

THE PARTNERSHIP OF PUBLIC HEALTH AND LAW ENFORCEMENT

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“The Partnership of Public Health and Law Enforcement”

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Goal

Describe how public health and law enforcement can effectively
collaborate during criminal investigations

Objectives

- Identify the role of law enforcement (LE) in criminal investigations
- Discuss the role of EMS, hospitals and public health in criminal investigations
- Identify how LE collaborates with EMS, hospitals, and public health
- Discuss the key issue of “Chain of Custody”



Yesterday

- Law enforcement - investigate and arrest
- Fire - put out fires & rescue
- EMS - render aid and transport
- Public Health - medical & environmental surveillance, administer health programs

Much less interaction between public safety and public health



Today

- Crimes
- Disasters (man-made & natural)
- CBRNE (chemical, biological, radiological, nuclear, explosive)
- WMD (weapons of mass destruction)
- Epidemics
- Pandemics

Public safety and public health partner together in all stages



Who Might Be Involved?

Local / State

HLSEM
EMA
Local/state public health
Laboratories
Law Enforcement
Hospitals / Clinics
EMS
DNR

Federal

FBI
CDC
National Guard
FEMA
USDA
DHS

Don't forget the media



Role of LE in Criminal Investigations

- Typically initiate the investigation
- Conduct interviews
- Develop and pursue leads
- Collect evidence
- Make arrests
- Support arrest with court testimony and documentation



Role of Public Health in Criminal Investigations

- EMS & health care providers - save the patient/victim
 - LE needs will NEVER trump the need of the patient
 - May provide support to LE by evidence collection
- Public Health
 - Involved in investigations of Possible CBRNE acts
 - CBRNE model available on Iowa Health Alert Network



What is the HAN? (Iowa Health Alert Network)

The HAN is a secure, web-based communications system allowing authorized users to:

- Issue alerts
- Share documents
- Post announcements and news items
- Collaborate



Possible Terrorist Events

Public health and law enforcement become involved in these investigations under different circumstances

Overt Attack – Perpetrator announces responsibility or nature of the event reveals itself (Law Enforcement)

Covert Attack – Typically an unannounced or unrecognized release in which presence of ill persons may be the first sign of the attack (Public Health)



Investigative Approaches

Both disciplines protect the public –

The approach & nature of the two are quite different

Public Health – Generally an inductive approach

Persons interviewed, data collected, hypotheses are developed, studies conducted to test hypotheses. Held to standard of scientific peer review

LE – Generally a deductive approach

Interviews, leads developed & pursued, evidence collected, suspect arrested & prosecuted. Held to legal standard.



Definitions

Chain of Custody – written record identifying evidence and individuals who had physical possession of it

Evidence – any object or item that proves/disproves a legal point

Forensic Evidence – application of scientific techniques and knowledge to obtain criminal or legal evidence



Public Perception - The CSI Effect



What is the CSI Effect ?

The creation of unreasonable expectations that law enforcement and its partners can solve every crime the way it is accomplished on the TV series "CSI"

(Including solving the case in an hour)



Types of Forensic Evidence

- Bullets
- Impressions
- Fibers
- Hair
- Glass
- DNA
- Powders
- Endless Possibilities



Why is Chain of Custody Important?

Intended to prove the integrity of the evidence has been maintained from seizure through court production

Documentation is critical to a successful prosecution

If You Didn't Document It, It Didn't Happen



Chain of Custody Legal Issues

- Who collected it?
- Who packaged it?
- Who had possession of it?
- Photographed?
- Secure storage of evidence?

Identifiable person must always have physical custody



What is Physical Custody?

Evidence is considered in your physical custody when:

- In your physical possession
- In your view after being in your physical possession
- In your possession and then secured so tampering cannot occur
- Kept in a secure area



Additional Considerations

- Initial triage, treatment and transportation ALWAYS take precedence over preservation or collection of evidence.
- Due care and diligence should be exercised to preserve materials and collect information that may assist in the investigation and prosecution of a crime.
- Preservation of evidence can occur simultaneously as care for critical patients is performed.



Thank You

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Partnership Between Public Health and Law Enforcement: Public Health and Healthcare Provider Roles



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Objectives

- Define Forensic Epidemiology and its importance to identifying and characterizing outbreaks/WMD events
- Define public health and clinical roles in outbreaks
- Describe basic forensic evidence collection for healthcare providers

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Case

- November 10, 2008 – Reports of increasing numbers of patients reporting to emergency rooms with unusual neurological findings – as days progress, many have respiratory failure and muscle paralysis
- Botulism
- Treatment
 - Botulinum antitoxin-only against toxin A,B,E
 - Supportive care-up to 3 months

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Consequence Management

- Local and State Public Health Departments
- Local Medical Care facilities
- Support from Centers for Disease Control and Prevention

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Public Health

- Organized federal, state and community effort to protect, promote and improve the health of its citizens
 - Primary care: focus on individuals
 - Public health: focus on populations
- A social institution, a discipline and a practice

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Epidemiology

- Originally, the study of epidemics
- Outbreak is a more localized term for epidemic
- Study of the factors that contribute to illness in individuals and communities, and how to reduce disease by altering those factors
- Forensics now more involved as a crime has been committed in cases of terrorism

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Public Health Emergencies

- Bioterrorism have focused attention on public health preparedness for emergencies
- In the case of botulism poisoning, public health has moved from secondary responder to one of the primary responders
- Requires interagency communication, training, agreements and exercises

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Public Health Emergencies

- Examples of public health emergencies:
 - Natural disaster: hurricanes, floods, earthquakes;
 - Outbreaks from contaminated food or water, influenza pandemics;
 - Biological, chemical, radiological and nuclear WMD

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Public Health and Law Enforcement Goals Compared

Law enforcement:
Public health:

- Stop further crimes
- Protect health and safety of public
- Apprehend and convict criminals
- Stop further cases of disease and outbreaks
- Protect health and safety of public
- Build science base for future prevention

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Differences Can Create Difficulties

- Who's in Charge?
 - Law enforcement or public health or both, but in charge of different aspects
 - Joint Operation should be established
 - FBI and CDC will be involved with multiple site outbreaks such as in our case
- Early Notification!

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Public Health and Law Enforcement Interviews

- Much of the information both investigators need to obtain is the same
- However, both investigators have unique perspectives/background/experience

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Local-State-Federal Relationships

- Public health is constitutionally a state matter
- Local health agencies: disease surveillance, initial outbreak investigations
- State health agencies: technical assistance, policy guidance, lab support, field assistance, resources (vaccines, drugs, ...)

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Local Health Department

- Responsibility and authority to investigate all epidemics, outbreaks, and issues of public health concern
- First responder for investigating and controlling biological WMD events
- Epidemiologist – Disease Detective


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Local-State-Federal Relationships

- CDC provides resources when outbreaks exceed state capacity, are multi-state or international, or result from bioterrorism
- For events within states, CDC usually investigates only on request of state health department


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What is an Outbreak?

- An outbreak is the occurrence of more cases of a disease than expected in a population during a certain time
- One case of smallpox, anthrax, plague, botulism, or tuberculosis anywhere in the US is an outbreak requiring immediate response
- An epidemic and an outbreak mean the same thing

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How Are Outbreaks Detected?

- Recognized and reported by individual doctors or groups (e.g., an emergency dept) **1-800-362-2736**
- Recognized and reported by those affected (e.g., coworkers, school, banquet)
- Detected by PH agency through review of individual cases reported by doctors, or review of lab reports or other health care data
- Enhanced surveillance in cooperation with state and federal public health officials

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Surveillance

- The ongoing, systematic collection, analysis, and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely feedback of these data to those who need to know.

In public health, 'surveillance' means tracking the occurrence of diseases of importance – not watching individuals or premises

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Syndromic Surveillance

- Many bioterrorism agents and emerging diseases present with viral syndromes where nonspecific symptoms are present
- Many public health agencies now automatically download patient data looking for abnormal trends in diagnoses, medications prescribed, etc.
- If a trend is detected, then the public health epidemiologist can begin a preliminary investigation

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Syndromic Surveillance

- Some indicators that surveillance systems monitor include:
 - Number of upper respiratory diseases seen in emergency departments
 - Number of ambulance runs within an allotted period of time
 - Number of antibiotics or over-the-counter drugs sold at pharmacies

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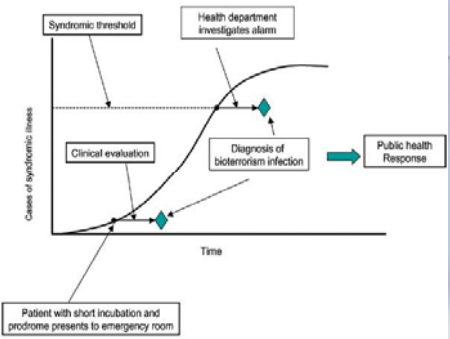
Clinician Reporting

- Astute clinicians either suspect an occurrence due to a large number of patients presenting with unusual symptoms or patients are admitted and cultures reveal an unusual disease or an unusual number of a certain disease regularly seen
- This is then reported to the public and/or state health departments
- UIHC – hospital epidemiology would also initially assist

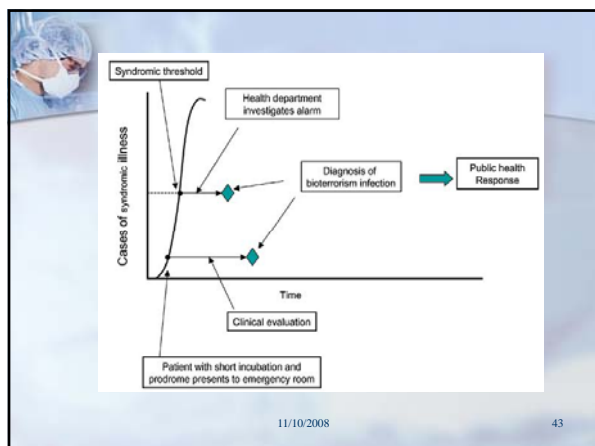
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Steps in an Outbreak Investigation


- Detect problem by public health surveillance or clinician reporting
- Verify diagnosis
- Confirm outbreak-more cases than would be expected during a certain time period or in a specific location
- Identify / count cases

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Steps in Investigation

- Characterize data → time / place / person
- Take immediate control measures
- Formulate / test hypotheses
- Implement / evaluate additional control measures
- Report findings

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Where Did the Outbreak Start?

- Most outbreaks do not have an identifiable scene you can put a tape around:
 - Spread is from person to person; or
 - Common source is gone; or
 - Group has dispersed from site of exposure; or
 - Source material discarded or replaced


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What Should Make You Suspect an Intentional Outbreak

- Sudden increase in severity or incidence of illness
- Appearance of unusual (non-endemic) illness or syndrome in your community-extremely rare disease
- Geographic and/or temporal pattern of illness
- Occurrence of vector-borne disease



What Should Make You Suspect an Intentional Outbreak

- Cluster of sick or dead animals
- Atypical seasonality
- Unusual expression of endemic disease
- Multi drug-resistant pathogens




What Should Make You Suspect an Intentional Outbreak?

- All victims attended a common event
- All victims share a common workplace or other locale
- All victims work for the same agency
- A dissemination device is found
- All victims traveled by same means

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Goal of Epidemiologic Investigation: **Prevention**

This is the source of urgency for PH staff

- Find and fix ongoing point source (like contaminated food or drink supply)
- Close location until fixed
- Take food product off the market
- Find, isolate, and treat infectious people
- Find exposed people, give them prophylactic treatment or vaccine, and/or quarantine them

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Public Health 'Police Powers'

- Inspect or close premises
- Limit the movements of people (isolation, quarantine)
- Require vaccination, testing, or treatment

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Public Health 'Police Powers'

- Seize, embargo, impound food and other hazardous substances, or stop their sale
- Board planes, trains, buses, and ships as part of disease control
- Review medical and hospital records
- Interview whoever and whenever information is needed for investigation of a public health problem

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Public Health Agencies Also Regulate

- Most PH agencies have powers to take disciplinary actions against licensed entities (restaurants, day-care centers, health care workers, etc.)
- These are handled as administrative law issues, not crimes
- Criminal prosecutions are very rare


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Forensic Evidence Collection

For Healthcare Providers




Evidence Collection: General Rules

- All trauma patients should be considered a forensic patient until proven otherwise. Other patients may include those with unusual diseases or presentation of a disease.
- Hospital personnel should keep in mind that the patient/victim's body and clothing may contain a large amount of evidence. Some evidence is obvious to the naked eye, but much of it is microscopic and can only be determined by laboratory examination.
- Above all, personnel must remember that anything can be evidence. What may seem unimportant at the time could become very critical later as the investigation grows.

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Locard's Principle

- Whenever there is contact between 2 objects, there is mutual exchange of material between them
- This is the basis for linking victims, perpetrators and crime scenes

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Evidence Collection

- If possible, informed consent should be obtained prior to collecting evidence
- This consent should include what will be taken, who the material will be given to, and should also include permission for photography

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Evidence Collection: History

- The first part of forensic examination should include the history of what happened to the patient prior to and during the event, if possible
- Treatment of the patient is always first priority, however, try to minimize damage to potential evidence during the process

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Evidence Collection

- Generally accepted procedures for collecting evidence
 - Staff safety is number one. Always use appropriate PPE. Gloves must be worn when handling physical evidence
 - Chain of custody must be maintained for each item
 - If clothing must be cut, cut carefully and not through wounds or defects in clothing

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Evidence Collection

- Procedures continued
 - If possible, photograph the victim and note injuries (if present) before removing clothing
 - Do not remove bullets, knife tips, or other objects with forceps as this could negate further lab findings
 - If ligatures are attached, do not untie the knots, but cut them
 - Place paper bags over hands to preserve evidence

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Evidence Collection

- Procedures continued
 - Collect sheets or blankets patient was transported on as they may contain trace evidence
 - Place one item per bag to avoid cross-contamination
 - Maintain chain of custody and pass material to either law enforcement or hospital security where it will be stored in secure location


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Collection and preservation process

- Clothing/Sheets from stretcher.
 - Remove each item from patient in one piece if at all possible.
 - If cut-off, do not cut through holes or wounds entries/exits.
 - With a sharp pen, place initials of person taking custody of item and date obtained.
 - Place item in PAPER sack.
 - On outside of sack, note date, time, name of person taking custody of item, patient's name, and item description.
 - One item per bag.
 - If item is damp or wet, it will need to be hung up and allowed to dry in a secure place.

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Evidence collection

- Bullets/Knife tips/Foreign objects.
 - DO NOT remove with forceps, use gloved hand or plastic-coated tipped forceps
 - Place in a small manila envelope.
 - Wrap bullets in gauze to preserve trace evidence


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Collection and preservation process

- Hairs/Fibers**
 - Do not use regular tweezers forceps to handle.
 - Use forceps with plastic-coated tips
 - Place in small paper envelope. Do not place in glass or plastic bottles or plastic bags.
 - Label outside of container with date, time, item description, patient's name person taking custody.
 - If hair is removed from patient, pull, do not cut.
- Swabs**
 - Allow to air dry.
 - Dried secretions or fluids and areas around bite marks should be swabbed
 - Same as sexual assault cases
 - Place in sterile test tube.


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Evidence Collection

- Fingernail Scrapings**
 - Scrapings from each finger should go into an individual small envelope.
- Blood**
 - Collect as indicated in standard lab procedure.
 - DO NOT use preservative, as this could interfere with lab tests.
 - Refrigerate.
- Vomit, urine**
 - Place in sterile jar.
 - Refrigerate.


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Epi Investigation Specimens

- Materials usually required to assist in an epidemiological investigation include:**
 - Tissue
 - Blood
 - Sputum
 - Urine
 - Vomit
 - Stool

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Epi Investigation

- Environmental samples will also be needed, but this is generally performed by public health with the assistance of law enforcement, especially when looking at possible terrorist event

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Evidence Labeling

- All evidence should be sealed in containers and labeled with date, time, patient's name, description of the item, source of the material including anatomic location, name of person collecting evidence, and names and initials of anyone else who handled the material

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Chain of Custody Documentation

- After evidence has been collected, properly labeled, and placed in its container, an **evidence receipt/log** showing a brief description of each item and its chain-of-custody needs to be completed.
- At UIHC, Safety and Security has evidence locker if law enforcement is not immediately available

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Evidence Receipts

- Evidence Receipts/Log**
 - An evidence receipt is the official record of receipt, chain of custody, and final disposition of items of physical evidence.
 - Any evidence turned over to law enforcement must be receipted to law enforcement personnel, showing items picked up, date and time and the signature of the officer receiving the evidence, as this helps maintain the chain-of-custody.
 - Evidence Receipt
 - Evidence Storage Log

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Conclusions

- Collaboration of public health and law enforcement is essential in identifying and treating public health emergencies, as well as determining who initiated event in some cases
- Most emergencies are handled at the local level and local agencies and law enforcement need to train and learn how to investigate together
- Evidence collection is essential in many cases to help identify what has occurred and to aid in law enforcement investigation
- While patient care comes first for healthcare providers, we have some obligation to help preserve evidence

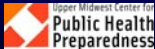
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