Forensic Evidence Collection for Texas Nurses
Sexual Assault Examination Guidelines

LEARNING OUTCOME AND OBJECTIVES: Upon completion of this continuing education course, you will demonstrate an understanding of the forensic examination process, including collecting, preserving, and documenting forensic evidence according to Texas legal standards. Specific learning objectives include:

- Identify key reasons for forensic evidence collection by nurses.
- Discuss the role of the emergency department nurse in forensic evidence collection.
- Discuss principles of patient-centered evidence collection.
- Describe basic evidence-collection guidelines, including evidence identification and documentation.
- Explain the process for sexual assault examination using an evidence collection kit.
- Outline the steps of evidence collection and preservation for common forensic situations.

INTRODUCTION

Violent crime is a growing issue that occurs nationally and globally. Every day, individuals are abused and victimized. As healers and caregivers, nurses come into contact with individuals who are victims of trauma—whether a motor vehicle accident, sexual assault, intimate partner violence, gunshots, psychological abuse, or pediatric and geriatric abuse.

Under these circumstances, nurses provide compassionate patient care that involves preservation of forensic evidence. Collecting such evidence is a patient-centered nursing function that assists in the investigation of trauma or death that might be related to abuse, violence, or criminal activity. Carried out with the objectivity of a healthcare professional, this process serves the criminal justice system, whether exonerating a suspect or corroborating a crime.
The objective documentation process is a standard function of nursing practice. Preserving evidence expands the already natural nursing assessment and information-gathering components of the profession. The Emergency Nurses Association (ENA) acknowledges the collection of evidence as a part of emergency nursing practice and recognizes the need to be familiar with “the concepts and skills of evidence collection, written and photographic documentation, as well as testifying in legal proceedings” (ENA, 2010). Additionally, the International Association of Forensic Nurses (IAFN) provides leadership in forensic nursing practice by developing, promoting, and disseminating information about forensic nursing science (IAFN, 2017).

When performing a forensic examination, nurses provide a detailed physical assessment, collect and preserve trace evidence, and carefully document all injuries or marks. This is done while being attentive to limit any further physical or psychological harm to the already-traumatized patient.

Utilizing the nursing process, a nurse possesses many of the skills necessary to collect and preserve forensic evidence for patients, including:

- Interviewing and obtaining sensitive information from patients
- Accurately documenting assessment findings and clinical activities
- Collaborating with other disciplines to accomplish necessary goals
- Understanding the need for strict adherence to policies and procedures for patient safety
- Collecting and handling biologic specimens
- Providing compassionate care and treatment to patients

**ROLE OF EMERGENCY NURSES IN FORENSIC EVIDENCE RECOVERY**

Although nurses in every clinical area may need to recognize, collect, and preserve forensic evidence, emergency nurses are particularly positioned for this activity, as they are often the first to evaluate a forensic patient. A **forensic patient** is defined as an individual who seeks treatment for a medical complaint that coincides with the law or has the potential to interface with the law. This is a complex process that involves other professionals such as law enforcement and social services (Darnell & Michel, 2012).

Following are examples of the sorts of patients who might be encountered in any emergency unit and for whom forensic evidence collection may be a part of their care:

- A young man with gunshot wounds from a street fight
- A teen driver in a head-on collision with another driver suspected of being under the influence of drugs or alcohol
• A three-year-old toddler with second-degree burns to the right hand
• An elderly man with a hip fracture and stage 3 pressure ulcers/injuries in the coccyx area
• A young woman admitted with a broken wrist from falling down the front steps
• A college student requesting treatment for sexual assault that took place at a fraternity party

Keeping the Focus on the Patient

A major role of emergency nurses in forensic evidence collection is maintaining a focus on the patient. The immediate medical needs of the patient are a first concern and should not be delayed in order to obtain forensic evidence (ENA, 2010).

Other team members focused on evidence-collecting activities may need to be reminded that at the center of this investigation is a patient in need of compassionate physical and emotional treatment. Reminders to keep the patient in focus may take the form of “code phrases” that are generic enough not to appear out of place to the patient but carry a specific focus message to all caregivers. For example, when working alongside other team members, a nurse might state out loud to the patient and for all to hear, “Let’s focus on you and what happened.”

Direct corrections or confrontations should not occur within earshot of the patient. This can cause the patient to lose confidence in the caregivers or facility. If necessary, a staff member should tactfully remove the offending person from the patient’s immediate vicinity and discuss the matter out of the patient’s hearing, while maintaining chain of custody (see “Maintaining Physical Evidence Chain of Custody” below).

Assessing and Documenting Findings

Another role of forensic evidence collection for emergency nurses is as observer of both subjective and objective evidence obtained during the interview and assessment process. Objective and evidence-based observations and documentation by an emergency nurse in any of the example situations listed above can help determine the cause of injury and either rule out foul play or assist in establishing that a crime was committed. On the other hand, poorly documented observations or incorrectly obtained evidence will be rendered useless to the criminal justice process.

Obtaining Physical Evidence

Obtaining physical evidence for use in determining cause of injury is an important forensic role for emergency nurses. This evidence can link a victim to a suspect or eliminate a suspect from consideration. Evidence must be secured, packaged, and maintained appropriately to be evaluated and used in legal proceedings.
Maintaining Physical Evidence Chain of Custody

Emergency nurses maintain the chain of custody for any physical evidence obtained. The chain of custody is a process used in forensic evidence collection that provides accurate information about physical evidence and preserves the evidence against possible contamination or tampering. This process tracks the places the evidence has been kept and the people who have had contact with the evidence, in chronological order. Such documentation confirms that the evidence has been secure throughout the process of obtaining, labeling, packing, and processing, and thus ensures that the evidence can be used during the court case.

The chain of custody is vitally important for any physical evidence obtained during nursing activities with a possible victim. Maintaining proper chain-of-custody procedures provides a defense for legal challenges to the authenticity of the evidence (Pagliaro & Bentley Cewe, 2013). Therefore, it is essential that mandated collection kits and standard collection protocols be used when obtaining evidence (Cabelus & Spangler, 2013). An emergency nurse is most likely one of the first to secure evidence in the chain-of-custody process.

Providing Testimony

Occasionally, emergency nurses are called upon to provide testimony in a court case involving evidence they have collected. This is an established part of emergency nursing practice (ENA, 2010). Often this testimony authenticates the evidence that was collected in the healthcare setting. Testimony can also confirm that the chain of custody was maintained during evidence collection procedures.

PATIENT-CENTERED EVIDENCE COLLECTION

Emergency medical treatment will always supersede a forensic evaluation. That being said, the preservation of evidence should be considered when meeting medical needs. Violence, trauma, and abuse assert psychological as well as physical harm. In the midst of delivering physical care and preserving evidence, emergency nurses must keep the psychological well-being of the victim in mind. Sensitivity to a patient’s psychological well-being may also require a nurse to use patient advocacy principles when interacting with law enforcement professionals.

Following Patient-Centered Principles

Patient-centered evidence collection focuses on the following principles and their application:

- **Maintain patient confidentiality.** It is important to take care when communicating with law enforcement personnel so that healthcare information unrelated to the crime is not revealed. As always, this includes attention to the confidentiality provisions of the Health Insurance Portability and Accountability Act (HIPAA).
• **Respect privacy.** Traumatized victims may already feel invaded and violated. Medical procedures such as vaginal exams or inspection of private body parts can further distress patients. Therefore, it is good practice to explain the forensic examination to the patient in addition to asking their permission each time evidence is collected from a different part of the body. Privacy is also important during the interview process. A patient is more likely to provide frank and intimate information in a setting that has visual and sound privacy.

• **Involve support persons as indicated by the patient.** While alone with the patient, a nurse can ask if the patient would like to have a family member or friend contacted to come in to the emergency department for support. However, family members or friends may be either supportive or distressing for the patient during the interview and assessment process. Sexually traumatized individuals, in particular, report appreciating having a supportive person nearby in the initial evaluation phases (USDOJ, 2013).

However, the national Sexual Assault Response Team (SART) protocol advocates for the presence of support persons of the patient’s choice (USDOJ, 2013). In most cases, it is better to complete the forensic interview solely with the presence of a trained rape crisis advocate, if available, for support. There are several reasons why this may be beneficial.

   For example, a friend or family member:
   - May not maintain confidentiality
   - Is unlikely to be trained to respond therapeutically
   - May hinder honest responses from the victim

• **Obtain the patient’s consent.** Patients must consent to evidence collection just as they must consent to other treatment in the emergency department. This consent should allow both the collection of evidence and the release of evidence to law enforcement (Cabelus & Spangler, 2013). It is recommended that the consent form specifically include consent for photographs.

Many facilities incorporate this consent into their general treatment consent form, but some may use a separate, specific form for a forensic consent. In all cases, consent for forensic evidence collection must be obtained before proceeding. If a patient refuses an examination against medical or legal advice, a clinician should not proceed with the exam. The legal age to agree to or decline a forensic exam for evidence of sexual assault in Texas is 16 years. If a victim is under the age of 16, his or her parent or legal guardian must sign the consent.

• **Establish rapport.** An empathetic and understanding demeanor will assist in obtaining needed information from a traumatized patient. Performing the interview seated alongside the patient, rather than standing over them, is helpful. Speaking slowly, making eye contact, and showing that the patient is being listened to are all ways to quickly establish rapport. Of all people who will come in contact with a patient, the nurse is most likely to be able to develop trust.
• **Show respect and patience.** The patient has just experienced a significant life event and may need time to process questions for response. In some ways, being asked to answer questions is helping the patient to organize and internalize the experience. Start with general questions before moving into the details of the violent event. Both respect and patience support the patient’s psychological well-being (Renaud, 2013).

**Providing Professional Support and Referral**

A traumatized patient will most likely need professional support beyond what can be provided in the emergency department. Sexual assault victims, in particular, have increased risk of posttraumatic stress disorder, depression, anxiety, substance abuse, eating disorders, and suicidal thoughts (White House, 2014). All traumatized patients, then, need to be linked with resources to attend to their psychological distress.

Printed information about confidential counseling and crisis intervention sources should also be made available to the patient and/or family. They are often unable to digest and respond to large amounts of information and direction in the initial period after the trauma. Offer to contact the services directly to set up a first appointment. By offering options and promoting informed decision-making, the patient is assisted through the early stages of their crisis (USDOJ, 2013).

**Understanding Survivor Response to Trauma**

Individuals respond to trauma in various ways based on their own background, developmental phase, and the type of trauma inflicted. As with the pain experience, a survivor’s response to trauma is unique. However, there are commonalities of survivor response that can help when supporting the patient during this period. Renaud (2013), in a review of the research, found three main categories of symptoms related to posttraumatic stress disorder. The following examples illustrate how survivor responses may present.

• **Re-experiencing the event.** Traumatized patients may experience nightmares and flashbacks of the traumatic event. For example, the college student who has been sexually assaulted may have difficulty sleeping as memories of the assault flood into her mind when she tries to relax.

• **Avoidance.** Patients may become anxious when confronted with objects or activities that can be associated with the trauma. For example, the burned toddler may scream when a nurse turns on water to wash hands. Severe manifestations of avoidance can lead to social isolation and even psychological dissociation.

• **Hyper-arousal.** Victims of trauma can also exhibit increased irritability and exaggerated responses to environmental danger signals. For example, the teen driver may be easily agitated and hypervigilant of traffic situations while on the school bus.
Working with Special Populations

Several special situations require age- and population-specific nursing interventions. Along with applying standard nursing care and evidence-collection principles, emergency nurses consider the special needs of those with disabilities or patients who are very young or elderly. These patients have increased vulnerability that needs attention. Nursing care may be altered in trauma situations involving patients with these characteristics.

PEDIATRIC PATIENTS

A pediatric patient must be addressed from the point of view of his or her developmental stage. With young children, language skills can play a part when trying to obtain accurate information about a traumatic event. A family member in the room may make the child feel safe, but it may also be the case that a family member was the cause of harm. In cases of high concern, if possible, interview a child separate from family members. Have another comforting second person in the room, such as someone from social services or a mental health practitioner.

Later, the child will most likely need to be interviewed by someone who is professionally trained as a child interviewer and may also need to meet with an investigator and/or a prosecutor. Increasingly, the criminal justice system is implementing the use of “therapy” or “facility” dogs. The child may be introduced to the dog when he or she meets with the investigation team, and in some courts the dog may be allowed to accompany the child when he or she testifies. The presence of a friendly dog can reduce witnesses’ fear and anxiety and facilitate a more efficient testimony (CACTX, 2014).

Use knowledge about growth and development to manage the interview and examination process. As with any interview, use open-ended questions and document what the child says or how they react. A toddler is unlikely to be able to describe much of the occurrence, however a school-age child might be able to describe the traumatic event. Also document how the child reacts to adult family members. For example, does the child appear fearful or clingy?

While the primary goal is to obtain necessary information, be aware of personal feelings when interviewing a child. A nurse may communicate attitudes that might create or increase a patient’s trauma. Tune in to the pediatric patient’s emotional state and speak with an open, nonjudgmental tone. Avoid leading or suggestive questioning. Instead, ask open-ended questions like “Tell me why you are here today” or “Is there anything you are worried or confused about?” (Jenny & Crawford-Jakubiak, 2013).

Nurses are in a position to provide a safe environment for the child to disclose abuse (Finn, 2011). A nurse’s intervention can prevent further injury or even death. But, this intervention will also affect family members. Revelation of a child-harming situation can have devastating effects on other family members. Be prepared to give support to non-offending family members who must now deal with the impact of this news (Berrien, 2013).
GERIATRIC PATIENTS

Elderly patients also need special consideration from the nurse who is obtaining forensic evidence. As with all elderly patients encountered in the emergency department, adjust for any sensory impairments such as hearing loss during the interview. As with the pediatric patient, interview the older adult patient and caregiver separately. Be alert to any inconsistencies in the histories provided. In all cases, avoid being confrontational and use a nonjudgmental approach (Pearsall, 2011).

OTHER SPECIAL NEEDS

Forensic patients may have learning or other disabilities that impair their ability to provide evidence or cooperate with evidence collection. They may have mobility issues that make them dependent on caregivers or family members. Be sure to allow extra time for the evaluation, examination, and collection of evidence when working with a patient who has special needs.

ASSESSING AND DOCUMENTING FINDINGS

Interview and History Taking

The interview and history provide the basis for a physical examination and the start of a diagnosis and treatment plan. This same history can prioritize what areas of the body are more likely to have physical evidence for collection and corroboration of the facts, thus revealing physical evidence that is consistent or inconsistent with the patient’s description of events.

The words of the patient and personal description of events leading to the need for emergency intervention are also forensic evidence. Therefore, be particularly alert in documenting accurately when interviewing and taking a patient history of the event. Of course, in all clinical documentation, the focus is on being complete, accurate, nonjudgmental, and objective, since the medical record is a legal document.

- **Completeness.** Document all information using only approved abbreviations, being careful to use descriptive terms for the location and appearance of injuries.

- **Accuracy.** Use the patient’s own words in quotation marks. Do not modify or “sanitize” them. Do not add interpretation of actions or words to the documentation. Let the documentation speak for itself. If a patient uses a slang word to describe genitalia, ask them what that means and/or have them point to the location on the body, and then document.

- **Lack of stated or implied judgment.** Judgmental words can creep into documentation and reduce the objectivity of the record. Examples in forensic cases include terms such as *alleges* or *refuses*, which indicate a cynicism or bias in any conclusion about what the patient says. Nonjudgmental documentation alternatives include *states*, *reports*, or *declines*. 
• **Objectivity.** Even though a patient is receiving a forensic evaluation, this does not necessarily mean he or she is the victim. The nurse’s job is to perform the examination and collect evidence. It is not up to a nurse to determine whether what the forensic patient is describing is factual or not.

The following table provides examples of poor and better nursing documentation of a patient’s history based on the forensic interview.

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<tr>
<th>NURSING DOCUMENTATION OF THE FORENSIC INTERVIEW</th>
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<td><strong>PRINCIPLE</strong></td>
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History information needs to be forensically useful in determining the possible causes of injury (Foresman-Capuzzi, 2014). Therefore, include the forensic implications of the patient’s responses as well as those that might guide an assessment and treatment plan. For instance, it would be important to note the specific timing of a patient’s fall when corroborating the history. Likewise, documentation might state that a patient’s chest pain may indicate a broken rib or cardiac involvement.

**ELEMENTS OF PATIENT-CENTERED INTERVIEWING**

• **Start with open-ended questions.** A patient will feel more in control, and thus less anxious, if allowed to control the beginning of the interview through open-ended questioning. For example, ask general questions like, “Tell me about what happened” or “What happened next?” rather than a specific question like “Who did this to you?” Leading questions can prove detrimental to a court case. Use information shared by the patient in response to an open-ended question to ask for more detail as the story unfolds.

• **Let the patient lead.** A traumatized patient will be more willing to reveal important and sensitive information if they feel in control of the conversation. Therefore, whenever possible, let the patient set the tone and pace of the interview. Probing into specific areas may be required later, but first see if the patient opens up a discussion about that information that can lead to follow-up questions. Also, let the patient know that the description they share will be documented verbatim as much as possible. It is best to let the patient know up front that they may be asked to speak slowly and to repeat their statements.
Physical Assessment

Once a patient history is complete, the next phase is a physical assessment. Be thorough and systematic, moving from head to toe. Document findings in both narrative notes and visual diagrams (Dougherty, 2011). Remember that assessment findings are forensically evidential, so be specific in both written and graphic representation.

Here are some examples of ways to be precise and forensically valuable in assessment documentation:

- **Patient’s arrival appearance and behavior.** The description of a patient’s appearance and behavior on arrival to the emergency department can be important evidence (Dougherty, 2011). Is the patient tearful, apprehensive, and not making eye contact? Does the patient flinch when contacting a family member is suggested? Is the patient preoccupied with any items or subjects? Document exactly what is seen and heard with as little interpretation as possible.

- **Wounds.** Measure wounds in centimeters and include size, shape, appearance, color, and location (Primeau & Sheridan, 2013). Be sure to use correct terms when describing wound types (Carter-Snell & Lewis-O’Connor, 2016). A laceration is different than a cut, for example.

- **Aging injuries.** Rather than attempting to interpret a finding (“Healing bruises on upper right arm”), document what is actually seen (“5 cm yellow/brown bruising on upper right arm; see body chart”).

- **Odors.** Note any unusual odors in written descriptions. Breath odor may need to be documented for the teen car crash victim or any wound odor when assessing the elderly patient with a hip fracture and coccyx pressure ulcer. Other odors to note might include gasoline, wood fire smoke, or a chemical smell (Dougherty, 2011).

**DRAWINGS AND DIAGRAMS**

**Body charts** are an effective method for documenting the specific location and appearance of injuries (Cabelus & Spangler, 2013). An emergency unit’s standard documentation forms likely have a body chart, but it is often small and difficult to use for detail. Body charts supplement
rather than replace written documentation. The current **Texas Evidence Collection Protocol** (Appendix VII) includes larger body charts for infants, males, females, and genitalia (Office of the Attorney General, 1998). Consider adding these body charts to any documentation system for forensic cases. *(See “Resources” at the end of this course for a link to the Texas Evidence Collection Protocol.)*

### EFFECTIVE USE OF BODY CHARTS

Body charts are particularly helpful for identifying the location, size, pattern, and shape of multiple wounds. Here are some tips for effectively using body charts in nursing documentation:

- Do not label wounds with an interpretation. For example, do not identify an “entrance” and “exit” wound on the diagram of gunshot trauma.
- Keep drawings in proportion to the anatomic graphic size.
- Locate wounds or marks in relationship to each other (pattern or constellation) and to standard anatomic locators such as the knee, elbow, or xiphoid process.
- Maintain the shape of the wound or mark—elliptical, round, jagged, wider at one end, etc.

*Source: Cabelus & Spangler, 2013.*

### PHOTOGRAPHIC EVIDENCE

If possible, obtain photographic evidence of the initial condition of the victim upon arrival. Although the foremost concern is a patient’s life and health, if the unit is prearranged for forensic evidence collection, photographic evidence may be able to be obtained just before cleaning and treating a wound. This is especially helpful if the medical needs of the patient will disturb the original presentation (Saferstein, 2011).

### PHOTO DOCUMENTATION REQUIRED FOR CHILD VICTIMS IN CERTAIN TEXAS COUNTIES

In a county with a population of three million or more, the forensic portion of a medical examination of a child alleged to be a victim of a sexual assault must include the production of photo documentation unless the medical professional examining the child determines that good cause exists for refraining from producing photo documentation.

*Source: Texas Government Code Sec. 420.032(b).*
Following are some key guidelines in obtaining photographic evidence (Saferstein, 2011):

**General Practices**

- Always obtain written, witnessed consent for collecting photographic evidence.

- Take a picture of the patient’s demographic information (name, date of birth, age, etc.). A hospital-generated patient label works well for this purpose. This photo should be the first photo of the series and serves to identify the set of photographs. A professional color card may also be considered if color quality of photos is questioned later.

![Photo of the patient's demographic information and color card.](source: Sheree Goldman.)

- Whenever possible include a photo of the patient’s face to establish identity as the second photo. This will help the examiner recall the patient at a later time if the case goes forward.

- In the photo of an injured area, always include an object of measurement (a scale) such as a ruler, paper measuring tape for neonates, or swab wrapper with centimeters printed on the side. Photograph the injury with and without the scale.

- If the condition of the injury changes, subsequent photographs may need to be taken to depict the change. The patient may be referred to law enforcement when additional photos are necessary.

- Take a series of three photos for each injury: the first is a regional photo to show the anatomic location (e.g., middle of the back, right shoulder, etc.); the second is of medium range, capturing a closer view of the injury; and the third is a close-up of the injury. Each close-up of the injury should be photographed with and without a scale beside it.
A regional photo depicts an abrasion on the patient’s left knee. (Source: Sheree Goldman.)

A medium-range photo shows the abrasion on the left knee. (Source: Sheree Goldman.)
A close-up photo of the abrasion without a scale.  
(Source: Sheree Goldman.)

A close-up photo of the same abrasion with a scale.  
(Source: Sheree Goldman.)

**Documentation**

A description of the injuries should be included in the patient’s medical record in a narrative or on the body chart, labeled appropriately. The patient’s medical record should describe the same injuries that are depicted in the photographs. In addition, there should be a notation in the patient’s medical record that states who took the photos, what type of camera was used, and details such as the magnification used.

Each institution should develop a policy to protect and store the photographs in a printed, electronic, or other format.
Confidentiality

When a patient signs consent for photographs to be taken and a release for them to be given to law enforcement, those photographs should still be protected from other persons who work in the institution who are not part of the treatment team. As with all patient information, photographic evidence must be collected with confidentiality and privacy in mind. Consider these issues when determining how to obtain and store photographic evidence in a particular setting (Cabelus & Spangler, 2013).

CASE

Henry is an 85-year-old man who was brought to the emergency department by ambulance after sustaining a fall in his apartment bathroom. He is accompanied by a live-in home health aide, Mara, who has been with Henry for the past eight months. Henry’s only living relative is a son who lives several states away. The son had obtained Mara’s services for Henry when he saw that his father’s abilities to care for himself were declining. The unit clerk is working to make contact with the son.

Henry’s nurse, Elsie, talks with him as she removes his clothing and applies an examination gown. She notes both urine and feces on his body; they both seem old and dried, not fresh as they would be if recent. This elicits some concern in Elsie about the level of care he is receiving from the home health aide.

Henry has difficulty hearing and refers most questions to Mara for answering. Mara explains to Elsie that Henry has been having increasing difficulty walking but that he doesn’t like to use a cane or walker. She reports that this morning Henry got up from his recliner to use the bathroom and was unsteady on his feet. She heard a thud from the kitchen, where she was fixing breakfast, and rushed to see what had happened, finding him on the bathroom floor.

Henry exhibits signs of significant pain in the left groin and hip area as he is prepared for a pelvic X-ray. With assistance, Elsie rolls him slightly to clean him of the urine and feces and finds a large stage 3 pressure ulcer/injury over Henry’s coccyx area, which also shows layers of dried feces. Henry had signed the emergency department consent form, which included consent for photos. In order to document Henry’s initial condition, Elsie takes photos of the pressure ulcer according to hospital protocol then cleans it before the X-ray is performed.

OBTAINING PHYSICAL EVIDENCE

Physical evidence includes tangible articles that can be collected for analysis of a crime. This type of evidence may include biological evidence such as blood, skin, hair, semen, saliva, and vegetation. Physical evidence may also consist of fiber, glitter, glass, soil, sand, adhesive, gravel, and oil. Physical evidence may be gross and visible to the eye, as in cases of transfer evidence such as soil under the fingernails. Physical evidence may also present as invisible trace evidence such as DNA on the skin surface. Physical evidence is a “silent witness” and can provide objective information about a crime that is hard to refute.
Principles of Evidence Collection

Two key principles inform the forensic evidence collection process:

- **Prevent contamination** of the sample
- **Preserve** the original integrity of the sample
  
  (TXDPS, 2016)

Additional basic principles for physical evidence collection include:

- **Collect a sufficient sample.** It is important to collect a generous amount of any physical evidence, be it hair, body fluids, or vegetative debris, especially in cases involving trace evidence. Proper analysis of a sample requires that sufficient amounts of a substance be submitted for analysis.

- **Maintain the individuality of the sample.** Preserve each sample separately to avoid contamination. Individual samples for a single case are to be separated, as are samples taken from multiple cases. Maintaining a boundary between simultaneous evidence-collection processes among more than one patient in a busy emergency department will reduce the likelihood of a mix-up. A nurse should never simultaneously collect evidence from more than one patient, since cross-contamination could occur and jeopardize any criminal case. Only exhibits from a single case are to be packed together in an external container (TXDPS, 2016).

- **Label and seal each sample.** All evidence must be labeled and properly sealed. In addition, any evidence containing blood or other body fluids must be labeled as a biohazard. Glass or other sharp objects should also be identified on the outside of the container.

Chain of Custody

The chain of custody is an unbroken documentation of evidence possession and storage from initial collection. This is an essential component of evidence integrity and must be initiated at the time of initial collection (Cabelus & Spangler, 2013). Thus, emergency nurses often are the originators of the chain-of-custody process.

**DOCUMENTATION**

Chain-of-custody documentation can be as simple as paper forms, electronically stored, or a combination (Ballou et al., 2013). No matter the format used, chain-of-custody documentation should have the following information.

- Description of the evidence
- Unique case identifier (case number)
• Where the evidence was collected
• Where the evidence was stored
• Who was in possession of the evidence and for what purpose
• What was done to the evidence (analysis or re-packaging)
• Date and time of information

A chain-of-custody form should always be used when obtaining and securing physical evidence. Most jurisdictions have a standard chain-of-custody form. An emergency department evidence collection kit should include a supply of such forms. Evidence should never be released to anyone without first documenting it on a chain-of-custody form. It is also a good practice to keep a copy of the chain-of-custody form in the medical record. In some jurisdictions chain-of-custody forms are multipart so that the original can stay with the evidence and a copy can be placed in the patient record (Ferrell & Caruso, 2011).

SEALING PHYSICAL EVIDENCE

In addition to completing documentation to accompany physical evidence, each piece of evidence must be secured in a sealed evidence container (envelope, bag, tube) and labeled with:

• The patient’s name
• Description of the contained evidence
• Description from where the evidence was recovered
• Date and time container was sealed
• The collector’s name and credentials

Sealing evidence is necessary to establish that it has not been tampered with during the various handoffs along the chain of custody. For a seal to be considered proper, the tape must have the initials of the person who sealed the evidence and it must extend over the edge of the opening and onto the packaging (TXDPS, 2016). Tape must cover all openings of an evidence container, such as the bottom of a cardboard box. Do not use staples. Examples of properly sealed evidence containers can be found in the Texas Physical Evidence Handbook. (See “Resources” at the end of this course.)

EVIDENCE SECURITY

To maintain evidence security, nurses should keep the collected evidence with them, in plain view, or in an established location in the emergency unit. Never leave evidence unattended and accessible to tampering (Cabelus & Spangler, 2013). Evidence should be secured in this way until handed over to law enforcement.
Avoid involving multiple staff members in handling collected evidence. Many facilities limit evidence collection to a single nurse who is the only healthcare staff member to handle the evidence until it is provided to law enforcement. This method provides the best security and keeps the chain of custody short. Eliminating unnecessary transfers of evidence also reduces disputes over the integrity of the evidence (Shapiro, 2011).

**Biological Evidence**

Biological evidence comes in many forms and all may contain DNA that would help in a criminal investigation. Therefore, emergency nurses need to understand the types of material that could contain biological evidence and how to collect and store them.

**TYPES**

Biological evidence is most often body fluids such as blood, semen, or saliva. Other biological evidence, however, may be present. The following is a list of common biological evidence sources (Ladd & Lee, 2013).

- Body fluids: blood, semen, saliva, urine, tears, bile, perspiration
- Soft tissue: skin, organs, hair, fingernails
- Structural tissue: teeth, bones
- Other human sources: fecal matter, vomit
- Nonhuman sources: animal, vegetative, microbial
- Objects contacted by persons: lipstick, toothbrush, hairbrush, razor, cigarette butts, drinking glasses/bottles, articles of clothing

**DOCUMENTATION**

Document the anatomic location of observed biologic evidence in the medical record narrative and, if appropriate, on the body diagram. Carefully label the specimen container and document the evidence on the chain-of-custody form.

**COLLECTION METHOD**

Following are some important guidelines for the collection of biological evidence for forensic purposes (TXDPS, 2016). Additional detailed information about biological evidence storage can be obtained from the *Biological Evidence Preservation Handbook*. (See “Resources” at the end of this course.)
Always maintain Standard Precautions when obtaining biological evidence. This means always wearing personal protective equipment (PPE) such as gloves and gown (or clean lab coat). Wear a facemask and eye protection if there is any potential for droplet splatter.

Wear a complete head covering and a freshly laundered, previously unworn lab coat or cover gown if contamination of the evidence is a concern.

Treat all biological evidence as a biohazard to prevent possible exposure to HIV, hepatitis B or C, or other pathogens.

**STORAGE**

Biological evidence may need to be stored before shipment to a crime laboratory for analysis. Check with the local crime lab for specifics. Follow these basic guidelines for storing biological specimens (TXDPS, 2016):

- Completely dry wet or moist items before packaging them in a sterile and secure environment. If items cannot be completely dried before the exam is finished, seal the wet items in a paper bag and then place the sealed paper bag in an open paper bag that is clearly marked “WET EVIDENCE” and notify law enforcement that the evidence is wet when they pick it up. Refrigerate liquid specimens such as blood.

- Package in white paper, not plastic. Plastic is not porous and therefore allows for moisture retention, resulting in possible growth of mold and/or mildew.

- Store in a cool, dry area, avoiding sunlight, heat, and humidity. Temperature and humidity must be monitored, or overgrowth of mold and bacteria can destroy stored biological evidence. A temperature-controlled environment at 60 °F to 75 °F and less than 60% humidity is ideal, but room temperature is acceptable (NIST, 2013).

- Refrigerate sexual assault kits. The refrigerator should be locked, or it should be kept in a locked room that is dedicated to evidence storage, or the evidence should be passed on to the law enforcement agency in whose jurisdiction the crime occurred and documented on a chain-of-custody form.

- If in doubt about how to store biological evidence, refrigerate it while awaiting further instructions or transport.

**Clothing As Evidence**

The clothing worn by an individual often contains physical or biological evidence that must be preserved. If the patient is still wearing the clothes they had on during the trauma, all items can be considered evidence. If the patient is not wearing the clothes they had on during the trauma, even “fresh” clothing, such as underpants in the case of a sexual assault, may still contain body fluid evidence for analysis (LaMonica & Pagliaro, 2013).
DOCUMENTATION

Examine the patient’s clothing and document any obvious stains or tears, then package this evidence for further evaluation at a forensic laboratory. Carefully label the container used to package clothing evidence and document the evidence on the chain-of-custody form.

CLOTHING COLLECTION METHOD

Following is an effective method of clothing evidence collection, particularly in a sexual assault case (Ferrell & Caruso, 2011):

1. Begin by covering the floor with a layer of exam table paper or other comparable paper. The purpose of this bottom layer of paper is to prevent collecting evidence from the emergency department floor; this paper will be disposed of.

   ![Bottom layer of paper](Source: Sheree Goldman.)

2. Cover with another layer of paper. This layer will catch any debris that may fall from the patient’s clothing, such as hair, vegetation, etc., and will be folded into a bundle and collected after the patient has undressed. If the patient has many clothing items, this area will need to be fairly large.

   ![Second layer of paper](Source: Sheree Goldman.)
3. Have the patient slip off his or her shoes and step directly onto the paper with bare or stocking feet.

Patient stepping on paper with stocking feet. (Source: Sheree Goldman.)

4. While providing for the patient’s privacy, have him or her remove clothing from the top of the body first and drop it onto the paper below. After the patient has removed all of the clothing from the top of the body, he or she can dress in a hospital gown and then remove the clothing from the lower part of the body, following the same process.

Patient beginning to disrobe and dropping articles of clothing onto the paper. (Source: Sheree Goldman.)
5. Using a clean pair of gloves for each item of clothing, inspect the clothing for tears and stains. Place a hospital sticker on the item of clothing after marking the sticker with the time the clothing was collected and the nurse’s initials.
6. Package each article of clothing separately. Be sure to seal the bag with tape over the edge of all openings. Write the time, date, and nurse’s initials across the seal. Mark the bag with the patient’s name, what clothing is in the bag, any information about the clothing, who collected it, and when it was collected.
7. After the clothing is collected, be attentive to any debris that might be shaken from the clothing. This material should be packaged as trace evidence. Be careful to keep items separated for packaging.

Trace evidence (hair) that has fallen from the patient's clothing onto the paper. (Source: Sheree Goldman.)

8. Carefully fold the top paper so that the top side touched by the patient and clothing is on the inside, label with the patient’s name and the collector’s initials, and package in a separate clean paper evidence bag as described for clothing above.

Folded paper. (Source: Sheree Goldman.)

Evidence packaged in a paper bag and properly labeled. (Source: Sheree Goldman.)
9. If indicated, using the same identification and packaging method, secure any hospital or transport linens that might have biological or trace evidence for forensic laboratory analysis.

STORAGE

Basic clothing evidence collection guidelines include air drying any wet clothing before packaging and using paper evidence bags, since plastic may cause moisture to accumulate and destroy possible materials on the clothing (Saferstein, 2011). Since all objects placed in the same bag are treated as one item by the forensic laboratory, place each piece of clothing in a separate evidence bag.

Other Physical and Trace Evidence

Other physical evidence may be found on or around the patient that warrants collection and documentation. Hair, fibers, and foreign material such as leaves, dirt, sand, or glass can create a link between a victim, a suspect, and a crime scene. For example, a teen driver may arrive with glass fragments among his clothing, while there may be soil on the shoes of a sexual assault patient. This physical evidence may be important for law enforcement in piecing together what has happened.

HAIR

Hair evidence is present in a wide variety of forensic situations. During an assault, hairs may transfer from one individual to another or to the crime scene, making it strong corroborating information in an investigation (TXDPS, 2016).

Documentation

Document the location of hair sample removal in medical record text and, if appropriate, on the body diagram. Carefully label the specimen container and document the evidence on the chain-of-custody form.

Collection Method

For identification purposes, it is important to also obtain control samples of a patient’s own hair. Following are some important factors when collecting hair evidence:

- **Hair combings.** Combings for evidence samples should take place before control samples are taken. Use an evidence comb specific to this purpose and place a paper towel under the patient’s head or under the patient’s buttocks (in the case of pubic hair) to collect the loose hairs that result from the combing (Saferstein, 2011). Once this sample is collected and securely packaged and labeled, proceed with obtaining the control sample. Never reuse a comb that is used for evidence collection.
• **Hair controls.** A sufficient number of the patient’s own hairs from the patient’s head and pubic area should be obtained and labeled as control hair, including documenting the location where they were obtained. Obtain a representative hair standard by pulling and combing hairs from different areas of the head and/or pubic region. A representative hair standard consists of at least 25 hairs, with roots, that represent the variation of all the hairs in the region. It is strongly recommended that greater than 25 hairs be collected, and collecting more hairs, up to 100, will ensure all variation is represented (TXDPS, 2016).

**Storage**

To avoid degradation, store hair samples with other biological evidence in a cool, dry environment protected from sunlight. A temperature-controlled environment at 60 °F to 75 °F and less than 60% humidity is ideal, but room temperature is acceptable (NIST, 2013). Hair samples do not need refrigeration.

**FINGERNAIL DEPOSITS**

Depending on the incident, a patient’s fingernails may contain valuable evidence.

**Documentation**

Document the process of **fingernail deposit evidence collection** in medical record text. Carefully label the specimen container and document the evidence on the chain-of-custody form.

**Collection Method**

Use the following process to effectively obtain any physical evidence under fingernails (TXDPS, 2016):

• Use clean nail clippers.
• Separate left and right hands.
• Gently use a separate toothpick or similar item for each finger.
• Place resulting evidence from each hand in separate, well-sealed containers labeled “right” and “left.”
• If nails are too short to cut, try using a swab with a few drops of sterile water to collect evidence along the nail edge.
• If fingers are swabbed, each should be swabbed and packaged separately. If they are cleaned with a toothpick, one container for each hand that holds all toothpicks for that hand is sufficient.
Storage

To avoid degradation, store fingernail deposits with other biological evidence in a cool, dry environment protected from sunlight. A temperature-controlled environment at 60 °F to 75 °F and less than 60% humidity is ideal, but room temperature is acceptable (NIST, 2013). Fingernail deposit samples do not need refrigeration.

FIBER

Fiber evidence is also associated with many crimes. Fibers can transfer from carpet, blankets, or clothing items during a crime.

Documentation

Document the location of fiber evidence removal in the medical record text and, if appropriate, on the body diagram. Carefully label the specimen container and document the evidence on the chain-of-custody form.

Collection Method

Fiber evidence may be recovered from clothing, fingernails, hair combings, or bedding that arrives with the patient. Do not remove fibers from these articles of evidence but instead package them intact for analysis of the clothing and the trace fibers attached to them (Saferstein, 2011).

Fiber found adhering to a patient’s body, however, will need to be carefully documented as to location and then removed and placed in paper evidence envelopes. Once the location of the fiber is documented, it can be removed from the body in several ways:

- Use clean tweezers or forceps to remove individual items. A single fiber or small amounts of fibers can be placed into paper folds and then into a paper envelope with sealed corners.
- Use fingerprint tape, cellophane tape, or clear adhesive tape to pat over the skin to recover fibers. Secure the tape to a plastic sheet before placing into paper envelopes.
- Dry surface debris can be gently scraped onto a glass slide or fold of paper.

Storage

To avoid possible degradation should the fiber contain any biological material, store with other dry biological evidence in a cool, dry environment protected from sunlight. A temperature-controlled environment at 60 °F to 75 °F and less than 60% humidity is ideal, but room temperature is acceptable (NIST, 2013). Fiber evidence does not need refrigeration.
STAINS AND OTHER DEPOSITS

Documentation

Document the location of stains or other deposits in the medical record text and, if appropriate, on the body diagram. Carefully label the specimen container and document the evidence on the chain-of-custody form.

Collection Method

Generally, suspicious clothing stains or other deposits should be allowed to dry and packaged in separate paper bags to avoid cross-contamination (Cabelus & Spangler, 2013). If, however, a sample swab of a substance is requested, use standard biological evidence technique by swabbing the stain with a sterile cotton-tipped swab. If the stain is dry, moisten the swab with sterile water first. If the stain is wet, use a dry swab. Allow a wet swab to air dry for 60 minutes and then seal in a labeled swab container.

Storage

To avoid possible degradation should the stain or deposit contain any biological material, store with other dry biological evidence in a cool, dry environment protected from sunlight. A temperature-controlled environment at 60 °F to 75 °F and less than 60% humidity is ideal, but room temperature for a short period of time is acceptable (NIST, 2013). Dry stain or deposit evidence does not need refrigeration.

PERSONAL ELECTRONICS AND DEVICES AS EVIDENCE

In a high-tech world, personal data devices must also be considered in a forensic case. For example, a patient with gunshot wounds may have a cell phone that could provide evidence needed to locate the shooter. Consult law enforcement regarding any personal technology items that might need to be secured as evidence. Do not activate any technology found, as this may result in loss of information (Cabelus & Spangler, 2013). Technology evidence should be packaged in an antistatic container with sufficient cushioning to avoid damage during shipment (TXDPS, 2016).

Toxicology

Forensic situations involving drugs or alcohol require the collection of blood or urine for analysis of suspect substances.
DOCUMENTATION

Document in the medical record any toxicology specimens obtained. Carefully label specimen containers and document the evidence on the chain-of-custody form, being certain to document the exact collection time.

COLLECTION METHOD

Texas protocol requires the collection of 30 ml of urine when a toxicology study is indicated.

For a blood sample, when possible, collect the sample as the first blood drawn before medication is administered (Cabelus & Spangler, 2013). While routine blood specimens for analysis are taken in tubes per processing laboratory protocols, toxicological blood samples are collected in gray-topped tubes that contain sodium fluoride (Dougherty, 2011).

Added caution is needed when obtaining blood samples for legal purposes. This blood is being drawn for purposes other than medical need and therefore must be processed separately from medical-purposed blood samples. Following are some specific guidelines to follow if toxicology blood samples for evidence are required (Dougherty, 2011):

- Obtain a written request from law enforcement.
- Obtain informed consent of the patient.
- If this sample is for blood-alcohol level, use aqueous benzalkonium (Zephiran) rather than alcohol to cleanse the skin.
- Draw the sample in the presence of the law enforcement officer who requested the procedure.
- Label each tube with the date, time, subject’s name, location, the collector’s name, and a case or evidence number (if available).
- Hand the blood sample directly to the requesting officer.
- Complete the chain-of-custody form.
- Document in the medical record the blood drawn and time.

STORAGE

To avoid possible degradation, liquid blood specimens such as toxicology samples should be refrigerated (maintained between 36 °F and 46 °F with less than 25% humidity) (NIST, 2013).
COMMON FORENSIC SITUATIONS

Sexual Assault Examination

In September of 2013, Senate Bill 1191 was passed to allow for forensic evidence of sexual assault of survivors to be collected in hospital emergency rooms by emergency room nurses in combination with an emergency room physician. The reason behind this was many survivors in remote areas found themselves in a dilemma; they wanted a forensic exam but the nearest Sexual Assault Nurse Examiner (SANE) nurse was several hours away. Survivors are given the choice to travel to a site that has a SANE nurse or have their exam done in an emergency department setting.

Emergency nurses must complete an approved training in order to collect forensic evidence from a sexual assault survivor. This training is not the same as that which is required for Sexual Assault Nurse Examiners.

Sexual assault is one of the most challenging evidence collection processes encountered by an emergency nurse. It is important to follow with care all established guidelines and collection procedures using the approved sexual assault evidence collection kit. The emergency nurse will attend to the patient’s health needs while simultaneously collecting evidence for the criminal justice system.

For the patient’s health, a history and physical exam should be done together with baseline testing for sexually transmitted infections (STIs) and pregnancy testing. The need for crisis intervention should be addressed. Prior to discharge, emergency contraception and STI prophylaxis in accordance with the CDC guidelines should be offered, along with a follow-up plan for both medical and psychosocial services.

For the criminal justice system side, a history of the sexual assault is recorded, findings are documented and photographed, physical evidence is preserved with a chain of custody, and later, an interpretation of the findings may be provided to the criminal justice system.

DOCUMENTATION

Carefully document all evidence collection both in the medical and the forensic records that will be passed on to law enforcement. When forensic samples are collected—such as blood, urine, clothing, and the evidence kit—each item will be listed on a form and signed by both the nurse who collected the evidence and the law enforcement officer who receives the evidence after the exam is completed. The forms may be provided by the law enforcement agency or the hospital, and a sample form is available in the Texas Evidence Collection Protocol.

In all cases of an uncollected sample, note the reason. This could be due to patient declining that particular sample or lack of availability. Some specimens may not be necessary based on assault history.
Label each specimen as it is collected and do not contaminate one body area from another as samples are obtained. For example, do not contaminate the rectal area while obtaining a vaginal swab.

**COLLECTION METHOD**

Organization is important when obtaining evidence to be both complete and efficient. Sexual assault evidence collection is intimate and may be uncomfortable for the patient. Being organized means that the procedure can be completed as quickly as possible. Bring all necessary equipment into the room before beginning the physical assessment.

To keep organized, have a plan for the order of evidence collection. A least-invasive to most-invasive procedure process is recommended (LaMonica & Pagliaro, 2013). Following is the general order of collection using a head-to-toe and external-to-internal approach:

1. Clothing collection
2. Debris and foreign material collection (any external evidence found during physical examination, such as blood, semen, saliva, debris, or other materials that might be associated with the crime scene)
3. Observation of skin surfaces with natural light, including photographing injuries
4. Observation of skin surfaces with an alternative light source and swabbing positive findings
5. Oral and buccal swabs
6. Blood and urine specimens
7. Head hair combing, followed by head hair controls
8. Fingernail swabs, clippings, or scrapings
9. Pubic hair combing, followed by pubic hair controls
10. External genitalia swabs (inner thighs; labia in females)
11. Penile and scrotal swabs in males (only swab external surfaces of glans, shaft, and scrotum; do not insert a swab into the urinary meatus)
12. Vaginal swabs and smear*
13. Cervical swabs and smear*
14. Anal wipe
15. Rectal swabs and smear*

* The nurse will coordinate with the attending physician to insert a speculum for the swab collection.
Every emergency department should have available a standard sexual assault evidence collection kit with the equipment needed to collect necessary evidence. Kits should be in a tamper-evident container and the integrity of the seal verified on a routine basis. The Texas Attorney General’s Office affirms that the SIRCHIE Southwestern Sexual Assault Evidence Collection Kit contains all the equipment needed to meet Texas evidence requirements (Woodard-Hotz, 2017). If a site-based kit is created, the listing of items in the SIRCHIE kit provides a reliable guide. (See “Resources” at the end of this course.)

<table>
<thead>
<tr>
<th>SEXUAL ASSAULT EVIDENCE COLLECTION</th>
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<tbody>
<tr>
<td><strong>Items</strong></td>
</tr>
<tr>
<td>All clothing</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Oral and buccal specimens</td>
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</tbody>
</table>
Blood specimen

- Use 1 purple-topped tube for reference DNA (EDTA preservative).
- Use 1 gray-topped tube for toxicology and additional tubes for RPR, HIV, Hep B Sag, and HCG.

Urine specimen

- Gather at least 30 ml for toxicology analysis; consider GC and chlamydia RNA test.
- Use midstream catch, not clean catch.
- Use a sterile urine collection container.

Head hair combings

- Collect dried secretions by clipping around the area and collecting in an evidence envelope.
- Comb top, back, front, and sides of head hair over a piece of paper to collect any loose hairs or fibers.
- Include both the loose hairs and the comb in the evidence envelope.

Head hair controls

- Pull 50 full-length strands from several areas of the head.
- Follow the procedure outlined in the “Hair” section earlier in this course.

Additional swabs

- Swab any area that was licked or bitten during the assault or any area that is positive with an alternate light source or any source that may have dried semen.
- If the area is dry, use 2 to 3 drops of sterile water on the tip of the swab and then swab the area by rotating the swab fully. Dry 60 minutes at room temperature.
- Include location and reasoning for collection.

Pubic hair combings

- Place a paper towel under the buttocks and comb pubic area for loose and foreign hairs.
- Include both the pubic hair and comb in the evidence envelope.
- Collect a dried secretion by clipping around the area and collecting in an evidence envelope.

Pubic hair controls

- Pull 2 dozen full-length hairs from the pubic area close to the skin line.
- Follow the procedure outlined in the “Hair” section earlier in this course.

Fingernail clippings or swabs

- Follow the procedure outlined in the “Fingernails” section earlier in this course.
External genitalia swabs

- Swab inner thighs and external genitalia with 2 lightly moistened swabs.
- Air dry for 60 minutes at room temperature.
- Place air-dried swab in swab box and then in a paper or manila container.
- Swab external surfaces of penis and scrotum in male patients, using four swabs that have been moistened with 2 to 3 drops of sterile water, and air dry for 60 minutes at room temperature.

Orifice swabs (vaginal/cervical/rectal)

- Obtain 4 swabs from each orifice, swabbing from the outside in.
- Air dry for 60 minutes at room temperature.
- Obtain all four swabs simultaneously.

Orifice smears (vaginal/cervical/rectal)

- Use 1 swab from each orifice to create a smear on a glass, frosted-end slide. Mark on the frosted portion of the slide with pencil only.
- Air dry for 5 to 10 minutes at room temperature.
- Label the frosted end of the slide using pencil to avoid ink contamination during processing procedures.

Sources: Adapted from TXDPS, 2016; Dougherty, 2011; Saferstein, 2011; LaMonica & Pagliaro, 2013.

STORAGE

Storage of evidence for a sexual assault case should follow standard principles described earlier in this course, including:

- Keep all evidence for a single case together.
- Fully label and identify each specimen with a case number.
- Do not allow evidence to be unattended at any time unless sealed and locked according to facility protocol.
- Keep blood specimens refrigerated.

CASE

Julie, a 20-year-old college student, walked into the emergency department of the small local community hospital late one morning stating that she had been assaulted at a fraternity party the night before. Patty, the nurse assigned to Julie, is aware of the need to carefully interview and examine Julie. She notices that Julie looks anxious and fearful but not disheveled.

Julie states that she was dropped off at her dormitory building early that morning; she was feeling dizzy and “hung over” so she slept a while and then took a hot shower. After a couple
hours she determined that she should seek treatment and came to the emergency unit. She explains that she doesn’t remember much about the incident but is having flashbacks of some type of group game going on around her. She had been drinking and thinks there might have been something put in her drink.

Patty first asks if Julie has notified law enforcement. Finding that she hasn’t, Patty gains permission to have an officer come to the emergency department to take a statement. Although there are no SANE nurses in the county, Patty is familiar with using the standard, state-approved sexual assault examination kit available in the emergency unit. Patty first interviews Julie in a private exam room, being sensitive to let Julie lead the discussion. Patty documents in the patient medical record, using as many of Julie’s own words as possible.

Patty then helps Julie remove her clothing using the standard evidence collection method. Even though Julie has changed her clothing since the assault, Patty packages her underwear for evaluation. Once Julie is in an examination gown, Patty performs a head-to-toe evaluation of Julie, looking for injury and any biological or physical evidence for collection. Julie has a bite mark on her right shoulder and bruising on both her upper arms and ankles. Patty carefully documents these on the body diagram and, with permission from Julie, photographs them. She then places several drops of sterile water on a swab and swabs the bite mark area in case saliva is remaining, although this is unlikely after a hot shower.

Once the physical examination is complete, Patty explains the need for the various specimen collections for sexual assault evaluation and biological evidence. Patty gains Julie’s verbal permission for each one as they are taken, even though Julie had already provided written permission before the start of the examination. Patty proceeds according to the various recommended forensic evidence collection guidelines. Each specimen is packaged separately in evidence collection envelopes from the assault kit. Patty keeps these envelopes in view in the room with her until the entire evidence collection process is completed. Then Patty packages the specimens in a single box for shipment to the crime laboratory.

The full forensic examination and specimen collection takes around 90 minutes, and Julie is now exhausted. She asks if a school friend could be called to be with her and help her get home. Patty helps to arrange this; Patty also reviews several crisis intervention options for Julie and calls to make her an appointment with a counselor for later that day.

Blunt and Sharp Trauma Injuries

There is a wide range of injuries that can result from blunt and sharp trauma; these include blunt force trauma, penetrative trauma, suction injuries, bites, incised wounds, lacerations, abrasions, burns, bruises, or contusions.

DOCUMENTATION

Careful documentation of any open or closed wounds provides evidence of the trauma inflicted. Using the correct descriptive terms is important in documenting wounds from blunt and sharp
trauma. Following is a short list of common injury terms and their definitions to help with accurate documentation (Besent-Mathews, 2011).

- **Abrasion**: Removal of the outer layer of the skin by sliding or compression
- **Contusion**: A bruise resulting from leakage of blood into the tissue
- **Ecchymosis**: Small, nonelevated, painless bluish or purple patches caused by hemorrhage rather than trauma
- **Laceration**: Defects in soft tissue as a result of tearing, ripping, crushing, overstretching, or shearing; caused by blunt trauma; irregular edges, can include scraping or bruising of the margins
- **Cut**: Skin opening created by a sharp object; smooth edges, usually without abrasion or bruising

**BITE MARKS**

Some forms of violence against a patient, especially sexual violence or animal attack, may lead to bite marks. These marks are evidence and can also contain trace amounts of the perpetrator’s saliva. Bite marks should be documented in the written record and graphic diagram. Note the size, shape, depth, or pattern. If possible, photograph the bite mark with an angled ruler providing size and dimension. The area should be swabbed for trace evidence before being washed or treated (Cabelus & Spangler, 2013). As with other biological evidence, swabs should be air dried before packaging and sealing.

**Gunshot Wounds**

Firearm evidence may also be available from a patient. Bullets and cartridge casings may be found around the patient with gunshot wounds. This evidence is fragile and should be collected with any attached debris intact. A cotton gauze wrap can protect the evidence and any attached debris (TXDPS, 2016). Use rubber-tipped forceps or a gloved hand to obtain the evidence, then secure in a labeled manila clasped envelope (Saferstein, 2011).

Gunshot residue on a patient is also evidence of the type and distance of a firearm in the crime. When a shooting is evident, always document the presence or absence of gunshot residue. Residue can appear as a dark powder, soot, particles, or small, punctuated hemorrhages (Dougherty, 2011). If unsure, it is always best to describe what is observed rather than label it as residue. Note that it is inappropriate to document “powder burns,” as this is an outdated and inappropriate description of gunshot residue (Besent-Mathews, 2011).

In all cases, photographic evidence of the residue and pattern is valuable and should be obtained prior to cleaning the wound if at all possible. However, the patient’s well-being must come first, and wound care may have to precede any evidence collection.
When removing clothing to provide emergency treatment to a gunshot victim, avoid cutting through the defect in the clothing from the bullet. Instead, cut around the bullet hole to preserve the evidence.

**Binding Injuries**

**ROPE AND KNOTS**

Ropes may be a part of evidence collection in the case of hanging or sexual assault. When preserving rope evidence, the nature of the knot or other tying mechanism may be of importance in the investigation. Therefore, be careful to preserve knots and do not untie or cut through them. If a patient’s well-being can be preserved, photograph the location and position of ropes before removing them. Document skin condition around the rope and location of rope and rope injuries on the body diagram.

**TAPE AND ADHESIVE**

Note any indication of the use of tape in binding a patient, if the situation warrants. Collect and secure tape found on any patient after the location and positioning has been documented and, if possible, photographed. Adhesive residue from duct tape may be important evidence and should also be collected.

**STRANGULATION**

Strangulation, the constriction of the neck area, limits both the airway and blood flow to the brain. Strangulation can occur through hangings, other ligature, or manually, as during a sexual assault (Shapiro, 2011). Always ask about strangulation in these situations and assess the neck and head area for any markings to document (Ledray, 2011).

The following are physical evidence of strangulation that should be documented and, if appropriate, photographed:

- Bruising, redness, swelling, or furrows on the skin of the neck
- Shortness of breath, wheezing, sore throat, or raspy voice
- Scratches on the neck
- Petechiae to conjunctiva, mouth, face, or neck (any area above the constriction)
- Bruising or petechiae behind the ear
- Loss of consciousness or memory of incident
- Loss of urine or stool
If smothering or strangulation is suspected in a forensic incident, be sure to thoroughly evaluate respiratory and cognitive functioning. For example, obtain pulse oximetry and perform a neurological assessment (Ledray, 2011). A victim of strangulation may have no external evidence of being strangled and may still develop life-threatening sequelae. Strangulation has been identified as a predictor of homicide in intimate partner relationships and is a red flag for healthcare professionals (Thomas et al., 2014).

PROVIDING TESTIMONY

Providing testimony in a legal case can be very stressful. If called upon to testify or provide a deposition for a legal case, be sure to make adequate preparation, including a review of the evidence and a discussion with the plaintiff or defense attorney who is calling for the testimony.

Juries consider both objective information and subjective presentation of the information. Demeanor, then, is an important component of testimony (Pagliaro & Bentley Cewe, 2013). It is important to provide information in a sincere and honest manner using direct eye contact and a calm voice. This will instill trust in the jury and maintain interest.

Be sure to carefully listen to the questions that are asked and consider a response before answering. Pausing to think through the question shows a thoughtful observer and reporter. When considering the response to a question, be thorough but do not provide any additional or extraneous information unless expressly asked for clarification. By being objective, professional, and thorough, a nurse can successfully participate in obtaining justice through the court system. Never make up facts about a case. It is better to say “I do not recall” rather than state something that is false or inaccurate.

Follow these guidelines to be successful at providing testimony in a forensic court case. Remember, juries are predisposed to like and trust nurses, as public opinion polls have attested for many years.

CONCLUSION

By becoming familiar with the concepts and skills of forensic evidence collection, preservation, and documentation, emergency nurses can assist traumatized patients and contribute to social justice, a distinctive feature of ethical nursing practice.

Nursing skills such as interviewing and patient assessment along with the ability to collaborate with other disciplines gives emergency nurses a unique opportunity to participate in legal processes while being sensitive to the physical and psychological needs of traumatized patients during this vulnerable time.
Acknowledgment

The authors would like to thank Lauren DaSilva, Certified Sexual Assault Counselor, for assistance with photos.

RESOURCES

Biological Evidence Preservation Handbook, 2013

SIRCHIE Southwestern Sexual Assault Evidence Collection Kit
http://www.sirchie.com/southwestern-sexual-assault-evidence-collection-kit.html#.U8ljovldWo1

Texas Evidence Collection Protocol

Texas Physical Evidence Handbook. Texas Department of Public Safety

REFERENCES


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TEST

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1. Nurses are trained to identify, collect, and preserve forensic evidence:
   a. Even though it is not considered part of emergency nursing practice.
   b. Because they, more than other healthcare professionals, are skilled at documentation.
   c. To confirm police findings from the initial crime scene investigation.
   d. To assist in the investigation of trauma that may be related to criminal activity.

2. According to the Emergency Nurses Association, the collection of forensic evidence is:
   a. To be carried out only by criminal justice professionals.
   b. To be carried out only by sexual assault team nurses.
   c. An appropriate responsibility for emergency nurses.
   d. Beyond the scope of practice for emergency department nurses.

3. In the chain-of-custody process, forensic evidence is secured against possible tampering by:
   a. Chronological documentation of places the evidence is kept and people who have had access to it.
   b. Documentation of the interview and history of the forensic event in the medical record.
   c. Secure maintenance of confidentiality and privacy during the forensic evidence interview.
   d. Photographing all forensic evidence obtained from the patient and crime scene.

4. The nurse caring for a patient who is a sexual assault victim begins with general questions before moving to specifics about the event. The nurse guides the direction of the discussion while allowing the patient to tell the story. This is an application of which patient-centered principle?
   a. Maintaining patient confidentiality
   b. Providing privacy
   c. Obtaining the patient’s consent
   d. Showing respect and patience

5. Which is a common survivor response to trauma?
   a. Increased sociability and affection for nontraumatized family members and friends
   b. Increased irritability and exaggerated responses to environmental danger signals
   c. Constantly talking about the trauma
   d. Sleeping long hours both day and night
6. A patient-centered approach to interviewing a traumatized patient includes:
   a. Taking control to speed the interview to reduce the patient’s distress.
   b. Giving words to patients to help them describe their feelings.
   c. Probing for specific information first, as memory fades quickly for a traumatized patient.
   d. Letting the patient know that his or her description of events will be documented.

7. Which is the best example of precise and forensically valuable documentation during the assessment of a woman who has fallen down a flight of stairs?
   a. “Healing bruises on the patient’s body.”
   b. “Afraid of husband; refuses to let him in the examination room.”
   c. “Note a 3 centimeter laceration along the patient’s left cheekbone.”
   d. “Patient alleges she fell down front porch steps.”

8. An important guideline when photographing forensic evidence is to:
   a. Avoid including the person’s face in the photo to maintain privacy.
   b. Take regional, mid-range, and close-up photos of the injury.
   c. Clean and treat wounds before obtaining evidentiary photos.
   d. Avoid including patient demographic information such as name, age, etc., with photos.

9. Which action by the nurse indicates proper application of basic forensic principles for physical evidence collection?
   a. Combining all samples from a single case into one package
   b. Labeling and sealing all physical evidence
   c. Obtaining the smallest sample possible to facilitate transport and storage
   d. Labeling all samples containing physical evidence as a biohazard

10. When obtaining clothing evidence, it is best to:
    a. Package all clothing from the same individual in a single evidence container to avoid misidentification.
    b. Keep any stains or spots on clothing evidence moist to maintain integrity during transport.
    c. Form a barrier by initially placing a clean bed sheet or exam table paper on the floor.
    d. Include any hospital or transport linens with the clothing evidence in one package.
11. The recommended procedure for obtaining hair evidence from a patient who has been sexually assaulted includes:
   a. Placing a paper towel under the patient’s buttocks on which to collect any loose hairs.
   b. Obtaining a control sample of the patient’s own hair before combing for hair evidence.
   c. Cutting 5 strands of hair of variable length for control purposes.
   d. Air drying the hair sample for at least 10 minutes before packaging.

12. Which practice is correct for obtaining orifice swabs during evidence collection in a sexual assault case?
   a. Obtain 1 swab from each orifice.
   b. Wait 30 minutes between swabs.
   c. Air dry swabs at room temperature for 60 minutes.
   d. Swab from the inside to the outside of the orifice.

13. The correct procedure for processing bite marks observed on a patient after experiencing trauma includes:
   a. Washing and treating any bites before swabbing for trace evidence.
   b. Swabbing the area and sealing the swab while still wet to maintain evidence integrity.
   c. Documenting on the graphic diagram only if able to see both upper and lower bite impressions.
   d. Photographing the bite marks with an angled ruler.