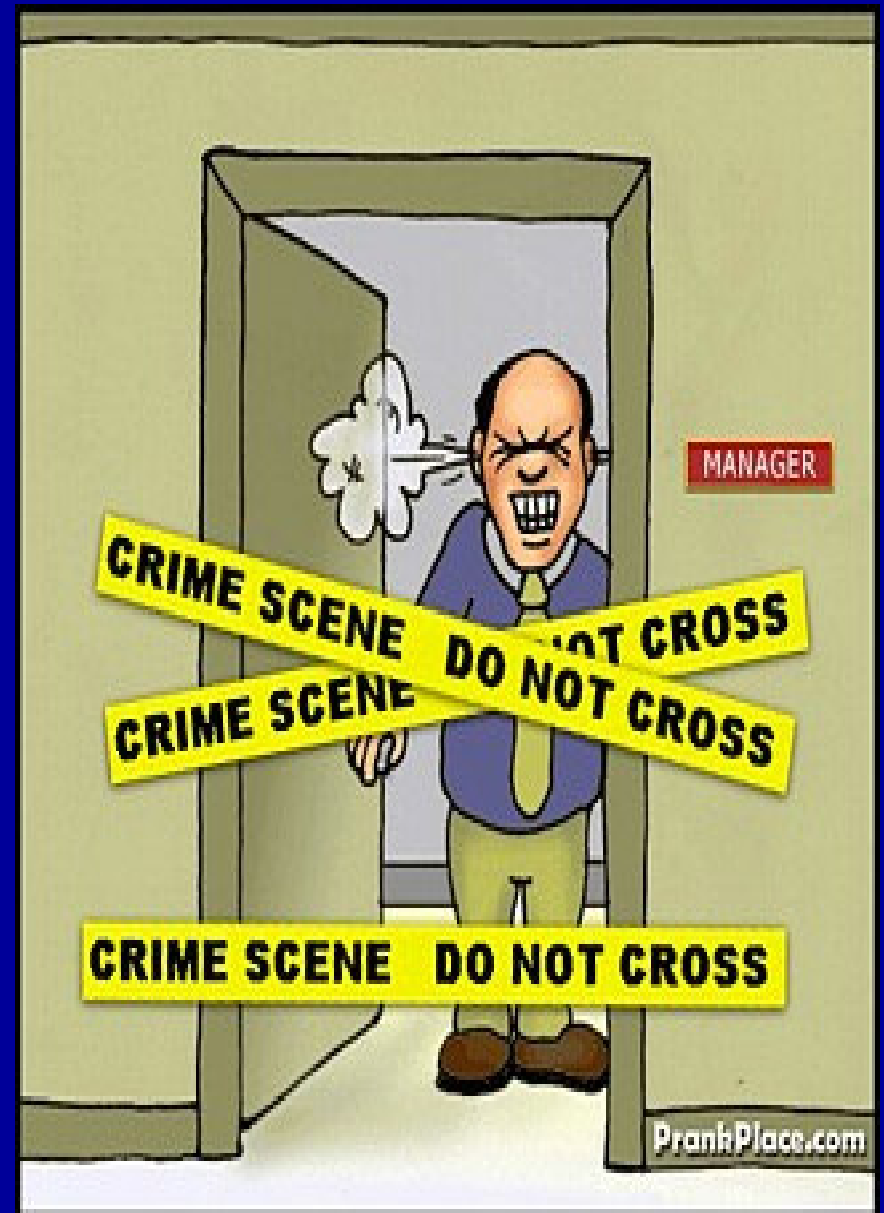




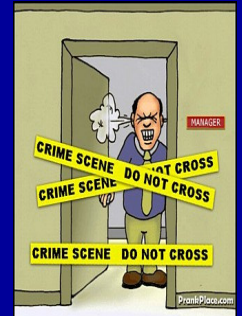
CRIME SCENE





Physical Evidence

- Crime laboratories “run” on physical evidence
- Physical evidence encompasses any and all objects that can establish that a crime has been committed or can provide a link between a crime and its victim or a crime and its perpetrator.
- But if physical evidence is to be used effectively for aiding the investigator, its presence first must be recognized at the crime scene.

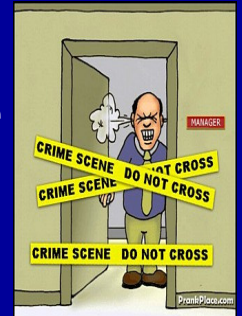




The Beginning

- Forensic science begins at the crime scene
- Every forensic investigator has to recognize physical evidence and properly preserve it for laboratory examination ,
- Any amount of sophisticated laboratory instrumentation or technical expertise can salvage the situation if physical evidence is not collected properly.
- The techniques of crime-scene investigation are not difficult to master and certainly lie within the bounds of comprehension of the average police officer

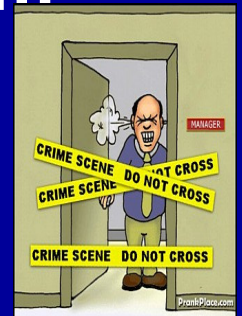
Forensic Science CC 30.07 Spring 2007 Prof. Nehru





The First Steps -1

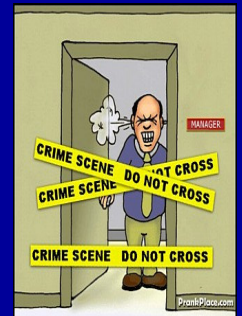
- The first officer to arrive at the scene is responsible for securing the crime scene.
- Priorities should:
 1. Medical assistance for individuals in need
 2. Arresting the perpetrator
 3. Exclude all unauthorized personnel from the scene.





The First Steps -2

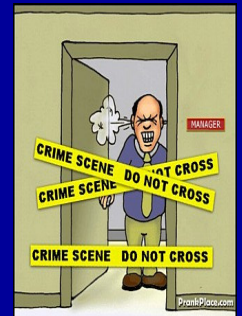
- Once the scene is secured, the preliminary exam must begin
- Recording of the crime scene becomes a critical piece to the investigation process.





Recording Methods

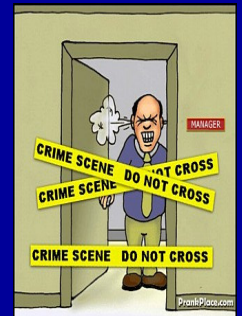
- Photography, sketches, and notes are the three methods for crime-scene recording
- Ideally all three should be employed; however, as is often the case, personnel and monetary limitations may prohibit the utilization of some





Photography -1

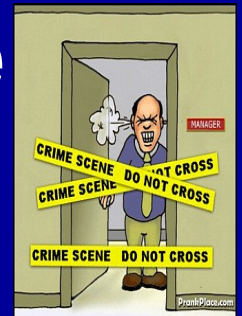
- The most important prerequisite for photographing a crime scene is for it to be in an unaltered condition.
- Unless there are injured parties involved, objects must not be moved until they have been photographed from all necessary angles.
- As items of physical evidence are discovered, they are photographed to show their position and location relative to the entire scene.





Photography -2

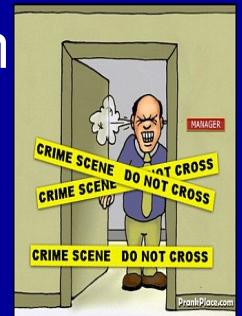
- After these overviews are taken, close-ups should be taken to record the details of the object itself.
 - When the size of an item is of significance, a ruler or other measuring scale may be inserted near the object and included in the photograph as a point of reference



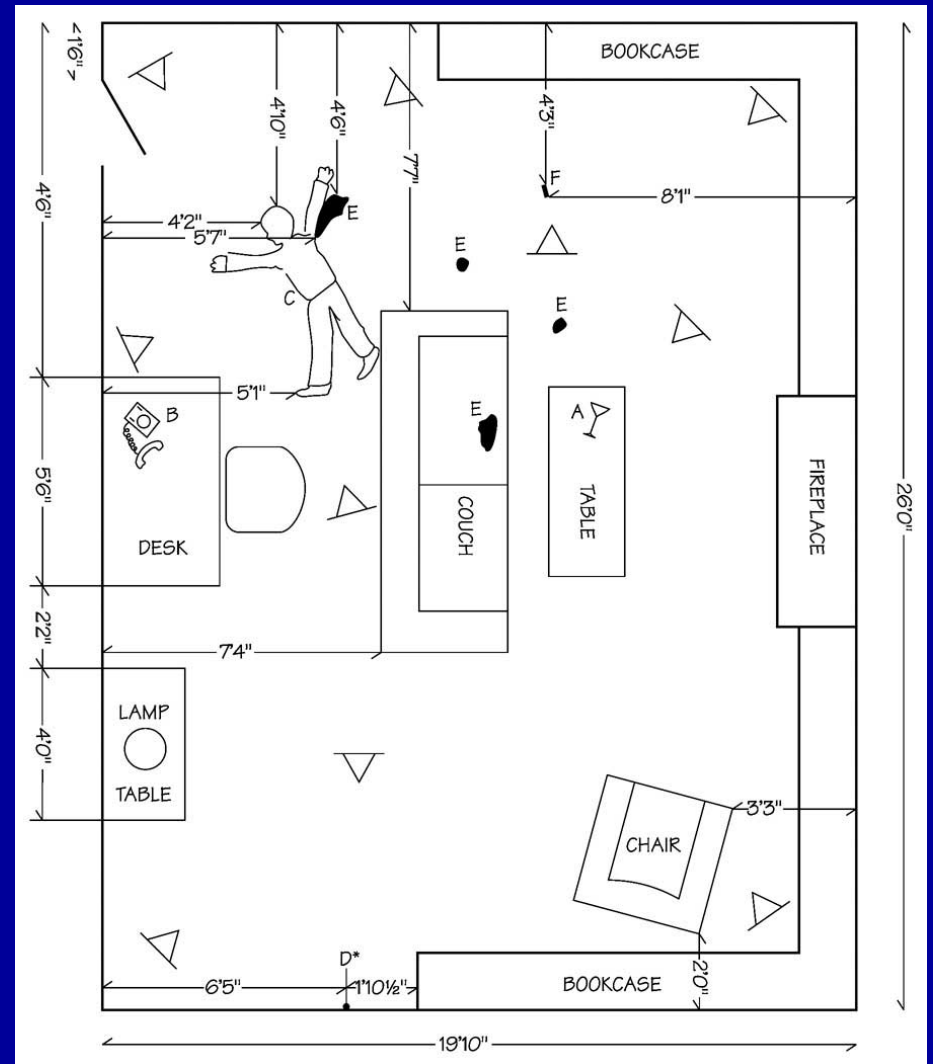
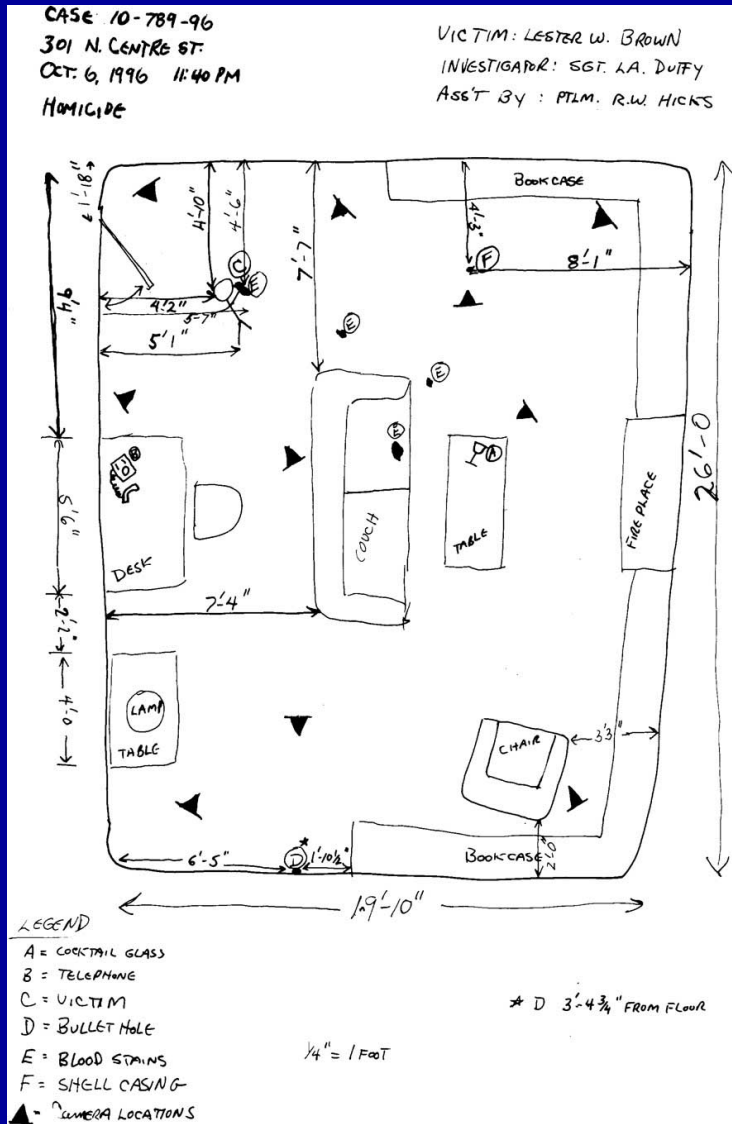


Sketches

- Next, sketches of the scene are made
- **Rough Sketch** —*A draft representation of all essential information and measurements at a crime scene. This sketch is drawn at the crime scene. It shows all recovered items of physical evidence, as well as other important features of the crime scene*
- **Finished Sketch** —*A precise rendering of the crime scene, usually drawn to scale. This type is not normally completed at the crime scene*
- Unlike the rough sketch, the finished sketch is drawn with care and concern for aesthetic appearance



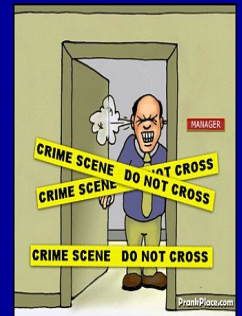
Rough Sketch vs Finished Sketch





Notes - 1

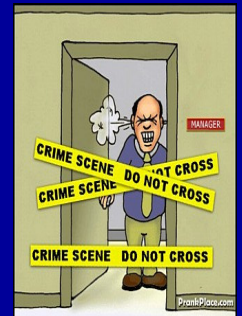
- Note taking must be a constant activity throughout the processing of the crime scene.
- These notes must include a detailed written description of the scene with the location of items of physical evidence recovered.





Notes - 2

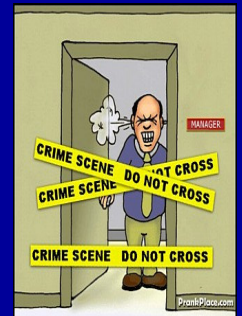
- **The notes must identify:**
 - the time an item of physical evidence was discovered
 - by whom it was discovered
 - how and by whom it was packaged and marked
 - the disposition of the item after it was collected
- **The note taker has to keep in mind that this written record may be the only source of information for refreshing one's memory.**

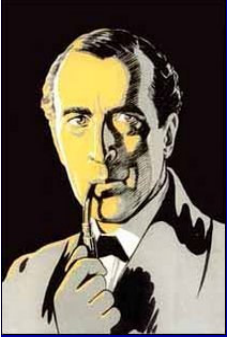




Recording The Crime Scene

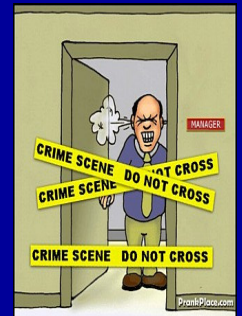
- Investigators have only a limited amount of time to work a crime site in its untouched state.
- The opportunity to permanently record the scene in its original state must not be lost.
- Such records will not only prove useful during the subsequent investigation but are also required for presentation at a trial in order to document the condition of the crime site and to delineate the location of physical evidence.
- Every step of the investigation should be documented thoroughly with an appropriate method.





The Preliminary Exam

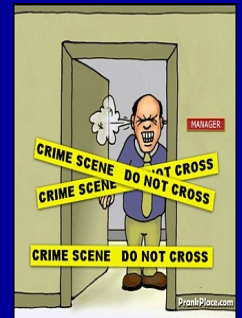
- A lead investigator starts the process of evaluating the area.
 - First, the boundaries of the scene must be determined.
 - Followed by the establishment of the perpetrator's path of entry and exit.
 - The investigator then proceeds with an initial walk-through of the scene to gain an overview of the situation and develop a strategy for the systematic examination and documentation of the entire crime scene.
- This is done before processing the crime scene for physical evidence.





The Search - 1

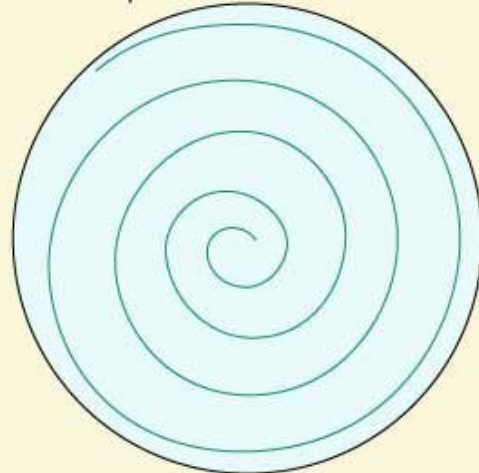
- The search for physical evidence at a crime scene must be thorough and systematic.
- The search pattern selected will normally depend on the size and locale of the scene and the number of collectors participating in the search.
- For a factual, unbiased reconstruction of the crime, the investigator—relying upon his or her training and experience—must not overlook any pertinent evidence.
- Physical evidence can be anything from massive objects to microscopic traces.



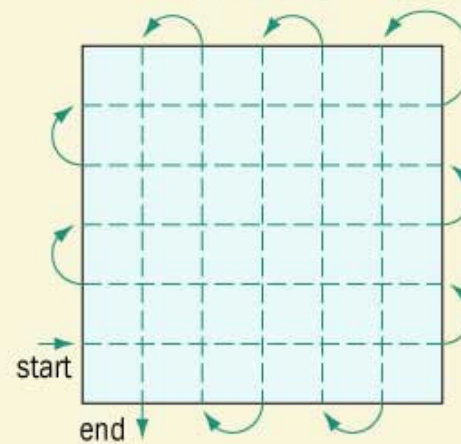


Crime-scene Search Patterns

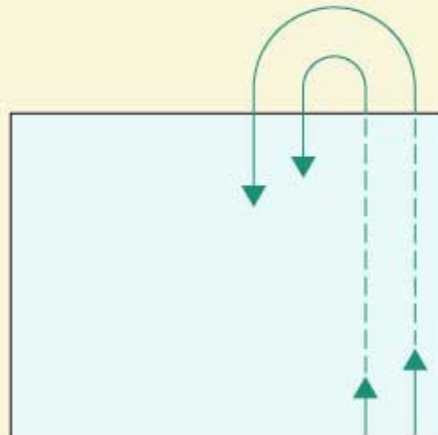
Spiral search method



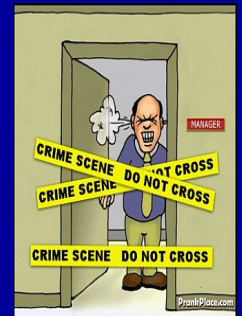
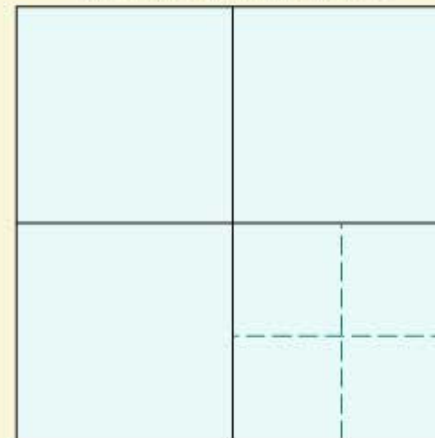
Grid method



Strip or line search



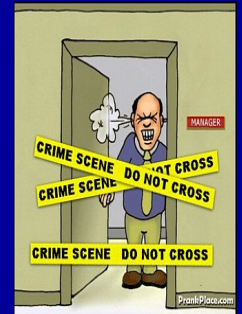
Quadrant or zone search





The Search - 2

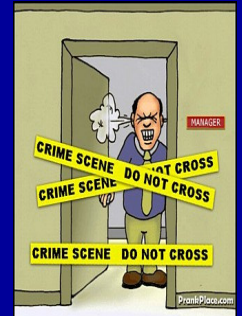
- Often, many items of evidence are clearly visible but others may be detected only through examination at the crime laboratory.
- For this reason, it is important to collect possible carriers of trace evidence, such as clothing, vacuum sweepings, and fingernail scrapings, in addition to more discernible items.





Beyond The Crime Scene

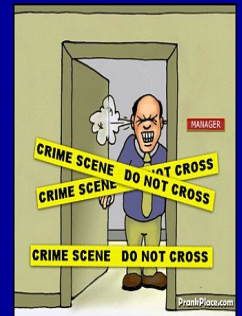
- The search for physical evidence must extend beyond the crime scene to the autopsy room
- The medical examiner or coroner will examine the victim to establish a cause and manner of death
- Tissues and organs will be retained for pathological and toxicological examination
- At the same time, arrangements must be made between the examiner and investigator to secure a variety of items that may be obtainable from the body for laboratory examination.





Beyond The Crime Scene

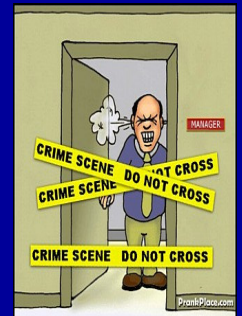
- *The following are to be collected and sent to the forensic laboratory:*
 1. Victim's clothing
 2. Fingernail scrapings
 3. Head and pubic hairs
 4. Blood (for DNA typing purposes)
 5. Vaginal, anal, and oral swabs (in sex related crimes)
 6. Recovered bullets from the body
 7. Hand swabs from shooting victims
(for gunshot residue analysis)





Packaging - 1

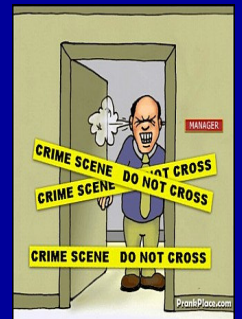
- Each different item (or similar items) collected at different locations must be placed in separate containers. Packaging evidence separately prevents damage through contact and prevents cross-contamination.





Packaging - 2

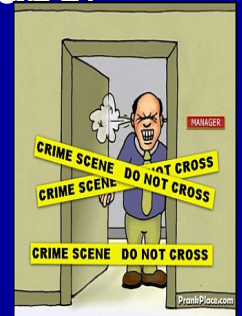
- Forceps and similar tools may have to be used to pick up small items.
- Unbreakable plastic pill bottles with pressure lids are excellent containers for hairs, glass, fibers, and various other kinds of small or trace evidence.
- Alternatively, manila envelopes, screw-cap glass vials, or cardboard pillboxes are adequate containers for most trace evidence encountered at crime sites.
- *Do not use mailing envelopes* (powders/fine particles will leak out of their corners)





Packaging - 3

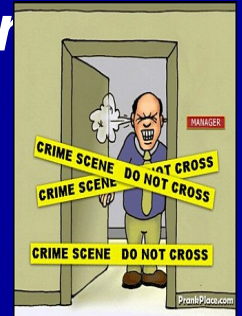
- Small amounts of trace evidence can also be conveniently packaged in a carefully folded paper, using what is known as a “druggist fold.”
- Although pill bottles, vials, pillboxes, or manila envelopes are good universal containers for most trace evidence, two frequent finds at crime scenes warrant special attention.
 - If bloodstained materials are stored in airtight containers, the accumulation of moisture may encourage the growth of mold, which can destroy the evidential value of blood.
 - In these instances, wrapping paper, manila envelopes, or paper bags are recommended packaging materials.





Chain of Custody

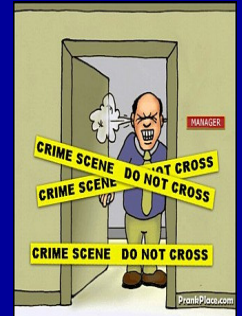
- Chain of Custody—*A list of all persons who came into possession of an item of evidence.*
- Continuity of possession, or the chain of custody, must be established whenever evidence is presented in court as an exhibit.
- Adherence to standard procedures in recording the location of evidence, marking it for identification, and properly completing evidence submission forms for laboratory analysis is critical to chain of custody.
- ***Every person who handled or examined the evidence and where it is at all times must be accounted for***





Obtaining Reference Samples

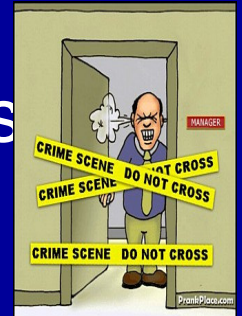
- Standard/Reference Sample—*Physical evidence whose origin is known, such as blood or hair from a suspect, that can be compared to crime-scene evidence.*
- The examination of evidence, whether it is soil, blood, glass, hair, fibers, and so on, often requires comparison with a known standard/reference sample.
- Although most investigators have little difficulty recognizing and collecting relevant crime-scene evidence, few seem aware of the like necessity and importance of providing the crime lab with a thorough sampling of standard/reference materials.





Crime Scene Safety

- The increasing spread of AIDS and hepatitis B has sensitized the law enforcement community to the potential health hazards that can exist at crime scenes.
- In reality, law enforcement officers have an extremely small chance of contracting AIDS or hepatitis at the crime scene.
- The International Association for Identification Safety Committee (IAISC) has proposed guidelines to protect investigators at crime scenes containing potentially infectious materials that should be adhered to at all times.





Legal Considerations at the Crime Scene

- **Warrant-less searches – are illegal**
- ***Circumstances under which the police can search without a warrant?***
 - existence of emergency circumstance
 - need to prevent the immediate loss or destruction of evidence
 - in connection of a lawful arrest
 - search made with the consent of the parties involved

