CERTIFIED IN DISEASE INTERVENTION

Exam Study Guide

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Introduction

Welcome to the Certified in Disease Intervention (CDI) Exam Study Guide.

The CDI Study Guide was created to support your preparation for the Certified in Disease Intervention (CDI) exam. Whether you bring years of experience or are looking to build knowledge in specific domains, this guide will help you feel more confident and prepared.

The CDI exam is built around a content outline, which serves as the blueprint for the test. This outline is developed through a formal job analysis, in which subject matter experts identify the knowledge, skills, and abilities essential for competent practice in the field. The outline specifies the domains (broad areas of expertise), the tasks within each domain, and the percentage of the exam devoted to each domain, indicating how heavily each area will be tested.

This study guide follows the structure of the content outline. Each chapter focuses on one of the six domains tested on the CDI exam:

- Planning and Case Analysis
- Interviewing and Case Management
- Field Services and Outreach
- Surveillance and Data Collection
- Collaboration
- Outbreak Response and Emergency Preparedness

Within each chapter, you will find an overview of the domain and its related tasks, along with detailed coverage of the knowledge and skills needed for effective practice. Keywords are bolded with definitions available in the Glossary. Examples and explanations are provided to illustrate how concepts can be applied differently depending on jurisdiction, program protocols, or work setting. Each chapter also includes practice questions to help you assess and reinforce your understanding as you go.

The study guide was developed through a collaborative process that involved reviewing CDC guidance, consulting with subject matter experts, and incorporating feedback from experienced DI professionals. It's important to note that the CDI exam and study guide emphasize core principles, processes, and skills applicable across various diseases and situations, rather than disease-specific details, such as incubation periods, interview periods, test technologies, and treatment regimens. Terminology in this guide was selected to represent nationally standardized language. Disease intervention professionals may encounter different terminology in regional and local practice. We hope this guide reinforces what you already know and offers new insights to deepen your expertise. Thank you for the work you do to protect and promote public health. Best of luck on your journey to certification!

How to Use This Guide

This guide is designed to be flexible, allowing you to study in the way that works best for you. Here are some tips for making the most of it:

- **Review by Domain** – Work through each chapter in sequence or focus on the domains where you feel you need the most review.
- **Learn the Keywords** – The glossary and bolded terms highlight essential concepts and vocabulary you should know for the exam.
- **Apply to Real Scenarios** – When reading, think about how you would approach similar situations in your own work setting or jurisdiction.
- **Use the Practice Questions** – Each chapter includes questions to help you check your understanding. Treat them as learning tools, not just quizzes.
- **Focus on Skills and Processes** – Since the CDI exam will not include disease-specific content, concentrate on the methods, strategies, and professional practices described.
- **Take Notes** – Keep a running list of concepts you want to revisit or discuss with colleagues.
- **Pace Yourself** – Break your study sessions into manageable chunks, and revisit challenging sections over time.

By following these strategies, you can turn this guide into an active study resource.

Certified in Disease Intervention (CDI) Exam Content Outline

The Certified in Disease Intervention (CDI) exam content outline was developed through the creation of a structured job analysis, during which experienced professionals identified the essential knowledge, skills, and abilities required for competent practice. It outlines the major domains of expertise, details the specific tasks within each domain, and assigns a percentage to indicate the relative weight each domain carries on the exam. This section presents the domains, tasks, and corresponding percentages for the CDI exam.

Domain 1: Planning and Case Analysis

Percentage of the Exam: 20%

This domain addresses the steps that should be taken prior to initiating the interview process. Planning and case analysis involve verifying reported information and using available data sources to obtain additional information about a person diagnosed with an infection to ensure a timely interview and referral to necessary medical and supportive services. Disease intervention (DI) professionals use local protocols to prioritize cases to maximize the opportunity for disease intervention.

Tasks:

1. Collect and verify relevant information to inform planning and case analysis for people diagnosed with or possibly exposed to infectious disease.
2. Assess and prioritize case load to maximize impact of intervention.
3. Use digital technologies to identify and locate people diagnosed with or potentially exposed to infectious disease.
4. Identify community resources to connect people to care and services (i.e., medical providers, Medicare/Medicaid services, mental health, behavioral health, financial assistance, utility assistance, food banks, homeless shelters).
5. Calculate disease intervention timeframes (e.g., interview period, incubation period, window period) to determine disease investigation needs.
6. Perform ongoing case analysis to recognize gaps and discrepancies to inform additional steps for intervention.
7. Adhere to public health principles during planning and case analysis.

Domain 2: Interviewing and Case Management

Percentage of the Exam: 20%

Interviewing people diagnosed with an infectious disease is a critical disease intervention activity. This domain covers the key aspects of the interview process, and critical communication skills necessary to successfully identify people exposed to an infectious disease for notification and referral to medical and supportive services. Disease intervention (DI) professionals ensure that people affected by infectious diseases have the information necessary to seek the prevention and treatment services they need to prevent further transmission and complications. Maintaining confidentiality and prioritizing people-centered communication, as well as attention to the unique needs of the populations served, are vital for building trust with individuals diagnosed with or exposed to infectious diseases.

Tasks:

1. Collect and verify relevant information to determine investigation needs for people diagnosed with or possibly exposed to infectious disease.
2. Define confidentiality and perform the investigation in a confidential manner.
3. Discuss the purposes of the disease investigation (e.g., interview, test results, disease exposure, and environmental risk).
4. Motivate people diagnosed with or possibly exposed to infectious disease to participate in disease intervention services (e.g., testing, treatment, isolation or quarantine, partner elicitation).
5. Comprehensively interview cases by using effective communication skills.
6. Obtain a detailed assessment of people diagnosed with or possibly exposed to infectious disease (e.g., risk history, sexual history, drug use, incarceration, demographics).
7. Elicit demographic and locating information about persons exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners) for prevention and intervention.
8. Elicit information on venues or social settings where persons may have been exposed to disease, to support prevention and mitigation.
9. Determine needs and barriers related to disease intervention for people diagnosed with or possibly exposed to infectious disease.
10. Refer people diagnosed with or possibly exposed to infectious disease to appropriate support services (e.g., hospitals, clinics, shelters, mental health facilities).

11. Collaborate with people diagnosed with or possibly exposed to infectious disease to develop and implement an action plan (e.g., testing, treatment, support services, negotiating methods of partner/contact notification for timely intervention).
12. Verify whether people diagnosed with or possibly exposed to infectious disease followed an action plan (e.g., testing, treatment, support services, and partner/contact notification).
13. Perform a record search of information on persons exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners, other people who may benefit from testing) to obtain and document any relevant locating, testing, and treatment information.
14. Locate and communicate with people exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners) via phone, text, referral letters, emails, digital technologies (e.g., apps, websites).
15. Follow up with people exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners, other people who may benefit from testing) to ensure testing, treatment, and/ or other referrals.
16. Adhere to public health principles during interviewing and case management.

Domain 3: Field Services and Outreach

Percentage of the Exam: 20%

Conducting field investigations in the community requires careful planning. This domain outlines the steps that disease intervention (DI) professionals should take to prepare to ensure efficient and timely field investigation activities. Preparing testing and treatment supplies, conducting record searches, and planning field visits in advance will enhance the impact of field investigation activities. While in the field, the DI professional should use effective communication skills and keen observation to ensure their safety while locating people infected with or at risk for an infectious disease.

Tasks:

1. Plan field services (e.g., at home visit, outreach events, screening) to maintain confidentiality, security, and safety.
2. Maintain supplies to be prepared for field services.
3. Perform field investigations to residences or other community locations to inform people of possible disease exposure or positive test results.
4. Communicate with people diagnosed with or possibly exposed to infectious disease in-person.

5. Maintain security and confidentiality of sensitive information and protected health information of people diagnosed with or possibly exposed to infectious disease.
6. When an individual cannot be reached, communicate with a third-party contact (e.g., mutual contacts, community support organizations, local businesses) to obtain additional information.
7. Practice universal precautions and infection control procedures.
8. Support field testing, treatment, and outreach activities for people experiencing a disproportionate impact of communicable disease.
9. Deliver and observe treatment (e.g., directly observed therapy (DOT), expedited partner therapy (EPT), field delivered therapy) in nonclinical settings to ensure adherence to treatment regimen as well as patient education.
10. Identify and respond appropriately to unsafe situations (e.g., body language, threat of bodily harm, environmental cues, tone).
11. Adhere to public health principles during field services and outreach.

Domain 4: Surveillance and Data Collection

Percentage of the Exam: 20%

Disease intervention (DI) professionals play a critical role in verifying information obtained through confidential case reports and in gathering supplemental information during the investigation process. This domain outlines the sources DI professionals use to obtain key data elements and the importance of working with health care providers and facilities to ensure timely and complete data collection for reportable conditions.

Tasks:

1. Verify and collect data by navigating formal and informal sources (e.g., providers, information systems, internet searches).
2. During comprehensive interviews of people diagnosed with or possibly exposed to infectious disease, verify and collect surveillance information (e.g., risk information, socio-demographic information).
3. Update documentation as appropriate to ensure accurate and complete surveillance data.
4. Identify investigation trends and make notifications of emerging trends or concerns.
5. Adhere to public health principles during surveillance and data collection.

Domain 5: Collaboration

Percentage of the Exam: 15%

This domain addresses the role of collaboration between disease intervention (DI) professionals, health care providers, and community-based organizations. Collaboration is vital to the success of disease intervention for infectious diseases. DI professionals serve as a resource for understanding and implementing public health recommendations and reporting requirements.

Tasks:

1. Collaborate with health care and other service providers (e.g., correctional facilities, schools, health departments) to ensure adequate care.
2. Educate health care providers (e.g., clinicians, laboratorians) on jurisdiction requirements or reporting compliance.
3. Serve as a local resource to relay public health information and CDC recommendations to the community and providers (e.g., correctional facilities, schools, health departments, medical personnel).
4. Participate in collaborative case review to identify and discuss opportunities for enhancing case management strategies and intervention.
5. Adhere to public health principles during collaboration.

Domain 6: Outbreak Response and Emergency Preparedness

Percentage of the Exam: 5%

This domain outlines the role of disease intervention (DI) professionals during an outbreak or public health emergency. Understanding emergency preparedness concepts will ensure that DI professionals are prepared to serve during an outbreak or emergency response. Participating in public health emergency preparedness initiatives allows the DI professional to understand the critical functions and their role, so they are ready to engage during an active public health emergency.

Tasks:

1. Participate in preparedness training (e.g., tabletop exercises, learning subject matter pertinent to emergency outbreak, just-in-time training, emergency planning, awareness of an outbreak response plan, incident command structure [ICS] training).
2. Apply disease intervention techniques (e.g., program operations guidelines [POG], cross-train on knowledge of other morbidities) to participate in public health emergencies and outbreak response initiatives.

3. Assist various government and public health officials to perform required tasks (e.g., data collection, contact elicitation, quarantine and isolation recommendations, rapid needs assessment, epidemiologists' consultation, community outreach, awareness promotion including Health Alert Network [HAN]).
4. Participate in after-action reports (AAR) to provide lessons learned and recommendations to improve future response activities.
5. Adhere to public health principles during an outbreak response and emergency preparedness.

CDI Glossary of Terms and Definitions

This glossary provides definitions for keywords used throughout the CDI Study Guide. Use this section as a quick reference to reinforce your understanding of important concepts and terminology.

Action – A specific step taken to carry out a plan or achieve an objective in public health or disease intervention.

Action Plan – A detailed strategy outlining the steps, responsibilities, and timelines for achieving a specific public health goal or objective.

Active Listening – A communication approach in which the listener fully concentrates, understands, responds, and remembers what is being said, using both verbal and nonverbal cues to show engagement. This includes specific techniques such as paraphrasing, nodding, asking clarifying questions, and reflecting back on what the speaker has said.

Active Surveillance – A method of surveillance whereby public health staff actively seek information on cases by contacting health care providers, laboratories, or facilities, and passive surveillance, which relies on health care providers, laboratories, and other entities to report cases to public health authorities.

Affirmations – Positive statements that recognize a person's strengths, efforts, or values, used to encourage and support them in behavior change or decision-making.

After-Action Report (AAR) – A tool used to provide feedback after an incident that summarizes what took place during the event, analyzes the actions taken by participants, and provides areas needing improvement.

Aggressive Communication – A style of interaction in which a person expresses needs or opinions in a forceful, hostile, or dominating manner, often at the expense of others.

Assertiveness – The ability to express one's thoughts, feelings, and needs clearly and respectfully, while also considering the rights and needs of others.

Associate – A person connected to a case or contact, often through a shared social or risk network, who may require follow-up in disease investigation. Associates are named during an interview with a person who is <u>not</u> infected.

Body Substance Isolation – A set of infection control practices that assumes all body fluids are potentially infectious and requires the use of protective barriers (e.g., gloves, masks) to prevent transmission.

Case Analysis – A detailed review of case information, including epidemiologic data, interview findings, and laboratory results, to guide public health intervention.

Case Investigation – Part of the process of supporting people with suspected or confirmed infection, in which public health staff work with a person to help them recall everyone with whom they have had close contact during the time frame while they might have been infectious.

Case Management – A coordinated process of planning, implementing, monitoring, and evaluating the services and interventions needed for a person with an infectious disease to achieve health and prevent further transmission.

Case Write-Up – A structured narrative or form summarizing the details of a case investigation, including demographics, exposure history, contacts, and outcomes.

Close Contact – Someone who was physically close to a potentially infectious person.

Cluster Interview – An interview with a person diagnosed with or exposed to an infection to identify other individuals in their social or risk network who may have been exposed.

Clustering – The occurrence or identification of cases or contacts that are connected through common exposures, locations, or social networks.

Confidential Environment – A private and secure setting that protects sensitive information during public health activities, such as interviews or counseling.

Confidentiality – The duty to keep personal information, such as medical records, secure. Confidentiality refers to how information is used and who has access to it.

Contact Tracing – The identification, monitoring, and support of a person who has been exposed to, and possibly infected with, an infectious agent, such as a person who came into close contact with a person with a confirmed or probable case of disease.

Contacts – Individuals who have been exposed to a person with an infectious disease and may be at risk for infection.

Contract Referral – A partner notification strategy in which an infected person agrees to notify their contacts within a set period; if they do not, public health staff will notify them.

Cross-Training – Training individuals to perform duties outside their primary role, so they can assist in other functions during public health responses.

Directly Observed Therapy (DOT) – The practice in which a health care or public health professional watches a person take each dose of their prescribed medication to ensure adherence and successful treatment.

Disease Comprehension – The degree to which an individual understands information about a specific disease, including its causes, transmission, prevention, and treatment.

Disease Exposure – Contact with an infectious agent, infected person, or contaminated environment that may result in disease.

Disease Intervention – Actions taken to prevent or reduce the spread of disease, such as case investigation, contact tracing, education, and treatment.

Distribution – The pattern of disease occurrence in a population as described by person, place, and time.

Dual Referral – A partner notification method in which both the person diagnosed with an infection and public health staff work together to notify exposed contacts.

Emergency Planning – The process of developing strategies, procedures, and resources to prepare for and respond to public health emergencies.

Empathy – The ability to understand and share the feelings of another person, often demonstrated through active listening and supportive communication.

Endemic – The constant amount of a specific disease that is usually present in a geographic location, like a state or country.

Environmental Risk – Potential harm to human health arising from physical, chemical, or biological factors in the environment.

Epidemiology – The study of disease and other health outcomes, their occurrence and causes in a population, and the application of this study to control health problems.

Ethics – Principles that guide decision-making and behavior, focusing on what is right and fair in public health practice.

Expedited Partner Therapy (EPT) – The clinical practice of treating the sex partners of people diagnosed with chlamydia or gonorrhea by providing prescriptions or medications to the diagnosed person to take to their partner without the health care provider first examining the partner, in order to prevent reinfection of the index case and prevent further transmission of the STI.

Field Delivered Therapy (FDT) – Providing medication to a person diagnosed with or exposed to an infection in the field (outside of a clinic setting) to initiate treatment promptly and prevent further disease transmission.

Field Testing – Collecting specimens for laboratory testing at a location outside a clinic, such as in a person's home, community site, or event venue.

Field-Based Specimen Collection – The process of obtaining biological samples (e.g., blood, urine, swabs) from people diagnosed with or exposed to an infection in nonclinical settings for laboratory analysis.

Formal Sources – Official or structured sources of information in an investigation, such as medical records, laboratory reports, or official registries.

Frequency – How often an event, symptom, or exposure occurs in a population during a specific period.

Harm Reduction – A set of practical strategies and ideas aimed at reducing negative consequences associated with certain behaviors, without necessarily requiring the cessation of those behaviors.

Health Alert - Reports used by health departments to notify local health care providers and public health entities of an increase in a disease within their jurisdiction

Health Alert Network (HAN) – A nationwide information and communication system developed by CDC to ensure rapid distribution of public health information to state and local health departments, hospitals, and other interested parties/groups.

Health Insurance Portability and Accountability Act (HIPAA) – A U.S. federal law that establishes national standards to protect sensitive patient health information from being disclosed without the person's consent or knowledge.

Health Literacy – The ability to find, understand, and use information and services to inform health-related decisions and actions for oneself and others.

Health Numeracy – The ability to understand and use numerical information related to health, such as risk probabilities, test results, or dosage instructions.

Impact – The intended or unintended long-term effects produced by a program, policy, or organization.

Incident Command System (ICS) – A standardized approach to incident management that is used for all kinds of incidents by all types of organizations and at all levels of government.

Incubation Period – The time interval between when a person is exposed to an infectious agent and when they begin to develop symptoms.

Index Case – The first documented case of a disease in a particular outbreak or population that comes to the attention of health authorities.

Incidence Rate– The number of new cases of a disease occurring in a specified population during a defined time period, often expressed per a certain number of people.

Infectious Period – The time when a person is able to pass the infection to others.

Informal Sources – Unofficial or casual sources of information in an investigation, such as self-report, tips from community members, or observations during field work.

Internet Partner Services (IPS) – An approach to delivering partner services using technologies such as the internet, social networking sites, email, instant messaging (IM), mobile devices, mobile applications, and texting.

Interview – A structured or semi-structured conversation used to collect information from a person diagnosed with or exposed to an infection, or other source for disease investigation or prevention purposes.

Interview Period – The timeframe in which relevant exposures or contacts are elicited from a person diagnosed with an infection during an interview.

Interview Record Form – A standardized form used to document information gathered during an interview, including demographics, risk factors, and contact details.

Interviewing – The process of asking questions and gathering information from a person diagnosed with or exposed to an infection for the purpose of disease intervention and public health action.

Isolation – The practice used to keep a person who is currently infected with an infectious agent away from others during their infectious period to prevent transmission of an infectious disease.

Just-in-Time (JIT) Training – Training delivered immediately before or during an event or response, to prepare individuals for specific tasks or procedures.

Laboratory Testing Algorithm – A defined sequence of laboratory tests performed in a specific order to aid in diagnosis or confirmatory testing.

Linguistic Accessibility – The provision of information in a way that is understandable to individuals regardless of their primary language, literacy level, or communication abilities.

Linkage to Care – The process of connecting a person diagnosed with an infection to medical and supportive services.

Medicaid – A joint federal and state program in the United States that helps with medical costs for some people with limited income and resources.

Medicare – A U.S. federal health insurance program for people age 65 or older and for certain younger people with disabilities or specific diseases.

Mode of Transmission – The process by which an agent moves from its source or reservoir to a susceptible host, either directly or indirectly (e.g., respiratory droplets, airborne, direct contact, vehicle-borne, or vector-borne).

Motivational Interviewing (MI) – A collaborative interviewing style intended to strengthen the person's motivation and commitment to change.

Multimorbidity – The presence of two or more chronic diseases or health conditions in an individual.

Mutual Contacts – People named by two or more individuals during partner or cluster interviews as shared contacts or associates.

Notification – The act of informing a person of possible exposure to an infectious disease or of test results requiring follow-up.

Open-Ended Questions – Questions that cannot be answered with a simple "yes" or "no" and that encourage the respondent to provide more detail.

Original Interview – The first interview conducted with a person diagnosed with an infection for a specific case investigation.

Original Interview Session – The initial meeting between a disease intervention professional and a person diagnosed with an infection to obtain information about the case, exposures, and contacts.

Outbreak – A higher number of cases than expected in an area within a certain time period.

Outbreak Response Plan (ORP) – A written document prepared to delineate what actions the responsible entity will take and who will be involved in a response to a disease outbreak.

Partner – A person who has had sexual contact with a person diagnosed with an infectious disease and may require notification, testing, or treatment.

Partner Elicitation – The process of identifying and documenting a person's sexual or needle-sharing partners during an interview.

Partner Services – A broad array of services offered to people with HIV infection, syphilis, gonorrhea, or chlamydial infection and their partners, including notifying partners of their exposure.

Passive Communication – A communication style in which a person avoids expressing their thoughts, feelings, or needs directly, often to avoid conflict.

Passive Surveillance - A method of surveillance which relies on health care providers, laboratories, and other entities to report cases to public health authorities.

Personally Identifiable Information (PII) – Any data that could potentially be used to identify a specific individual, such as name, address, phone number, or date of birth.

Person-Centered Approach – An approach that involves practices that emphasize communication, individuality, autonomy, and dignity of people receiving services, with respectful and noncoercive services led by trained staff.

Plain Language - communication—written or spoken—that is designed to be clear, concise, and easily understood by the intended audience the first time they read or hear it.

Point-of-Care (POC) Testing – Diagnostic testing performed at or near the site of patient care, providing rapid results that can guide immediate clinical decisions.

Polite Imperative – A communication technique that uses polite but direct language to encourage action, often phrased as a suggestion rather than a command.

Post-Interview Analysis – The review and assessment of information obtained during an interview to identify key findings, gaps, and next steps for the investigation.

Pouch – A secure container or envelope used to transport confidential case documents or biological specimens.

Pre-Interview Analysis – Reviewing available case information before conducting an interview, to plan questions and strategies.

Prevention Strategies – Actions that reduce the spread of disease.

Primary Prevention – Activities to prevent a disease before it occurs, such as vaccination or health education.

Priorities for Response Readiness (PRR) – Key tasks and capabilities needed to ensure a public health agency is prepared to respond effectively to an outbreak or emergency.

Privacy – The duty to protect a person's sense of being in control of the access others have to their experiences, behaviors, or thoughts. Privacy deals with people (e.g., health care workers should not share the name or location of the index case with a close contact without their permission or consent).

Problem Solving – The process of identifying an issue, analyzing potential causes, generating possible solutions, and selecting and implementing the best course of action.

Prophylactic Treatment– Providing curative treatment, in the absence of test results, to those exposed to an STI to stop the incubating infection.

Protected Health Information (PHI) - Any information in a medical record or designated record set that can be used to identify an individual and that was created, used, or disclosed in the course of providing health care services.

Provider Referral - A notification strategy where the provider (e.g., a health department staff member) is responsible for confidentially notifying partners of their exposure to an infection.

Quarantine – The practice of separating people who have been exposed to an infectious agent but are not yet showing symptoms from others to prevent the possible spread of disease.

Question Framing – The way a question is structured to elicit certain types of responses, encourage openness, and avoid bias during an interview.

Record Search – A review of existing records (e.g., health department data, lab reports, correctional facility records) to identify locating information, testing history, or treatment history relevant to a case.

Referral – Directing a person diagnosed with or exposed to an infection to another person, agency, or service for additional care, support, or intervention.

Referral Letters – Written notices sent to individuals to inform them of possible exposure to an infectious disease and provide instructions for follow-up.

Reflective Listening – A communication strategy where the interviewer restates or paraphrases what the interviewee has said to confirm understanding and encourage further sharing.

Re-Interview – A subsequent interview conducted to gather additional information or clarify responses from an earlier interview.

Risk History – Information gathered about an individual's past behaviors, exposures, or conditions that may influence their likelihood of having or transmitting an infection.

Risk Mitigation – Actions taken to reduce the likelihood or consequences of a risk, such as harm reduction strategies or the use of protective measures.

Secondary Prevention – Activities to detect and treat a disease in its early stages to halt or slow its progression.

Self-Efficacy – A person's belief in their ability to perform a specific behavior or task successfully.

Self-Referral – When a person diagnosed with or exposed to an infection independently seeks services without being prompted by a provider, investigator, or partner notification.

Sentinel Surveillance - A method of surveillance that focuses on specific sites or groups for tracking disease trends.

Sexual History – A set of questions asked to gather information on a person's sexual practices, partners, and risk factors relevant to disease prevention and intervention.

Social Contacts – People within the social network of a person with an infection who may be at risk for exposure to disease through shared environments or activities.

Source – The origin of an infectious agent or exposure in a specific case or outbreak.

Special Populations – Groups who may have unique needs or vulnerabilities in the context of public health, such as people with limited English proficiency, people experiencing homelessness, or individuals with disabilities.

Spread - People (i.e., partners, contacts) who are infected with an infectious disease by an index case.

Stages of Change Model – A model describing the process by which individuals move through stages when changing behavior: pre-contemplation, contemplation, preparation, action, and maintenance.

Summarization – A communication technique used during interviews in which the interviewer periodically restates the main points shared by the interviewee to confirm understanding.

Surveillance – The ongoing, systematic collection, analysis, interpretation, and dissemination of health data to guide public health action.

Tabletop Exercises (TTX) – Discussion-based sessions where team members meet to discuss their roles and responses to a simulated emergency scenario.

Tertiary Prevention – Activities, such as rehabilitation or support services, to reduce the impact of an ongoing illness or injury that has lasting effects.

Third-Party Contact – Someone who may know the location of a person diagnosed with or exposed to an infection but is not at risk for the infection themselves.

Treatment – The use of medications, therapies, or other interventions to cure, manage, or relieve symptoms of a disease.

Universal Precautions – A set of infection control practices used to prevent transmission of diseases that can be acquired by contact with blood or other potentially infectious materials.

Venipuncture – The puncture of a vein to draw blood or administer intravenous therapy.

Venue-Based Contact Tracing – A disease investigation strategy that involves identifying and contacting people who may have been exposed to a disease at a specific location or event.

Warm Handoff – The act of transferring a person receiving services directly from one provider to another, often in person, to ensure continuity of care.

Window Period – The time between potential exposure to an infection and the point when a test can reliably detect that infection.

Chapter 1 Planning and Case Analysis

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Introduction

Planning and case analysis encompass a range of aspects, including information gathering and decision-making, to help the disease intervention (DI) professional select the most suitable actions for a given case scenario. These tasks are embedded in a case of reportable infectious disease and are integral to its management. In short, planning and case analysis support a thorough and complete investigation process. Planning and case analysis activities are included in the steps of case management[1]:

1. Pre-interview analysis
2. Original interview session (see Chapter 2)
3. Post-interview analysis
4. Referral of people who were exposed (see Chapter 2)
5. Cluster interview/re-interview (see Chapter 2)
6. Case closure

Planning and **case analysis** activities begin at the time a case is assigned and continue throughout the investigation. The information collected during the interview process helps determine the focus of intervention efforts, the timing and pacing of these efforts and actions, and the resolution of infectious disease cases. **Post-interview analysis** occurs after the interview is complete and informs whether follow-up actions are required to obtain additional information from the person diagnosed with an infection. In addition to applying planning and case analysis during an interview with a person diagnosed with an infectious disease, case analysis sometimes can include a presumptive interview with a person who may be at risk of an infection, but who has not tested positive for an infectious disease. This can consist of people with similar risk factors as the person with the infection, or those in their social or sexual network.

The following tasks are part of the Planning and Case Analysis domain and will be covered in this chapter[2]:

- Task 1: Collect and verify relevant information to inform planning and case analysis for people diagnosed with or possibly exposed to infectious disease.
- Task 2: Assess and prioritize case load to maximize impact of intervention.
- Task 3: Use digital technologies to identify and locate people diagnosed with or potentially exposed to infectious disease.

- Task 4: Identify community resources to connect people to care and services (i.e., medical providers, Medicare/Medicaid services, mental health, behavioral health, financial assistance, utility assistance, food banks, shelters).
- Task 5: Calculate disease intervention timeframes (e.g., interview period, incubation period, window period) to determine disease investigation needs.
- Task 6: Perform ongoing case analysis to recognize gaps and discrepancies to inform additional steps for intervention.
- Task 7: Adhere to public health principles during planning and case analysis.

Domain Content

Section 1: Initial Case Data Collection, Analysis, and Prioritization

The DI professional conducts a **pre-interview analysis** of each assigned case.[3] The pre-interview analysis includes initial data collection, analysis, and prioritization. Initial case data collection will be determined by the size and type of the agency, local protocols for case assignments, and case management. That said, several general procedures are common in most public health agencies. Clinicians and laboratories report demographic and diagnosis information about reportable infectious diseases. The state, tribal, local, or territorial public health agency decides, with direction from the CDC, which case reports are prioritized for interview and investigation, treatment assurance without interview, or administrative closure.

When a person is diagnosed with a statutorily reportable infectious disease, the health care provider and the laboratory are obligated to report the infection to a public health authority.[4] It may be a state, tribal, local, territorial, or military health department/agency. Most states have electronic reporting systems that enable clinicians and laboratories to submit reports to a database accessible to staff from state, city, and county health departments. Relevant information on the case is required to be reported, including demographics about the person diagnosed with an infectious disease, such as[5]:

- Name
- Address
- Phone number
- Date of birth
- Sex/gender
- Name and address of clinical/laboratory facility
- Test performed, test type
- Site of test

- Test result
- Date of test
- Treatment information (e.g., medication, administration, dosage)
- Date of treatment
- Person/agency reporting the information
- Date reported

The basic information reported to the public health entity is the first step in determining whether the reported case will be assigned to a DI professional for an **original interview session**. The original interview is the first interview conducted with a person with an infection. More details about conducting an original interview are discussed in Chapter 2.

State agencies ultimately are required to report less detailed (de-identified) data to the CDC on a routine basis. This data includes the core epidemiologic variables of age, sex, county, diagnosing facility type, specimen collection date, and anatomic site(s) of infection.[6] The DI professional has an important role in ensuring complete and accurate data are collected and reported, so they should be knowledgeable of and permitted access to their agency's disease database system and the statewide database system. This enables the DI professional to verify completeness of reported data and document steps throughout the case management process. A widely known adage in infectious disease control is: "If it's not documented, it's not done." This adage has two meanings:

1. The case is not complete, nor can the interview record or **case write-up** be properly dispositioned and closed, unless all documentation has been completed.
2. If the work, such as phone calls and texts to locate a person diagnosed with an infection or someone who has been exposed to infection, is not documented then it cannot be proven that the work was performed.

This could result in delays, duplication of work, or reprimand due to omission of pertinent information.

Internal databases, outside of the main disease reporting database (laboratory and morbidity reporting mentioned above), may be available to a DI professional. These include electronic medical records (EMR) systems, statewide compiled medical records systems, and legal authority to contact medical facilities to get required medical information or information that advances the **case investigation**. The **Health Insurance Portability and Accountability Act (HIPAA)**, which establishes federal standards for protecting sensitive health information, includes an exemption that allows DI professionals to access health records without a person's consent for public health investigation activities.[7]

During the pre-interview stage, the DI professional reviews reported cases before initiating the interview process. In some jurisdictions, DI professionals may have support from a surveillance coordinator, while in others, they may review cases independently. After a reported case is reviewed, the DI professional works immediately to complete a record search, review the required report, contact the health care provider's office or the laboratory

for missing and additional information, and prepare to contact the person diagnosed with an infection (also called the **index case** or original case) or people exposed to an infection (partners/contacts) to ensure that proper testing, treatment, and other care is offered and provided.

Ideally, for **disease intervention** to occur and be documented, each person diagnosed with an infectious disease should be interviewed to determine the source of the infection, identify risk factors, and determine if others may have been exposed. There are a wide variety of settings where people may receive clinical care for their infection, such as sexual or reproductive health clinics, correctional facilities, and community clinics where DI professionals provide on-site services. The public health entity is responsible for providing DI professionals with tools, training, resources, case management protocols, and a quiet and confidential space in which to conduct interviews. The DI professional will receive details on the report of an infection. The case will be assigned to them by a surveillance coordinator or, if they are self-assigned, via review of the case reports received by a public health agency. According to CDC's Passport to Partner Services, three major factors determine whether people diagnosed with an infectious disease receive an interview in a particular jurisdiction[8]:

- Staff capacity
- Funding
- Morbidity levels

Staff capacity refers to the availability of qualified staff who can work on a case report. Staff need to be properly educated, trained, and experienced. Funding is allocated through a combination of federal, state, local, and sometimes tribal and territorial government processes. These include formula-based distributions (e.g., population size or disease burden), competitive grant programs, and legislative appropriations. The availability of resources for staffing and case investigation is shaped by these structured funding mechanisms, which are designed to support timely and fair public health interventions across unique communities.

Social and economic conditions can contribute to health and are considered nonmedical factors that affect health outcomes.[9] They include the conditions in which people are born, work, live, and age, as well as broader forces and systems that shape everyday life. Because it is not always feasible to interview every person with an infectious disease, jurisdictions establish a priority basis to determine which people diagnosed with an infectious disease will be interviewed. The extent to which DI professionals can investigate a case to provide **referrals** for exams and treatment (as appropriate) to the person's partners, **social contacts** (people identified by a person diagnosed with infectious disease as someone who would benefit from testing), and **associates** (people identified by an uninfected person as someone who would benefit from testing), also are determined by a priority system and local jurisdiction capacity.[10] Factors that are considered in prioritizing a case for interview and investigation include[11,12]:

- Infection-specific morbidity
- Infectiousness of the disease, or disease stage

- Public health cost
- Burden of infections and their complications
- Amenability of the disease to the intervention
- Profile of contacts and other at-risk individuals (e.g., adolescents, people who are pregnant, people with intact female reproductive anatomy)
- Available program resources (e.g., staffing capacity, level of funding)[21]

Public health agencies also regularly reevaluate case investigation priorities, including interviews, notifications, and referrals of contacts, social contacts, and associates. Examples of prioritization of infectious disease case reports may include[11, 13]:

- People who are pregnant
- People testing positive for HIV
- People with other health conditions
- People at risk of severe health outcomes
- People with positive tests from a high-morbidity area (HMA) or a high-risk geographic area
- People who live in multifamily housing or work/live in crowded settings
- People with inadequate access to health care
- People with high levels of social engagement in social networks
- People who experience barriers to care

A DI professional should be able to quickly complete interview and investigation activities, whether working in the field or at a clinic. After a case is assigned, the original interview with a reported case of infection should happen promptly. This is the first interview with the person diagnosed with an infection. If a DI professional is working at a clinic where the case was diagnosed and reported, the interview can take place right after the person receives treatment. At a dedicated clinic, this can happen when enough trained and qualified DI professionals are available on staff. Conducting interviews in the same facility as the exam and treatment ensures the interview happens promptly and helps protect the person's privacy. When DI professionals are available immediately, the interview is timely, and the individual with an infectious disease may sense the urgency of discussing the diagnosis. For priority case interviews and investigations, timely interviews after diagnosis help build rapport with the DI professional and create a teachable moment for the person diagnosed with an infectious disease. When a case of infection is identified and reported by an agency lacking DI professional staff, the interview must be assigned to a DI professional who will use field investigation activities to promptly locate and interview the person diagnosed with an infectious disease. Each program establishes its own timeliness standards to ensure priority cases are interviewed quickly, usually in 3-7 days of initiation.[14]

After the original interview session is finished and key findings are documented, the DI professional can proceed to post-interview analysis. This is conducted using information collected during the interview.[15] An interview record, including a case write-up, is completed. This should be done immediately after the interview (or as soon as possible) to ensure the details are accurately reflected. Information from the interview can be verified and supported through research with both internal and external sources.

Preparing and organizing phone calls, texts, other messages, mailed letters, and field visits by the DI professional requires effective time management. Managing the timeline for caring for people diagnosed with infectious diseases and others at risk begins when the DI professional promptly creates a plan to contact those exposed to infections after completing the interview record form.[15]

The **interview record form** captures all parts of the case assignment. Filling out all sections on the form includes, but is not limited to: original demographics of the person diagnosed with infectious disease, testing and treatment details, details on partner(s), social contact(s), and associate(s) involved in the case, with their demographics, location, exam, testing, and treatment outcomes; a case write-up that summarizes the case from start to finish, along with the DI professional's interview notes; and a request to the DI supervisor for closure and disposition of the case assigned.

These steps also help ensure that people diagnosed with infectious diseases and their partners, social contacts, and associates are notified as quickly as possible. The speed and efficiency with which DI professionals perform their duties ensure timeliness in case management.[10,16] By preparing ahead of time (e.g., the day before or early in the morning of field investigations), the DI professional can work more efficiently and meet the goals set by their programs. For more information on conducting field services and outreach activities, refer to Chapter 3.

Timeliness and time management provide three essential disease intervention keys to reducing infections during case management[14]:

1. Reduce transmission from person to person.
2. Minimize the medical complications of infections.
3. Improve overall public health outcomes.

Section 2: Case Analysis and Interpretation for Disease Investigation and Intervention

A significant amount of preparation is needed for the pre-interview analysis when receiving a new case. In most instances, though not always, the DI professional has various pieces of information to form an overall picture of the case and can use that to prepare for the original interview.

Here is some of the information a DI professional might have, especially if working in a clinic setting:

- First name
- Last name
- Nickname
- Date of birth
- Age
- Address
- Phone number
- Physical description
- Test types
- Test date
- Results of preliminary tests
- Estimated date of exposure to an infection
- Reported signs and symptoms, along with dates of occurrence
- Diagnosis
- Diagnosis date
- Treatment provided
- Stage of disease, if relevant

The DI professional can use this information to prepare for the interview, verify existing information, formulate questions to ask during the interview, and create a plan of action when speaking with the person diagnosed with the infection.

Incubation Periods

The **incubation period** for an infection is something the DI professional knows ahead of time, based on disease-specific training. The incubation period refers to the timeframe that begins with the date the index patient first was exposed to an infection and ends with the appearance of signs or symptoms of the infection. The length of time (e.g., days, weeks, etc.) it takes for an infection to develop after exposure varies. The DI professional should be familiar with the average incubation period and range for the specific disease (e.g., the average incubation period for measles is 10 to 12 days, but it can range from 7 to 21 days). Calculating the incubation period is challenging when the index case does not develop symptoms.

Onset and Duration of Signs and Symptoms

Signs of disease can sometimes be obvious and recognizable to others, especially trained clinicians. For some infections, the date of symptom onset can help determine the most likely timeframe of exposure, which can aid in identifying the source of the infection. Based on the onset of symptoms, the DI professional can develop a set of questions to obtain more information about the likely exposure. For example:

- *"What was happening for you about 3 months ago?"*
- *"Who were you having sex with between January and March?"*
- *"Where did you travel over the holidays?"*

The incubation period, as well as the onset and duration of any signs and symptoms, or even the absence of symptoms (asymptomatic), are key in identifying the **interview period.** The interview period is the timeframe in which relevant exposures or contacts are elicited from a person diagnosed with an infection during an interview. It covers the time from the earliest date the person could have been infected to the date of treatment, or the date of the interview if the index person has not yet been treated.[17] It is important for the DI professional to calculate the interview period ahead of the original interview, so that a smooth and conversational rapport can occur. This approach makes it more likely that the person diagnosed with an infectious disease will be willing to provide information, recognizing that a competent, knowledgeable, and empathetic individual wants to help them avoid reinfection. Other goals related to determining the interview period include preventing complications, reducing further transmission by others involved in the case, and ensuring that people exposed to infectious disease receive appropriate testing and/or treatment based on the date(s) of the exposure.

Identifying people who had contact that could lead to transmission with the index case during their infectious period is central to the original interview. Finding other individuals who also may be at risk or showing signs of disease observed by the index case is also an important part of the interview and case analysis. Common ways infections can spread include:

- Person-to-person contact (e.g., airborne, respiratory, direct contact, or sexual transmission)
- Animals or insects to humans (e.g., zoonosis or vector-borne transmission)
- Objects to people (e.g., food, water, or contaminated surgical instruments)

The DI professional should understand how the disease is transmitted and tailor interview questions to identify contacts based on relevant exposure routes.

Significance of Obtaining Partner or Contact Names

The main goal of public health is always prevention. This is accomplished through various population-based and individual interventions.[18] Preventing infectious diseases usually involves public health investigations and **notifications** and referrals of contacts. Being aware of their exposure is crucial for contacts to recognize the need for examination, testing, and treatment with appropriate medical intervention. During notification and referral, DI professionals also have the chance to discuss future prevention strategies and behavioral risk reduction techniques.

Disease intervention occurs at three levels: primary, secondary, and tertiary.[19] These levels are discussed more in Chapter 2: Interviewing and Case Management. Disease intervention occurs when someone exposed to an infectious disease is tested and treated quickly to prevent the disease from developing, spreading further, or causing negative health effects. It also involves properly treating infected individuals to stop the infection from progressing into a more severe disease with possible complications that could be harmful or deadly. This applies whether it is the original person diagnosed with the infectious disease or an exposed partner or contact who was treated properly and later diagnosed with the infection.

DI professionals use the interview period to establish the timeframe before the original interview to inquire about anyone with whom the person had relevant types of contact. Eliciting close contacts, partners, and other individuals at risk of infection involves obtaining names, addresses, dates of birth or age, physical descriptions, accurate location information, and exposure dates, including first, last, and frequency of exposure, for all individuals exposed during the interview period.

Post-Interview Analysis

The post-interview analysis is essential for synthesizing all the information collected through the medical/epidemiologic case report, which includes initial record searches, the original interview, and the case write-up, to determine the next steps.[18] The DI professional uses organizational skills to document the interview results concisely. The DI professional should review all information gathered during the original interview and other investigative steps taken so far. Possible scenarios to explore include[8]:

- Identifying critical-period sex partners/contacts
- Recording searches for information on sex partners/contacts to determine any prior medical or disease intervention records relevant to the current case
- Reviewing standard investigative resources to confirm locating information on all named sex partners
- Analyzing the disease intervention information on named sex partners/contacts and accurately determining probable relationships and possible factual omissions, setting priorities for field investigations, and identifying potential avenues to pursue future disease intervention

The post-interview analysis should investigate unexplained exposure gaps for the original person diagnosed with an infectious disease to identify missing information and determine whether a re-interview, cluster interviews, or halting further activities are necessary. Usually, a re-interview is needed because post-interview analysis often reveals that the original person has avoided discussing or mentioning all sex partners/contacts during the original interview. Each re-interview should be carefully justified by the DI professional and the immediate supervisor.

Another aspect of case management is post-interview analysis, where information gathered during each of the interview types (presumptive, original, re-interview, and cluster) is examined. Different interview types can provide various pieces of information that contribute to understanding the case and its connection to other cases. The post-interview analysis should be conducted immediately after the interview while the information is still fresh in a DI professional's memory.

A case write-up includes brief, objective notes that avoid judgments about the individuals involved. It also may include information that is not evident during the interview with the person originally diagnosed with an infectious disease. As they review and document the case for their supervisors, DI professionals might identify overlooked details and make connections between cases and behaviors. Sometimes, a re-interview is necessary immediately after the original to gather missing information or resolve inconsistencies. Scheduling this re-interview during the original interview saves time and demonstrates the DI professional cares and will follow up at a specific time.

Cluster Networks

Sometimes cluster networks, also known as social networks, can be identified during post-interview analysis. When a group of people found to be infected are linked by similar disease timelines, geographic location, type of exposure, or other identifying factors, this is considered a cluster network. For example, a DI professional may find several cases of a disease occur among people living in the same motel. Understanding how and when people are connected can reveal a group that might otherwise appear as separate, independent cases. DI professionals also can gather information about a person's social network, including places they visit, risk behaviors, and where they met contacts, to help plan additional prevention efforts, such as outreach and screening events.[20] The cluster network offers another way to promote community prevention by increasing awareness of the infection and how it spreads within the community.

Source and Spread

The interview period for infections varies depending on the type and stage of the disease. The interview is used not only to promote case and contact findings but also to estimate which contacts/partners are most likely to have been the source of infection for the original person diagnosed with the infectious disease. Identifying the **source** of infection is crucial for linking cases and gaining a broader understanding of disease transmission patterns. It can also help determine which partners/contacts, social contacts, and associates the person most likely infected with the disease (i.e., **spread**). Source and spread information help define the epidemiology of the infection and can be used to identify the cluster network. To some extent, the source and spread can be estimated for certain infections that may not have a timely course of disease process or when the original person is asymptomatic.

Source and spread relationships can be established by an experienced DI professional primarily through interviews and further confirmed by evaluating clinical outcomes, such as test results and symptoms reported by named partners/contacts.[1]

Re-interview

The **re-interview** of an original person diagnosed with an infectious disease generally involves asking more targeted questions to fill gaps that were either intentionally or unintentionally omitted by the individual or not thoroughly examined by the DI professional. This re-interview typically concentrates on specific problems related to locating and referring sex partners/contacts, key social contacts, and associates connected to the case. Proper preparation ensures the most effective approach during a re-interview. It must be conducted promptly to highlight its importance, follow a well-planned agenda, and be tactfully organized to encourage the individual's voluntary cooperation in the disease intervention process. As to goals, a re-interview should be[8]:

- Conducted reasonably soon after the original interview
- Approached with planning and purpose
- Executed tactfully
- Positively and assertively raise any concerning evasive behavior displayed by the original person diagnosed with an infectious disease regarding the referral of sex partners/contacts or the treatment or follow-up of their own infection

CDC Treatment Regimens and Guidelines

The CDC develops and publishes guidelines for effective treatment regimens of infectious diseases to ensure the correct treatment of people diagnosed with infectious diseases. The guidelines are developed by CDC staff and subject matter experts, clinicians, laboratorians, and other agencies worldwide to effectively prevent disease. When people with an infectious disease are not properly treated, they may exhibit reduced signs and symptoms but still can spread the infection or develop complications.

CDC guidelines not only include treatment regimens but also sociological, behavioral, and developmental characteristics of infected individuals, giving the public information about risks of acquiring and preventing infections.[21] The guidelines have clinical prevention guidance, behavioral risk assessment, first-line and alternative treatments, diagnostic and screening test recommendations, prevention counseling techniques, disease-specific primary prevention methods, partner services steps, and reporting and confidentiality requirements for working with populations infected or at-risk.

Section 3: Use of Research Tools to Support Locating Individuals and Resources

While an investigation is ongoing, the DI professional may also use databases and other internet platforms to supplement information available in their agency's internal database, such as a statewide case surveillance system. Many, but not all, health departments utilize internet-based search engines and platforms during case investigations.[22] These internet services include, but are not limited to, search engines, people-finding sites like LexisNexis, social media, dating apps, licensed databases, statewide medical record cooperatives, and instant messaging. Before using digital technologies, the public health agency must obtain a license for the service, if required. For instance, LexisNexis is proprietary and requires each staff member using the system to have a license. Some agencies designate a few individuals who can conduct record searches for DI professionals, while others may purchase a license for each DI professional. Well-equipped public health agencies provide up-to-date search tools, such as a basic search engine account for DI professionals. A search engine query may help identify an individual's location, age, occupation, school, photos, and other relevant information that can help verify the correct individual and provide new insights. When an agency uses social media accounts for disease investigations, it should ensure its public health entity already has an account on that platform.

Some disease intervention programs also conduct **Internet Partner Services (IPS)** activities using digital platforms to locate and notify people diagnosed with or exposed to an infection. DI professionals may rely on IPS for communication using text messaging, email, or secure apps, to notify partners of possible exposure to an infectious disease, particularly STIs or HIV. For instance, use of Facebook or Messenger is common in public health agencies conducting IPS searches. DI professionals should make maximum possible use of current technology tools that provide security and confidentiality for record-keeping and case management materials. For more details about Internet Partner Services (IPS), see Chapter 2.

Social Media Best Practices

While some public health entities have restrictions on the use of social media for locating individuals involved in a case, when these tools are managed correctly and confidentially, they can provide information vital to finding individuals at risk of infection. Meta platform accounts enable searching for people, verifying information to confirm their identities, and sending them messages. It is essential to note that the person may not receive a notification of a message sent from a profile outside their "friend" network, which can result in significant delays in communication. A remedy to this issue is to send a friend request to the person, so they are more likely to see the message. The social media account should have a name related to the public health agency, such as one similar to the name of the clinic, but without explicitly stating it. This helps maintain confidentiality for the person a DI professional is trying to contact. Once communication is complete, the individual should be "unfriended," or removed. An additional way to ensure confidentiality for individuals is to designate one DI professional to manage all social media account inquiries and searches.

Regardless of the methodology used to perform partner services, common standards should be followed. All partner services, including IPS, must comply with confidentiality and ethical standards. When communicating, whether through a letter, leaving a referral card,

text messaging, instant messaging, or messaging via a dating app profile, discretion is essential. The message should not include the name of the infection or the agency. In a public health organization, the broader entity the DI professional works for, such as the county or city health department or the state government, should be referenced instead of the infectious disease investigation unit. General terms like "urgent matter" or "urgent health matter" may be used instead of specific infection names, diagnoses, or exposure types. Avoid using specific titles; instead, opt for a more generic designation, such as "educator" or "patient navigator."

Confidentiality Risks and Practices

An essential part of disease intervention activities, regardless of their form, is adhering to confidentiality and ethical practices. All staff should operate on a "need to know" basis when handling details from case interviews and investigations. These standards also apply during IPS activities. The agency's security and confidentiality agreement that employees sign should extend to IPS, covering all forms of internet access and clearly outlining the consequences if confidentiality is breached or if databases and the internet are used for personal purposes. DI professionals should not use work devices or credentials to obtain personal information, nor should they exploit agency access to conduct investigations for personal gain.

Whenever a DI professional encounters any identifying information (e.g., screen names, email addresses, personal details, medical data, names, addresses, locations, workplaces, or other partners, like a spouse), it must be maintained with the same level of privacy and confidentiality as a name and date of birth on an official public health record. DI professionals must be trained in IPS policies, security, confidentiality, and the types of information that may or may not be shared with individuals diagnosed with an infectious disease, partners, or contacts. Many agencies require a legal disclaimer in outgoing emails, along with proper contact information that includes the employee's name, a nonspecific job title, and the broad name of the agency (e.g., health department instead of infectious disease program) and not a program name that reveals the disease (e.g., HIV/STI). Agencies should work with their IT staff to enable necessary staff to access websites that are typically restricted at work, including those related to networking, dating, and disease-specific information. Personal accounts should not be used to conduct IPS activities.

Awareness of Local Known/Trusted Clinics for Testing/Treatment

DI professionals should maintain a list of clinics that provide trusted services for exams, diagnosis, and treatment for people diagnosed with an infectious disease, especially those in priority populations.[23] Many states have laws requiring health jurisdictions to provide free or very low-cost confidential sites where people can be referred, particularly in areas with high morbidity rates. This ensures that geographic areas with higher incidence and prevalence of disease have clinical sites that are affordable and accessible to the unique population in that area. Public health departments should analyze morbidity in their jurisdictions and, in areas with high morbidity, allocate enough staff to implement provider referral and partner notification. **Provider referral** is a notification strategy where the provider (e.g., a health department staff member) is responsible for confidentially notifying partners of their exposure to an infection. When a contact or partner is evaluated by a provider outside the health department's jurisdiction, the agency should have protocols in

place to contact the health care provider to ensure the individual receives CDC-recommended testing, treatment, and recommendations to reduce the spread of infection and minimize complications.[24]

Ability to Explain the Importance of Linkage to Care

Partner services and case management involve identifying people who have been diagnosed with an infectious disease through proper screening and detecting new cases of infections, including co-morbid infections that occur alongside them. These can be discovered during initial screening and treatment for the first identified infectious disease. Screening, diagnostic testing, and partner services are crucial strategies for diagnosing infections and quickly connecting affected people and their exposed partners to medical care. The purpose of screening is not only to find new infections but also to identify people who previously have received a diagnosis but are not, or have not been, receiving medical care for their infection. **Linkage to care** is vital for ensuring that individuals receive the necessary medical care at a suitable clinic.[25]

Section 4: Public Health Principles and Ethics in the Management of Infectious Disease

Ethical and Professional Conduct

DI professionals represent their agency or organization and must uphold the ethics and professionalism that garner the best results during their investigations. They should be trained to display confidence, competence, dependability, preparation, integrity, and appropriate seriousness while conducting interviews with people diagnosed with infectious diseases and other relevant parties. Their expertise, knowledge, training, and dedication should be evident as they work in a clinic or office and interact with people diagnosed with an infectious disease, those at risk, or medical professionals.

Health Literacy

The characteristics of people with an infectious disease and their circumstances can influence the disease intervention process. Features such as mental health and decision-making skills influence how their cases are investigated. **Health literacy** depends on knowledge, learning ability, access to health information, and self-efficacy, which can collectively determine the success of disease intervention efforts. Even if people can read a pamphlet or infographic about an infection and know what steps to take to stay healthy, they may still lack understanding due to:

- Unfamiliarity with health and medical terms or how the body works
- Inability to interpret statistics and evaluate the risks and benefits of their own health and safety
- Being diagnosed with a perceived serious illness and being scared and confused
- Other complicating health conditions that require complicated self-care

Public health agencies recognize these possible factors and strive to deliver communications in **plain language**, making them as understandable as possible. DI professionals can use techniques such as modeling terminology being used by the person receiving services, asking clarifying questions when terms are unclear, and presenting information in simplified written or pictorial form to address gaps in health literacy and ensure that people have sufficient understanding about the infection to take steps to access the care and services they need.

Respectful and Adaptive Communication

Some communities may be disproportionately affected by infectious diseases because of social, structural, and environmental factors. DI professionals play a crucial role in addressing these disparities by providing services that are respectful, accessible, and tailored to the unique needs of the populations they serve. Even when they are not members of a particular community, DI professionals can build trust by understanding the **person-centered** context where an outbreak occurs and using strategies that are responsive to that environment. Effective communication in disease intervention depends on the DI professional's ability to recognize their own values, assumptions, and biases, and to engage others with openness and respect. Instead of assuming expertise in every culture, DI professionals are encouraged to practice ongoing self-reflection, learning, and adaptation. This approach helps provide person-centered care by meeting people where they are and acknowledging the beliefs, identities, and lived experiences that influence their health behaviors and decision-making.

Basic Epidemiology

Epidemiology is the study of the distribution and causes of diseases and other health outcomes in populations, as well as the application of that knowledge to prevent and control health problems. For DI professionals, a basic understanding of epidemiology provides the foundation for understanding how infectious diseases spread, interpreting case trends, and prioritizing actions that reduce transmission and protect public health.

Economic and Social Factors Contributing to Health

Health is shaped by more than biology and individual behavior. Factors such as education, employment, housing, transportation, and access to nutritious food all influence a person's ability to prevent illness, seek care, and maintain well-being. DI professionals may observe that individuals and communities with limited resources often face greater challenges in achieving positive health outcomes, including increased exposure to risk and reduced access to timely services.

DI professionals play a key role in recognizing and responding to these realities. By collaborating with community organizations focused on areas such as food security, housing stability, employment support, and access to education, DI professionals can help address barriers to care and support coordinated outreach strategies.[14] Grounded in awareness of these broader conditions, their work becomes more responsive, accessible, and effective at reaching those most at risk.[13]

Confidentiality

Confidentiality is a foundational principle of public health practice. DI professionals have a legal and ethical responsibility to guard a person's **protected health information (PHI)**, which includes any identifiable details related to a person's health, diagnosis, or treatment. The Health Insurance Portability and Accountability Act (HIPAA) is a federal law that establishes national standards for safeguarding PHI. Generally, HIPAA prohibits the sharing of this information without written consent, although exceptions are made for public health reporting and the coordination of care.

DI professionals must also comply with any additional privacy laws established by their state or local health departments. Whether working in clinics, in the field, or over the phone, maintaining confidentiality helps build trust and encourages individuals to participate fully in disease intervention services. Explaining how information will be used and protected is crucial to preserving respectful and ethical public health practices.

Conclusion

The concepts and techniques related to the planning and case analysis steps in the investigation process are guided by the CDC. They are usually consistent across funded public health agencies in states, large cities, and U.S. territories. The specific policies and procedures for performing duties as a DI professional vary depending on the location. This variation is typically influenced by factors in the geographic area, staffing capacity, caseload, state or local regulations/statutes, and the community's needs.

DI professionals should understand and apply the components of interviewing to analyze the information gathered and intervene in the spread of infectious disease. DI professionals develop competence in interviewing skills and case management through experience in managing cases and receiving supervisory feedback.

Competence in case management (including planning and case analysis), interviewing, policies and procedures, locating and referral for medical exams or treatment, and field investigations are developed through practice, participating in training activities, and professional mentorship.

Effective and efficient case management enhances the success of disease intervention. Disease intervention involves preventing the spread of infection by treating individuals exposed to an infectious disease, thereby stopping further transmission. This is also achieved through identifying exposed individuals and providing treatment, which breaks the cycle of transmission. Ultimately, disease intervention occurs when properly treated individuals recover, reducing or eliminating complications such as full disease development, adverse medical outcomes, and systemic illness.

Chapter 1 Keywords

Associate

Case analysis

Case investigation

Case write-up

Confidentiality

Disease intervention

Epidemiology

Incubation period

Index case

Internet Partner Services (IPS)

Interview period

Interview record form

Health Insurance Portability and Accountability Act (HIPAA)

Health literacy

Linkage to care

Original interview session

Person-centered

Plain language

Post-interview analysis

Pre-interview analysis

Protected Health Information (PHI)

Provider referral

Referral

Re-interview

Social contacts

Source

Spread

Chapter 1 Practice Questions

1. Which of the following would most commonly initiate a case investigation by a DI professional?

    a. A morbidity report

    b. A positive laboratory result

    c. A person who might have been exposed

    Answer: b

    Rationale: A new investigation typically begins when a laboratory confirms a positive result for a reportable disease. Morbidity reports or suspected exposures may raise awareness, but a confirmed lab result is the standard trigger for an official case investigation.

2. Which of the following should be prioritized for field visits?

    a. Nearest geographic location

    b. People living in community homes

    c. People at the highest risk of infection

    Answer: c

    Rationale: Field visits should be prioritized based on public health risk. While geographic proximity and living arrangements may factor in, those at highest risk of infection or further transmission take priority to reduce disease spread.

3. Which of the following should a DI professional do after the field visit ends?

    a. Document the visit

    b. Map out the exit route

    c. Schedule meetings in the morning

    Answer: a

    Rationale: Accurate and timely documentation is critical for case management, continuity of care, and public health records. Mapping routes or scheduling meetings may be part of logistics but are not essential DI tasks.

4. What is one main concern for utilizing internet partner services?

    a. Internet notification requires more resources than traditional notification.

    b. Partners have limited access to the internet messaging apps.

    c. Malicious notification of partners is possible.

Answer: c

Rationale: Internet-based notifications can be misused if someone falsely reports another person as an exposure. While resource use and app access may pose barriers, malicious reporting is a unique risk with this method.

5. Why is prompt linkage to care a critical step for individuals diagnosed with or exposed to an infectious disease?

    a. It primarily focuses on reducing health care system costs.

    b. It allows individuals to explore clinical services on their own.

    c. It ensures timely access to necessary medical care.

    Answer: c

    Rationale: The primary goal of linkage to care is to connect patients with treatment and prevention services as quickly as possible, limiting complications and further transmission.

6. Why is cluster interviewing important as a disease intervention strategy?

    a. It helps identify people outside of the sexual and drug-sharing network who were exposed to the disease of interest, to prevent ongoing rapid transmission.

    b. It benefits the treatment of index cases by increasing access to treatment medication.

    c. It assists in community resource mapping to expand sexual networks.

    Answer: a

    Rationale: Cluster interviewing expands the scope of an investigation by identifying additional contacts and potential exposures beyond direct partners, helping to interrupt chains of transmission.

7. During which stage of a case investigation would a DI professional calculate the interview period if they were assigned a case from a designated clinic?

    a. Original interview

    b. Pre-interview analysis

    c. Re-interview

    Answer: b

    Rationale: The interview period, the timeframe during which transmission may have occurred, is calculated during pre-interview analysis so the DI professional is prepared with accurate information before speaking with the case.

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Chapter 2 Interviewing and Case Management

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Introduction

In this chapter, we examine the key components of interviewing and case management for people diagnosed with or potentially exposed to infectious diseases. Effective interviewing and case management play a crucial role in disease intervention, ensuring that individuals affected by the disease receive appropriate support, testing, treatment, and prevention services.

The following tasks from the content outline for the Interviewing and Case Management domain will be covered. These tasks contribute to successful interviewing, disease investigation, and case management[1]:

- Task 1: Collect and verify relevant information to determine investigation needs for people diagnosed with or possibly exposed to infectious disease.
- Task 2: Define confidentiality and perform the investigation in a confidential manner.
- Task 3: Discuss the purposes of the disease investigation (e.g., interview, test results, disease exposure, and environmental risk).
- Task 4: Motivate people diagnosed with or possibly exposed to infectious disease to participate in disease intervention services (e.g., testing, treatment, isolation or quarantine, partner elicitation).
- Task 5: Comprehensively interview cases by using effective communication skills.
- Task 6: Obtain a detailed assessment of people diagnosed with or possibly exposed to infectious disease (e.g., risk history, sexual history, drug use, incarceration, demographics).
- Task 7: Elicit demographic and locating information about persons exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners) for prevention and intervention.
- Task 8: Elicit information on venues or social settings where persons may have been exposed to disease to support prevention and mitigation.
- Task 9: Determine needs and barriers related to disease intervention for people diagnosed with or possibly exposed to infectious disease.

- Task 10: Refer people diagnosed with or possibly exposed to infectious disease to appropriate support services (e.g., hospitals, clinics, shelters, mental health facilities).
- Task 11: Collaborate with people diagnosed with or possibly exposed to infectious disease to develop and implement an action plan (e.g., testing, treatment, support services, negotiating methods of partner/contact notification for timely intervention).
- Task 12: Verify whether people diagnosed with or possibly exposed to infectious disease followed an action plan (e.g., testing, treatment, support services, and partner/contact notification).
- Task 13: Perform a record search of information on persons exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners, other people who may benefit from testing) to obtain and document any relevant locating, testing, and treatment information.
- Task 14: Locate and communicate with people exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners) via phone, text, referral letters, emails, digital technologies (e.g., apps, websites).
- Task 15: Follow up with people exposed to or at risk for disease (e.g., contacts, sexual partners, social network partners, other people who may benefit from testing) to ensure testing, treatment, and/or other referrals.
- Task 16: Adhere to public health principles during interviewing and case management.

By mastering these tasks, disease intervention (DI) professionals can strengthen their ability to prevent the spread of infectious diseases and provide compassionate, effective care to individuals and communities. This chapter provides the knowledge and skills necessary to conduct thorough interviews and investigations, and support those affected by infectious diseases in a professional and ethical manner.

Domain Content

Section 1: Overview of Interviewing and Case Management

Case management is defined by the Centers for Disease Control and Prevention (CDC) as the systematic pursuit, documentation, and analysis of the medical and epidemiologic information about a case to develop a plan for disease intervention or other treatment and prevention measures depending on the type, stage, and severity of infection/disease.[2] The steps in the case management process include the interviewing activities (original, cluster, re-interview) and referral of people who were identified as a partner/contact.

Case management steps:

1. Pre-interview analysis (see Chapter 1)
2. Original interview session
3. Post-interview analysis (See Chapter 1)
4. Referral of people who were exposed or are at-risk (including contacts, sex and/or needle sharing partners, and social contacts
5. Cluster/re-interview (as needed)
6. Case closure

Case investigation is the process of interviewing people with confirmed and probable diagnoses of an infectious disease and working with them to[3]:

- Assure that people know about their positive test result or diagnosis.
- Discuss health information, including symptoms, treatment history, and other related health conditions.
- Encourage symptom monitoring and refer for relevant medical treatment, as appropriate.
- Identify people who may have been exposed to the infectious disease based on its **mode of transmission**.
- Identify the **source** of infection to guide cluster and outbreak investigations.
- Refer people to other medical or other supportive services.

Contact tracing is a core public health practice used to identify and support individuals who may have been exposed to an infectious disease.[3] For STIs and HIV, a specialized approach known as **partner services** focuses on sexual and needle-sharing exposures, and ensuring access to other supportive services for partners and contacts[4]. Both are defined in the glossary, and in either case, DI professionals work with individuals to:

- Notify them of potential exposure.
- Discuss health information, including potential symptom history and other related health conditions.
- Refer for appropriate testing, vaccination, or treatment, as indicated.
- Emphasize the importance of following public health recommendations to prevent transmission while awaiting their test results.
- Encourage symptom monitoring and outline a plan to seek medical services if symptoms develop (for infectious diseases with no prophylactic treatment).
- Provide case management services to assess needs and refer individuals to other supportive services, such as food, housing, transportation, primary medical care, mental health services, and substance abuse treatment.
- Identify others with similar risk factors or exposure history who would benefit from testing.

The Purpose of Disease Investigation

Investigation of infectious diseases is a crucial part of public health, helping to detect, control, and prevent the spread of infections early on.[5] To support this process, a case investigation interview for diseases of interest can be conducted to understand how diseases spread, identify their sources, and take actions to protect people. Ensuring that people infected with or exposed to an infection understand the purpose of the interview is critical for effective engagement. Helping the person understand that by participating in the interview process, they are contributing to stopping the spread of the disease within their network and community can motivate them to take part.

The interviewing process begins with speaking to people diagnosed with or exposed to an infectious disease. By asking about their health history, social interactions, and potential exposures, DI professionals can trace how the disease is spreading and work to prevent further transmission by identifying other people who were potentially exposed. Laboratory tests and clinical assessments, like blood tests or physical examinations, help confirm diagnoses and rule out other possible conditions. Environmental factors also play a big role; contaminated water, air quality, or close contact with infected individuals can all contribute to the spread.

Overall, disease investigation enables health professionals to detect outbreaks promptly, contain infections, and provide the appropriate care to minimize harm. This process keeps communities safer and reduces the overall burden of disease.

Section 2: Interviewing People with Infectious Disease

When a person is diagnosed with an infectious disease on the National Notifiable Conditions list, the health care provider and laboratory are obligated to report the infection to a presiding public health authority.[6] It may be a state, tribal, local, territorial, or military public health entity, such as the Defense Health Agency or a service-specific medical command. The report must include relevant information such as:

- Name
- Address
- Phone number
- Date of birth
- Sex/gender
- Name and address of clinical/laboratory facility
- Test performed
- Test type
- Site of test
- Test result
- Date of test
- Treatment information (medication, administration, dosage)
- Date of treatment
- Person/agency reporting the information
- Date reported

This information is used to determine whether the reported case will be assigned to a DI professional for a disease investigation interview based on local priorities. The objective of the interview is to prevent the further spread of disease through the prompt identification and examination of all people who were exposed to the infectious disease, including **contacts** or partners, and **social contacts**. The interview is designed to ensure that the person being interviewed understands the seriousness of the disease and to motivate them to cooperate with infectious disease control efforts. It is also designed to increase the likelihood that all at-risk people are identified, so they can be notified of their exposure and referred for appropriate examination, testing, and medical intervention, including treatment. DI professionals should approach the interview and subsequent communications using person-centered counseling techniques to develop a personalized risk reduction plan tailored to each individual's needs.

Types of Interviews

There are three types of interviews used to elicit information from people diagnosed with an infectious disease[7]:

- **Original Interview** – An original interview is the first interview of a person with an infection (sometimes called the original patient or **index case**). The original interview should occur promptly to begin the process of identifying people with potential exposure. Other critical data elements, such as risk factors, treatment, and travel history, are also gathered during the original interview.

- **Cluster Interview** – A cluster interview is an interview of an uninfected person conducted to gather information about previously unnamed partners of people with an infectious disease and individuals who may be at risk of the infection who would benefit from testing. **Clustering** is also an interviewing technique that can be used during an interview with a person diagnosed with an infection to identify others who may benefit from intervention (not contacts or partners) based on shared risk behaviors or potential exposures.

- **Re-interview** – A re-interview is a subsequent interview of the person with an infectious disease to gather additional information necessary for case analysis and to identify or get further locating information on named partners, contacts, or social contacts.

A successful interview enables the collection of critical information about a person with an infectious disease and other people who may have been exposed, while providing support, referrals, and answering questions. The goals of the case interview are to:

- Refer the person with an infectious disease for necessary treatment, as appropriate.

- Gather important data elements about their exposure history and risk factors to understand how infectious diseases are spreading in the community.

- Assess their symptom history and any previous treatment.

- Emphasize the importance of taking precautions to prevent further transmission to others.

- Obtain the names and location information of other people who may have been exposed, and places, events, and gatherings where transmission may have occurred, as well as working to uncover the potential source of infection.

- Identify opportunities to provide testing and prevention services to individuals and communities at increased risk.

Clear messaging about how disease investigation works is crucial. Building rapport and trust through the use of open-ended questions, active listening techniques, and motivational interviewing is essential for addressing concerns, providing support, and gathering accurate information to inform the next steps in the disease investigation. This can help address concerns of the person being interviewed (e.g., privacy and confidentiality, next steps in managing the diagnosis, barriers to accessing services) and fosters cooperation.

Calculating the Interview Period

Before conducting an interview, the DI professional must calculate the interview period to establish a timeline for the interview.[8] The **interview period** includes both the incubation period and **infectious period** and helps to identify both the source of the infection and people who were potentially exposed:

- **Incubation Period** – the time from initial exposure to the development of disease. The incubation period varies depending on the infectious disease of interest. The DI professional should be aware of the incubation period for all diseases that they investigate.
- Infectious Period – the timeframe during which a person with an infectious disease could have potentially exposed other people. The timeframe varies depending on the disease. The DI professional should be aware of the infectious period for all diseases that they investigate.

An assessment of the person's symptoms and testing history helps identify the dates of their infectious period, allowing for the identification of people who may have been exposed, as well as the incubation period, which can help identify the potential source of the infection.

Interview Format

It can be beneficial for DI professionals to follow a standard format when conducting interviews with people diagnosed with or exposed to an infectious disease. The interview format below is one example of a general framework that allows the interviewee to understand their diagnosis and have their concerns addressed, while also focusing on the important steps of eliciting partners/contacts.[8]

I. Introduction
   - State purpose/role
   - Assure confidentiality

II. Assessment of a person diagnosed with an infectious disease
   - Resolve the person's concerns
   - Obtain social history
   - Obtain medical history
   - Ensure disease comprehension

III. Disease intervention
   - Elicit partner/contact information
   - Discuss how to prevent transmission to others/develop a risk reduction plan

IV. Conclusion

- Re-state commitments
- Prepare for re-interview
- Wrap up and summarize

Section 3: Identifying People Exposed to Infectious Disease

A key strategy to reduce infectious disease transmission is to conduct interviews with people diagnosed with an infectious disease to identify individuals, locations, events, and activities where exposure may have occurred, thus facilitating prompt intervention for those who may have been exposed.[9] Depending on the disease of interest, several factors can influence exposure risk, including: type, proximity, and duration of exposure; environmental factors; vaccination status; and prior infection history.

Significance of Identifying People Exposed to an Infectious Disease

Prevention of infectious diseases is at the heart of public health disease investigation and typically involves interviews and notifications and **referrals** of people exposed to an infectious disease. Being aware of their exposure is key to the person's awareness and is necessary for them to understand the need for examination, testing, and treatment with appropriate medical intervention. During notification and referral, DI professionals also have the opportunity to discuss individuals' future prevention and behavioral risk reduction techniques.[7]

The interview is also designed to increase the likelihood that all people who were potentially exposed (e.g., sex or needle-sharing partners, contacts, and social contacts) are identified so they can be referred for examination, testing, and treatment, as necessary. The DI professional should also provide person-centered counseling to develop a personalized risk-reduction plan.

Disease intervention occurs when someone who has been exposed to an infectious disease is tested and, if appropriate, promptly treated, regardless of test results, to prevent the development of the disease, onward transmission, and complications.

Prophylactic (preventative) treatment can be initiated for individuals who have been exposed to a bacterial infection while it is incubating within their body. **Prophylactic treatment** can be provided by a health care provider in combination with examination and testing, or via **expedited partner therapy (EPT)**. EPT is the practice of treating sex partners of people diagnosed with gonorrhea or chlamydia, for example, by providing medication or a prescription to the person diagnosed with an infectious disease to deliver to their partner(s) without a clinical encounter.[10]

Disease intervention also occurs when people diagnosed with an infectious disease are properly treated, which prevents the infection from progressing to a disease state with complications that can be harmful or even deadly. This occurs when a person who was exposed and received appropriate treatment tests positive.

Disease intervention is achieved at three levels of prevention[11]:

- **Primary prevention** – to prevent the development of disease in exposed partners by administering preventive treatment
- **Secondary prevention** – to administer treatment to people who are infected, thus stopping the spread to others, including re-infection of the person originally diagnosed with the infectious disease
- **Tertiary prevention** – to prevent the development of serious complications in people diagnosed with an infectious disease

Elicitation of people exposed to an infection is the process of obtaining key data elements that aid in identifying and locating people in need of intervention services such as testing, treatment, or vaccination. Important details to collect include:

- Identifying information, including name, nickname/street name, and screen name on social media or dating apps
- Date of birth (complete or partial) and/or age
- Address, alternate address or location where they stay, hangouts, place of work, email address, social media handles
- Physical description, such as height, weight, build, hair/eye color, skin tone, tattoos, piercings, hairstyle, and manner of dress
- Exposure dates (first, last, and frequency of exposure)

There are various terms used to describe people who have been exposed to an infectious disease. In STI control, direct contacts are called sex partners. In tuberculosis (TB) or measles investigations, the term used is **close contacts**. And for an HIV or Hepatitis C infection, the term could be a sex partner or needle-sharing partner.

In STI control, there are three categories of elicited contacts[7]:

- **Partner** (sex partner or close contact) – a person named in an interview by someone who is infected. Partners are divided into three groups:
    - The person has had sex or close contact with a person with an infectious disease
    - The person has shared needles with the person with an infectious disease
    - The person has engaged in both sex/close contact and needle-sharing activities
- **Social contacts** (previously called suspects) – a person named in an interview by someone who is infected and who is <u>not</u> a sex or needle-sharing partner. These are divided into three groups:
    - The social contact has symptoms suggestive of the disease

  - The social contact is a sex partner or a close contact of another person known to be infected
  - The social contact needs an exam and does not fit into either of the above two categories

- **Associate** – a person named in an interview by someone who is not infected, also divided into three groups:
  - The associate has symptoms suggestive of disease
  - The associate is a sex partner of a person known to be infected
  - The associate needs an exam and does not fit into either of the above two categories

Referral Mechanisms

During the interview, the DI professional works with the person with an infection to determine the best referral method for their contacts. There are three basic types of referrals for people identified as a contact/partner exposed to an infection[12]:

- **Provider Referral** – when health department staff notify people exposed to an infectious disease, including contacts, partners, and social contacts, and refer them for an exam, testing, and treatment, as appropriate. With the consent of the person being interviewed, the DI professional takes on full responsibility for confidentially locating, notifying, and referring exposed people to a health care facility that best meets their needs. A provider referral ensures that the person with an infection can maintain their confidentiality while still ensuring that those exposed are notified. Research shows that provider referral is a highly effective method for notifying contacts.

- **Self-Referral** (i.e., referral by the person diagnosed with an infectious disease) – when the person with an infection takes full responsibility to notify their own partners/contacts of their exposure and refer them for exam, testing, and treatment as appropriate. The DI professional should provide guidance on how to notify partners/contacts, where the exposed person can receive testing and treatment services, and what type of exam, testing, and treatment is appropriate. The person with the infection should be provided with the resources and support to successfully notify and refer their own partners/contacts and understand that doing so could compromise their privacy. Some websites can be used for confidential or anonymous self-notification of partners/contacts if the person with the infection does not want to reveal the diagnosis during the notification process.

- **Contract Referral** – a hybrid method where the provider/DI professional negotiates a timeframe (usually 24-48 hours) for the person with an infection to inform their partners/contacts of their exposure and provide resources for them. The DI professional still collects locating and identifying information on the people exposed, but does not contact them unless they fail to follow up for services. This method works well as the DI professional still has locating and identifying information on the

partners/contacts, in case the person diagnosed with an infectious disease changes their mind or did not notify the partners/contacts on their own.

Locating Partners, Contacts, and Social Contacts

Identifying, locating, and informing people at risk of infectious diseases is key to reducing transmission, preventing complications, and preventing outbreaks. DI professionals identify contacts, sexual partners, drug-sharing partners, and social contacts to provide timely testing, treatment, and referral to appropriate medical and supportive services.[7] Timely notification of people exposed to an infection reduces the transmission and prevents complications.

Professionals use various methods to reach individuals, such as:

- Digital tools (apps, texts, websites, social media) for quick communication
- Field-based methods (field visits, outreach) for priority cases and people who are harder to reach (see Chapter 3 for more detail on field investigation)
- Traditional methods (e.g., emails, letters, phone calls) for those with limited tech access

For example, if someone tests positive for HIV, a DI professional may confidentially contact previously identified partners to encourage testing, early treatment, and prevention options. Public health providers need to establish rapport and build trust to ensure those affected are receptive to medical management. It's important to respect person-centered contextual differences and be aware of different health and digital literacy levels. Simplified instructions ensure everyone understands how to access care. The use of pictures and infographics can help convey important health information to individuals with language barriers or low health literacy.

By adapting communication methods and tailoring outreach, professionals ensure interventions are effective, inclusive, and accessible, reducing disease spread and improving community health.

Performing Record Searches

Once a person is identified as a contact/partner, the DI professional should conduct a **record search** to determine whether there is existing documentation or prior case history for that individual.[7,13] The record search should include a review of previous lab reports, case investigations, and previous interviews or notifications. This step is essential, as the individual may not require notification if they have been tested previously and/or treated.

Similarly, when partial information is provided about an exposed person, the DI professional may need to conduct a record search to identify or locate the person. Record searches may include accessing a variety of data systems, including but not limited to:

- Internet
- search engines
- Regional health information organizations
- Social media platforms
- Public record databases
- Post office verification
- Local school enrollment logs
- Jail rosters or inmate census
- Federal Bureau of Prisons inmate locator
- Other health department programs and sources
- People finder sites such as LexisNexis

Record searches can provide additional information about an individual's demographic information, medical and social history, marital status, living conditions, and other factors that affect health care access. Obtaining this information before an interview or notification may enhance the DI professional's interview or notification strategy. Additionally, the record search can prepare the DI professional for what they may encounter during a field visit, such as a third-party contact (e.g., a spouse, parent, or roommate), pets, or other potential safety concerns. Record search results should be fully documented on the interview or field record, or in other data systems.

Internet Partner Services (IPS)/Contact Tracing

Internet Partner Services (IPS) is the practice of utilizing technologies such as the internet, social networking sites, email, instant messaging (IM), mobile devices, mobile applications, and texting to locate people identified as a partner/contact.[14] While IPS is most often used and is associated with STI/HIV case management related to dating sites or apps, it may also be adapted for use in other infectious disease outbreaks or a pandemic. Often, IPS is beneficial after methods such as phone calls, letters, and field visits have been

exhausted or have failed. When the only identifying and locating information the original person diagnosed with an infectious disease has or is willing to share is a screen name or email address of a partner or contact, then IPS becomes the most useful tool for the investigating DI professional. There are three types of notification in IPS:

- Notification via DI professionals
- Notification from the original person – personal IPS
- Notification via third-party sites utilized by the original person

Notification via a DI professional allows the DI professional to take responsibility for notifying partners for whom they have an email address, screen name, or social media account. This method ensures that the notification has been attempted and documented. The disadvantage of provider notification is that the agency is required to utilize more resources than traditional notification because systems, policies, and protocols need to be in place before their use. Notification by the original person diagnosed with an infectious disease when they do not prefer the DI professional to reach out to their contacts has some disadvantages. These include malicious notification of partners (i.e., using the notification process inappropriately, such as to frighten a person who has not actually been exposed). The second disadvantage is that limited anonymity exists for people using the internet to contact exposed partners, which could compromise their confidentiality. Lastly, partners or contacts notified by the original person may not have the necessary support or information to access appropriate testing and/or treatment.

IPS can increase the likelihood of eliciting a response, but the DI professional should exercise caution when using IPS. Agency program staff and management should adhere to applicable state and local laws, regulations, and statutes that govern the use of IPS. A DI professional should also adhere to their agency's policies and procedures, which should be person-centered and ensure confidentiality. IPS should be conducted from designated agency e-mail accounts and profiles and never from personal e-mail accounts or profiles.

IPS presents unique risks, including malicious notifications (i.e., intentionally sending false exposure notices) and privacy concerns[14].

To mitigate these risks, the CDC recommends:

- Using secure, jurisdiction-approved tools (e.g., SendSS, SPNS IPS platforms).
- Verifying partner information before sending notifications.
- Ensuring notifications are non-specific, protecting the index patient's identity.
- Documenting IPS use according to local protocols.
- Providing follow-up pathways for notified individuals to access testing and treatment.

Partner-initiated notification (e.g., through third-party services such as TellYourPartner.org or inSPOT) can also be useful but must be accompanied by counseling on respectful use and privacy.

Verification Processes

Public health agencies using IPS should inform and engage key partnering community agencies where people are diagnosed and treated. Best practices for verification include having a good physical description to compare to available photos and asking the original person diagnosed with an infectious disease to share a contact's online profile picture and provide their screen name. After people with an infectious disease are contacted through social media, they often contact the agency where they were examined/diagnosed/treated to verify the legitimacy of a public health staff person contacting them through nontraditional means. They are looking for confirmation to verify that the attempt to contact them was valid and urgent. Informing partners and clinical agencies about IPS practices at the health department can then expedite the time it takes for a person diagnosed with an infectious disease, or their partner, to respond to an instant message or email notification. DI professionals should use their program's approved language for digital notifications and include the following information:

- Name of the DI professional trying to reach the person
- Program or agency affiliation
- Contact information for the DI professional
- Brief message encouraging the person to contact the DI professional as soon as possible

For sample messages, please refer to Appendix D of the Internet Partner Services Components guidance from the CDC.

Notifying People Exposed to an Infection

Once the DI professional locates the person identified as a partner or contact, they must notify them of their potential exposure and refer them for appropriate testing and treatment services. Each time a DI professional provides notification services, they should work to ensure that the person identified as a partner/contact[13]:

- Knows the disease to which they were exposed.
- Knows that the information is valid and the risk is real.
- Knows that the information is confidential.
- Has the information they need to act quickly.

Before informing a person about their exposure, the DI professional must verify their identity by asking them to confirm their date of birth. Confirming the correct spelling of their first and last name is another way to verify identity (see more in the Confidentiality Section of this chapter).

When notifying a person named as a partner/contact, the DI professional should provide clear and concise information about the infection, including the name of the infection, potential consequences of the infection, and available prevention, testing, or treatment

options. It is vital that the DI professional answer any questions and address concerns without releasing any information that could reveal the identity of the index case/original person diagnosed with an infectious disease. Assessing the person's knowledge about the disease can be useful in motivating them to seek appropriate care. It is a delicate balance between using "scare tactics" and providing enough factual information about the potential health consequences of the disease to motivate the person to seek the care they need. The DI professional can also ask the person if they have ever been diagnosed with the infection or had previous testing to help determine the appropriate next steps.

Developing an Action Plan

Once a person exposed to an infection has been notified, DI professionals should establish an **action plan** with them to ensure they receive timely services for testing, treatment, or vaccination (as appropriate). The action plan should be time-specific and include active referrals for services that consider any potential barriers identified during the referral process, such as transportation, location, hours, or access. DI professionals should establish relationships with staff at trusted clinics or community organizations to serve as referral sites, ensuring that the person receives appropriate services. They should also follow up with people exposed to an infectious disease if they fail to complete the recommended medical services. The person should understand that if DI professionals cannot confirm they have completed their follow-up services, they may be contacted again to problem-solve the situation.

Collaborating with individuals diagnosed with infectious diseases builds trust and encourages adherence to prevention and treatment plans. Using a person-centered approach, professionals can help individuals create realistic action plans they are willing and able to follow. These plans aim to prevent infection or manage existing conditions, reducing the risk of transmission.

Ensuring follow-through is just as important. This can be achieved through regular check-ins, progress monitoring, and coordination with health care providers, using direct conversations or reviewing medical records.

Venue-Based Contact Tracing

In some instances, a person with an infection may struggle to identify specific contacts or partners during an interview, especially if the exposure occurred at a large event or was anonymous. **Venue-based contact tracing** is a valuable tool for identifying additional people who may have been exposed to an infectious disease.[9] Common venues where infectious diseases may spread include, but are not limited to:

- Congregate settings, like correctional or long-term care facilities
- Shelters
- K-12 schools and institutions of higher education
- Childcare facilities
- Travel and transport settings (e.g., airplanes, airports, buses, and trains)

- Social venues, such as concerts, conferences, clubs, bars, gyms, and restaurants

The benefits of venue-based contact tracing include:

- Easier recall in listing daily activities over the past few weeks (e.g., using a calendar to identify venues/locations/settings).
- More palatable to some people to name a place or setting rather than a specific person.
- Advantageous when people who were exposed are anonymous or unknown to the person diagnosed with the disease (e.g., anonymous sexual contacts at a bath house or contacts with measles on a recent flight).
- Potential to identify the source of infection and transmission among social groups at events and gatherings. This offers the opportunity to identify others who attended the same event or gathering to notify them of their potential exposure and assess their needs for services.
- Potential to identify opportunities to expand access to services in the community. DI professionals and public health programs could partner with community-based organizations to facilitate community engagement and provide tailored, on-site information, communications, and testing and vaccination events and services to groups of at-risk people and people associated with an identified venue (e.g., workplaces, schools, supportive housing programs emergency/transitional housing, community-based organization, mobile harm reduction unit).

Section 4: Motivating Participation in Disease Intervention Services and Interviews

A person-centered approach, motivational interviewing (MI) principles, and effective communication skills are essential in prompting individuals diagnosed with or possibly exposed to an infectious disease to embrace the relevance and importance of intervention services and participate in a comprehensive discussion or interview. The strategies listed below play a vital role and can be used in combination to effectively motivate people to accept testing, treatment, and partner services.

A Person-Centered Approach

A **person-centered approach** prioritizes the individual, considering their values, preferences, and experiences at the center of the discussion. This creates a safe, supportive space where they are heard, respected, and empowered to make their own decisions. This builds trust, which is especially important for those who may be hesitant to share sensitive information about their infection, personal experiences, and others who may have been exposed. Valuing the person's autonomy and personal experiences helps them feel more comfortable, understand the need for intervention, and actively participate in discussions or interviews with the DI professional. To accomplish this, the DI professional should attempt to make the interaction conversational, avoiding the use of scripts or forms,

and allowing the interviewee to guide the conversation. While DI professionals are tasked with gathering a series of data elements, this process should not take priority over placing the person receiving services at the center of the interaction and using a person-centered approach. A skilled interviewer can elicit the required information while maintaining a conversational tone and tailoring the interaction to the unique circumstances of each person they interview. During declared public health emergencies, autonomy protections remain essential, but may operate within jurisdictional legal requirements for reporting, isolation, or quarantine.

Motivational Interviewing (MI) Principles

The **Stages of Change Model**, developed by Prochaska and DiClemente, helps tailor interventions based on a person's readiness to change.[15] The five stages of change in this model are pre-contemplation, contemplation, preparation, action, and maintenance.

In the pre-contemplation or contemplation stage, a gentle approach using reflective listening and empathy helps individuals recognize the importance of intervention. During these stages, the DI professional can ask questions such as *"How would your life be different if this behavior changed?"* or *"How important is it to you to [do xyz]?"* to help the person reflect on their readiness for change.

As they progress, intervention strategies can become more action-oriented to support their commitment to change. The DI professional can help guide the person through developing an action plan using prompts tailored to their situation. For example, the DI professional might ask, *"What is one small thing you could do to start making this change?"*

During the maintenance stage, the person may need support to maintain the new behavior, which could include joining support groups, connecting with individuals in a similar situation, or having occasional conversations with their health care provider or the DI professional to discuss their progress and offer encouragement.

MI is a collaborative, goal-oriented approach that helps individuals explore and strengthen their motivation for change.[16] By exploring and addressing uncertainty and internal conflict, MI supports meaningful choices and decision-making.

Effective Communication Strategies: Open-Ended Questions, Affirmations, and Reflective Listening and Summarization (OARS)

DI professionals play a key role in creating a supportive environment. The way questions are framed, such as asking why someone took a particular action, can unintentionally lead to defensiveness and resistance. Using effective communication skills helps people being interviewed think about the benefits of intervention, leading to more active participation in disease intervention.[17]

Key techniques include using:

- Open-ended questions encourage thoughtful responses.
- Affirmations validate strengths and progress.
- Reflective listening shows understanding and builds trust.

- Summarization reinforces key points and clarifies insights.

The acronym OARS is often used in training environments to help DI professionals remember these key communication skills.

Open-Ended Questions

Open-ended questions foster an atmosphere of respect, acceptance, and trust by encouraging individuals to express themselves more fully. Using questions that begin with *"Who/ What/Where/When/How?"* during an interview can build rapport and result in the elicitation of more detailed information. Open-ended questions enable individuals to share their stories by elaborating and providing more detailed responses.

Examples:

- *"Who have you had sex with most recently?"*
- *"What symptoms have you had over the last 3 months?"*
- *"Where do you usually meet your partners?"*
- *"When is the last time you took antibiotics for any type of health issue?"*
- *"How often do you use condoms with your partners?"*

In contrast, closed-ended questions often lead to limited responses, such as "Yes" or "No," which can reduce engagement. Closed-ended questions usually begin with *"Can you/Do you/Are you/Have you?"* Asking questions like*, "Did you experience pain?"* or *"Can you remember when that was?"* often leads to minimal or unfavorable results. Instead, the DI professional can ask *"How painful was it?"* or *"When did that happen?"* to reframe the line of inquiry into open-ended questions.

While questions that begin with *"Why?"* are technically open-ended, they should be used with caution. When a DI professional conducting an interview asks an individual (interviewee) why they did something, it can unintentionally come across as judgmental, leading to defensiveness and resistance. For example, questions like *"Why don't you use condoms?"* or *"Why haven't you been tested before when you knew you were at risk?"* may feel accusatory to the individual. Rather, you can use *"Why?"* questions sparingly and only when necessary for clarification. For example, you may need to ask, "*Why did your partner go to the doctor last week?"* or *"Why are you staying with your sister right now?"* to get a better understanding of the person's situation.

Along the same lines as open-ended questions, the DI professional can use **polite imperatives** to elicit detailed information. These are statements (rather than questions) that encourage the person to provide information.

Examples:

- *"Tell me a little about your alcohol use…"*
- *"Help me understand more about your relationship with your baby's father…"*

- *"Let's talk a little bit about your diagnosis…"*

Affirmations

Affirmations are positive, encouraging, and supportive statements that communicate understanding, appreciation, and validation. They help strengthen emotional bonds and build confidence.

Examples:

- Compliments: *"You did an amazing job using personal protective equipment."*
- Encouragement*: "I believe in you and your abilities."*
- Gratitude: *"I really appreciate you sharing this information."*
- Support: *"I'm here for you."*

Using affirmations fosters a supportive environment, promoting self-esteem and trust in relationships. Affirmations are an important technique for building rapport, which can help the person participate more effectively in the interviewing process.

Reflective Listening

Reflective listening involves actively paying attention to both the words and emotions a person expresses. It ensures clear understanding by accurately interpreting their message and responding in a way that confirms comprehension.

DI professionals often repeat key points, allowing individuals to hear their own thoughts reflected back, thereby strengthening communication and preventing misunderstandings.

Common phrases include:

- *"So, you feel…"*
- *"It sounds like you…"*
- *"You're wondering if…"*

Types of reflective listening:

- Repeating or Rephrasing – Restating what the person said in a slightly different way
- Paraphrasing – Summarizing their message to clarify understanding
- Reflection of Feeling – Highlighting emotional aspects to show empathy

Together, these communication strategies create meaningful connections, encourage engagement, and build trust.

Summarization

Summarizing helps keep conversations clear and is especially useful at transition points, such as when someone shares a personal experience, finishes discussing a topic, or when the conversation is wrapping up. They ensure both participants are aligned, helping to guide the discussion toward the next steps or meaningful change.

Summarization is used effectively and starts with clear statements:

- *"Let me see if I understand so far…"*
- *"Here's what I've heard – let me know if I missed anything."*

This approach maintains open communication and fosters understanding between both parties.

Problem Solving

Problem solving is another effective strategy that enables the DI professional and the person receiving services to collaborate in identifying challenges, exploring solutions, and developing a plan of action. This approach helps individuals navigate barriers like fear of stigma or confusion about treatment, making it easier for them to engage in care. Encouraging ownership of their health decisions empowers them to take meaningful steps toward better outcomes. Addressing problems as soon as they come up during an interview can help keep the interview on track. For example, if the interviewee seems distracted and keeps glancing at the time, the DI professional should pause the interview and check in by asking something like, "*I noticed you keep looking at the time – is there something you are concerned about that we can address?"* It may be something as simple as needing to make a quick phone call to check on their child or putting more change in a parking meter. By addressing the person's concerns, the DI professional maintains rapport and creates a supportive environment for the interview to continue.

Active Listening

The DI professional can use **active listening** to convey that they are fully engaged in the interview process.[18] It is important to maintain eye contact (if person-centered contextually appropriate), avoid distractions, and provide feedback. Focusing on the person being interviewed and occasionally providing verbal affirmations during the conversation makes the person feel heard and understood.

Examples of active listening:

- *"That's interesting."*
- *"Mmmhmmm… "*
- *"Go on…".*
- *"I see"*
- *"I understand."*

Active listening can also involve nonverbal techniques, such as nodding the head, smiling, leaning forward, and maintaining eye contact with the person.

Effective Communication Skills (Assertiveness, Empathy, and Respectful and Adaptive Communication)

Assertiveness is the ability to express one's thoughts, feelings, and beliefs clearly, as well as one's needs, confidently and respectfully, without being overly passive or aggressive. It involves standing up for oneself while also considering the perspectives of others. Assertive communication helps set boundaries, advocate for personal or professional needs, and foster healthy relationships through clear and direct expression.[17] It helps convey the importance of the conversation and ensures the person's feelings are heard and understood.

DI professionals must communicate clearly, directly, and respectfully to ensure individuals understand the importance of an intervention. An assertive approach promotes collaboration and trust, making conversations more effective. **Aggressive communication** (i.e., being overly forceful) can cause resistance, defensiveness, or fear, making people less likely to engage in care. **Passive communication** (i.e., unclear or hesitant messaging) can lead to confusion, reduced participation, or dismissal of the intervention, ultimately reducing its effectiveness.

Examples of assertive communication:

- Clear and direct – *"I want to make sure you have the right information about your treatment options."*
- Respectful and nonjudgmental –*"I understand this may be difficult, but these steps can help protect your health."*
- Avoiding aggression – Instead of *"You need to do this now!"* use *"Here's why this intervention is important for your health."*
- Avoiding passivity – Instead of *"You might consider treatment, if you want…"* say *"I recommend this treatment because it can help prevent complications."*

Using assertive communication ensures that individuals feel heard, understand their options, and are more likely to engage in care, while strengthening public health efforts.

Empathy demonstrates an understanding and care for a person's feelings and situation, fostering trust and cooperation, particularly during sensitive health discussions. Recognizing and respecting person-centered backgrounds is crucial (e.g., using respectful language, maintaining eye contact, and employing appropriate body language). Beliefs shape attitudes toward illness, testing, treatment, health care, and medical management. It is important to make time during the interview to demonstrate empathy. This conveys that the DI professional is concerned about the person and recognizes that the situation may be stressful for them.

Examples:

- *"I understand how hard it is to share so much private information and really appreciate you talking with me."*
- *"I can only imagine what it must be like to hear that you have been diagnosed with this infection."*
- *"I'm so sorry that you're dealing with this right now and will do everything I can to support you."*

Respectful and Adaptive Communication

DI professionals enhance their effectiveness by developing an awareness of people's different backgrounds and communication styles. While it is impossible to fully understand every nuance, professionals can commit to ongoing self-reflection, humility, and active learning to identify their own knowledge gaps. By practicing attentiveness to both verbal and nonverbal cues, professionals can recognize when certain approaches may not align with person-centered preferences. For instance, recognizing behaviors such as avoiding direct eye contact, which in some cultures signals respect rather than avoidance, allows professionals to adapt their strategies accordingly. Emphasizing flexibility, openness, and person-centered responsiveness ensures that intervention services are responsive, supportive, and tailored to individuals' unique needs.

Creating a Safe and Supportive Environment

Using a person-centered approach, motivational interviewing techniques, and effective communication skills, such as assertiveness and empathy, helps individuals feel respected and motivated to engage in intervention services. People need to feel safe and respected to be willing to share very personal details about themselves. If the DI professional does not take the time and effort to create a safe and supportive environment, it won't be easy to build the rapport necessary to complete the interview process successfully.

By avoiding aggression or passivity, focusing on assertive and clear communication, and emphasizing confidentiality, DI professionals can promote open dialogue, trust, and better health outcomes for those affected by infection or disease.

Section 5: Disease Comprehension and History Taking

DI professionals must gain a comprehensive understanding of infectious diseases, assess risk, and apply evidence-based strategies to protect communities. Effective intervention relies on evaluating medical history, social factors, substance use, diagnostic testing, and treatment guidelines. By conducting thorough assessments of individuals diagnosed with or exposed to infectious diseases, DI professionals can respond promptly, reduce transmission, and prevent health complications.

Equally important is ensuring the people diagnosed with or exposed to infectious diseases understand the relevant details of the infection, such as transmission, complications, prevention, and treatment. Rather than simply educating the person, the DI professional can use a person-centered approach to assessing **disease comprehension**. For example, the DI professional can ask the person, *"What do you understand about this infection and how it passes from one person to another?"* This gives the person the opportunity to tell the DI professional what they already know, which is very empowering. This technique can also highlight any gaps in disease comprehension or incorrect information and serve as a springboard to gather specific information about risk exposure.

When taking a history, it is essential to normalize the process by informing the person that the questions being asked help provide a comprehensive picture of how they may have acquired an infection and that the same questions are asked of everyone. Using the effective communication techniques listed above can help keep this portion of the interview conversational and person-centered.

History Taking Using the 5 P's

The 5 P's, as outlined in the CDC's Guide to Taking **Sexual History**, can be a useful way to remember the key elements in taking a thorough history from a person diagnosed with or exposed to an infection. This technique is especially useful when taking a history from a person diagnosed with a sexually transmitted infection or HIV. Still, components of this model can be useful for all infectious diseases.[19]

The 5 P's:

1. Partners/contacts
2. Practices/behaviors
3. Protection from STIs and other infections
4. Past history of STIs or other infectious diseases
5. Pregnancy intentions

Partners/Contacts

During the interview, it is important to determine the number and gender of the person's sex partners or other contacts. Using open-ended questions is a good way to elicit partner information, including the date of first and last exposure, demographics (e.g., name, address, phone, email, work, nickname, screen name, physical description, and hangouts).

Examples:

- *"How many people have you had any kind of sexual contact with in the past 12 months?"*
- *"When was the last time you were in a large group of people, like at class or a concert?"*
- *"Let's talk more about your most recent partner – what was their name?" "What do they look like?"*
- *"Where does [partner/contact name] hangout when they aren't at work?"*
- *"When is the last time you hung out with [partner/contact name]?"*
- *"What is the best way for me to reach [partner/contact name]?" "Where else can I find them if that doesn't work?"*
- *"Who else do you know that has had symptoms similar to the ones you are experiencing?"*

Practices/Risk Behaviors

Learning more about the person's specific sex or other behavioral practices can help guide recommendations for testing for exposed anatomical sites, identify risk reduction strategies, and determine the source of infection. When eliciting information about an STI or HIV, the DI professional should ask about types of sex, parts of the body used for sex, and risk reduction practices for each type of sex. For other infectious diseases, the DI professional may want to ask about substance use, social behaviors, and settings where transmission may have occurred. This portion of the discussion can be introduced by saying, *"Now we need to discuss more specifics about the things you do that may have placed you at risk, so I can make sure you receive the necessary testing and treatment."*

Examples:

- *"What parts of your body do you use for sex?"*
- *"What types of sex have you had with your partners – oral/anal/vaginal?"*
- *"When is the last time someone put their penis in your butt?"*
- *"When you have anal sex, are you usually top, bottom, or both?"*
- *"When is the last time you put your mouth on someone's penis/vagina/butt?"*

- *"How often does sex go hand-in-hand with drinking or drugs for you?"*
- *"Where do you usually go to hang out with your friends?"*
- *"How often do you go to places where there are many people, like the shelter, or the mall?"*
- *"When is the last time someone gave you money or something you needed in exchange for sex?"*
- *"What types of drugs have you used?"*
- *"When is the last time you were incarcerated or spent the night in a hospital or shelter?"*
- *"How often do you use mobile apps to meet your partners?" "Which apps do you use?"*

Protection from STIs and Other Infectious Diseases

Understanding how people work to prevent an infection is crucial, as it enables DI professionals to make appropriate referrals to prevention services and collaborate with individuals to develop tailored risk reduction plans. Do not assume that the person does not take any steps to prevent getting an infection just because they have tested positive or were exposed. They could be implementing strategies that can serve as the foundation for further risk reduction and may be motivated to make additional changes due to their current infection or exposure.

Examples:

- "*What do you do to protect yourself from getting infections?"*
- *"When you travel, what do you do to protect yourself from getting an infection?"*
- *"How much do you know about how to prevent getting an infection?"*
- *"What do you know about PrEP and DoxyPEP for prevention?"*
- *"How often do you use condoms and for which types of sex?"*
- *"How comfortable are you talking to your partners about the risk of STIs and HIV?"*

History of STIs or Other Infectious Diseases

Assessing for previous infection can help determine whether the person has a new infection, has received previous treatment, or is at increased risk due to a history of multiple repeat infections.

Examples:

- *"When is the last time you were tested for [infection]?"*

- *"What STIs have you had in the past?"*
- *"When is the last time you were given antibiotics for anything?"*
- *"Tell me about your history of getting vaccines…"*
- *"When is the last time you saw a doctor because you weren't feeling well?"*
- *"Which clinic did your last blood draw?"*
- *"Which of your partners has told you they had an STI or HIV?"*

Pregnancy Intentions

Understanding whether a person is pregnant or intends to become pregnant has important implications for the treatment of infectious diseases. Some medications are not safe during pregnancy, and alternative regimens must be used. For syphilis, use of benzathine penicillin G is prioritized for pregnant women diagnosed with or exposed to syphilis. Some infections can be transmitted to the infant during pregnancy (i.e., syphilis and HIV), which can elevate the need for immediate medical care and intervention for both the person with the infection and any potentially pregnant partners.

Examples:

- *"When is the last time you were pregnant/had a baby?"*
- *"How likely is it that you/your partner could be pregnant right now?"*
- *"What are you doing to prevent getting pregnant?"*
- *"What concerns do you have about how this infection could affect your baby?"*

Tools and Techniques for Effective Assessment and Engagement

DI professionals rely on a range of interpersonal and analytical tools during interviews and investigations. Motivational interviewing, active listening, and structured problem solving are among the most essential techniques for effective communication. Using these techniques, coupled with the effective communication techniques mentioned above, provides a foundation for eliciting information. Skillfully framed questions and pulling in information discovered during interviews and investigations ensure that essential details are gathered comprehensively; this is called **question framing**. Using motivational interviewing, disease investigation professionals can help individuals recognize their role in mitigating risks and adhering to preventive measures, and can promote behavior change.

Beyond the interview itself, integrating medical chart reviews and consultations with health care providers adds depth to the assessment process. These steps help corroborate self-reported data, identify additional risk factors, and confirm adherence to treatment or preventive actions. Accurate, up-to-date information enables DI professionals to tailor interventions to the unique needs of each person.

Importance of Documentation in Public Health

Documentation is a vital part of public health. Maintaining detailed documentation facilitates continuity of case management and is useful for reference in future investigations.[13] It is vital to document key elements of the investigation, including:

- Key dates when action was taken
- Action taken (e.g., phone calls, text messaging, internet searches, field visit encounters and outcomes, record searches, medical record reviews)
- Referrals, services provided, and follow-up

Keeping thorough records enables DI professionals to monitor a person's condition, assess testing and treatments, track disease progression, evaluate the effectiveness of interventions, and identify patterns of continuity of care, accountability, and evaluation that can inform future strategies. It also ensures compliance with legal regulations and supports quality assurance.

In infectious disease control, integrating medical, social, and behavioral data helps create effective plans. For example, when investigating an outbreak, DI professionals document symptoms, exposure history, and social factors, such as environmental and living conditions, to understand how a disease spreads. Using motivational interviewing and active listening encourages individuals to follow recommended interventions, such as vaccination or quarantine, thereby promoting adherence to these guidelines.

DI professionals use documentation to address barriers, foster collaboration, and promote fair access to services. By collaborating with community organizations and employing culturally sensitive (person-centered) approaches, they ensure that interventions are both inclusive and effective. It is essential to simplify the language used, clearly convey key points, and effectively communicate concepts to people diagnosed with or exposed to an infectious disease.

Follow-ups after infection or exposure play a key role in public health efforts:

- Monitoring health – Checking in enables professionals to assess whether a person's condition is improving, worsening, or remaining stable. For example, a person recovering from tuberculosis needs follow-ups to ensure symptoms don’t return.
- Ensuring treatment adherence – Documentation helps verify that people follow prescribed treatments, such as taking antibiotics correctly and completely, which prevents the development of drug resistance.
- Preventing disease spread – If a person is exposed to an infectious disease, follow-up confirmations determine whether quarantine or further precautions are necessary. For example, tracking recent contacts of a person diagnosed with measles helps prevent outbreaks.
- Identifying long-term effects – Certain infections can lead to lasting complications, such as post-Lyme disease syndrome or long COVID. Continued monitoring helps detect and manage these early.

- Educating and empowering communities – Documentation supports public health data collection, helping public health officials track trends and educate individuals on prevention, symptoms, and protective measures. For example, if a community experiences recurring influenza outbreaks, documentation can reveal trends such as low vaccination rates or crowded living conditions, enabling public health teams to use data to design targeted prevention strategies in high-risk areas

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Section 6: Addressing Needs and Barriers

An understanding of person-centered backgrounds and the social and economic conditions that affect daily life is essential for ensuring fair and consistent access to services. DI professionals must respect a wide variety of person-centered backgrounds and consider key social and economic factors that contribute to health. People at risk for infectious diseases often face obstacles like stigma, limited health care access, confidentiality concerns, fear of judgment, mistrust, and financial difficulties. These barriers can be practical (e.g., transportation issues) or systemic (e.g., distrust of health care or person-centered contextual misunderstandings).

To ensure interventions are accessible and effective, DI professionals can:

- Use culturally sensitive (person-centered) communication to engage communities.
- Build trust and rapport by addressing concerns.
- Show the real benefits of interventions to encourage participation.

The DI professional can ask the person about the barriers they may face in getting the care they need. For example, the DI professional could ask, *"What might make it difficult for you to go to the clinic for testing and treatment?"* or *"What is going on for you that could get in the way of making this a priority?"* Once a barrier is identified, the DI professional can utilize problem-solving skills to assist in finding a solution and facilitating access to the necessary services.

Some common objections or barriers that the DI professional may encounter include:

- Lack of health care access (e.g., no insurance, no primary care provider, language barriers, distrust of the health care system, concerns about cost, and inability to attend during work hours)
- Concerns about confidentiality
- Not believing that the diagnosis or exposure is valid
- Concerns about stigma or judgment of sexual or other risk behaviors (e.g., drug or alcohol use)
- Lack of stable housing or transportation
- Active substance misuse or mental health conditions

By identifying and addressing these challenges, DI professionals can ensure that people infected with or exposed to infectious diseases can access the medical and supportive services they need to prevent negative health outcomes. These public health efforts can reduce the spread of disease and exposure, ensure fair and effective health outcomes, and improve overall community health.

Strong community partnerships improve public health interventions by ensuring comprehensive care and support. Connecting with local providers, support services, and organizations helps address a wide range of needs (e.g., working with shelters, correctional facilities, mental health services, and rehabilitation facilities) to ensure vulnerable populations receive tailored assistance.

Considerations for Special Populations

Special populations require particular attention when assessing needs and barriers.[7,9,20] For example, people who use drugs may need harm reduction, needle exchange services, access to Narcan, and substance abuse or mental health treatment. People experiencing housing instability often struggle with continuity of care and require assistance with accessing housing resources and transportation. People who are victims of intimate partner violence may face unique safety concerns that affect their ability to engage in care and their access to referrals and services. Pregnant women require specialized interventions to protect both maternal and infant health. People experiencing mental health crises may need integrated care that addresses both mental and physical health. Refugees, immigrants, and migrants face challenges with health care access, language barriers, distrust of systems, and person-centered contextual barriers that may prevent them from accessing the necessary services. By addressing the specific needs of these groups, DI professionals can design more effective and compassionate interventions that meet the needs of these groups.

Explaining Lab Results

Interpreting and explaining lab results clearly is a vital part of case investigation.[7,9] These results help confirm diagnoses, rule out conditions, and identify disease-causing agents. A DI professional may need to explain results to a person with an infection, a person exposed to an infection, or a health care provider. The DI professional should tailor their approach and ensure they are communicating at the person's level of understanding and **health literacy**. For example, the DI professional may need to simplify the explanation for a person who tests positive for an infection but can use more technical language when talking to a health care provider.

To ensure understanding:

- Use plain language (i.e., avoid medical jargon).
- Interpret results – Clarify what the results mean and what they don't mean (e.g., a positive HIV test does not indicate AIDS).
- Assess comprehension – Ask follow-up questions to ensure the person understands the material.
- Avoid giving medical advice – Always refer individuals to their health care provider.

Effective communication helps guide treatment decisions, public health responses, and delivery of medical care. For instance, a positive bacterial infection result may indicate the need to start antibiotics, while a negative result could prompt a reassessment of symptoms or further testing.

Clear, simple explanations empower people to make informed health decisions while ensuring they get the proper medical guidance.

Understanding and Explaining Guidelines (Diagnostic, Treatment, Transmission)

The success of disease investigation activities, including interviews, depends on having a strong understanding of the latest diagnostic, treatment, and transmission guidelines, as well as the ability to convey them clearly and effectively to various populations. Transmission guidelines, particularly during infectious disease outbreaks, outline how diseases spread (e.g., airborne, vector-borne) and what public health measures to take (e.g., quarantine, isolation, vaccination). They define how health care settings should operate to ensure high-quality services. They cover on-site testing, treatment protocols, disease management, and available public health resources. These guidelines also help determine when to consult specialists or refer people receiving services for further care and provide direction on recommendations according to state and local health departments and the CDC.

DI professionals must be able to interpret these guidelines and communicate them in simple terms, using clear language that avoids jargon and abbreviations, to ensure that individuals and communities understand the necessary health measures to prevent disease spread and complications, while promoting effective public health action.

Section 7: Key Guidelines in Disease Investigation

DI professionals use different guidelines depending on their disease area of specialty within infectious diseases (i.e., STIs, TB, HIV, communicable diseases). Guidelines are tailored to the disease of interest but generally address three key areas of management: diagnosis, treatment, and transmission.

- Diagnostic guidelines – specify the correct tests to use for diagnosis, the order in which the tests should be performed, and the criteria for their use. Diagnostic guidelines are a crucial tool in identifying infectious diseases and preventing their transmission. These guidelines contain **laboratory testing algorithms** that outline a sequence of tests used in combination for the diagnosis of an infectious disease.

- Treatment guidelines – issued by health experts at organizations such as health departments, the National Institutes of Health, and the CDC. They provide recommendations for managing infectious diseases, outlining appropriate treatment regimens and considerations for special populations.

- Transmission guidelines – explain how diseases spread (e.g., airborne, vector-borne) and outline prevention strategies like masking, preventative treatment, quarantine, isolation, or vaccination.

Laboratory testing algorithms streamline the diagnostic process, ensuring accurate and timely identification of pathogens. DI professionals should be familiar with the testing algorithms for their disease(s) of interest and assist with interpretation when necessary. Clear communication of lab results helps people at risk for or diagnosed with a disease and those involved in medical care and follow-up understand the nature and implications of the disease.

Following relevant diagnostic, treatment, and transmission guidelines consistently builds trust among health care providers, people diagnosed with or exposed to an infectious disease, and the communities they serve. With a structured approach to diagnostics, treatment, and disease prevention, DI professionals can respond effectively to outbreaks, protect individuals, and work toward improved health outcomes worldwide.

These guidelines also shape how clinics operate, guiding delivery of medical care, onsite treatment, and referrals to specialists when needed. Furthermore, adherence to guidelines ensures consistency in disease management and transmission control, fostering trust and collaboration among health care providers and affected individuals.

By combining testing strategies, lab result explanations, and adherence to relevant guidelines, public health teams can effectively tackle disease outbreaks. Clear communication helps people affected by a health situation understand their condition, while standardized approaches build trust between health care providers and the community. A well-structured response to disease challenges strengthens public health efforts while protecting communities and ensuring fair access to health care for all.

Confidentiality and Information Collection

Confidentiality is a legal requirement, governed by laws like the **Health Insurance Portability and Accountability Act (HIPAA)** and state or local regulations that govern the confidentiality of public health records.[21] Confidentiality is a cornerstone of effective communication and ethical practice in public health, particularly when discussing personal information tied to sensitive topics like infectious diseases.[6,11] It ensures that **protected health information (PHI)** shared in confidence remains confidential, fostering trust and openness.

PHI is any information in the medical record or other records that can be used to identify an individual, including name, locating information, date of birth, phone number, email, Social Security number, etc. PHI also includes highly sensitive information about symptoms, testing, diagnosis, treatment, risk factors, and other details. PHI must be safeguarded to ensure compliance with HIPAA and maintain individual privacy. Protecting an individual's privacy is vital due to the potential social stigma, legal implications, and privacy concerns associated with an infection and diagnosis.

Information about an infection or health condition is shared only with people who are either authorized by the person or legally permitted to receive it, typically with the person's informed consent. Any disclosed information must be carefully protected in terms of both

storage and use. To ensure this, programs must establish clear policies and procedures for data protection and provide training to health professionals on how to manage sensitive information appropriately.[5] This not only creates a foundation for effective communication but also supports tailored, person-centered care, ultimately upholding the investigation objectives, public health goals, and individual well-being.

To protect PHI from unauthorized access, DI professionals take several key precautions. These include:

- Maintaining personal and medical records in secure, access-controlled office environments
- Bringing only the necessary level of identifying information during field activities
- Ensuring that interviews and notifications are conducted in a **confidential environment** where unauthorized parties cannot hear confidential information
- Disclosing or limiting the release of information required for medical management

In the context of gathering sensitive information and demonstrating respect for an individual's privacy, building trust is vital in creating a secure environment where individuals feel safe sharing personal, private, and often sensitive details. This commitment not only enhances individual experiences but also strengthens public health efforts by ensuring the collection of accurate and reliable information in a manner that respects and values every individual's unique needs and circumstances. This requires a commitment to employing person-centered communication strategies, demonstrating awareness of different cultures and perspectives, and addressing varying levels of health literacy. Additionally, adherence to the principles of Culturally and Linguistically Appropriate Services (CLAS) ensures that interactions are responsive to individual needs and language preferences, thereby further enhancing trust and understanding.

Confidentiality During Public Health Interviews

Confidentiality is essential in health-related conversations, ensuring the privacy, trust, and dignity of individuals discussing sensitive information, such as their health status. This information should only be shared with authorized medical professionals.[7, 12]

Confidentiality matters because it:

- Encourages honesty – When people trust that their information will remain private, they are more likely to share accurate details, which is critical for disease intervention.
- Reduces fear and stigma – Confidentiality prevents individuals from worrying about judgment or repercussions, making them more likely to engage in care.
- Improves tailored support – With complete and open information, DI professionals can provide better interventions.

When communicating confidential information to a person diagnosed with or exposed to an infection, it is essential to ensure that the information is being released to the appropriate

person. Before discussing specific disease information, the DI professional must verify the identity of the person by asking them to confirm their date of birth.

At the start of an interview, clearly explain:

- Reasons for verifying identity
- What will be kept private (e.g., personal health details)
- Legal limits of confidentiality (e.g., mandatory disease reporting)
- Who has access to the information (e.g., medical providers)

For example, to verify the identity of the person, the DI professional can begin the interaction by saying, *"I have important health information to discuss with you, but before we can proceed, I need to confirm your date of birth to make sure I am talking to the correct person. This helps to protect your privacy."* Sometimes a DI professional may have incomplete identifying information, such as just a first name, age, or nickname/screen name. In this case, it is still important to request the date of birth, and a DI professional can gather more complete information by asking them to spell their last name.

Deliver this message with empathy and transparency to build trust and encourage participation.

When conducting interviews, the physical environment must be secure to prevent unauthorized third parties from overhearing protected health information. Sometimes, the DI professional can perform the interview in a controlled setting, such as a clinic room, an office with a door, or even in a vehicle.

When encountering a person diagnosed with or exposed to an infection in a field setting, it can be more challenging to find a secure environment. If a DI professional locates the person they need to interview in a field setting where other people are nearby, they must do everything possible to find a secure location. This can include techniques like asking the person to step outside to speak if there are other people in the building, using the DI professional's vehicle, walking the person to a private location nearby, or asking to use a private space (e.g., a bedroom, office inside of a shelter, or a room in a clinic).

DI professionals should always observe appropriate safety and infection control precautions when selecting or entering these spaces. Similarly, when conducting interviews via telephone, the DI professional should not assume that the person is in a confidential space. It is essential to assess confidentiality before initiating the interview process. This can be done by asking the person, *"Are you in a place where you can speak privately right now?"* If they are not, the DI professional can encourage them to take a few minutes to find a more private place to talk.

Conclusion

In conclusion, effective disease intervention requires a comprehensive and thoughtful approach that integrates several key components. Confidentiality in conversations and information collection during interviews and investigations ensures trust and protects the dignity of individuals while facilitating the disclosure of sensitive information. Motivating participation in disease intervention services is crucial for empowering individuals to take an active role in their own health outcomes, drawing on their intrinsic motivation to change behaviors.

Conducting interviews and gathering demographics, alongside assessing disease comprehension and history, provides the foundation for understanding disease exposure and developing actionable plans. Accurately eliciting information from individuals diagnosed with an infection and those exposed to an infection (e.g., contacts, partners, and social contacts) is essential for identifying and locating individuals confidentially, ensuring privacy while addressing public health concerns. Addressing needs and barriers to disease intervention involves providing appropriate referrals to support services, emphasizing responsiveness to individual needs and accessibility to ensure effective support.

Following up with individuals while they are infected and afterward through reinterviews, action plan reviews, and documentation supports ongoing engagement and accountability. Locating people identified as sexual and drug-sharing partners or social contacts highlights the critical roles of partner notification, leveraging technology, and services tailored to individual needs to navigate these interactions effectively.

By integrating these skills and approaches, DI professionals can enhance case management, promote successful disease intervention, and contribute to broader public health outcomes, fostering a collaborative and respectful environment for all involved.

Chapter 2 Keywords

Action Plan

Active Listening

Affirmations

Aggressive Communication

Assertiveness

Associate

Case investigation

Case management

Close contact

Cluster interview

Clustering

Confidential Environment

Contacts

Contact tracing

Contract referral

Disease comprehension

Empathy

Expedited Partner Therapy (EPT)

Health Insurance Portability and Accountability Act (HIPAA)

Health literacy

Incubation period

Index case

Infectious period

Internet Partner Services (IPS)

Interview Period

Laboratory testing algorithm

Mode of transmission

Notification

Open-ended questions

Original interview

Partner

Partner services

Passive communication

Person-centered approach

Polite imperative

Primary prevention

Problem Solving

Prophylactic treatment

Protected Health Information (PHI)

Provider Referral

Question framing

Record Search

Referral

Reflective Listening

Re-interview

Secondary prevention

Self-referral

Sexual history

Social contacts

Source

Special Populations

Stages of change model

Summarization

Tertiary prevention

Venue-based contact tracing

Chapter 2 Practice Questions

1. What is the first thing a DI professional should do when they receive a new case?

    a. Record search all available resources

    b. Call the person and verify their identity

    c. Conduct a field visit

    Answer: a

    Rationale: Before contacting a patient or conducting a field visit, the DI professional must review all available information (lab reports, medical records, registries) to prepare for the case investigation and avoid duplicate or unnecessary contact.

2. Which principle is practiced when notifying partners of exposure without revealing the identity of the person who named them?

    a. Compliance

    b. Confidentiality

    c. Assurance

    Answer: b

    Rationale: Confidentiality is a cornerstone of partner services. Partners are notified of potential exposure without ever learning who named them, ensuring trust and protecting privacy.

3. Who would be allowed to participate in a partner services interview without violating the confidentiality of the person being interviewed?

    a. A medical assistant who is drawing blood

    b. A friend or a parent who wants to join the interview

    c. A supervisor for quality assurance or someone for language interpretation

    Answer: c

    Rationale: Supervisors may join for training or quality purposes, and interpreters may be included to ensure clear communication. Friends, parents, or medical staff outside the interview process would breach confidentiality.

4. What techniques should a DI professional employ to obtain a detailed risk assessment when conducting an interview?

    a. Record searches and partner elicitation

    b. Health education and treatment advice

    c. Open-ended questions and active listening

    Answer: c

    Rationale: Open-ended questions allow clients to share detailed, nuanced information, while active listening builds trust and ensures accurate understanding of risks.

5. What information should the DI professional try to obtain for each person identified as a sex partner or contact?

    a. Name, exposure dates, locating information, and description

    b. Number of partners, name, contact information, and social history

    c. Name, location, description, and risk assessment

    Answer: a

    Rationale: These details are essential for accurately identifying and locating partners, determining the period of exposure, and planning follow-up for notification and care.

6. What is it called when a DI professional determines what the person diagnosed with an infection knows about the disease?

    a. Interview

    b. Medical history

    c. Disease comprehension

    Answer: c

    Rationale: Assessing disease comprehension helps the DI professional understand the client's baseline knowledge and tailor education accordingly.

7. What is expedited partner therapy (EPT)?

    a. Providing prescriptions for a person diagnosed with an infectious disease to take to their sex partners

    b. Permitting the DI professional to take prescriptions to the field to hand deliver to the sex partners

    c. Setting aside dedicated clinic appointment slots for only those identified as being sex partners

    Answer: a

    Rationale: EPT allows patients to deliver medication or prescriptions to their partners without the partners needing a clinic visit first, reducing delays in treatment.

8. When interviewing a person diagnosed with an infection, what is the best way to elicit information on people who were exposed?

    a. "Have you slept with anybody recently?"

    b. "Tell me about the last person you had sex or shared drugs with."

    c. "You have been diagnosed with an STI. You must disclose your partners to me."

    Answer: b

    Rationale: This open, conversational prompt is less intimidating, avoids judgment, and encourages recall, making it more effective than blunt or directive approaches.

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Chapter 3 Field Services and Outreach Activities

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Introduction

As the role of a disease intervention (DI) professional continues to evolve, so does the way they plan, prepare, and conduct field services and outreach activities for infectious diseases, vaccine-preventable diseases, emerging infections, and foodborne illnesses. Conducting field investigations is a core function of disease intervention programs, ensuring that people diagnosed with infections receive timely and adequate treatment. Field investigations also ensure that people potentially exposed to an infectious disease receive appropriate testing, examination, and treatment, when necessary, to interrupt disease transmission and prevent further complications.

This chapter describes the process of planning and preparing for a field investigation, examines the public health principles followed during fieldwork, outlines how field investigations are conducted in residences and other community locations while maintaining confidentiality and security for all involved, identifies safety strategies for the field, and reviews standard and universal precautions when delivering field testing and treatment to people diagnosed with or potentially exposed to infectious diseases.

The following field service and outreach tasks are included in this chapter[1]:

- Task 1: Plan field services (e.g., home visits, outreach events, screening) to maintain confidentiality, security, and safety.
- Task 2: Maintain supplies to be prepared for field services.
- Task 3: Perform field investigations to residences or other community locations to inform people of possible disease exposure or positive test results.
- Task 4: Communicate with people diagnosed with or possibly exposed to infectious disease in person.
- Task 5: Maintain security and confidentiality of sensitive information and protected health information of people diagnosed with or possibly exposed to infectious disease.
- Task 6: When an individual cannot be reached, communicate with a third-party contact (e.g., mutual contacts, community support organizations, local businesses) to obtain additional information.
- Task 7: Practice universal precautions and infection control procedures.
- Task 8: Support field testing, treatment, and outreach activities for people experiencing a disproportionate impact of communicable disease.

- Task 9: Deliver and observe treatment (e.g., directly observed therapy [DOT], expedited partner therapy [EPT], field delivered therapy) in nonclinical settings to ensure adherence to treatment regimen as well as patient education.
- Task 10: Identify and respond appropriately to unsafe situations (e.g., body language, threat of bodily harm, environmental cues, tone).
- Task 11: Adhere to public health principles during field services and outreach.

Domain Content

Section 1: Preparing for Field Investigation

DI professionals must plan and prepare carefully to ensure investigations are safe, confidential, and effective. DI professionals must protect the confidentiality and security of **personally identifiable information (PII)** and **protected health information (PHI)** of people diagnosed with or potentially exposed to infectious diseases. PII includes data that can identify, locate, or contact someone, such as name, date of birth, address, and phone number, and may also include details like race, age, occupation, or the date of exposure. Combining these identifiers could disclose an individual's identity. PHI pertains to a person's health status, health conditions, or diagnoses, as well as the provision or payment of health care. Maintaining **confidentiality** when searching for a person diagnosed with an infectious disease means that no PHI, such as diagnosis, is shared with anyone other than the person infected.

During an investigation, DI professionals may need to contact a private physician's office or other health care provider to:

- Refer for examination
- Make recommendations for testing or treatment
- Confirm examination or treatment
- Follow up on positive lab reports
- Provide physicians with a diagnosis or notice of exposure to an infectious disease
- Discuss surveillance reporting requirements

During these encounters, under an exemption to the Health Insurance Portability and Accountability Act (HIPAA), providers may share PHI with DI professionals for public health purposes. This allows DI professionals to collect information about the examination and treatment of infectious diseases. However, when DI professionals refer partners or contacts for examination and treatment, they must not discuss any confidential or medical information about the individual diagnosed with an infectious disease with the physician's office staff. DI professionals should follow their local regulations and protocols when determining what information can be shared with health care providers. Any potential breach of confidentiality should be reported to supervisors immediately.

Field Preparation

A key part of this preparation involves securing all records and materials before leaving for a visit. When preparing for the field, all records must be secured to transport PHI. Investigative field records can be maintained in a physical pouch or electronic device (e.g., tablets). A **pouch** is a small binder that is secured with a zipper or lock to protect physical records and prevent breaches or unauthorized access to confidential information.

Before heading out to the field, DI professionals must conduct a thorough **record search** to investigate and maximize their time in the field.[2] DI professionals first must search their local or state health department records to see if the person involved in the investigation has a previous record. The record search should include reviewing past lab reports, case investigations, and previous interviews or notifications. This step is crucial because the individual might not need a field visit, which can save investigative time for disease intervention staff. Additional record searches may include, but are not limited to, the following:

- Internet search engines
- Regional health information organizations (RHIO)
- Social media platforms
- Public record databases
- Post office verification
- Local school enrollment logs
- Jail rosters or inmate census
- Federal Bureau of Prisons inmate locator
- Other health department programs and sources
- People finder sites, such as LexisNexis

Record searches can provide additional details about an individual's demographic information, medical and social history, marital status, living conditions, and other factors contributing to their health. Gathering this information before an interview or notification may improve a DI professional's interview or notification strategy. In addition, the record search can help prepare a DI professional for what they might encounter during a field visit, such as a third-party contact (e.g., a spouse, parent, roommate, or someone else who might know the location of the person diagnosed with an infectious disease but isn't at risk themselves), pets, or other safety concerns. A record search might also prevent a field visit if there are risks to confidentiality, domestic violence, severe mental health concerns, or serious safety concerns.

Record search results should be thoroughly documented on the interview record, field record, or other data system. Documentation should follow local protocols. It must include the date and time of day, type of activity, and results learned from the investigation.

Example: 8/15/2025 9:30 am. RHIO Record Search, person diagnosed with infectious disease treated with ceftriaxone 500 mg intramuscularly at Memorial Hospital on 8/13/25.

If using paper-based records, the investigative pouch should keep field records organized and divided by the activities to be conducted, such as phone calls, field visits, re-interviews, and tasks that require follow-up. It also should include the necessary supplies to conduct field investigations. Before entering the field, DI professionals should plan a route and arrange field records at the front of the pouch in an order based on investigative priority. If records are maintained electronically, DI professionals should review their task list and prioritize case assignments before leaving for the field. Electronic devices should be password protected and should accompany the worker on the visit. Electronic devices should not be left in the vehicle.

Community Coordination

Investigations should be prioritized to ensure that people who remain untreated and contacts at the highest risk are contacted or interviewed first. For example, with a syphilis infection, this may include people of childbearing age, people who are pregnant, people reporting symptoms, and those exposed to a primary lesion who might be incubating infections. Priority also might be given to interviews or field records that have been open for a longer period, in an effort to reach people who haven't been located through other methods (e.g., telephone, letter).

The field visits and routes should attempt to address as many priority assignments as possible in an efficient sequence. Grouping field visits by geography can help with efficiency and maximize time in the field. This may mean that the DI professional conducts lower-priority field activities located near higher-priority investigations.[3] Lower-priority investigations that require a field visit should be conducted to save time, money, and resources, and can prevent scattered work.[2] Field visits also can be pooled or batched among workers for a particular day. DI professionals should consult with supervisors when visiting residences or other community locations in distant areas.[2] Essentially, DI professionals should attempt to address the greatest number of investigative priorities in the most efficient route and follow the local program area's guidelines and policies.[5]

Before leaving for the field, DI professionals should prepare standard materials and supplies, including but not limited to[2]:

- Investigative pouch or electronic device
- Cell phone
- Maps or access to a global positioning system (GPS)
- Notepad and pen
- Prepared health department letters in envelopes
- Business cards
- Identification card
- STI picture cards or visual aids

- Disease-related brochures or educational materials
- Condoms, lube, or other harm-reduction supplies
- Release of health information forms (if needed)
- Mileage record forms (if required)
- Funds for parking or tolls (if needed)
- Field testing kit (where applicable)

DI professionals should prepare a field-testing kit with necessary equipment and supplies for the type of testing being conducted, including but not limited to:

- Absorbent pads
- Gloves
- Alcohol swabs
- Gauze pads
- Bandages
- Lancets
- Biohazard waste bags
- Medical specimen bags
- Needles
- Blood tubes
- Vacutainer holder
- Sharps container
- Hand sanitizer
- Tourniquet
- Ziplock trash bag
- Dried blood spot (DBS) cards and transport box
- Glassine sheet paper
- Timer
- Thermometer
- Test device kits (check expiration dates)
- Urine collection cups
- Testing form
- Correct dosages of medication, if providing field treatment

Field Safety

Just as DI professionals are responsible for protecting sensitive information, they also must be prepared to protect their personal safety while in the field. DI professionals should have a basic understanding of field safety protocols. Because DI professionals often conduct fieldwork in a variety of community settings, it is important to be familiar with the local environment, follow agency field safety protocols, and use situational awareness to ensure personal and participant safety.[2]

DI professionals follow jurisdictional protocols and prioritize personal safety. There are generally certain precautions DI professionals should understand and follow while conducting field work in order to plan outreach appropriately and ensure safety [2.]The following are examples:

- Wear comfortable, professional attire, including low-heeled footwear.
- Avoid wearing or carrying articles that appear valuable; money should not be displayed or given. Valuables should be stored in the trunk of the car before departing for the field.
- Return at another time if you encounter unexpected congregations of people.
- While at the location of the field visit, avoid documenting in the car or sitting idle in the car. Pull away and park in a safe location, such as a school parking lot or another public location.
- Never leave keys or other valuables in plain sight inside the car, and always ensure the doors are locked.
- Field visit routes should be planned before departure and shared with a supervisor.
- When parking the car, face in the direction needed to leave the location.
- Observe the surrounding area before entering. If any safety concerns arise, discontinue the visit and notify a supervisor for guidance. A coworker or supervisor may accompany the DI professional on a future visit. Familiarize yourself with areas where high-risk activities may occur, such as substance use or transactional sex or other settings relevant to disease transmission. Be aware of neighborhood dogs, and check for dogs by rattling car keys or whistling before entering premises.
- Carry health department identification and business cards that do not identify the specific program (e.g., HIV/STI or TB program).

Section 2: Conducting Field Investigations

Field investigations generally are considered the most effective method for ensuring that people diagnosed with or potentially exposed to infectious diseases are notified, examined, and treated, if necessary.[2] DI professionals should initiate a field investigation when a person diagnosed or potentially exposed to an infectious disease cannot be reached by telephone or when the person does not follow through with a commitment for testing or treatment.[3] Making contact in the field allows for trust and rapport building, which may facilitate a more effective interview or notification.

This section covers:

- Conducting field investigations at residences or other community locations
- Maintaining security and confidentiality of sensitive information and PHI of individuals diagnosed with or possibly exposed to infectious disease
- Communicating with individuals diagnosed with or possibly exposed to infectious disease
- Communicating with third-party contacts to obtain additional information
- Identifying and responding appropriately to unsafe situations during field investigations

Upon arriving at a field stop, DI professionals again should consider both safety and confidentiality. As mentioned before, confidentiality means that no information is divulged to unauthorized individuals that could identify the person diagnosed with an infectious disease.[2] Therefore, no personally identifiable information (PII) can be shared with individuals possibly exposed to an infectious disease or other **third-party contacts** (e.g., roommate, parent, spouse, employer, neighbors, children). Conducting investigative activities outside a protected, confidential office setting can create challenges for maintaining confidentiality; therefore, DI professionals must anticipate these situations and prepare to respond appropriately.[2]

When using a physical pouch, DI professionals should secure it in the worker's vehicle during field visits or should leave it at their office. The only physical information that should be brought to a residence or other field location is a health department referral letter or notice in a plain, sealed, and confidential envelope. The letter should not mention the name of the disease or the nature of the exposure. For safety purposes, these **referral letters** should be prepared before departing for the field, if possible, as preparing notes in the field may distract a worker's attention from their immediate surroundings.[2]

In addition, electronic devices can be used to access field and interview records and can allow the worker to enter notes directly into a case management system from the field. These electronic devices containing confidential information should not be left in a car and should accompany the worker on the visit; however, they must be password-protected. DI professionals should ensure a secure internet connection. If the internet is unavailable, documentation can be completed in the office upon return. DI professionals should follow local protocol on case prioritization and documentation in the field with an electronic device.

Field investigations should be conducted in unmarked vehicles if possible.[3] Before leaving the vehicle, DI professionals should review the field record and memorize the name of the person diagnosed with or potentially exposed to an infectious disease, their date of birth, physical description, and any other pertinent information. DI professionals should be aware of their surroundings, observe the environment, and conceal the pouch, as well as other valuables, in the vehicle.

At a home or residence, a DI professional should consider who may be present and anticipate the possibility of encountering third parties. If other people are present, ensure a private setting for the interview or notification, and ensure that paper-based records are not visible or displayed.

If there is no response at the front door, DI professionals should attempt to locate the person at the side or back doors or windows only if it is safe to do so.[3] If the individual is not found, other investigative techniques to confirm locating information for the individual should be attempted by exploring other resources, such as:

- Names on the mailbox
- Neighbors
- Co-workers or managers
- Postal employees
- Local businesses
- Children in the area

If the information appears to be incorrect (e.g., the address doesn't exist or the address provided is a vacant lot), the DI professional can transpose the house numbers and verify nearby residences that are similar to the original description.[3]

If the DI professional does not encounter the person at their confirmed place of residence, they may leave a health department referral notice in a sealed envelope marked as "confidential." Referral notices can be left with co-residents, building managers, employers, or placed under or in the door. However, notices must not be placed in or affixed to any mailbox.[4] A DI professional also should avoid leaving written messages that include specific disease details or confidential information—such as diagnosis, exposure information, test results, or reasons for the visit—for third parties.[2]

If a DI professional visits an apartment complex and no apartment number is given with the address, check the mailbox labels for a matching name of the person diagnosed or potentially exposed and identify the apartment number associated with the name. If they do not see the name of the person listed, search for the names of family members or associates identified during the record search process. The DI professional should attempt to locate the person with the associated apartment number and leave a health department letter if there is no response. The letter should be slipped under the door or secured tightly and discreetly in the doorway. DI professionals also may request assistance from third parties (e.g., neighbors, children, building managers) to locate the correct apartment. If the DI professional is unable to access the apartment, leave the health department letter near

the mailbox associated with the apartment. By law, DI professionals are prohibited from accessing or tampering with a mailbox.[4]

Visits to a workplace should be conducted as a last resort due to potential privacy concerns. When visiting a place of employment or other community location, the visit should be conducted as informally as possible, and the DI professional should ask to speak with the person they are trying to locate. If the person is not there, the DI professional should confirm when they will be there and then arrange to call or return to the workplace at that time.[2] The DI professional should not provide a return telephone number that identifies the DI professional's specific program area.

If the DI professional encounters a supervisor or coworker during the visit, simply state, *"It concerns an important matter and will only take a few moments."* If there is a policy prohibiting personal calls at the workplace, the DI professional should leave their name and number.[2]

If the person is not reachable at the workplace, the DI professional could wait for lunch or a break to meet the person as they're leaving. If the DI professional has a description or license plate number of their vehicle, they could attempt to locate it in the parking lot and leave a message.[2]

After completing a field investigation at a residence or other community location, the DI professional should leave immediately and find a safe place to document their investigative efforts.[3] Locations with parking lots near public buildings, such as a library, grocery store, or post office, are usually safe locations to document field notes. If using public transit, documentation may need to wait until returning to the office to prevent other passengers from viewing confidential information. Regardless of the location, all files always should be properly secured.[5]

When conducting field investigations, safety is a priority. DI professionals may encounter some potentially unsafe locations and should have a basic understanding of field safety protocols and how to conduct themselves during a field investigation. DI professionals should always be aware of their surroundings, employ a common-sense approach, and trust their instincts.

During field investigations, DI professionals should pay attention to:

- Exits and escape routes
- Stairs and elevators
- Quality of lighting
- Warning signs of gang or drug activity (e.g., excessive foot traffic to/from a residence, loitering in/around a residence, drugs or drug paraphernalia in the area, strange smells coming from the property)
- Boarded windows or "no trespassing" signs
- Dogs barking or "beware of dog" signs
- People behaving suspiciously (e.g., acting nervously, avoiding eye contact, signs of intoxication)

If a dog is present, the DI professional can keep their hands at their sides and avoid looking the dog directly in the eyes. Ask the owner to put the dog in another room. Alternatively, request that the resident step outside, provided confidentiality can be maintained. If the person refuses to secure the dog and it shows signs of aggressive behavior, it may be time to leave. For more information on field safety, see the “Planning for Field Investigation” section.

Legal authority for notifying and referring individuals who may be exposed to infectious diseases lies with the states. The program policies and procedures should align with relevant state laws, statutes, and regulations.[3]

Section 3: Communicating with People Diagnosed with or Possibly Exposed to an Infectious Disease

Confidentiality and privacy are fundamental to field investigations. DI professionals must ensure every interaction and data-handling practice protects the privacy of individuals who have been diagnosed with or potentially exposed to infectious disease. This section expands on those core principles and emphasizes how to apply them effectively, especially in complex or regulated situations.

During fieldwork, professionals must avoid actions that compromise confidentiality. This includes[3]:

- Ensuring a private setting for the interview/notification
- Attempting to interview/notify face-to-face
- Never revealing the name of the person diagnosed to contacts or third parties
- Not leaving verbal or written messages that include the name of the disease
- Not giving confidential information to third parties
- Not showing or displaying field records

For more information on record storage, device security, and home visit protocols, refer to the section titled “Preparing for Field Investigations.”

When communicating with individuals diagnosed with or exposed to an infectious disease, DI professionals must ensure they are speaking with the correct person by verifying their identity, introducing themselves clearly, being concise, and using nonconfrontational body language and tone. The DI professional should strive to establish rapport and form a connection with the person. The interview or notification must be conducted in a private setting, but in a location that is easily accessible to an exit.[5] The DI professional should position themselves so that there is no person between them and the nearest exit.

While communicating with people diagnosed with or possibly exposed to an infectious disease in the field, a DI professional should first:

- Introduce themselves and their role
- Confirm the identity of the individual
- Ensure a private setting
- Discuss confidentiality

If it seems the conversation could be overheard or observed, the DI professional should use open-ended questions to assess privacy, such as *"Where can we talk privately?"* or *"Who else can overhear what we're saying?"*.[2] The disease intervention interview and notification are voluntary, and DI professionals should accommodate requests to meet with individuals at the location of their choice. An interview or notification should not be conducted with a third party present, even if the person requests it. The only exceptions are if the DI professional's work performance is being observed by an approved party or for language interpretation/translation.[3] Because the person does not know what questions may be asked or what information may be shared during the interview or notification, they cannot provide informed consent for a third party to be present.

The information provided should be straightforward and convey a sense of urgency. DI professionals should communicate at an individual's level of understanding and avoid medical jargon and other technical terms.[3] When language is a barrier, arrangements should be made immediately with interpretation or translation services. All communication should be delivered in a nonjudgmental, respectful manner tailored to individual needs.

DI professionals should adopt a person-centered approach, which involves reflecting on their own perspectives and values, as well as understanding the needs and preferences of others.. Using this method helps DI professionals build rapport and trust, encouraging the person receiving services to be more open to the information and recommendations given. To demonstrate this approach, a DI professional should:

- Admit they may not understand or have knowledge about that person's experience
- See people as individuals and recognize that their willingness and ability to make changes may differ
- Demonstrate empathy and an ability to understand another's feelings
- Counter stereotypes and be mindful of assumptions
- Reflect on what it would be like if they were in a similar scenario

DI professionals should practice **active listening** techniques by asking open-ended questions, providing positive affirmations, acknowledging the individual's feelings, and summarizing the individual's statements and concerns to check that they understand correctly. After delivering educational messaging, DI professionals should ask open-ended questions to determine whether the person understands the seriousness of the infection and is motivated to act. For example, the DI professional might ask, *"How important is it to*

you to go to the clinic, now that you are aware of this serious health issue?" All individuals should be allowed to ask questions, share concerns, and receive person-centered counseling to develop a realistic and feasible risk-reduction plan tailored to their specific needs.[3]

DI professionals should be thorough and gather as much information as possible when they contact the person. Every interview or notification should be treated as if it is the only opportunity to provide or confirm information with the person diagnosed with or exposed to an infection, in case the person is unreachable for follow-up or refuses to respond to additional contact attempts.

When the DI professional does not find the person they are looking for during a field visit, they should gather additional locating information from other sources, including third-party contacts, such as parents, spouses, roommates, neighbors, or children.[3] Efforts to communicate with third-party contacts should be conducted in a manner that preserves the confidentiality of all parties involved.[3] Refer to the "Preparing for Field Investigation" section for more information on maintaining confidentiality in the field.

Third-party contacts can be useful in obtaining new locating or identifying information, such as:

- Full name and physical description
- Precise address or apartment number
- Telephone number
- Place of employment
- Hangouts and associates
- Description of the individual's car
- Where the individual can be found now

Interactions with third parties have the potential to become problematic and must be handled professionally and skillfully.[2] Sometimes a third party may obstruct communication with the person sought by denying entry, refusing to confirm if the person is available, or questioning the DI professional on their role and purpose for the visit. During these interactions, a DI professional should remain respectful and assertive. The DI professional should politely avoid answering questions but acknowledge their concerns and state that the information can only be shared with the person sought. If required to provide more information on the purpose of the visit or affiliation, the DI professional should use the largest possible agency affiliation.[2] For example, *"I'm Kate with the County. Please let them know I need to speak with them."*

If, during a third-party encounter, it is apparent that the third party may be infected or has visible symptoms, the DI professional should discreetly refer the person for examination. If the referral could jeopardize the confidentiality of the person being sought, it may be beneficial to communicate with the person diagnosed with an infectious disease first and determine their relationship with the third party.[2] To protect the confidentiality of the original

person interviewed, the DI professional can give the potential contact to another staff member for follow-up at another time.

It is best practice to avoid having third parties present during a notification or interview, since the person may not be aware of the nature of the encounter and cannot give informed consent. Every effort should be made to speak with the person privately. However, if the person and the third party refuse to be separated, the DI professional can make a **dual referral** while maintaining the individual's confidentiality.[2] The DI professional might say, *"You both have been around someone who was infected with syphilis. It's important you both get checked as soon as possible."*

During a field investigation, if a DI professional encounters someone who is unwelcoming or makes them feel uncomfortable, they should remain calm and reassure the person that they are there to help, without reacting in a confrontational manner. The safety of DI professionals is extremely important, and they should not put themselves at risk to complete a field visit. They may need to leave if the person asks them to or if the situation gets out of control.[5] DI professionals should respect the individual's needs and thank them for their time before leaving.

When stopped in traffic, at lights, or at stop signs, DI professionals should keep car doors and windows locked. DI professionals should maintain a sufficient distance between their vehicle and the vehicle in front to ensure they can pull away quickly, if necessary. If an individual confronts the vehicle and attempts to seize it, the DI professional should not resist and should give up the vehicle. The DI professional should observe the individual's physical description, proceed to a safe location, report the incident to law enforcement, and then notify a supervisor.[2]

DI professionals should have a backup plan in mind in case something goes wrong and should know who to contact in case of an emergency.[5] If an incident occurs before, during, or after a field visit, contact a supervisor to report the incident. Document any issues that arise during the interview in the field record. Detailed documentation protects and prepares DI professionals and other program staff who conduct field investigations at this location in the future.[5]

Section 4: Field Testing/Treatment and Universal Precautions

Field testing enables DI professionals to provide testing outside of clinical settings, allowing for the timely diagnosis of individuals who may not have access to traditional health care. It is especially valuable for reaching populations at increased risk, such as people experiencing homelessness, those involved in transactional sex, or those with substance use disorders, and for screening in nontraditional locations like residences, vehicles, bars, shelters, parks, or jails. By identifying undiagnosed infections in these settings, DI professionals can connect individuals to appropriate care and treatment.[3]

DI professionals' capacity to deliver treatment may provide further opportunities to increase testing and treatment of people diagnosed with or potentially exposed to infectious disease, as well as individuals who are medically underserved or uninsured.

This section outlines the practice of universal precautions and infection control procedures, supporting field testing, treatment, and outreach activities for individuals disproportionately affected by communicable diseases, and delivering and observing treatment in nonclinical settings to ensure adherence to treatment. Standard precautions are a set of protocols designed to reduce the risk or prevent transmission of pathogens.[6] They include the major features of **universal (blood and body fluid) precautions** and **body substance isolation**. Under standard precautions, blood, body fluids, and all body substances of individuals are considered potentially infectious. These precautions should be observed by all DI professionals while conducting field testing.

DI professionals must practice universal precautions, including:

- Hand hygiene
- Personal protective equipment (PPE)
- Respiratory hygiene
- Sharps safety
- Cleaning and disinfection
- Waste disposal
- Safe handling of people receiving services

According to the Program Operation Considerations for STI Prevention, recommendations to reduce the risk of transmission include[3]:

- Use of protective barriers, including latex or vinyl examination gloves, gowns, masks, and protective eye wear as appropriate based on the mode of transmission
- Needles and syringes should not be recapped or removed from disposable syringes
- Disposable syringes and other sharp items should be placed in a puncture-resistant container in the immediate vicinity
- Gloves should be worn during **venipuncture** (i.e., a blood draw) or other specimen collection (e.g., urine, sputum) **point-of-care (POC) testing**, and should be changed between individuals tested
- Skin should be immediately and thoroughly washed before and after testing
- Infectious waste should be incinerated or autoclaved before disposal in a sanitary landfill

During field investigations, DI professionals should recommend relevant testing and motivate the person to undergo follow-up testing, as necessary. If the person declines field testing or field testing is not an option, refer the individual for testing or transport them to the clinic or provider of their choice (if permitted).[3] DI professionals should provide risk reduction counseling and advise people diagnosed with an infectious disease to avoid

behaviors that pose a risk to others based on the mode of transmission for the disease of interest. DI professionals are often required to conduct field-based specimen collection or perform POC testing on people who are at increased/higher risk of infectious disease and persons potentially exposed to infectious disease.[3] POC testing refers to testing that can be performed in the field and allows for rapid results without needing to send a specimen to a laboratory.

Field-based specimen collection refers to the process by which a DI professional collects an individual's specimens through venipuncture, urine collection, or swabbing and transports them to a laboratory for testing. POC testing provides rapid results using whole blood from a fingerstick; however, further tests are required to confirm a diagnosis. Individuals with positive rapid test results should receive serologic confirmatory testing by venipuncture and have the specimen analyzed at a laboratory.[7] Venipuncture is performed to obtain a whole blood specimen for confirmatory testing. The blood must be collected and transported to a clinical laboratory for processing. There are emerging POC technologies for the diagnosis of gonorrhea and chlamydia, including vaginal swabs.

All field-testing methods should be conducted in a private, confidential setting and follow standard and universal precautions. DI professionals should follow the manufacturer's package insert for proper storage and handling of test devices. Test kit quality controls should be performed at intervals specified by the manufacturer to ensure the testing devices are functioning correctly and providing reliable results.

When individuals receive reactive test results, DI professionals should ensure the person understands the result and immediately refer them for confirmatory testing and treatment. Individuals with a rapid reactive result for HIV should obtain confirmatory testing and be referred for HIV specialty care as soon as possible to access treatment and case management, if needed.[8]

When transporting specimens, the DI professional should[3]:

- Label the specimen with the person's name, date of birth, and collection date
- Maintain blood specimens in an upright position in a specimen rack or cardboard container
- Deliver the specimen to the laboratory for processing at the earliest practical time
- Avoid leaving it in a car where temperatures can become excessively high or low
- Do not allow unauthorized individuals to handle specimens
- Store specimens upright in a refrigerator when blood specimens cannot be delivered on the same day as collected
- Maintain proper temperature based on testing specifications
- Do not freeze the specimen

Traditionally, DI professionals have focused on interviewing people diagnosed with an infectious disease and notifying their contacts of potential exposure. Some programs have

utilized DI professionals to directly deliver medications to people diagnosed with or potentially exposed to an infectious disease. In addition, DI professionals may need to deliver medications, such as penicillin G benzathine, directly to clinics or community physician offices when medical practices have difficulty keeping penicillin on-site.[9] This improves partnerships between medical practices and the health department and allows DI professionals to interview the individuals diagnosed onsite.

The scope of practice that DI professionals may engage in varies widely by local or state jurisdiction and depends on regulations, including licensing requirements. In some jurisdictions, DI professionals can treat individuals infected with or exposed to an infectious disease by providing oral medication prescribed under a standing order directly to those who have been diagnosed with or exposed to the infection. This can occur at the time of diagnosis or notification and is often done in combination with testing performed or collected by the DI professional.

Some programs have utilized DI professionals to deliver oral medications as **expedited partner therapy (EPT)** for individuals potentially exposed to gonorrhea or chlamydia infections. EPT is a practice that ensures treatment by providing prescriptions or medications to individuals potentially exposed before they are examined by a health care provider. This strategy is particularly recommended for the treatment of male partners of women with chlamydial infection or gonorrhea[10]. EPT can also be administered in a clinic setting or directly delivered to a person's contacts who have an infection. DI professionals administering intramuscular penicillin for the treatment of syphilis is less common. Some programs may partner a public health nurse with a DI professional in the field to administer oral or parenteral medication. For example, the King County STD Clinic in Seattle, Washington, allows DI professionals to run the pre-exposure prophylaxis (PrEP) clinic for people at risk of acquiring HIV and coordinate the prescription of PrEP medications.[9]

Directly observed therapy (DOT) is most commonly used for individuals diagnosed with TB. A DI professional will watch an individual swallow each dose of their prescribed TB medication in person to ensure treatment adherence. Delivery of DOT often requires a field investigation to locate the person for daily therapy. Electronic DOT is an alternative method for remotely observing individuals with a video-enabled device, such as a smartphone, tablet, or computer.[11]

Some health departments have used **field-delivered therapy (FDT)** for people diagnosed with or potentially exposed to uncomplicated chlamydial and gonococcal infections. FDT enables DI professionals to treat uncomplicated chlamydial and gonococcal infections under the medical license of an STI controller for individuals who are unable, unwilling, or unlikely to return for treatment. DI professionals permitted to conduct FDT should develop a field pack containing items needed for obtaining consent for treatment, administering medication, and STI education and prevention.[4]

The field-delivered therapy pack should include:

- Single-dose medication packets
  - Chlamydia (azithromycin, 1g)
  - Gonorrhea (cefixime 800 mg)
- Medication card
  - Medication name
  - Lot number
  - Expiration
- Medication instructions
- Dosing cup (to mix medications)
- 8 oz bottle of water
- Consent forms
- Infection fact sheets
- Condoms
- Field staff identification badge
- Stationary
- Cellular phone

When conducting field-delivered therapy, DI professionals should[4]:

- Arrange time/place to meet
- Confirm identity
- Assure confidentiality
- Counsel about chlamydial or gonococcal infection
- Discuss the need for treatment
- Assess for:
  - Allergies to antibiotics
  - Current medications
  - Serious medical conditions

  - Symptoms of STIs
  - Indications of current substance use
- Obtain consent
- Administer medication
- Observe for adverse reactions (15 minutes)
- Counsel on partner notification and STI prevention
- Provide STI fact sheets and condoms
- Refer to the STI clinic if the DI professional cannot treat in the field

DI professionals permitted to conduct FDT should follow local protocol and CDC STI Treatment Guidelines and recommendations.[11] People treated for an infectious disease should be counseled on the possibility of reinfection if re-exposed to an untreated contact and advised to avoid exposure until all contacts are treated.

Conclusion

Disease intervention (DI) professionals play a critical role in protecting public health by conducting thorough, timely, and ethically grounded field investigations. Every interaction, whether with a person diagnosed with an infectious disease, a potentially exposed contact, or a third-party source, must uphold confidentiality, maintain privacy, and protect sensitive information. DI professionals must adhere to local protocols to prioritize cases, respond promptly, and ensure that follow-up actions are completed in a timely manner. Prioritization considers factors such as the type and stage of infection, symptoms, co-morbidities, pregnancy status, and other risk factors, with acute or high-risk cases receiving the highest priority.

Effective field investigations require meticulous preparation, including secure handling of records, appropriate use of electronic devices, planning efficient field routes, and ensuring personal safety. DI professionals must use a combination of investigative techniques, including record searches, third-party contacts, and direct field visits, to locate and communicate with individuals while minimizing risks to both the person being investigated and themselves.

Communication during field services must be clear, concise, person-centered, and tailored to the individual's understanding and context. Establishing rapport and trust is crucial for obtaining accurate information, delivering educational messages, and motivating adherence to testing, treatment, and risk-reduction strategies. Universal precautions and infection control procedures must be observed consistently during field testing, specimen collection, and treatment delivery to protect both DI professionals and the people they serve.

Ultimately, DI professionals balance ethical, legal, and public health responsibilities with practical considerations of safety, confidentiality, and effective communication. By adhering to professional standards, utilizing evidence-based practices, and approaching each interaction with empathy and a person-centered mindset, DI professionals ensure that field services and outreach activities effectively reduce disease transmission, improve access to care, and protect the health of the community.

Chapter 3 Keywords

Active listening

Body substance isolation

Confidentiality

Directly observed therapy

Dual referral

Expedited partner therapy (EPT)

Field-based specimen collection

Field-delivered therapy (FDT)

Field testing

Personally identifiable information (PII)

Protected health information (PHI)

Point-of-care (POC) testing

Pouch

Record search

Referral letters

Third-party contact

Universal precautions

Venipuncture

Chapter 3 Practice Questions

1. An activity that identifies individuals with infection within a social network who engage in behavior that puts them at greater risk for infection is referred to as:

    a. Field search

    b. Targeted screening

    c. Conditional testing

    Answer: b

    Rationale: Targeted screening focuses on higher-risk populations or social networks to identify undiagnosed infections, preventing ongoing transmission.

2. DI professionals providing testing to individuals diagnosed with infection or individuals potentially exposed to infectious disease in nonclinical settings are referred to as:

    a. Field testing

    b. Expedited partner therapy (EPT)

    c. Direct observed therapy (DOT)

    Answer: a

    Rationale: Field testing means offering diagnostic services outside of clinics, such as in homes, community spaces, or other locations, to increase accessibility.

3. Where should a DI professional park when they identify the correct address for a field visit?

    a. At the opposite end of the block to blend in

    b. Park facing the direction needed to leave the location

    c. The next street over, so the individual or their neighbors don't see the vehicle

    Answer: b

    Rationale: Safety is important to the programs in the health departments for which the DI professional works. This ensures a safe and efficient exit if needed. Parking too far away or attempting to "blend in" could compromise safety or timeliness.

4. How should DI professionals prioritize their field visits, assuming no urgent issues arise?

    a. Visit the youngest individuals first.

    b. Visit the people who have the earliest assignment date.

    c. Visit all individuals residing in the same geographical region.

Answer: c

Rationale: Prioritizing caseload by geographic region saves time, money, and resources to prevent scattered work and may require making field visits to lower priority assignments that reside near higher priority assignments in an attempt to address as many priority assignments as possible in an efficient sequence.

5. When doing a field visit and the person diagnosed with an infectious disease is not home, what is the appropriate response if a roommate asks, “What is this about?”

    a. Provide the DI professional’s title, work location, and reason for the visit.

    b. Politely avoid answering questions, acknowledge concerns, and restate the request.

    c. Provide detailed information to the roommate about the diagnosis and treatment needed.

Answer: b

Rationale: Confidentiality must be maintained. The DI professional cannot disclose the diagnosis or details but should remain respectful and reiterate the need to contact the individual directly.

6. How can DI professionals safeguard valuables during field investigations?

    a. Store valuables in the trunk or glovebox before leaving for field investigations.

    b. Place valuables in the trunk once you arrive at the field visit.

    c. Secure valuables in a work bag used for field investigations.

Answer: a

Rationale: To minimize theft, valuables should be stored out of sight before arrival at the field site. Doing this upon arrival could draw attention.

7. When conducting field testing, where should DI professionals dispose of needles or lancets?

    a. Sealed plastic bag

    b. Closest recycling bin

    c. Puncture-resistant sharps container

Answer: c

Rationale: OSHA and CDC guidelines require sharps to be disposed of in puncture-resistant containers to prevent injury and potential infection.

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Chapter 4 Surveillance and Data Collection

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Introduction

To effectively discuss surveillance and data collection, it is essential to have a solid foundation in key epidemiological concepts. **Epidemiology** plays an important role in understanding the relationship between health and disease within populations.[1] Epidemiology is the *systematic, scientific study* of the **distribution** (who is affected, where, and when)and determinants (causes and contributing factors) that influence the occurrence of disease, and health-related events in human populations.[1] Epidemiology is applied to help prevent and control health-related events.[1]

Simply put, epidemiology is a problem-solving approach that helps “disease detectives” primarily epidemiologists, understand how people become ill, who is most likely to become ill, what outcomes result from illness, and how to prevent illness in the first place.[1]

Surveillance, a core concept of epidemiology, is the systemic, ongoing collection, analysis, and interpretation of health data to monitor disease patterns and identify potential outbreaks.[1,2] For disease intervention (DI) professionals, surveillance provides the information needed to respond quickly and effectively to prevent and control the spread of infections.[1,2]

Understanding how diseases spread is crucial for effective disease control and intervention. Factors such as the mode of disease transmission, population density, and environmental conditions all influence disease patterns.[2] Surveillance helps DI professionals trace the pathways of infections, identify at-risk populations, and evaluate the success of different intervention strategies.[1,2]

In addition, social and economic conditions, such as income, education, and access to health care, play a significant role in shaping health outcomes and disease distribution.[3] Differences in these conditions can affect a person’s vulnerability to infection. Surveillance data can reveal where these differences exist and support strategies to improve health outcomes for all communities.[3]

We will cover the following tasks in this chapter[4]:

- Task 1: Verify and collect data by navigating formal and informal sources (e.g., providers, information systems, internet searches).
- Task 2: During comprehensive interviews of people diagnosed with or possibly exposed to infectious disease, verify and collect surveillance information (e.g., risk information, socio-demographic information).
- Task 3: Update documentation as appropriate to ensure accurate and complete surveillance data.

- Task 4: Identify investigation trends and make notifications of emerging trends or concerns.
- Task 5: Adhere to public health principles during surveillance and data collection.

Domain Content

Section 1: Foundations of Surveillance and Data Collection

Surveillance is the collection, analysis, and interpretation of health-related data, which may include clinical records, environmental samples, behavioral data (e.g., recent food consumption), and other relevant information.[2] It serves as the foundation for monitoring disease trends, identifying outbreaks, and guiding public health programs and interventions. DI professionals rely on surveillance to provide timely and actionable insights, enabling them to protect and improve community health effectively.[2,5]

Public health surveillance operates under explicit legal authority that permits the collection of identifiable health data for public health purposes, including HIPAA's public health reporting exception. State, local, territorial, and tribal laws determine specific reporting requirements.

Defining Surveillance

Surveillance involves gathering information about diseases and health conditions to determine their **frequency**, distribution, and **impact** on populations.[2,6] This process is essential for detecting new or re-emerging diseases, monitoring the effectiveness of control measures, and supporting evidence-based decision-making. Frequency refers to how often a disease occurs within a specific population or timeframe.[2,3] It helps identify patterns and trends, like seasonal outbreaks or a sudden increase in cases. Distribution describes how a disease or infection spreads across differing populations, geographic areas, or demographic groups.[2,3] Understanding distribution highlights who is most affected and where resources are most needed. Impact points out the effects of a disease on individuals and communities, including health outcomes, economic costs, and burdens on the health care system.[2,3]

The steps in the public health surveillance process are Data Collection > Data Analysis > Data Interpretation > Data Dissemination > Action.[6]

Table 1. Introduction to Surveillance - Types of Public Health Surveillance

(Examples may vary by jurisdiction, and DI professionals must follow their state, tribal, local, or territorial reporting requirements).

Surveillance can be passive, active, or sentinel[2,3,5,6]

Type of Surveillance	Description	Example	Level of Resources Needed
Passive Surveillance	Relies on routine reporting by health care providers, laboratories, and other institutions.	A hospital reports all diagnosed cases of influenza to the local health department as part of standard disease reporting requirements.	Low: Depends on existing reporting mechanisms; may miss underreported cases.
Active Surveillance	Involves proactive data collection by DI professionals by contacting health care providers, reviewing records, or conducting surveys.	Public health workers contact clinics daily to collect data on new cases of foodborne illness during an outbreak investigation.	High: Requires dedicated resources and personnel for comprehensive data collection.
Sentinel Surveillance	Focuses on specific sites or groups for tracking disease trends.	A network of pediatric clinics monitors cases of respiratory syncytial virus (RSV) during the winter season to help plan hospital resources.	Moderate: Targets specific sites or groups, balancing resource use with focused data collection.

Understanding the Broader Context of Health and Disease Spread

Understanding how illness affects different communities requires attention to the conditions that influence people's daily lives and well-being. Factors such as income, education, housing stability, access to food and transportation, and safety in the home or neighborhood all can affect a person's ability to seek care, follow treatment recommendations, and protect their health.[7,8] These challenges also may contribute to the spread of infection and can vary widely across communities.[7]

DI professionals can help address these barriers by gathering data with care and sensitivity, employing strategies that minimize bias and foster respectful engagement.[5] Communicating

clearly, considering varying levels of **health literacy**, and being attentive to each person's background and experience are essential skills.[5,7] By understanding the broader context in which people live and applying ethical and professional practices in data collection and outreach, DI professionals can deliver services that are fair, responsive, and grounded in trust.[7,8]

Confidentiality and Legal Considerations

DI professionals not only protect an individual's privacy and build trust, but they also ensure compliance with the law.[5,9,10,11] With this foundation in place, it becomes possible to focus on gathering and using information effectively. Maintaining **confidentiality** and adhering to legal requirements are critical steps of surveillance and data collection. DI professionals must be aware of and comply with the following[12]:

- Confidentiality Requirements and Record Security – Confidentiality in public health refers to the professional and ethical duty to safeguard protected health information (PHI). Information such as names, addresses, and medical conditions (and much more) must be kept secure. All patient information must be stored in secure systems to which only authorized personnel have access. Confidentiality is crucial, and failure to maintain it can result in legal consequences and a loss of trust. A minimal number of staff members should have access to personal identifiers and the programs where they are stored to ensure confidentiality.[2,9-11]

- The Health Insurance Portability and Accountability Act (HIPAA) — A U.S. law that protects patient health information from being disclosed without the person's consent or knowledge.[2] In surveillance, public health workers must balance the need for disease reporting with the privacy of the person diagnosed with an infectious disease. Surveillance activities must align with HIPAA requirements, ensuring that any data collected is used and disclosed in a manner that is both appropriate and compliant with the regulations. In addition, while HIPAA safeguards patient information, exceptions are made for public health reporting.[2,9-11] When a disease poses a risk to the public, health care providers must report it in accordance with applicable laws and program policies.

- Communicable Disease Laws – Each jurisdiction has specific laws governing the reporting and management of communicable diseases. Public health workers must be aware of which diseases are reportable and under what conditions.[2,13,14] Very often, people who have been diagnosed with or exposed to an infection, and sometimes even their providers, hesitate or refuse to share valuable information or data with a DI professional. This often occurs because they interpret the HIPAA law as a blanket protection for privacy, or because trust and rapport have not been established. When speaking with providers, it is up to the DI professional to communicate the exceptions as they relate to public health disease intervention.[9,11,12] Many programs have adopted provider letters that can be sent to the clinic or hospital to explain why certain pieces of essential data can be released for public health disease intervention purposes. Building trust will be discussed in the next section.

Section 2: Data Collection

Data Collection > Data Analysis > Data Interpretation > Data Dissemination > Action.[6]

Understanding and Navigating Data Sources

By ensuring confidentiality and compliance with legal requirements, DI professionals are laying the groundwork for effective surveillance. The next step is to identify, access, and utilize various data sources to understand disease trends and health outcomes. DI professionals play a critical role in verifying and collecting this data, often using both formal and informal sources.

Formal sources include structured and official channels, such as health care providers, electronic medical records (EMRs), laboratory reports, public health registries, health department databases, vital records, and national surveys.[2,3]

For example, one of the major operating components of the U.S. Department of Health and Human Services, the Centers for Disease Control and Prevention (CDC), tracks reportable diseases and ensures consistent data gathering through the National Notifiable Diseases Surveillance System (NNDSS).[11-13]

Case definitions and notifiable conditions can be found by year by exploring the CDC's NNDSS website: https://ndc.services.cdc.gov/search-results-year/.[13]

Informal sources include less-structured sources, such as symptoms reported by the person diagnosed with an infectious disease, internet searches, community forums, interviews, word of mouth, and social media. While useful, informal sources require cross-referencing and verification.[2,9]

DI professionals should know how to efficiently access and utilize both formal and informal information systems to confirm diagnoses, monitor trends, and locate individuals who have been diagnosed or exposed to an infection. For example, combining local hospital reports with community information helps create a more complete picture. This process, known as cross-referencing, ensures data validity by comparing formal sources, such as health care records, with informal sources, such as information reported by the person diagnosed with an infectious disease.[3] It can be vital for collecting comprehensive and accurate data. Using these sources effectively also involves identifying and accessing databases and reports, building relationships with key informants and health care providers, and evaluating the reliability and validity of informal data. When discussing data verification, it's important to remember that in the case of verifying a diagnosis, for example, laboratory results are the only definitive method.[2,6] Verifying a previously treated bacterial infection, for example, does not necessarily relate to the current diagnosis. Current cases must be verified across multiple sources.

Remember, when verifying and collecting data from both formal and informal sources, always review and follow the health department's instructions to protect privacy and confidentiality. Storing documents and electronic devices in a secure area when not in use is an effective way to ensure confidentiality for the person diagnosed with an infectious disease.[10,11] Never store confidential information on personal devices, and avoid using public Wi-Fi when working with sensitive data.[10,11]

Essential Data Points to Collect

Essential data points include:

- Demographics (e.g., age, date of birth, gender, race, geographic location, vital status)
- Risk factors (e.g., sexual history, drug use history, testing history, and exposure history)
- Medical details (e.g., symptom onset, exposure history, diagnosis, treatment, previous testing history)
- Pregnancy status (Yes / No / Unknown; include estimated delivery date if applicable)
- Social and environmental history (e.g., housing, access to health care, social needs, travel, and occupational risks)
- Contact information (e.g., current address, where the individual is currently staying, phone number, social media handles, email, and alternate methods of communication, such as a friend or family member's phone number)[2,6-8,11]

By utilizing all these sources and collecting relevant data points, DI professionals ensure comprehensive and accurate surveillance efforts, leading to more informed and evidence-based interventions.[2,3,11]

Examples of essential data points to collect in different contexts include: the person's age at time of diagnosis and the location of influenza cases to track outbreak patterns; monitoring symptoms and outcomes to evaluate treatment efficacy; collecting travel history to identify sources of food- or waterborne illnesses; and assessing health care access in underserved areas to address vaccination gaps.[2,3,6]

Key data points enable public health officials to identify close contacts and vulnerable groups, allowing local health departments to implement targeted efforts to control disease transmission.[3,6,11] These essential data elements can serve as a foundation for more detailed analysis and discussion. Note that these data points vary depending on the disease, as they depend on severity, transmission mode, and infectivity.[2,3] Data also should be updated regularly. Surveillance data are constantly changing, so new data must reflect current conditions and be documented accordingly.[3,6] As previously mentioned, surveillance involves the ongoing collection, analysis, and interpretation of health-related data. Data should be reviewed and updated regularly to ensure effective analysis, interpretation, and action.[3,6,11]

A key method of gathering these data points is through comprehensive interviews with individuals who have been diagnosed with or exposed to infectious diseases. Interviews offer an opportunity to verify information and gather additional details directly from the affected individuals, ensuring the accuracy and completeness of surveillance data.[5,9,11]

Data Collection Through Interviews

Data Collection > Data Analysis > Data Interpretation > Data Dissemination > Action.[6]

Comprehensive interviews are a vital element of surveillance, allowing DI professionals to collect accurate and detailed information directly from individuals diagnosed with or exposed to infectious diseases. These allow for data verification and give space for the individual to expand upon this information, ensuring that surveillance efforts are thorough, accurate, and actionable. They also play a role in identifying modes of transmission, risk factors, behaviors, and opportunities for risk reduction.[2,5,6,11] While many of these topics are discussed in Chapter 2: Interviewing and Case Management, they are summarized here to highlight the central role of interviews in effective data collection.

Explaining the Importance of Collecting Information

To ensure that interviews are both effective and respectful, it is essential to begin by clearly outlining the purpose and significance of the data being collected. This transparency helps foster trust and cooperation between the health professional and the person being interviewed.[2,5,9,11] During interviews, it is essential to emphasize the broader public health mission behind this data collection. Individuals diagnosed with or exposed to an infection should understand how their information contributes to preventing disease spread, protecting communities, and improving their health.[2,5,6] Again, transparency is key here; clearly explain that personal information is being collected for tracking disease outbreaks, assessing risk factors, and providing additional resources and information on taking care of their health.[2,5,11]

DI professionals also should introduce themselves and identify their role within public health, once they have verified that they are speaking to the correct person.[11] Verification is an important step here. When beginning to speak with someone over the phone, via a video call, or face to face, confirm the individual's demographic information to ensure you are talking to the correct person.[11] This typically includes the date of birth, the date of a recent appointment, the address, or the phone number to ensure the information the DI professional is asking about is information only the individual would be aware of.[5,9,11]

Once the importance of the interview is established, the next step is to focus on communication strategies that place the person at the center of the interaction. While the goal of this chapter assumes that the DI professional is conducting an interview, in practice, professionals often begin with no guarantee that the individual will engage with them at all.[11] It’s important to note that participation in partner services, contact tracing, or disease intervention is entirely voluntary. Therefore, empathy, respect, active listening, and person-centered communication are not only helpful but also essential tools for effective engagement.[11] The individual’s cooperation is entirely voluntary. Building rapport through empathy, respect, active listening, using open-ended questions, and overall person-centered communication are key to gathering accurate and detailed information.[5,9,11] These strategies not only facilitate the collection of accurate and detailed information but also serve as the foundation for encouraging the individual to remain in the conversation in the first place.

Communication and Interviewing Techniques

Interviewing and communication techniques, such as verbal and nonverbal person-centered communication and **motivational interviewing**, are vital to collecting surveillance data. These techniques are discussed further in Chapter 2, "Interviewing and Case Management." By utilizing all the person-centered techniques at their disposal, DI professionals can build stronger relationships, reduce resistance, and promote active engagement during interviews to gather essential data.[11,15]

These communication techniques serve as the foundation for ensuring that individuals diagnosed with or exposed to an infection not only feel heard but also understand the critical public health information being shared with them. The next element is addressing health literacy and numeracy to ensure that people can comprehend and act on the information and recommendations provided.

Health Literacy and Numeracy – Brief Introduction to Culturally and Linguistically Appropriate Services (CLAS)

Culturally and linguistically appropriate services (CLAS) standards promote attention to the unique needs of the populations served by ensuring public health services are respectful of and responsive to person-centered and linguistic needs.[16] Cultural sensitivity **(person-centered approach)** is respecting an individual's values and beliefs during interactions.[16] **Linguistic accessibility** refers to providing materials in the person's preferred language and offering interpreter services if necessary.[16] Avoiding the use of jargon (terminology that only a co-worker or someone else in the public health field would understand) and mirroring the terminology used by the individual who has been diagnosed with or exposed to an infection is key to continuously building rapport. Plain language is always preferred, as using medical terminology can be confusing and inefficient at times.[2,7,8,15,16]

Health literacy refers to an individual's ability to obtain, understand, and use health information to make informed decisions about their health.[2] **Health numeracy** is the ability to interpret and apply numerical concepts regarding health, such as understanding medication instructions, time intervals, probability of side effects, or lab results.[2] Both of these are central to the goals of CLAS, as they directly influence whether individuals can understand and act on the health information being shared with them.[16] For example, a person who cannot read a prescription label or who misinterprets a medication schedule is at higher risk for complications. Supporting health literacy and numeracy empowers people to take control of their health, engage more fully in their care, and make safer, more informed decisions.[2,7,8,16] This is all relevant when discussing sexual health, diagnoses, partners, and treatment, because they directly affect whether individuals can understand, process, and act on this information.[11]

Why Health Literacy Matters in Disease Intervention

Many people may not be familiar with terms like "asymptomatic," "incubation period," or even the names of any infections.[11] Without health literacy, individuals may not understand what their diagnosis means, how it affects their health, or the risks of transmission.[2,16] Without adequate health literacy, individuals may downplay or misunderstand the severity or seriousness of their illness. Whether it is a sexually transmitted infection (STI) or a foodborne illness like Salmonella, individuals need to understand what their diagnosis

means, what symptoms to expect, how it is transmitted, and how long they might be contagious.[11] Explaining the need to notify sexual partners, family members, or other people who were exposed through shared meals, water, or proximity is crucial.[2] A person with hepatitis A, for example, may need to inform household contacts.[2]

Health literacy helps people understand the reasons for public health notifications and how their cooperation supports their health, the health of their friends or loved ones, and community health.[2,7,16] Individuals need to understand how to manage their illness at home, for example, through hydration, rest, or isolation, as well as when and how often to take medication and when to seek follow-up care. Low health literacy increases the risk of misunderstanding instructions, complications, re-infection, preventable transmission, or discontinuing treatment prematurely.[2,7,16] Finally, individuals must fully understand their rights during these conversations, the role of the DI professional, and how their information will be used or protected. This is the only way to engage ethically with individuals.[16]

DI professionals often explain time-sensitive treatment regimens, such as the need to continue taking doxycycline at 100 mg orally two times a day for seven days for chlamydia or the need to continue taking acyclovir at 400 mg three times a day for seven to 10 days for genital herpes.[2,11] Misunderstanding numbers can lead to skipped doses or overdose. Regardless of the infection, individuals need to follow specific dosing instructions. Misunderstanding numbers, such as the need to take medication every eight hours, can lead to ineffective treatment or the development of antibiotic resistance. In both STI and non-STI contexts, public health workers often recommend testing at specific intervals. For example, after a waterborne outbreak, residents may be asked to test water samples weekly or monitor symptoms for a set number of days.[2] In addition, explaining isolation timelines, symptom monitoring, or criteria for someone to return to their place of work requires numerical comprehension.[2] For example, understanding the statement, *"You may return 48 hours after your last symptom."*

Discussions around risk reduction also require consideration of health literacy and numeracy. Discussing concepts like transmission, effectiveness of condoms or other forms of contraception, or the window period for testing requires numeracy.[2] For example, explaining to an individual that they may test negative today, but that does not mean they are not infected, so they need to take the test again in 10 days. Or the effectiveness of hand washing, which reduces the risk by 40%.[17] Numeracy also matters when comparing options. If multiple treatment or prevention strategies are presented to an individual, numeracy helps them weigh the benefits and risks.[2]

In disease intervention work, health literacy and numeracy, alongside CLAS, are essential.[2,7,8,15,16] DI professionals must ensure that individuals understand what their diagnosis means, how to protect others, and how to follow through with treatment or prevention measures. Without this clear communication tailored to an individual's literacy, numeracy, culture, and linguistics, even the most accurate information may fail to result in the correct public health action.

Once data have been collected through comprehensive interviews and other surveillance methods, they must be carefully documented and strategically used to inform public health initiatives. Accurate and prompt documentation ensures that the information gathered can be leveraged to make evidence-based decisions, track disease patterns, and implement

targeted interventions. This is when the next two stages of public health surveillance come into play.

Section 3: Data Documentation and Usage

Data Collection **> Data Analysis >** Data Interpretation > Data Dissemination > Action.[6]

This section reviews the processes and principles of documenting data, emphasizing the importance of accuracy and timeliness, as well as the ethical implications of data handling. It also examines how documented data, through analysis, drives public health decision-making, linking back to the first two tasks to underscore the foundational role of essential data points in achieving public health objectives.[11]

The Impact of Data Collection

The data collected during surveillance and interviews extends beyond individual cases, shaping public health policies and interventions at a population level. When properly documented and analyzed, this data informs decision-making, supports disease intervention efforts, and helps ensure that responses are inclusive and tailored to the needs of communities disproportionately affected by the disease.[8,11] When DI professionals and authorities have sufficient and reliable data, they can identify trends, allocate resources effectively, and implement targeted interventions and outreach efforts.[11] Disease control efforts are supported by improvements in contact tracing, outbreak management, and assessment of interventions.[6,9,11]

Finally, data can highlight differences in health outcomes and access across and within populations, helping to guide initiatives that remove barriers and expand services for geographically or situationally isolated populations.[8,11] This data is essential to the planning, implementation, and evaluation of public health practice. Furthermore, data should be reviewed regularly and updated to ensure accuracy. Because surveillance data are in a state of flux, they are changing constantly.[2,11] Therefore, new data must be relevant to the change that is happening and should be documented as such. Conversely, inaccurate or incomplete data can have significant consequences.

Delayed Outbreak Detection

Failing to collect accurate data or omitting critical information can lead to delayed recognition of disease outbreaks.[2,10] For example, missing exposure histories or incomplete demographic details might obscure patterns that signal an emerging cluster of infections. These delays reduce the effectiveness of containment strategies, allowing diseases to spread further.

Inadequate Resource Allocation

Incomplete or inaccurate data can skew public health assessments, leading to misallocated resources.[2,11] For instance, underreporting of cases in certain areas may result in insufficient vaccine distribution, while other areas receive a surplus they do not require. These errors exacerbate disparities in health care access and outcomes.

Missed Opportunities for Prevention

Without comprehensive documentation, opportunities to identify and address key risk factors may be lost. For example, neglecting to document social and economic conditions that contribute to health, such as housing instability or limited access to health care, could hinder the implementation of tailored prevention programs.[7,11] In addition, something as simple as misspelling an individual's name has consequences. This can lead to difficulties in locating their medical records and public health records.

Inability to Measure Intervention Success

Data serves as the foundation for evaluating the effectiveness of public health interventions. Incomplete data prevent accurate assessments, leaving gaps in understanding what strategies work and which need improvement.[2,6]

Erosion of Public Trust

Repeated errors or inconsistencies in public health data can erode trust in health systems. Public skepticism can undermine compliance with recommendations, making it harder to control disease outbreaks and promote preventive measures. This erosion of public trust was observed during the coronavirus disease (COVID-19) pandemic.[2,11]

Addressing Missed Opportunities

To minimize missed opportunities, DI professionals must prioritize the accuracy, completeness, and timeliness of their data collection efforts.[9,11] Quality assurance processes should be completed, with regular reviews of data to ensure consistency and accuracy and to identify and address gaps promptly. Comprehensive training is another crucial component in addressing missed opportunities. DI professionals must be equipped with the necessary tools and skills to gather, verify, and document data effectively so that details are not overlooked.[9,11] By addressing missed opportunities, public health workers strengthen the reliability of surveillance systems and ensure that the collected data serves its ultimate purpose – protecting public health and improving health outcomes. It is essential to ensure the completeness of all data points collected, including demographic details, clinical symptoms, and exposure histories.[3] All of this data are used in the next step of public health surveillance, which is interpretation.[3] However, the need to collect complete and accurate data should not serve as a barrier to conducting person-centered interviews that prioritize the person's needs and concerns.[9,11]

It is crucial to collect and document data to ensure careful, accurate data analysis. During analysis, DI professionals must decide who will analyze the data, what methodology to use, and how frequently the data will be analyzed. Data can be analyzed by place, time, or person. This means that data can be collectively viewed based on geographic locations, time over days, weeks, or years, or demographic patterns by age, sex, and race, all connected to infection within a population.

Section 4: Interpreting and Managing Data for Public Health Response

Data Collection > Data Analysis **> Data Interpretation** > **Data Dissemination > Action**.[6]

Once essential data points have been collected and documented, DI professionals must focus on interpreting and managing this information to drive public health action. Data interpretation is the third step in public health surveillance.[3,6] Data analysis and interpretation typically are combined. DI professionals analyze and interpret data to identify priorities. Collected data is reviewed for trends, outliers, and clusters of disease or infection.[3,11] This allows for the prioritization of resources, whether monetary or less concrete, like time, effort, labor, and energy. Resources should be allocated toward high-incidence areas or populations at increased risk of infection.

Similar to data collection, data accuracy must be validated across multiple sources, and any discrepancies should be resolved. Identified gaps or inconsistent data should be reconciled before reporting. For example, when reviewing data for an outbreak of an emerging pathogen, it is essential to have accurate addresses for people who are diagnosed with an infectious disease to describe the distribution of the disease in the population accurately.[2,10] Findings then can be translated into actionable steps by preparing concise, tailored reports for partner agencies, affected communities, local health departments, policymakers, groups at the highest risk, and community leaders and members.[3] Visualization tools like charts, tables, and heat maps are effective ways to present and communicate complex data clearly.[3] This element of public health surveillance requires plain language for the priority population.[16] Data then can be used to plan and implement targeted intervention plans, allocate resources, and adapt public health responses to current and emerging needs. DI professionals are responsible for ensuring that the data translate into meaningful action. Without action, the collected data cannot serve its purpose.

Identifying and Communicating Emerging Trends

Accurate and up-to-date documentation is crucial for maintaining reliable surveillance data and ensuring that disease trends are accurately recorded. Once this documentation is complete, the focus can shift to identifying patterns within the collected data to detect emerging concerns. Recognizing investigation trends and notifying partner agencies and affected communities about unusual or concerning data enable a timely and coordinated response.[1,2,11]

This section of the chapter explores strategies for analyzing trends, detecting anomalies, and effectively communicating findings to partner services and other infectious disease professionals to enhance public health investigation, notification, and mitigation.[1,3,11] Further, for infectious disease professionals and partner service health professionals, recognizing patterns in disease occurrence is critical for outbreak prevention and response. Surveillance data is not only useful for tracking known infections, but also important for detecting unusual or unexpected patterns that could signify an emerging threat.[5,11]

The key objectives within this chapter are to establish baseline surveillance trends, define what is considered “normal” for a disease, recognize deviations, and identify and respond to unexpected increases in cases, unusual demographic shifts, or changes in disease transmission.[9-11] Equally important is notifying the appropriate public health authorities, health care providers, and community collaborators about these emerging trends.[9-11]

Finally, these data can be used to guide interventions and guidelines that minimize transmission and prevent further outbreaks.[9-11]

To begin, a baseline surveillance trend is the expected level of disease cases within a population over time.[3,11] It serves as a reference point that allows DI professionals to detect when something is off track. There are many factors to consider in establishing baseline trends.

Historical data can be reviewed through older disease surveillance reports to help determine seasonal patterns and fluctuations in case numbers. For example, flu cases tend to peak in the winter, while Lyme disease cases increase during the summer months.[2] Why does this matter? By recognizing expected seasonal patterns, DI professionals can better identify deviations that may indicate an outbreak.[2] Since the flu naturally increases in the winter, a rise in flu cases is expected.[2] However, if data show a spike in flu in the summer, this will warrant investigation. In addition, since we know that Lyme disease is more prevalent in the summer due to increased tick activity, recognizing this pattern enables us to plan targeted education for communities about prevention strategies.[2]

Demographic factors such as age, gender, race, and sexual orientation can also affect disease trends.[1,3] For example, current data show that gonorrhea rates are highest among young adults aged 15-24.[18] Why is this important? Knowing who is most vulnerable or most affected allows public health resources to be directed toward these groups.[7,8] Recognizing demographic patterns helps in targeted education and better access to prevention measures.[3]

Geographic distribution involves understanding and mapping the locations of cases to identify areas of high risk. Some diseases are more common in specific regions due to climate, population density, or access to health care.[2] Monitoring geographic patterns helps pinpoint where outbreaks are more likely and supports targeted interventions.[2] For example, in the U.S., dengue fever is more common in Florida, Texas, and Hawaii because their warm climates support mosquito populations.[19] This data also can help identify travel-related cases or those imported from other countries. Another example is malaria, which isn't **endemic** to certain areas but can occur due to travel, migration, or global trade.[19] Malaria cases in the U.S. usually are found in travelers returning from regions like sub-Saharan Africa, Central and South America, and South Asia, where the disease is endemic.[19]

Modes of transmission are also important to consider, as understanding how a disease spreads helps track changes in its transmission.[2] For example, if we were to see a shift in HIV transmission from injection drug use to sexual transmission, it may indicate evolving risk factors.

The kind of surveillance used also should be considered; these were discussed more in-depth in previous sections (i.e., passive, active, sentinel).[2,3,5,6]

National Notifiable Disease Surveillance System

The National Notifiable Diseases Surveillance System (NNDSS), briefly discussed earlier, collects data on infectious diseases from public health authorities across the United States.[13,14] It is a key component of our public health infrastructure. This system has standardized the collection, analysis, and dissemination of data on notifiable diseases across states and territories. It uses specific case definitions and standardized reporting procedures.[11,13,14] State and local health departments are responsible for reporting cases to the CDC using the NNDSS, which then compiles and publishes this data. Furthermore, it ensures consistency in data reporting, allows for timely detection of outbreaks, and supports evidence-based public health decisions.[1,13,14] Electronic reporting, case notification, data management, and analysis can provide timely access to all information on each case notification.[14]

Evaluating Surveillance Performance

Understanding the performance of a surveillance system is vital to ensure data quality. These performance indicators include timeliness, sensitivity, specificity, representativeness, and data quality[1,2]:

- Timeliness – the speed between the occurrence of a case and its reporting. If data are reported in near real-time, for example, a rapid rise in reported flu cases can trigger an immediate alert.[3,11]
- Sensitivity – the ability of the system to identify cases correctly. For example, **active surveillance** methods can increase sensitivity by identifying cases that might be missed through routine reporting.[3,11]
- Specificity – the ability of the system to correctly exclude non-cases. This is why accurate case definitions are so important; they help ensure that only true cases of a disease are reported.[1,3,11]
- Representativeness – the occurrence of a health event over time and its distribution in the population by place and by person. It is assessed by comparing reported events to all actual events.[3,11]
- Quality of data – an important part of representativeness. The completeness and accuracy of reported information are critical as missing data on an individual's age or location can obstruct the identification of at-risk populations.[3,11]

Enhancing Surveillance Systems

Enhancing surveillance systems ensures that the data collected are reliable, timely, and actionable. Some strategies were discussed earlier in the chapter, including combining multiple data sources, continuous quality improvement, and using active and **sentinel surveillance**.[1,2,11] Combining data from multiple resources and records can help create a more complete picture; combining laboratory confirmation with a hospital report and a case report can improve accuracy.[1-3,11]

Conducting Case Surveillance

Conducting case surveillance involves collecting, analyzing, and interpreting data on individual cases to inform decision-making. The CDC provides comprehensive guidelines for this process, and the best practices include[1-3,6,9,11]:

- Standardized case definitions that ensure all cases are reported using uniform criteria, which improves comparability across regions.[11,13] These allow for DI professionals to classify and count cases consistently. These case definitions for current and historical conditions can be found on the CDC's website for the NNDSS (https://ndc.services.cdc.gov/).[13]
    - The case definition of a health-related event can include clinical manifestations (i.e., symptoms), laboratory results, epidemiologic information (e.g., person, place, and time), specified behaviors, and case classifications (e.g., confirmed, probable, or suspected).[2,3,11]
- Forms and electronic systems also are standardized to ensure that essential data are recorded appropriately.[11]
- Communication between laboratories and health care providers to public health authorities should be prompt.[11]
- Verification, or cross-checking reported cases with laboratory results or other data sources to confirm accuracy, should be emphasized.[2,3,11]

Identifying and Communicating Unusual Trends

Once baseline trends are established, monitoring for deviations from the "norm" that could indicate emerging health threats is the next step.[1-3,6,9-11] These deviations are linked to the baseline patterns discussed earlier. There are many indicators to watch for. The first is a sudden rise in cases that go beyond the established baseline.[11] Demographic shifts are another example; for instance, an unexpected increase in an infection within a specific age group can suggest new risk factors or changes in existing risk factors.[1,11] Geographic clusters are another sign; these are areas where cases are concentrated in a specific location, indicating an outbreak.[9,11] Changes in clinical presentation are also important; variations in symptoms that differ from traditional or known presentations are important.[9-11] Finally, changes in baseline trends could signal the emergence of pathogens or resistant strains that do not respond to standard treatments or clinical guidelines.[9-11] Unusual trends should be communicated through established jurisdictional reporting pathways to ensure timely public health action.

Communication Strategies

Prompt communication strategies are vital for a coordinated response.[1,2,11] Health alerts and advisories, direct outreach, and public announcements are just a few examples. Health alerts can be issued through established networks, such as the CDC's Health Alert Network (HAN) or the WHO's Early Warning, Alert, and Response System (EWARS).[1,2,9-11] Direct outreach (i.e., engaging with health care providers and community organizations to share updates and recommendations) is another key strategy.[2,11] Public announcements also

have proven successful, utilizing media and social media platforms to inform the public about guidance and preventive measures.[2,11]

Role of Emerging Infectious Diseases Research

The *Emerging Infectious Diseases* journal is a critical resource that publishes research on new and re-emerging infections.[20] It serves as a real-time source for scientific findings, case studies, and surveillance reports that inform public health strategies by providing evidence of these emerging trends.[1,2,9-11] It highlights the evolution of pathogens and patterns of resistance, while also offering insights into successful outbreak interventions that can be adapted at the local levels (https://wwwnc.cdc.gov/eid/).[20]

Conclusion

Surveillance and data collection begin with a foundation in public health and epidemiology. Understanding how diseases spread and who they affect helps us determine what information to collect, where to find it, and how to respond effectively.[1-3] Whether using passive, active, or sentinel surveillance, DI professionals must understand not just what is happening, but the why and how behind it all. These processes are only effective when paired with ethical standards, legal awareness, and a people-centered approach.[11] Throughout the surveillance process, DI professionals navigate both formal and informal sources, from lab reports and case registries to community conversations and interviews. Knowing what data to prioritize, how to verify it, and how to maintain confidentiality in compliance with laws like HIPAA is critical.[2,9-11]

Surveillance and data collection are essential parts of public health work. They help DI professionals track diseases, find patterns, and respond quickly to protect communities.[2,3,11] Whether it is an STI, a foodborne, waterborne, or vector illness, or identification of an emerging threat, the role of the DI professional is to gather accurate information, understand what is happening, and help guide those next steps. The work of DI professionals is more than just collecting data; it is truly about *how* we collect the data. Using empathy, respect, and person-centered communication helps build trust, making it more likely that someone will talk to us, share information, and stay engaged.[1-3,11,15,16] Without that trust, key data elements cannot be collected or utilized.

Throughout this chapter, we explored how to verify and collect information from various sources, the importance of interviewing with empathy, the role of a person-centered approach, and health literacy and numeracy in public health communication. We also discussed how to document, interpret, and use that data responsibly to guide timely interventions and prevent further spread of infections. Building rapport, using clear and respectful language, and remaining aware of the lived experience of individuals ensures that surveillance efforts are accurate, complete, and fair. Accurate and timely documentation supports all of this work. It also enables DI professionals to identify trends, detect outbreaks, and notify the appropriate individuals when action is required. Furthermore, it enhances public health efforts by helping identify variations in health outcomes and guiding responses that are community-centered and tailored to local conditions. When public health data systems are strong, they can help to plan better, act faster, and adapt to any emerging threats or changes.

In the end, surveillance is not just about numbers and cases; it is about the people whom public health serves and cares for, the ones providing the information, the ones interpreting it, and the communities we all live in. Every step of the process matters, from the first questions asked in an interview to the final report that guides public health action. The better DI professionals are at listening, documenting, and connecting, the more effective they will be able at protecting health, preventing complications, and saving lives.

Chapter 4 Keywords

Active surveillance

Change talk

Confidentiality

Cultural (person-centered) sensitivity

Distribution

Epidemiology

Formal sources

Frequency

Health literacy

Health numeracy

Impact

Informal sources

Linguistic accessibility

Motivational interviewing

Passive surveillance

Sentinel surveillance

Surveillance

Sustain talk

Chapter 4 Practice Questions

1. Which of the following is an essential data point for surveillance data collection?

    a. HIPAA guidelines

    b. Demographic information

    c. Provider documentation

    Answer: b

    Rationale: Demographics (such as age, sex, race/ethnicity, and residence) are essential for surveillance systems to track disease trends, identify at-risk populations, and guide public health action.

2. Why is it important to collect essential data points during an interview with the person diagnosed with an infectious disease?

    a. Essential data points are critical in building rapport and understanding.

    b. Essential data points remain consistent regardless of disease.

    c. Essential data points allow for the timely detection of health threats.

    Answer: c

    Rationale: Collecting consistent core data enables quick recognition of unusual patterns, clusters, or outbreaks, ensuring timely public health response.

3. How does a DI professional verify and collect important surveillance data when interviewing people diagnosed with or identified as possibly exposed to an infectious disease?

    a. Review the importance of collecting data.

    b. Use person-centric methods to extract essential demographic information.

    c. Share information about the public health authorities' role in data collection.

    Answer: b.

    Rationale: Using respectful, person-centered interviewing techniques ensures accurate collection of critical demographic and epidemiological data while maintaining rapport and trust.

4. What is a potential consequence of inaccurate or incomplete documentation?

    a. A delay in detecting an outbreak

    b. A slowing of computer programs

    c. An improved estimation of disease burden

    Answer: a.

    Rationale: If data are incomplete or incorrect, public health officials may miss warning signs of disease spread, leading to slower responses and increased transmission.

5. Why are the protection of privacy for the person diagnosed with the infectious disease, data confidentiality, and system security essential to maintaining the credibility of any surveillance system?

    a. To protect against inappropriate use or release of that data

    b. To gather more information from informal sources

    c. To expedite the data collection process

    Answer: a.

    Rationale: Public trust in surveillance systems depends on strict protection of personal health data. Breaches can undermine participation and compromise system effectiveness.

6. Which of the following practices are important for ensuring accurate and complete surveillance data when documenting?

    a. Uploading negative test results and excluding positive test results

    b. Updating documentation once a new outbreak is declared

    c. Regularly reviewing and updating the latest medical data relevant to infectious diseases

    Answer: c.

    Rationale: Ongoing review and updates ensure data accuracy and consistency, helping public health agencies maintain reliable surveillance records.

7. What is the primary purpose of conducting baseline surveillance?

    a) To determine the effectiveness of surveillance procedures

    b) To collect and interpret health data

    c) To develop a starting point for disease monitoring

    Answer: c.

    Rationale: Baseline surveillance establishes the expected levels of disease occurrence, which allows health departments to detect unusual increases or decreases in disease activity.

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Chapter 5 Collaboration

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Introduction

The roles and responsibilities of disease intervention (DI) professionals are fundamentally collaborative in nature. Individuals serving as DI professionals are tasked with educating, informing, and communicating vital public health information to both people diagnosed with or exposed to an infectious disease and service providers within their community. At the foundation of this collaborative work are public health principles, including meeting the needs of the populations served, respectful engagement, awareness of different perspectives, people-centered communication, and services tailored to individual needs, which support the delivery of consistent, high-quality care across all populations.[1] This chapter will discuss key considerations for conducting collaborative work so that DI professionals may leverage their expertise, as well as the institutional knowledge of community partners, to provide the appropriate services to people diagnosed with or exposed to an infectious disease. This chapter will address the following tasks[2]:

- Task 1: Collaborate with health care and other service providers (e.g., correctional facilities, schools, health departments) to ensure adequate care.
- Task 2: Educate health care providers (e.g., clinicians, laboratorians) on jurisdiction requirements or reporting compliance.
- Task 3: Serve as a local resource to relay public health information and CDC recommendations to the community and providers (e.g., correctional facilities, schools, health departments, medical personnel).
- Task 4: Participate in collaborative case review to identify and discuss opportunities for enhancing case management strategies and intervention.
- Task 5: Adhere to public health principles during collaboration.

Domain Content

Section 1: Application of Public Health Principles and Ethics During Collaboration

The process of collaboration in the field of public health requires particular attention to the application of, and adherence to, public health principles and **ethics**. Adherence to these principles and ethics ensures access to respectful, quality care for people diagnosed with or exposed to an infectious disease, as well as for their communities. This section will explore public health principles, including health literacy, respectful engagement, awareness of different perspectives, and meeting the needs of the populations served, which should be integrated into the work of a DI professional when collaborating with community partners.

Adherence to Public Health Principles

The leading set of guiding principles on ethics for the field of public health is outlined in the Public Health Leadership Society's report on "Principles of the Ethical Practice of Public Health." This report contains 12 ethical principles for public health that include, but are not limited to[1]:

- Partnerships to build trust and effectiveness
- Professional competence among public health practitioners
- Timeliness of public health services
- Input from communities in public health interventions or policies
- Informed consent from people diagnosed with or exposed to an infectious disease and communities
- Awareness of different perspectives
- Social and economic conditions contributing to health
- Individual rights and **confidentiality** of health information

To complement the Public Health Leadership Society's *Principles of the Ethical Practice of Public Health*, DI professionals can also ground their collaborative work in APHA's Issue Brief *Public Health Code of Ethics* which outlines a set of professional standards and expectations for public health practitioners. Together, these frameworks establish national expectations for ethical decision-making in public health settings.

These guiding principles help public health practitioners ensure that public health services, policies, and programs remain ethical and respectful on an individual, community, and environmental level. These principles should be adhered to and communicated throughout collaboration with both health and nonhealth partners.

Ethical and Professional Conduct

When collaborating with the affected community, DI professionals should be mindful of their professional conduct to build trust among those receiving services, providers, and external partners.[3] Expectations for DI professionals' conduct often are set by their employer. These expectations may include demonstrating ethical and professional conduct, providing person-centered, non-judgmental services, and maintaining confidentiality.[4] In addition to employer expectations, DI professionals should ensure all program activities comply with federal, state, tribal, local, and territorial laws, statutes, and regulations.

Health Literacy

Health literacy, as defined by the CDC, is a public health principle that is separated into personal health literacy and organizational health literacy. Personal health literacy refers to the extent to which an *individual* can find, understand, and utilize information and services to make informed decisions about their own health.[5] Organizational health literacy refers to the degree to which *organizations* empower individuals to find, understand, and use information and services to inform their own health decisions.[5] Individuals with limited resources face greater challenges with health literacy, underscoring the importance of improving communication and access across unique populations.[6]

Health literacy best practices can be interwoven into collaboration efforts by[7]:

- Using plain language
- Using an individual's preferred language and communication channels
- Using culturally (person-centered) and linguistically appropriate language (as referenced in CLAS)

Instituting health literacy best practices when collaborating with health care and other service providers can result in improved health outcomes and **self-efficacy** among people diagnosed with or exposed to an infectious disease. According to the American Psychological Association, self-efficacy refers to an individual's confidence in their ability to make decisions regarding health behaviors and outcomes.[8] Health literacy practices should follow jurisdictional communication requirements and CDC Clear Communication Guidelines, including the use of plain language, accessible formats, and linguistically appropriate materials for the intended audience.

Respectful and Adaptive Communication

DI professionals benefit from developing the skills and awareness needed to engage effectively with individuals from different backgrounds. While technical knowledge and professional training provide a foundation, individuals cannot become versed in all aspects of the person-centered context of people diagnosed with or exposed to an infectious disease. Still, they can, through a lifelong commitment, learn to exercise humility and self-reflection when working with communities.[9] This approach emphasizes respectful communication, flexibility, and attentiveness to the unique needs of each person.[10] By practicing these principles, professionals can strengthen trust, build more effective

relationships, and deliver services that are responsive and appropriate across a range of settings and communities.

Basic Epidemiology

The CDC defines **epidemiology** as "the study of disease and other health outcomes, their occurrence and causes in a population, and the application of this study to control health problems."[11] Epidemiology is a core science in the public health field that guides the work of DI professionals. In collaborative settings, DI professionals may be tasked with understanding, communicating, and adhering to basic epidemiological practices.[11]

Economic and Social Factors Contributing to Health

DI professionals may observe that individual differences in education or income can be associated with different experiences in accessing care or maintaining consistent health practices. Understanding these factors can help DI professionals plan and provide services that are practical and responsive to the needs of the communities they serve.

By collaborating with organizations focused on food, housing, employment, and education, DI professionals can support improved public health outcomes through coordinated outreach and service delivery.

Confidentiality

A core principle of public health ethics is the protection of individual rights and confidentiality. Confidentiality in public health refers to the professional and ethical duty to safeguard protected health information (PHI), including medical records, by ensuring its security and **privacy**.[12,13] This principle governs how sensitive health information is stored, accessed, and shared. The Privacy Rule of the **Health Insurance Portability and Accountability Act (HIPAA)** states that PHI cannot be used or disclosed without the written consent of the person.[14] Exceptions to this may include mandatory public health reporting. For example, DI professionals can communicate relevant health-related information directly with health care providers involved in the person's care. DI professionals should be knowledgeable of any additional laws, regulations, or statutes outlined by their state or local government regarding the privacy and confidentiality of PHI.

When PHI must be shared, DI professionals should follow local protocols for the release of information, which usually directs them to release the minimum information necessary to accomplish the public health goal. Confidentiality expectations may vary in state, tribal, local, and territorial contexts

Maintaining confidentiality via electronic, paper, or oral communication is integral to safeguarding the privacy of individuals and communities, as the collaborative nature of DI spans various organizations, providers, and non-health sector partners.

Section 2: Provider Education and Training

A primary responsibility of DI professionals in collaborative settings includes providing education to health care providers and community partners. This education may require providing training on jurisdictional requirements, reporting compliance measures, and relaying public health recommendations or information to ensure effective implementation. This section will cover the necessary information that DI professionals should communicate to serve as a go-to public health resource, equipping partners to better serve their communities.

Educating Health Care Providers

Health care providers, such as clinicians and laboratorians, may use DI professionals' expertise and knowledge to become familiar with certain requirements or compliance measures set forth by their jurisdiction. These may include reporting notifiable diseases, case report documentation, communicating with people diagnosed with or exposed to an infectious disease, and disease trends currently occurring in their jurisdiction.[15]

Notifiable Diseases, Laws, Statutes, HIPAA

The CDC classifies notifiable diseases as diseases that, when diagnosed, require health providers to report the case to state and/or local public health officials due to the diseases' contagiousness, severity, or frequency.[16] DI professionals may serve as educators to providers about treatment recommendations and preventive measures for notifiable diseases, such as the use of pre-exposure prophylaxis (PrEP), post-exposure prophylaxis (PEP), or doxycycline. The health provider's state will determine factors for mandatory reporting, including the timeframe for reporting, the agencies to report to, and the specific conditions that must be reported.[15] For example, in Delaware, notifiable disease reports may be submitted for diseases such as chlamydia or gonorrhea, and the report must include information such as the person's name, race, birth date, and sex.[17] In Georgia, notifiable disease reports are submitted using the State Electronic Notifiable Disease Surveillance System (SendSS).[18] DI professionals should be knowledgeable of their jurisdiction's reporting requirements regarding notifiable diseases and clearly communicate these expectations to community partners.

Please refer to the section above on confidentiality for additional information regarding HIPAA.

Area Case Report Documents and Submission Requirements

STD prevention programs should encourage laboratories to electronically capture and report all essential data variables for case reporting.[4] Case report types can include laboratory reports, health care provider reports, medical records (e.g., electronic health records or EHR), public health clinic databases, and any prior DI or interview records. [19] The CDC website contains helpful resources for case reporting, such as comprehensive interview record templates and health alert templates. **Health alerts** are reports for health departments to notify local health care providers and public health entities of an increase in a disease within their jurisdiction.[20] While health alerts are public notifications on disease trends, case reports are confidential surveillance tools to record an individual's health. Common information included in case reports addresses a person's diagnosis, symptoms a

person may be experiencing, treatment a person is receiving, their demographic information, the person's contact information, and their sexual and/or social history.[21] Public health departments are then responsible for reporting de-identified case reporting data on national notifiable diseases to the CDC.

Communication Skills and Strategies

When communicating across organizations, agencies, and networks, it is best practice to identify and use your intended audience's preferred communication channel to share public health information. EHRs are a primary tool for communication between providers.[7] However, nonhealth sector partners may use other forms of communication and reporting.

Communication with people who receive services, health care providers, and community partners also requires the use of techniques such as active listening or conflict management and resolution.[22] Active listening is a listening technique used to strengthen the relationship between the provider and the person diagnosed with an infectious disease through deeper, conscious engagement and communication [23] DI professionals can further support health care providers by providing education on communication techniques, such as:

- Communicating with people who receive services and with the community using person-first and destigmatizing language (e.g., using the term "people living with HIV" instead of "people infected with HIV").[24]
- Using plain language and speaking with a clear, slow voice helps people who receive services and community members better understand the information being shared with them.[5]
- Understanding that a person's communication preferences may vary based upon population factors such as income, race/ethnicity, and education.[25]

Disease Trends

Providers seeking information on disease surveillance trends occurring within their jurisdiction can consult with their local or state epidemiologist. DI professionals can support provider education by facilitating conversations between these two partners and supplying relevant health department-published data reports on disease outbreaks to providers and external partners.

Section 3: Serving as a Local Resource for Providers and the Community

State, tribal, local, and territorial health departments are responsible for serving as local resources for public health information. As a result, these health programs often assume the role of communicating health recommendations and guidance from the CDC to their communities and health care providers. This section provides information on key resources, organizations, and special populations that DI professionals may interact with when serving as a local resource for public health.

Key Resources

Educational resource packets containing fact sheets, informational posters, and guiding documents can be helpful tools in communicating public health recommendations and guidelines to providers and community members. Items to consider including in these packets are resources such as testing and treatment guidelines, disease-specific brochures, recent epidemiologic publications, and copies of reporting regulations. For example, for STIs, informational packets might include things like the CDC Sexually Transmitted Infection (STI) Treatment Guidelines, a resource designed to provide evidence-based prevention, diagnostic, and treatment guidance for clinicians.[26] Additional key resources include the CDC STI Screening Recommendations,[27] STI Outbreak Response Plan Guide,[28] and the STI Outbreak Prevention and Control Activities document.[29] These resources can be accessed on the CDC website. When providing CDC resources, DI professionals should use the most recent, 508-compliant versions and confirm that guidance has not been updated since publication.

Key Area Support Organizations

Programs are encouraged to establish partner networks with support organizations, such as reproductive health groups, schools or universities, correctional facilities, and religious organizations. Additional examples of key support organizations include[4]:

- Health department programs
- Federally qualified health centers (FQHCs)
- Substance abuse treatment facilities
- Family planning clinics
- Mental health services
- Transitional housing or housing support
- Community-based organizations (CBOs)
- Ryan White Clinics

Creating and maintaining partner networks with support organizations has been promoted as a method to improve health outcomes. Pooling the skills and resources of each organization enables health care providers to deliver health services more efficiently and effectively. DI professionals play a crucial role in this network as facilitators for the flow of communication and information between network partners.

Special Populations and Area Communities

Special populations are groups that may be disproportionately affected by diseases because of social and/or societal factors, such as limited English proficiency or experiencing homelessness.[30] Special populations, therefore, should be prioritized for prevention, screening, and treatment initiatives. For example, adults and juveniles who are involved with the justice system are more likely than the general population to experience HIV, viral hepatitis, STIs, and tuberculosis.[31] Special populations also may include, but are not limited to [30]:

- Pregnant individuals and infants who could experience poor health and birth outcomes because of exposure to STIs
- Populations that may face unequal structural or social conditions influencing STI prevalence (e.g., men who have sex with men, people who are transgender, people engaged in sex work, certain racial or ethnic minority group, etc.)
- Individuals living with disabilities
- Individuals who are immunocompromised
- Individuals with military experience

DI professionals should serve as a local resource for these populations by educating them on current health threats, connecting population members to care, educating providers on the needs of special populations, and partnering with organizations and/or facilities that may be connected with these populations. For example, this may include connecting with schools or correctional facilities to inform them of disease outbreaks and recommendations for the prevention or management of diseases.

Section 4: Partnership and Collaboration for Quality Care

DI professionals and providers, when equipped with the knowledge of public health ethics and jurisdictional requirements, can be better prepared to collaboratively provide adequate health services to people diagnosed with or exposed to an infectious disease and communities. This section explains the role of a DI professional and how individuals in these roles can collaborate to provide quality care.

Collaborating with Health Care and Other Service Providers

This section will outline key public health services that can be provided through collaboration. Collaborative health services, alongside the key support organizations previously discussed, may include treatment for infections, **referrals** to other service providers, motivating people diagnosed with or exposed to an infectious disease to engage in care, and providing education.[4]

Explaining the Role of the DI Professional to Other Staff

In collaborative settings, DI professionals may be asked by partners or providers to clarify their role and responsibilities associated with the position. DI professionals primarily are non-licensed public health professionals with applied expertise in preventing the spread of

infectious disease at the community level.[32] DI professionals connect people diagnosed with or exposed to an infectious disease to testing, treatment, and prevention resources using their competencies in case management, interviewing, field services, contact tracing, outbreak response, and case analysis.[33,34] The DI professional role may be classified under various job titles, as determined by the organization where the individual is employed.

Treatment Recommendations

A core responsibility of DI professionals is connecting people diagnosed with or exposed to an infectious disease to appropriate testing and treatment in partnership with health care settings and laboratories. Clinical guidance for treatment of infectious diseases is outlined in a variety of guidelines published by the CDC, NIH, and other national bodies. DI professionals can review these resources to verify adequate treatment and to educate people diagnosed with or exposed to an infectious disease and clinicians on recommended treatments, craft the appropriate treatment plan, and identify any necessary referrals as outlined in the guidelines. Some examples of relevant treatment guidelines are listed below:

- CDC STI Treatment Guidelines
- CDC Guidelines for the Treatment of Latent Tuberculosis Infection
- Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents With HIV
- Infectious Diseases Society of America (ISDA) guidelines on the treatment and management of various infectious diseases

Area Service Providers

Service providers working alongside DI professionals to provide adequate care for people affected by infectious diseases may include family planning clinics, public health clinics, HIV care clinics, emergency departments, and private physicians' offices.

These partners can be vital in responding to disease clusters and outbreaks due to their connections within the community. For example, if DI professionals have identified cases occurring among persons within an unhoused community, area service providers, such as substance use clinics, could assist in gaining access into this community through the distribution of Narcan or syringe exchange programs. Working with these area service providers allows DI professionals to build trust among people who receive services by leveraging the partners' existing relationships and the services they provide.

Appropriate Referrals

Referrals are commonly known as the process in which a person diagnosed with or exposed to an infectious disease is directed or redirected to a specialist or health provider for treatment or another organization for supportive services.[36] Health programs are encouraged to establish arrangements and networks for referrals to the appropriate service providers.[28] Providers or services that people can be referred to can include linkage to HIV care, family planning clinics, **harm reduction** services, housing assistance, or mental health services.

Tasks performed by DI professionals when developing a referral may include identifying a person's need for a referral, gauging how receptive they may be to the referral service, and identifying any potential barriers to receiving appropriate services.[35] Community referral resource directories can be an effective way to coordinate appropriate referrals. These directories can include information such as the contact information of a community resource, hours of operation, appointment times, and items that may be required during the appointment, such as proof of identification.[35] The referral process may require a more hands-on approach to connecting people to care, often referred to as a "**warm handoff**" that involves DI professionals making formal introductions between the person and the service providers, or helping them make the initial appointment. For example, with the person's permission, the DI professional could use their cell phone to call their designated contact at a clinic or other service provider directly during the encounter to facilitate the timely completion of the referral.

Motivating Individuals Exposed to or at Risk for Disease to Engage in Care

Motivating individuals exposed to or at risk for disease to engage in care is often referred to by DI professionals as motivational interviewing. **Motivational interviewing (MI)** involves communicating with people diagnosed with or exposed to an infectious disease in a manner that encourages healthy behavior choices.[36]

Motivational interviewing requires DI professionals to acquire communication skills such as active listening, nonstigmatizing language, and guided decision-making that align with themes of empowerment, self-efficacy, and respect. Nonstigmatizing language is a communication style best practice that DI professionals and providers should adopt to create person-centered, judgment-free, inclusive dialogues with people diagnosed with or exposed to an infectious disease, thereby building trusting relationships.[24] Examples include terms like "person with a substance use disorder" or "person in active use." Guided decision-making, or shared decision-making, are terms that refer to the way people are diagnosed with or exposed to an infectious disease and providers working together to make decisions that elicit behavior change.[37] This may include discussing testing, treatment, or disease management plans that may be preferred by the person based on guidance from a health professional. [21]

Focusing on successful motivational interviewing techniques can help foster trusting relationships that guide people diagnosed with or exposed to an infectious disease toward positive health outcomes.

Education and Resources

To ensure people receive adequate care from health service providers, DI professionals may assist with compiling educational resources for both providers and people diagnosed with/exposed to an infectious disease. Educating both providers and people diagnosed with/exposed to an infectious disease on infectious diseases, treatment options, and preventative measures can help communities stop the spread of infectious diseases, in addition to providing quality care. Educational materials should be tailored to the level of health literacy for each intended audience.

In some programs, DI professionals are responsible for assembling program packets and materials when conducting health provider visits. Health provider visits may be conducted

by DI professionals for the purpose of communicating valuable information on testing, treatment, reporting rules, and/or partner services. The provider visit packets can include reporting and treatment guidelines (see the Provider Education and Training section of this chapter), business cards, and education materials. By providing these educational materials and resources for people diagnosed with or exposed to an infectious disease and providers, DI professionals can contribute to the improvement of organizational and personal health literacy, while ensuring providers are up-to-date on critical health service information.

Section 5: Collaborative Case Review for Quality Improvement

Case management is determined by the NBPHE as one of six competency domains for DI professionals.[32] To enhance case management strategies, DI professionals should collaborate on the case review process. This can be done by identifying and discussing quality improvement opportunities with partners and support organizations. This section will cover areas of opportunity for the evaluation and improvement of the case review process.

Case Review Process

Case management involves the documentation and analysis of patient health information to plan and execute disease intervention initiatives.[19] The management of cases of an infectious disease includes seven comprehensive steps [38]:

- Pre-interview analysis
- Original interview
- Post-interview analysis
- Referral of individuals named in the social or sexual network
- Interviews with persons who may benefit from testing or social contacts
- Re-interviews
- Case closure

Case review is conducted as a result of the information collected through the interview process and is a joint effort between DI professionals, the DI professional's supervisor(s), and the clinical team of the person diagnosed with/exposed to an infectious disease. Case review can be an opportunity to identify areas for quality improvement. Areas within case management that may be reviewed for improvement include recommended treatments, key case elements captured, communication strategies used, best practices that could have been incorporated, and missed opportunities within the overall case. Consulting additional service providers, such as substance use disorder services or family planning clinics, during the case review process can bring to light additional areas for improvement and successful collaboration.

Treatment Recommendations

As a result of information gathered from interviews with individuals diagnosed with an infectious disease, DI professionals may recommend additional testing for people diagnosed with or exposed to an infectious disease by collecting specimens with the person's consent for submission to a laboratory.[19] DI professionals will notify people diagnosed with or exposed to an infectious disease of their results, which may lead to the recommendation of treatment. Treatment recommendations provided by DI professionals are a critical case element that can be reviewed in conjunction with laboratory partners and providers to ensure accuracy and provide the appropriate recommendations and referrals. The case review process offers DI professionals an opportunity to verify that the person, in addition to other people who were exposed, received the appropriate treatment as recommended by clinical guidelines relevant to the disease of interest, such as the CDC STI Treatment Guidelines and Treatment of Drug-Susceptible and Drug-Resistant Tuberculosis.[26] If the appropriate treatment was not provided, DI professionals should refer the person diagnosed with an infectious disease and/or people exposed to an infectious disease to additional treatment plans.

Review of Key Case Elements

Reviewing case elements in collaborative settings can help DI professionals enhance case management strategies by highlighting key information, such as areas of partnership that may have been missed. Key case elements may include information such as age group, gender, sexual history, or occupation, as well as details about the person's location, such as a school or correctional facility. [17]

Communicating Effectively in a Group Setting

As discussed, collaborative case review requires support from key organizations, agencies, and service providers. However, communicating across these group settings can serve as a potential barrier to effective case review and management. Identifying and creating clear communication strategies can prevent communication-based barriers to quality care. Strategies for effective communication may include agreeing upon clear roles and responsibilities, establishing communication channels for updating or sharing information with partners, setting the frequency of communication, and clearly documenting any expectations or policies.

Best Practices

When collaborating on case review initiatives, establishing best practices across the collaborating partners can ensure an efficient and effective review process. Best practices may include[39]:

- Establishing and agreeing upon a shared purpose or vision for the process.
- Identifying a strategy or approach for the process to assist in determining roles and responsibilities for each participant.

- Ensuring the review process meets the needs of the population served and highlights any alternate perspectives from people who received services or providers.
- Maintaining the communication strategies provided above for effective and clear communication.
- Outlining agreed-upon action items from the collaborative process, which may include next steps after a review has been conducted.
- Instituting confidentiality practices to safeguard sensitive information throughout the collaboration process and communicating these practices (e.g., de-identifying data or releasing the minimum information required to the appropriate providers) to the people who receive services.

These best practices can be applied to nearly all collaborative settings; however, they can be particularly useful for determining enhanced strategies for case management across all parties involved.

Identifying Missed Opportunities

Identifying missed opportunities throughout the case review process enables DI professionals to pinpoint case elements that can be improved upon or areas in which additional support can be offered. Gathering additional information in interviews, collaborating with other providers for support, or referring a person diagnosed with/exposed to an infectious disease to additional services are all examples of missed opportunities that could improve the overall health outcomes of people who receive services. Further information may include missing contact details, the names or contact information of other people exposed to an infectious disease, locations or venues relevant to exposure, or infection exposure dates. The process of identifying missed opportunities requires DI professionals to pay close attention to case details, use critical thinking skills, and employ problem-solving techniques.

Quality Improvement

Public health programs should undergo appropriate and routine evaluation for quality improvement, which encompasses case management activities.[28] Reviewing and analyzing cases with collaborative partners can be an inclusive quality improvement initiative that should take into consideration the concepts provided above. Additional areas for case analysis and quality improvement can include data collection and reporting through the EHR system, as well as outreach and intervention approaches.[28] Emphasizing the importance of routine and strategic quality improvement initiatives that incorporate these elements can lead to improved health service delivery.

Conclusion

Collaboration between DI professionals and community partners is central to providing care and services that are accessible, fair, and that appropriately meet the needs of the populations served. Effective collaboration requires DI professionals to adhere to public health principles and ethics, educate providers as their local resource on public health information, and employ partnerships with key parties. This chapter outlined key considerations pivotal to collaborative settings through the five tasks identified at the start of this section. These considerations supply DI professionals with a guide to use when collaborating with community partners. This guide establishes the ethical principles foundational to the partnership and identifies how to properly equip partners with the information necessary to deliver quality services to people diagnosed with and exposed to an infectious disease. DI professionals can apply information from this chapter to build more effective partnerships for improving health in the communities they serve.

Chapter 5 Keywords

Case management

Confidentiality

Epidemiology

Ethics

Harm reduction

Health alert

Health Insurance Portability and Accountability Act (HIPAA)

Health literacy

Motivational interviewing (MI)

Privacy

Referral

Self-efficacy

Special populations

Warm handoff

Chapter 5 Practice Questions

1. If clinicians are unsure of reporting requirements for their state, where should they seek advice?

    a. Online medical forums

    b. State/local health departments

    c. Colleagues in their department or another provider

    Answer: b

    Rationale: State and local health departments set and enforce communicable disease reporting requirements. They are the authoritative resource for reporting questions.

2. Which of the following communications of health information would HIPAA prevent?

    a. Doctor's office sharing a person's diagnosis with their emergency contact

    b. A daycare facility sharing a cluster of communicable disease cases with its local health department

    c. A hospital notifying a skilled nursing facility about a person's communicable disease upon transfer

    Answer: a

    Rationale: HIPAA protects patient confidentiality. Sharing diagnoses with emergency contacts requires patient authorization unless the person is incapacitated. The other scenarios involve public health or continuity of care, which HIPAA permits.

3. Which agencies primarily communicate public health recommendations to a community?

    a. Provider offices

    b. Health departments

    c. Social media

    Answer: b

    Rationale: Local, state, and federal health departments have the responsibility for issuing public health guidance to communities. Providers and social media may share information, but health departments are the authoritative source.

4. Which of the following activities involves working with schools or correctional facilities?

    a. Following CDC guidelines for mitigation strategies of a possible disease outbreak in public facilities

b. Calling each staff member employed at the facility to notify them of the presence of a communicable disease

c. Annually requesting the medical history for each student or individual who is incarcerated

Answer: a

Rationale: DI professionals collaborate with institutions like schools and correctional facilities during outbreaks to apply mitigation strategies and protect populations. The other options are not appropriate or realistic DI tasks.

5. Which types of resources would a DI professional be most likely to provide to a medical provider?

   a. Fact sheets and posters about communicable diseases

   b. Interpretation services via phone or tablet

   c. Masks and gloves

   Answer: a

   Rationale: DI professionals support providers with educational resources, technical assistance, and up-to-date information. PPE and interpretation services may be important but are not typically supplied by DI staff.

6. What additional infectious disease information must be reported with all presumptive and confirmed cases?

   a. Stage of the disease, history, and treatment, if any

   b. No additional information is needed after treatment

   c. Identified symptoms, treatment, and contact information

   Answer: c

   Rationale: Surveillance requires more than just case identification. Stage, clinical history, and treatment status help determine disease burden, transmission risk, and resource needs.

Chapter 5 References

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Chapter 6 Disease Outbreak and Emergency Preparedness

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Introduction

Disease intervention (DI) professionals are defined as any public health professional who conducts disease intervention activities, including, but not limited to, person-centered interviews, collection of enhanced surveillance and community assessment data, contact tracing, field specimen collection, field investigation in outbreaks, emergency preparedness, community outreach, and collaboration with medical providers.[1]

DI professional skills that support this work include communication, interviewing, case investigation, and coordination. DI professionals often describe “wearing many hats” as they balance multiple responsibilities, which helps them respond effectively in both routine and emergency situations. This chapter outlines the tasks and roles of DI professionals in outbreak response and emergency preparedness[3]:

- Task 1: Participate in preparedness training (e.g., tabletop exercises, learning subject matter pertinent to emergency outbreak, just-in-time training, emergency planning, awareness of an outbreak response plan, incident command structure [ICS] training).
- Task 2: Apply disease intervention techniques (e.g., program operations guidelines, cross-train on knowledge of other morbidities) to participate in public health emergencies and outbreak response initiatives.
- Task 3: Assist various government and public health officials to perform required tasks (e.g., data collection, contact elicitation, quarantine and isolation recommendations, rapid needs assessment, epidemiologists' consultation, community outreach, awareness promotion, including Health Alert Network [HAN]).
- Task 4: Participate in After Action Report (AAR) to provide lessons learned and to improve future response activities.
- Task 5: Adhere to public health principles during an outbreak response and emergency preparedness.

Domain Content

Section 1: Participating in Preparedness Training

DI professionals play a vital role in reducing the morbidity and mortality associated with public health emergencies, especially during infectious disease outbreaks. To respond effectively, they must possess the necessary knowledge, skills, and familiarity with emergency systems and protocols needed to operate confidently in high-pressure environments.

This section outlines key preparedness training activities DI professionals may engage in, including emergency planning, outbreak response plans, the incident command system (ICS), tabletop exercises, and just-in-time (JIT) training. These tools and frameworks equip DI professionals to act confidently and effectively across all phases of the emergency response cycle, from planning and capacity-building to response and recovery.[4]

Emergency Planning and Risk Mitigation

Emergency planning, the process of developing strategies, procedures, and resources to prepare and respond to public health emergencies, ensures that when urgent health threats arise, the public health system can act quickly, effectively, and fairly. DI professionals are essential to a successful outbreak response. Their expertise in case investigation, contact tracing, community engagement, and field-level operations provides critical insight into how response plans are implemented in real-world settings.

Active involvement in this planning enables DI professionals to participate in risk mitigation by anticipating challenges, devising proactive solutions, identifying critical functions, and determining the necessary resources. By collaborating with multidisciplinary teams, such as epidemiologists, surveillance staff, and public health officials, DI professionals help assess risk and build more resilient response systems.

Key components to implement emergency planning and risk mitigation include:

- Risk Assessment – Work with epidemiologists, surveillance teams, and public health officials to identify potential outbreak scenarios and appropriate response actions.[5]
- Resource Allocation – Assist in planning the distribution of vaccines, personal protective equipment (PPE), testing kits, and other essential supplies.
- Community Engagement – Assist in developing plans to educate and involve the community in the preparedness and response activities for the following: federal agencies, state health departments, health care providers, clinics, hospital administrators and governing bodies, government, health insurance, nongovernment organizations (NGOs), citizens, universities, laboratories, and community volunteers.

These planning activities build preparedness and reduce risk before an outbreak begins. A clear example of this can be seen in the response to the 2022–2023 monkeypox (mpox) outbreak. In the early 2000s, the CDC had been working on smallpox preparedness planning, which involved having reliable diagnostics, a licensed vaccine, and investigational medical countermeasures ready for use in the event of an outbreak.[6] When mpox emerged,

this planning allowed for a rapid and coordinated public health response. The ability to act quickly demonstrates how emergency planning and risk mitigation strategies can reduce both the spread and severity of an outbreak.

Outbreak Response Plan

Once emergency planning and risk mitigation strategies are established, **outbreak response plans (ORP)** provide the tactical roadmap for determining actions that should be taken. These written plans identify roles, resources, and key strategies for containing disease, protecting the public, and maintaining essential services. While these plans are developed at an organizational level, DI professionals often contribute their subject matter expertise, especially in areas such as outbreak response, case investigation, and reaching at-risk populations.

Key public health intervention strategies considered in an outbreak response plan include:

- Surveillance – Ongoing systematic collection, analysis, and interpretation of data to monitor disease spread, identify hotspots, and inform timely interventions.[7]
- Containment – Implementation of isolation, quarantine, and social distancing measures to prevent further transmission.[8]
- Vaccination campaigns – Organization of mass immunization efforts to protect disproportionately affected populations and reduce morbidity and mortality.[9]
- Public communication – Using CDC Crisis and Emergency Risk Communication (CERC) principles to deliver accurate, timely information and counter misinformation during outbreaks.[10]

Comprehensive emergency response and outbreak plans guide public health crises, and as reflected in CDC and Federal Emergency Management Agency (FEMA) resources, they can be organized into the following phases:

- Preparation – Resource identification, personnel training, and risk assessment.
- Response – Activation of emergency operations, deployment of resources, and implementation of interventions.
- Recovery – Evaluation of response effectiveness, restoration of public health systems, and integration of lessons learned.

Emergency planning must reflect jurisdiction-specific reporting requirements, legal authorities for outbreak control, and tribal sovereignty considerations where applicable.

The Incident Command System

The **Incident Command System (ICS)** provides a standardized framework for emergency responses, integrating resources under a common structure for cross-jurisdictional management.[11] In public health emergencies, it aids in investigating causes while supporting operations.

For DI professionals, understanding ICS is essential to operating effectively during outbreak responses. It clarifies reporting lines, defines roles, and ensures the work is integrated into the broader response effort. For instance, during a foodborne illness outbreak, DI professionals may function within the ICS to coordinate case investigations and public messaging.[12] ICS also supports resource coordination, data flow, and decision-making, helping DI teams align with others, such as epidemiology, laboratory services, and logistics.

Key steps for integrating into ICS:

- ICS fundamentals training – Many health departments require staff to complete FEMA's ICS-100 and ICS-200 courses as part of National Incident Management System (NIMS) compliance. ICS 100 introduces the history, principles, and structure of ICS, and ICS 200 prepares staff for supervisory roles during the early phases of response.
- Understand critical ICS roles – DI professionals may work alongside or report to individuals in ICS leadership roles, including:
    - Operations section chief – Manages tactical response activities (e.g., contact tracing, field investigation)
    - Planning section chief – Oversees the development of the incident action plan (IAP), which outlines daily objectives and strategies
    - Public information officer (PIO) – Coordinates with media and ensures consistent public messaging
- Respect the chain of command – ICS relies on a clear chain of command to maintain safety and efficiency. DI staff should follow established reporting protocols and communicate within designated channels and structures.
- Participate in drills and exercises – Regular simulation exercises help DI professionals practice ICS coordination, real-time decision-making, and interagency collaboration in a low-stakes setting.

Tabletop Exercises

Tabletop exercises (TTX) simulate real-world events, such as infectious disease outbreaks, natural disasters, bioterrorism events, and other public health threats, allowing participants to practice their roles and gain experience in emergency settings. TTX typically are initiated and coordinated by the health department or a designated emergency preparedness team to test and strengthen components of an organization's outbreak response plan. Scenarios should incorporate jurisdiction-specific constraints, including local authority structures, data-sharing limitations, and public health legal frameworks. As an organizational tool, TTX fosters group problem-solving, enhances communication and coordination across agencies, supports comprehensive situation analysis, and helps refine and develop operational plans.

Key features of TTX:

- Plan a scenario – Select a plausible outbreak scenario drawn from historical events or emerging threats. To guide the discussion, include details, such as mode of transmission, affected populations, and logistical challenges.
- Define roles – Assign clear roles to DI professionals, epidemiologists, health care providers, emergency managers, and others based on each participant's expertise. Account for critical competencies such as:
    - Providing interpretation for non-English-speaking populations.
    - Planning for individuals who rely on mobility aids or in-home medical care.
    - Addressing local jurisdictional factors, like limited hospital capacity, community mistrust, or transportation barriers.
- Consider resources – Identify and document the resources, skills, and knowledge necessary to support an effective response.
- Debrief – After executing the outbreak response plan through TTX, hold a debriefing to evaluate the process. The final step is a post-exercise review to assess performance, identify coordination or knowledge gaps, capture lessons learned, and recommend improvements to strengthen future response efforts.

Figure 1 shows the cycle for planning a simulation. TTX are a vital part of emergency preparedness, helping agencies test and strengthen their response plans while using insights from each exercise to enhance future readiness. Organizations should have a defined cycle, mix, and range of exercises in a multiyear exercise plan that covers the wide range of natural and deliberately caused emergencies that may occur.[13]

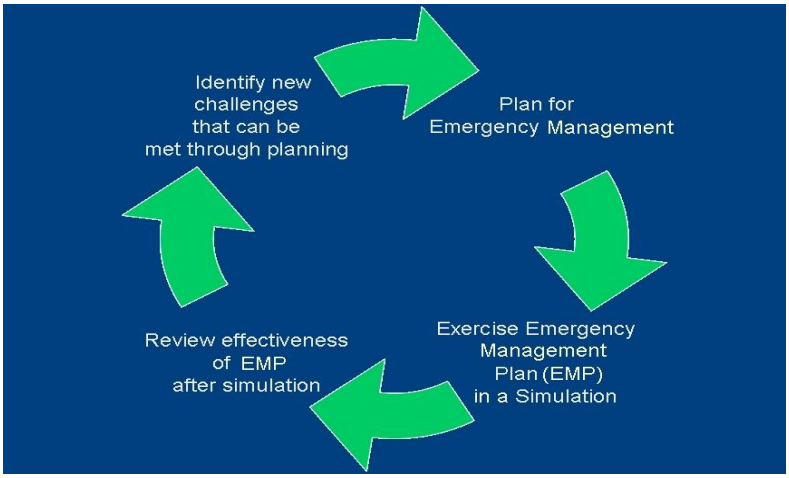

Figure 1: Simulation Planning Cycle, Testing Before Emergency.

Source: North Carolina Department of Environmental Quality

Just-in-Time Training

Just-in-time (JIT) training equips DI professionals with up-to-date, targeted information immediately before or during an outbreak. It supports adaptability to evolving situations by focusing on specific protocols, skills, and knowledge for the current incident. These trainings are designed to be brief, focused, and responsive, ensuring everyone is prepared to act effectively in a time-sensitive environment. In-person sessions are often most effective with ≤ 20 participants for optimal engagement, but session size may vary based on jurisdictional training protocols, and some sessions may be delivered virtually...

To implement JIT training effectively, it is essential to identify core topics relevant to the outbreak, such as pathogen characteristics, transmission routes, prevention strategies, and public communication approaches. JIT trainings should be brief, stand-alone modules that can be updated rapidly and delivered in person, virtually, or asynchronously. Leveraging technology, such as learning management systems (LMS), virtual learning environments (VLEs), or mobile applications, enables the quick distribution of materials and allows for offline access, when needed, through downloadable content for mobile devices.

JIT training is a practical, scalable tool that enables DI professionals to quickly acquire the knowledge and skills necessary for effective outbreak response. Its modular and adaptable nature makes it a vital component of emergency preparedness and real-time workforce support. For example, during the COVID-19 pandemic, health departments used VLE platforms to deliver JIT training on contact tracing, isolation protocols, and community outreach. This strategy empowered DI professionals to respond effectively, even in the face of rapidly shifting guidance and unprecedented challenges.

Section 2: Apply Disease Intervention Techniques

As reflected in the CDC Program Operation Considerations for Outbreak Response "Best Practices," DI professionals play a critical role in the implementation of CDC-recommended best practices during outbreak response. Their work starts even before the outbreak occurs, by helping to prepare and exercise outbreak response plans (ORPs), which have been demonstrated to enhance outbreak control. DI professionals are responsible for understanding local disease trends and contributing to day-to-day surveillance, enabling early detection. They contribute to gathering and analyzing data during an outbreak to identify affected populations and guide targeted response activities. They also communicate with the organizational partners involved in the ORP, thus promoting a coordinated response. DI professionals contribute to disseminating clear and frequent communication to the public throughout the outbreak to raise awareness and encourage protective actions. After the outbreak is resolved, DI professionals, working in collaboration with other health care specialists, develop field reports that help senior management evaluate the response's effectiveness and develop final reports from which they extract lessons. These lessons learned will provide insight for managing current infectious diseases and guide future policies for teaching and improving public health outcomes.[14]

DI professionals also must be able to apply core disease intervention strategies during an outbreak. This section outlines how to integrate CDC's **priorities for response readiness**

(PRR) with outbreak response competencies and innovative techniques that address multiple morbidities and evolving threats. These skills help DI professionals respond confidently to evolving threats and serve unique populations with complex health needs.

DI professionals should integrate CDC PRR, CDC outbreak response best practices, and jurisdictional ORP structures to ensure coordinated and consistent response activities.

Apply the CDC's Priorities for Response Readiness on Outbreak Response Competencies

The CDC's PRRs provide a unified approach to prepare and respond to public health emergencies. For DI professionals, applying these principles ensures readiness to manage evolving threats, support cross-jurisdictional collaboration, and respond effectively across multiple disease areas. DI professionals should know where to find this information and how to utilize it when needed.

Examples of the CDC's PRR in practice:

- CDC PRR – Review CDC guidelines for communicable diseases (e.g., tuberculosis, STIs, COVID-19) and essential intervention protocols, such as case investigation, contact tracing, and outbreak management.[15]
- Syphilis outbreak detection – Use the Syphilis Outbreak Detection Guidance from the Council of State and Territorial Epidemiologists to tailor jurisdiction-specific outbreak identification and response.[16,17]
- Outbreak response plan for STD prevention – Understand CDC's recommendations for STD outbreak response, including detection, investigation, and control activities.

Apply Cross-Training to Outbreak Response

Cross-training is a crucial tactic for enhancing outbreak preparedness and response. DI professionals should pursue training in diseases beyond their main areas of responsibility. They should participate in training programs, such as the CDC's Field Epidemiology Training Program, to build skills in epidemiology and infection control. Cross-training on diseases outside of their typical duties is also important. For instance, an STI DI professional can cross-train in TB or hepatitis B virus investigation to support potential outbreak responses.

Apply Knowledge Through Simulated Settings

In addition to building cross-functional knowledge, DI professionals benefit from applying these skills in practical settings. Simulation exercises provide a valuable opportunity to practice roles, decision-making, and coordination across agencies. These experiences help DI professionals improve their readiness and identify gaps in their skills or systems before a real emergency occurs.

Whenever possible, DI professionals should take advantage of tabletop exercises, outbreak simulations, and preparedness drills coordinated by their health departments or local emergency preparedness teams. Participating in these activities enhances familiarity with

PRR and allows professionals to apply techniques such as case investigation, contact tracing, and risk communication in realistic, time-sensitive scenarios.

Examples of applying skills in practical settings:

- Simulation exercises – Utilize both TTX and live simulations to apply PRR strategies, assess performance under realistic outbreak conditions, and pinpoint areas for improvement.[18]
- Foodborne illness simulation – Practice pinpointing the contamination source, issuing public advisories, and coordinating with food safety agencies to curb transmission.
- Ebola in Uganda (2022) – During the Sudan virus outbreak, Uganda Public Health Fellows, supported by CDC capacity-building efforts, led case identification, contact tracing, and control measures, demonstrating the effectiveness of well-rehearsed response skills.[19]

Apply Disease Intervention Techniques to Multiple Morbidities

Some outbreaks disproportionately affect individuals with multiple chronic health conditions. DI professionals must be prepared to adapt their strategies accordingly. **Multimorbidity** is the co-occurrence of two or more chronic conditions in a person. It is increasing worldwide, often appearing a decade earlier in communities experiencing economic factors that contribute to health than in countries with higher incomes. This leads to poorer outcomes and increased health care utilization.[20] In contrast, comorbidities refer to additional health conditions that occur alongside a primary disease. Infectious disease outbreaks can exacerbate both multimorbidity and comorbidities, requiring DI professionals to adopt comprehensive intervention approaches.

To respond effectively, DI professionals must understand several foundational principles that guide containment and care strategies:

- Modes of disease transmission – Understanding how diseases spread helps shape containment strategies.
    - Airborne: Transmission via inhaled dust or droplet nuclei suspended in the air (e.g., tuberculosis, measles).
    - Vector-borne: Transmission by an animal, typically an insect, carrying pathogens from host to host (e.g., malaria, Lyme disease).
    - Contact: Direct physical contact with a person diagnosed with an infectious disease or indirect contact via contaminated surfaces or droplets (e.g., influenza).
- Window periods and quarantine guidance – Knowledge of incubation and infectious periods allows for the implementation of appropriate quarantine measures to prevent further spread.

- Populations experiencing disadvantages – Identifying groups at greater risk due to age, health status, disability, or other factors enables DI professionals to act swiftly by using targeted interventions, such as isolation, prioritized testing, or vaccination, when available.

- Disease trends and surveillance – Monitoring real-time data enables the detection of emerging threats, supports adaptive interventions, and facilitates communication with the public and partner agencies.

Once DI professionals have this foundational understanding, they can apply the following strategies to address multiple morbidities during an outbreak:

- Determine coexisting conditions – Depending on their educational level and expertise, DI professionals support the epidemiological team by sharing insights gained from their field investigation experience. In addition, DI professionals should collect data from affected populations to recognize prevalent comorbidities (e.g., obesity, heart disease, hypertension, diabetes, immunosuppressive disorders) and tailor interventions accordingly.

- Utilize functional strategies for multimorbidity management – DI professionals should tailor intervention plans based on individual assessments to address both the primary outbreak disease and related comorbid conditions. For instance, during the COVID-19 pandemic, vaccination efforts prioritized individuals with underlying health conditions, recognizing their increased risk. By working with health care providers, DI professionals can ensure integrated care that includes timely medication, lifestyle counseling, and preventive measures.

- Devise focused interventions – Ensuring access to diagnostic services is crucial, as diagnostics serve as the first line of defense against infectious diseases, enabling early detection and treatment.[21] Timely diagnosis facilitates prompt treatment for both the outbreak disease and associated comorbidities.

- Track and modify strategies – Utilize real-time data analytics to monitor the effectiveness of interventions and make necessary adjustments.[22] Sharing findings with community members promotes the dissemination of best practices and lessons learned, optimizing future responses. For example, traditional analytics cannot process live data or give immediate insights. Real-time analytics, utilizing tools such as machine learning and artificial intelligence, can predict outcomes from past data without explicit programming. These methods help predict outbreaks, guide public health actions, allocate resources, and design solutions. This enables health care providers to act promptly and prevent the spread of disease. For example, during the COVID-19 pandemic, dashboards displayed the spread of the virus, identified hotspots, and tracked vaccination rates in specific geographical areas. Real-time health metrics enabled data scientists and analysts to build predictive models that quickly adapted to changing conditions. These models often included multiple scenarios, not only one prediction, for factors such as different levels of immunity or the effects of new treatments.[23,24]

- By applying CDC guidelines, referring to POGs, participating in cross-training, and integrating strategies for managing complex health conditions, DI professionals enhance their ability to make meaningful contributions to public health emergencies and outbreak response efforts. A deep understanding of disease principles and trends enables DI professionals to support evidence-based interventions that save lives and improve outcomes.

Section 3: Assist Various Government and Public Health Officials to Perform Required Tasks

An effective response to public health emergencies relies on collaboration among various partners. Federal, state, local, tribal, and territorial health agencies, as well as health facilities, have established procedures and responsibilities in place in the event of an emergency. These responsibilities and procedures are outlined in an emergency operations plan (EOP). The EOP outlines that the actions the facility or agency will take in the event of a disaster. This plan should be developed as an all-hazards plan.[25] States should consider local and federal plans in EOP development to build awareness and understanding, enabling the development of plans that best fit their state's functions but also work in connection with local and federal operations.[26]

DI professionals play a vital role in facilitating access to care. This section focuses on strategies DI professionals can utilize to support health officials and implement response measures. These activities may include data collection, quarantine protocols, developing partnerships, and communication.

Collect Data for Health Outcomes and Policy Decisions

High-quality data enables DI professionals to implement effective risk mitigation strategies and ensure fair distribution of resources. The effectiveness of public health responses depends on strong data collection, which minimizes risks and errors. Data management must include accuracy, completeness, consistency, timeliness, and validity. Monitoring data quality over time ensures the viability of governance frameworks.[27]

DI professionals play a vital role in supporting data collection for health outcomes and policy decisions. They use standardized data entry tools to ensure accurate and consistent documentation by recording case investigation details, contact information, and outcomes into standardized systems. Standardizing data entry formats allows for effective analysis. A consistent digital toolset facilitates efficient data collection.[28] Their frontline documentation provides reliable data for analysis and public health action. DI professionals also utilize technology, including electronic health records (EHRs), mobile apps, and geographic information systems (GIS), to enhance chronic disease monitoring and ensure timely data collection. For instance, the use of mobile GIS systems for collecting patient data has improved the accuracy of spatial data in health care.[29] Digital tools, such as the Internet of Things health care monitoring systems, enable quick data gathering and patient management.

DI professionals collaborate with clinical laboratories to obtain test results and translate these findings into effective prevention strategies. Quick intervention by DI professionals in

notifying people who have come into contact with the diagnosed person is crucial in controlling the spread of infectious diseases. Finally, while many DI professionals may not conduct formal data analysis themselves, they collaborate with surveillance teams to analyze case data, identify trends, and report findings to health care partners, facilitating well-informed decision-making.

Engage with Key Partners and Contributors

DI professionals serve as a link between public health organizations and the community. Their ability to engage key partners and communicate effectively is vital for achieving successful health outcomes, especially during public health emergencies and outbreaks. DI professionals involve key partners and contributors who influence community health, including health care providers, emergency management organizations, community members, nongovernmental organizations, tribal organizations, and local health departments.[30] Building relationships with these partners enables DI professionals to coordinate efforts, align goals, and respond more efficiently to emerging threats.

DI professionals regularly attend regional, local, and state meetings; national conferences; and participate in quality improvement projects to stay engaged in public health efforts.[31] This helps them stay updated on best practices and ensures their work aligns with broader public health strategies. In their daily activities, DI professionals communicate clearly and frequently with people diagnosed with infectious diseases, caregivers, and decision-makers. Miscommunication can lead to serious health consequences, as seen in cases where incorrect medication instructions cause life-threatening conditions.[32] Therefore, consistent, transparent communication is essential to prevent misinformation and can be lifesaving.

In addition to communication and coordination, DI professionals also play a central role in supporting joint initiatives, such as collaborating on vaccination campaigns, outbreak simulations, and early detection of outbreaks. For example, during a measles outbreak, DI professionals typically work with school officials, health care providers, and community leaders to conduct vaccination campaigns and prevent further spread.[33] These partnerships are foundational to effective disease prevention and control.

Support Quarantine and Isolation Recommendations during Outbreak Events

DI professionals use case investigation to limit the spread of infectious diseases and advise individuals about the isolation measures required for certain infectious diseases. DI professionals are responsible for implementing transmission control protocols, such as quarantine or isolation, while educating people diagnosed with an infectious disease on the importance of controlling the spread of the infection.[34] It is more important to act proactively by targeting medically or financially marginalized people. These preventive measures ensure that individuals diagnosed with an infectious disease who are noncompliant are reported to health authorities.

DI professionals also monitor compliance, encouraging adherence to quarantine measures, and ensure that people diagnosed with infectious diseases who are not compliant are reported to health authorities. They provide access to psychiatric care professionals to people in isolation, and facilitate reaching out to older people, people with disabilities, and others with certain risk factors. In addition, they coordinate support services to ensure that people in quarantine or isolation have access to essentials like food, medication, and

hygiene supplies, without requiring direct contact – a strategy proven effective during the COVID-19 pandemic.

Finally, DI professionals address barriers by working with health care partners in real-time to eliminate barriers such as language or transportation issues, which can hinder compliance by the person diagnosed with an infectious disease. For example, tele-rehabilitation systems were used to overcome language and communication barriers during the COVID-19 pandemic.[35]

Follow Updates and Notifications via the Health Alert Network (HAN)

The CDC's **Health Alert Network (HAN)** is a nationwide communication system that delivers rapid, time-sensitive information to public health professionals at the federal, state, tribal, local, and territorial levels. It is a vital tool for disseminating timely emergency notifications and alerts.

DI professionals use the HAN network to stay informed and respond quickly during public health emergencies. They should subscribe to HAN alerts to stay informed, which ensures timely access to emergency notifications and outbreak information.[36] These alerts help DI professionals adapt their intervention strategies, coordinate with partners, and communicate effectively with the public.

In addition to receiving information, DI professionals should disseminate information in clear, concise, accurate, and timely messages to health care professionals and community organizations. Maintaining consistent communication and reiterating information to ensure that messages are understood is vital, especially during a disease outbreak or emergency. DI professionals are responsible for providing additional information to clarify the situation in the community, such as the current disease levels, the need for volunteers, message clarity, and other tailored messages.

Finally, DI professionals should regularly evaluate the effectiveness of their communication strategies. They should collect feedback from the community, analyze the responses, and refine their messaging to enhance clarity. This can be achieved by incorporating visual cues or personalized messages.[37] The DI professional should avoid communicating any health misinformation (i.e., the accidental spread of inaccurate information without intent) or disinformation (i.e., the intentional spread of false information to mislead people), as both may cause harm and affect the ability to improve public health. Whenever this happens, it should be corrected by offering repeated corrections, providing factual alternatives, and consulting with health care practitioners for the proper response.[38,39]

Section 4: Participate in an After-Action Report

An **after-action report (AAR)** is a feedback tool that is employed immediately after an outbreak to assess the response and identify strengths, challenges, and lessons learned. The goal is to help public health professionals reflect on shared experiences, identify the root causes of gaps, and inform improvements for future preparedness.

Preparation for an AAR session occurs promptly after the outbreak, while details are still fresh in participants' minds. The DI professional's role is to understand the purpose and steps of the AAR, gather information, and provide lessons learned and recommendations.

The core phases of an after-action report include four stages: planning, facilitation, identification, and analysis to identify key themes and patterns.

Planning

Effective planning ensures a focused, inclusive review. Activities may include[40]:

- Engaging community members and partners across sectors (federal, state, local, tribal, and territorial).
- Selecting specific focus areas such as case investigation, contact tracing, surveillance, communication, and vaccination logistics.
- Establishing a clear agenda, timeline, and participant roles.
- Identifying key indicators (e.g., lab positivity rates, adverse events, communication effectiveness) to guide discussion and evaluation.
- Evaluating epidemiology, treatment access, vaccination logistics, and supply adequacy.
- Reviewing factors such as epidemiology, treatment access, supply adequacy, and vaccination uptake.[41,42]

Facilitation

A skilled external facilitator (e.g., someone from the World Health Organization or the European Centre for Disease Prevention and Control) or an internal facilitator guides the AAR meeting to promote an honest and open dialogue. Effective facilitation includes:

- Encouraging honest feedback and critical analysis.
- Using trigger questions to explore preparedness, capacity, and coordination gaps.[43]

  Examples:

  - *"What aspects of our response worked well and why?"*
  - *"Where did we encounter breakdowns or delays, and what were the root causes?"*
  - *"How effectively did we communicate key information to the public and partners?"*
- Collecting data from multiple sources (e.g., surveys, focus groups, webinars, etc.).
- Analyzing gaps with structured tools (e.g., bow-tie analysis, look-back analysis).[44,45]

- Incorporating DI professionals' real-world insights and solutions.

Identification and Analysis

Capturing what was shared is crucial to ensure that everything is documented accurately. This includes taking clear minutes and capturing a variety of perspectives.

Reviewing the data captured during the AAR for key themes and patterns is essential for informing change. This phase includes:

- Organizing findings by domain (e.g., planning, communication, medical provisions, coordination).[46]
- Highlighting recurring challenges and strengths.
- Comparing planned procedures with actual outcomes.
- Presenting results clearly through summaries, infographics, or visual tools.

Provide Written and Verbal Feedback to Share Lessons Learned

Once an AAR session has been conducted and key insights have been gathered, the next step is to translate those findings into action. This requires a structured debrief report and a clear final report that outlines what worked, what didn't, and how to improve moving forward.

An AAR debriefing report should be developed after the facilitator-led debrief to reflect on response performance, including specific examples, identified gaps, and an improvement plan with roles, timelines, and deliverables. Once developed:

- Share findings with senior management in a concise summary to secure endorsement, scale implementation, and raise awareness.
- Use this debriefing to mobilize strategic partnerships and advocate for resource planning and emergency preparedness.

The debrief outcomes should be consolidated into a clear, action-oriented report, called the AAR final report. This includes an action plan outlining:

- Activities requiring minimal resources for quick implementation
- Resource-intensive activities that require budget allocation
- Prioritization of actions (short-, medium-, long-term) based on urgency
- Official approval and signed agreement on the report's conclusions
- Communitywide dissemination of findings, tailored to local needs
- Assignment of staff to monitor the execution of action plans and tackle any implementation challenges

The true value of an AAR lies in its application. DI professionals and public health agencies must utilize the insights gained to refine future emergency responses and foster a culture of learning that values feedback as a pathway for growth. Building feedback loops into routine operations promotes resilience, accountability, and continuous improvement. This empowers the health department staff to continuously share insights and build innovation and resilience in the public health system.

AARs support adaptive public health systems. As new infectious disease variants and threats continue to emerge or re-emerge, early detection and rapid response remain critical. Research has shown that providing food and nutritional support can benefit health in a manner comparable to vaccines in certain contexts, such as tuberculosis, highlighting the importance of addressing basic needs in conjunction with clinical interventions.[47] These findings also highlight the importance of effective governance and coordinated public health systems as crucial tools in disease prevention. By promoting wellness and addressing risks before they escalate into outbreaks, DI professionals not only improve community health but also contribute to long-term economic and social stability—offering a hopeful path forward for public health practice.

Section 5: Ensure Adherence to Public Health Principles

During an infectious disease outbreak, DI professionals must act quickly while upholding core ethical principles that protect individual rights and promote community well-being. This section focuses on ensuring DI professionals' activities remain rooted in public health values, as they are often at the forefront of outbreak or emergency preparedness responses and must navigate complex challenges related to these values.

Ethical Issues in Infectious Disease Outbreaks

Ethical concerns during infectious disease outbreaks resemble those in regular settings but are complicated by system disruptions, fear, and uncertainty. Governments in resource-constrained countries often face urgent decisions without robust health systems or effective legal frameworks in place. This is exacerbated in regions prone to disasters and conflict, where disease risks increase and access to care diminishes. Health professionals must balance competing values under constrained resources.

For example, the 2014-2016 West Africa Ebola outbreak revealed ethical gaps, leading the WHO to declare a Public Health Emergency of International Concern. An ethics panel and later an ethics working group offered guidance. Ethical issues mirrored those from past outbreaks, such as SARS, influenza, and drug-resistant tuberculosis. This section examines these challenges and proposes strategies for ethical, culturally sensitive, and fair outbreak responses.[48]

Respect for People and Public Health Professionals

Public health ethics prioritize individual autonomy, ensuring that informed decisions align with personal values. They advocate for consent free from coercion and the safeguarding of privacy, confidentiality, and person-centered beliefs. Outbreaks often test these ethics due to the need for rapid interventions. Transparency and truth-telling are crucial for fostering

trust and delivering effective responses. Ethical consistency and fairness are vital for public health officials and DI professionals. Regular ethics training and community education efforts help build trust, encourage cooperation, and strengthen coordinated responses during outbreaks.

Health Literacy and Respectful, Adaptive Communication

Trust-building requires inclusive community engagement and open dialogue during outbreak responses. Public health authorities should use clear, culturally (person-centered) sensitive communication to address literacy and person-centered contextual barriers, thereby building trust. Transparency about decisions, uncertainties, and injustices enhances credibility. Collaboration with community leaders improves information dissemination. Visual tools and simple language help bridge gaps, fostering adherence to prevention and treatment protocols for effective public health measures.

Understanding Outbreak Dynamics Through Basic Epidemiology

Accurate data are essential for identifying and responding to outbreaks. DI professionals play a crucial role in gathering and interpreting information, including case counts, contacts, and patterns of transmission. In many settings, limited resources can lead to delays in data collection and analysis, making early training and planning crucial. Using clear communication and person centered appropriate approaches helps ensure data are accurate and useful. When collected responsibly and shared appropriately, this information supports timely and targeted public health responses that reflect the community's needs.

Addressing Economic and Social Factors Contributing to Health

Outbreaks heavily affect low-income and marginalized groups due to inadequate access to essentials like water, food, transportation, and communication tools. Public health responses will falter without addressing these inequities. Solutions include free or subsidized care, fair vaccine distribution, transport aid, and food or housing support. Tackling these barriers helps build trust and reduce the number of deaths related to outbreaks.

Maintaining Confidentiality

During outbreaks, maintaining confidentiality is crucial for preventing stigma and fostering trust, particularly in close-knit communities. DI professionals must adhere to clear legal and ethical standards when managing personal health information. The Privacy Rule of the Health Insurance Portability and Accountability Act (HIPAA) prohibits the disclosure of protected health information (PHI) without written consent, except in specific instances such as mandatory public health reporting. Ethical principles also highlight minimizing harm, protecting data through secure digital systems, and training DI professionals in confidentiality procedures. In all cases, informed consent – the process when individuals diagnosed with infectious diseases are informed about how their health information will be used and they are given the choice to agree or refuse – should govern data sharing, upholding both privacy and professional integrity.

Conclusion

This chapter highlights the crucial role that DI professionals play in safeguarding communities during outbreaks and other public health emergencies. Preparedness for, and response to, outbreaks are key duties of the DI professionals to ensure their readiness to respond quickly and effectively when public health emergencies arise. The deployment of outbreak competencies, cross-training, and the use of data-driven intervention strategies enable DI professionals to achieve optimal frontline protection against rapidly spreading diseases. A DI professional's skills to collect reliable data, provide inputs across multiple partners, and apply ethical approaches in decision-making have a direct effect on the success of emergency response events. Through acquiring skills in preparedness, DI professionals develop the ability to manage risk, protect vulnerable populations, and maintain public confidence, thereby making their role critical for both short-term outbreak management and long-term public health resilience.

Chapter 6 Keywords

After-action report (AAR)

Emergency planning

Health Alert Network (HAN)

Incident command system (ICS)

Just-in-time (JIT) training

Multimorbidity

Tabletop exercises (TTX)

Outbreak response plan (ORP)

Priorities for response readiness (PRR)

Chapter 6 Practice Questions

1. Which of the following is the most effective intervention method to control a fast-spreading respiratory disease in its early stages?

    a. Administer vaccines after the outbreak has peaked.

    b. Establish isolation protocols for individuals showing symptoms.

    c. Await the natural development of herd immunity.

    Answer: b

    Rationale: In the early stages of a respiratory outbreak, immediate isolation and infection control measures are the most effective at slowing transmission. Vaccines and herd immunity take time and are not early-stage interventions.

2. What is the advantage of just-in-time (JIT) training for DI professionals during an outbreak?

    a. To reduce the necessity for information updates

    b. To lower the overall cost of training in the long run

    c. To provide timely, relevant information for immediate application

    Answer: c

    Rationale: JIT training equips professionals with up-to-date, practical knowledge tailored to the specific outbreak response. It's not about cost savings or reducing updates – it's about readiness.

3. Which is the most important communication platform that public health officials use to report an urgent notification of a spoiled batch of medicine to health care professionals?

    a. Social media

    b. Health Alert Network (HAN)

    c. A printed flyer posted in public places

    Answer: b

    Rationale: HAN is the CDC's primary system for rapid, secure communication with health care professionals. Social media or flyers are not appropriate for urgent, technical notifications.

4. During a tabletop exercise simulating an outbreak scenario, there is a lack of communication among several contributors. What is the next suggested step?

    a. Recommend stopping the exercise entirely to reset team expectations.

    b. Continue with your assigned tasks and avoid raising concerns mid-exercise.

    c. Document the gap and help in creating a communication improvement plan.

    Answer: c

    Rationale: Tabletop exercises are designed to identify strengths and weaknesses. Rather than stopping or ignoring the issue, gaps should be noted to strengthen future response planning.

5. A DI professional participates in an after-action reporting session following a mass outbreak response. What key response activities should they document through the after-action report?

    a. The most significant actions that led to the disease containment

    b. Only activities approved by upper management

    c. Remarks about the financial resources used throughout the response

    Answer: a

    Rationale: AARs focus on lessons learned – documenting strengths, gaps, and outcomes that directly influenced response effectiveness. Limiting to approvals or financial notes misses the point.

6. A DI professional is preparing educational materials for a community whose language is not English. What should the DI professional do to ensure health literacy and person-centered awareness in the message?

    a. Use the same materials provided to English-speaking communities and translate them word-for-word into the other language.

    b. Use someone from the community to translate the materials and revise the content so that it can more accurately characterize the person-centered values and traditions of the community.

    c. Publish general health facts without regard for the language or person-centered barriers, in hopes that the majority of people will be able to understand the material.

    Answer: b

    Rationale: Effective health communication is not just word-for-word translation; it must be person-centered and linguistically tailored for understanding, trust, and relevance.

Table 1

Example of Public Information Message: (MSF Medical Guidelines)

There is currently a measles outbreak in _____

Patient treatment

Consult your nearest health facility if a child or someone in your family has:

a fever and widespread skin rash
associated with
a cough or conjunctivitis (red, watery eyes) or nasal discharge (runny nose)

- If the child's condition is worrying (breathing difficulties, drowsiness, seizures, diarrhea, refusal to eat, etc.), take them to the hospital immediately.

- During the outbreak, measles treatment is free of charge.

Vaccination

Everyone age 6 months to _____ years should be vaccinated against measles.

- Vaccinations will be performed from: _____ to_____
- Please go to the nearest vaccination site: _____

- Measles vaccination is free of charge.

- If you will be absent the day of the vaccination, go to the health facility as soon as possible.

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