Chapter 2  Crime Scene Investigation and Evidence Collection

By the end of this chapter you will be able to:

- Summarize Locard’s exchange principle
- Identify four examples of trace evidence
- Distinguish between direct and circumstantial evidence
- Identify the type of professionals who are present at a crime scene
- Describe how evidence from a crime scene is analyzed
Chapter 2  *Crime Scene Investigation and Evidence Collection*

By the end of this chapter you will be able to:

- Summarize the three steps of a crime scene investigation
- Explain the importance of securing the crime scene
- Identify the methods by which a crime scene is documented
- Demonstrate proper technique in collecting and packaging trace evidence
Principle of Exchange

Established by Dr. Edmond Locard, the principle states:

- When a person comes in contact with an object or another person, a cross-transfer of physical material can occur.
- Study of the material can determine the nature and duration of the transfer.
Principle of Exchange

- Physical transfer of materials such as hair, fibers, blood, and skin cells will occur whenever two people come in contact with each other. Dr. Edmond Locard was the first to describe this *principle of exchange*.
- The longer or more intense the contact between two people, the greater amount of trace evidence present.
- It is the job of the forensic examiner to recognize, collect and analyze this trace evidence to help solve crimes.
Types of Evidence

Direct evidence
Testimony by a witness about what that witness saw, heard, or did
VERY RARE!
ONLY VIDEO AND EYEWITNESS TESTIMONY
Types of Evidence

Circumstantial evidence
- also called Indirect
- trace evidence
- can be used to imply fact but does not directly prove it.

Physical evidence
- bullets, ransom notes...

Biological evidence
- blood or hairs ...
Types of Evidence

Explain why this would be or would not be trace evidence? Why might it be biological or physical?
The Crime Scene Investigation Team

Who is at the crime scene?

- Police
- District attorney (possibly)
- Crime scene investigators
- Medical examiners
- Detectives
- Specialists
The Seven S’s of Crime Scene Investigation

1. Secure the scene
2. Separate the witnesses
3. Scan the scene
4. Seeing the scene
5. Sketch the scene
6. Search for evidence
7. Secure the collected evidence
Securing the Scene

- The first responding police officer must make sure the scene is secure by first making sure all individuals in the area are safe and second by preserving evidence.
Securing the Scene

- Typical Crime Scene Kit
Separating the Witnesses

Witnesses must not be allowed to talk to one another.

- Prevent Collusion (secret or illegal cooperation or conspiracy, especially in order to cheat or deceive others)
- Effect memory of the event
Scan the Scene

The primary and secondary crime scenes must be determined and decisions regarding where photos should be taken are made.

- Primary crime scene - where a crime actually occurred
- Secondary crime scene - in some way related to the crime but is not where the actual crime took place
See the Scene

- Photos of the overall area and close up photos with and without a measuring ruler should be taken.
  - Should use numbered markers to indicate important evidence.
Sketching the Scene

- A rough sketch and a neater final copy of the crime scene drawn to scale must be made.
Crime-Scene Sketch Form

Scale: $\frac{1}{4}'' = _______ feet$

Case number __________
Date _______________
Location ___________
Name _______________
Search for Evidence

- A spiral, grid, linear or quadrant pattern should be walked and location of evidence marked, photographed and sketched.
Securing and Collecting Evidence

- All evidence must be properly packaged, sealed and labeled using specific techniques and procedures.
Packaging the evidence

1. Crease a clean paper and place evidence in the X position
2. Fold in the left and right sides, and then fold in the top and bottom
3. Put the bindle into a plastic or paper evidence bag affixing a seal over the opening
4. Write your name on the seal
Securing and Collecting Evidence

- An evidence log and a chain of custody must be attached to the evidence container.
  - Packaging Evidence
- Each piece of evidence should be wrapped in an appropriate sized bundle, placed and sealed in an evidence bag, with the collector's signature along the taped edge.
- b. Chain of Custody
- Each person who comes in contact with a piece of evidence must use proper procedure and protocol in order to maintain responsible handling of evidence from crime scene to courtroom.
Evidence ID Forms

**Evidence**

- Case # __________________
- Inventory # ______________
- Item # ______________
- Item description ________________________
- ______________
- ______________
- Date of recovery ____________
- Time of recovery ____________
- Location of recovery ________________________
- Recovered by ________________________
- Suspect ________________________
- Victim ________________________
- Type of offense ________________________

**Evidence Inventory Label**

- Case # __________________
- Inventory # ______________
- Item # ______________
- Item description ________________________
- ______________
- ______________
- Date of recovery ____________
- Time of recovery ____________
- Location of recovery ________________________
- Recovered by ________________________
- Suspect ________________________
- Victim ________________________
- Type of offense ________________________

**Chain of custody**

- Received from ____________ Date ____________
  By ________________________
  Time __________________ AM or PM
- Received from ____________ Date ____________
  By ________________________
  Time __________________ AM or PM
- Received from ____________ Date ____________
  By ________________________
  Time __________________ AM or PM
- Received from ____________ Date ____________
  By ________________________
  Time __________________ AM or PM

**Chain of custody**

- Received from ____________ Date ____________
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  By ________________________
  Time __________________ AM or PM
- Received from ____________ Date ____________
  By ________________________
  Time __________________ AM or PM

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Maintaining a chain of custody log is essential to present credible evidence in court.
Chain of Custody (cont’d.)

1. Bag the evidence
   Add identification
   Seal it
   Sign it across the sealed edge

2. Sign over to a lab technician
   Open bag on non-sealed edge

3. Return items to the evidence bag
   Seal evidence bag in another bag
   Sign the evidence log
Another way to classify Evidence

Individual vs. Class Evidence
What is Trace Evidence?

A very small piece of physical evidence that can be used to identify or link a suspect to a crime
Trace Evidence

- Divided into individual or class evidence
Individual Evidence

- Individual evidence shows an object’s uniqueness
- Can specifically place things to a person or a place or an object to the exclusion of all others
- DNA, fingerprints, bite marks
- Sometimes shoe prints, tire prints and torn fabric.
Class Evidence

- Class evidence can place an object to a group, but not to an individual
- Will include a group of suspects
- Examples: fibers, paint, soil, glass
Analyze the Evidence

- Facts result from collected evidence processed by the forensic lab
- Lead detective aims to see how facts fit into the crime scenario
Analyze the Evidence

Lab results can:

- Show reliability of witness accounts
- Establish the identity of suspects or victims
- Show suspects to be innocent or link them with a scene or victim
Crime Scene Reconstruction

Crime scene reconstruction involves:

- Forming a hypothesis of the sequence of events
- From before the crime was committed through its commission
Staged Crime Scenes

When lab results don’t match up with the testimony of witnesses

Common examples:
- Staging a fire—to collect insurance money
- Staging a suicide—to cover a murder
- Staging a kidnapping—to cover murder (JBR)
Staged Crime Scenes

Was the crime scene staged? Consider:

- Does the type of wound match the weapon?
- Could the wound be easily self-inflicted?
- What were the mood and actions of the victim before the event?
- What were the mood and actions of the suspect before the event?
Scenario

- A student is kidnapped on the way home from school. Her backpack is found on the side of the road. There are several strands of hair caught in the zipper.

- Hair can be either class or individual depending on whether the root is present. The root of the hair will have DNA on it. Otherwise hair is usually class evidence.
Locard’s exchange principle:
  • Contact between people and objects can transfer material that can determine the nature and duration of the transfer

Evidence can be direct or indirect
  • Physical or biological traces

A crime scene investigation team consists of police, detectives, crime scene investigators, medical investigators, and specialists.
Summary

- Investigations consist of recognizing, documenting, and collecting evidence.
- First responding officers identify the extent of the crime scene, secure it, and segregate witnesses.
- Crime scene investigators document the crime scene.
- Evidence is collected, packaged, and labeled.
- The evidence is analyzed and interpreted to fit the crime scenario.