

6. Exam and Evidence Collection Procedures

Recommendations at a glance to facilitate the exam and evidence collection:

- Recognize the evidentiary purpose of the exam.
- Strive to collect as much evidence from patients as possible, guided by the scope of informed consent, the medical forensic history, exam findings, and instructions in the evidence collection kit.
- Be aware of and document evidence and injuries that may be pertinent to the issue of whether the patient consented to the sexual contact with the suspect.
- Understand how biological evidence is tested.
- Prevent exposure to infectious materials and risk of contamination of evidence.
- Understand the implications of the presence or absence of seminal evidence.
- Modify the exam and evidence collection to address the specific needs and concerns of patients.
- Explain exam and evidence collection procedures to patients.
- Conduct the general physical and anogenital exam and document findings on body diagram forms.
- Collect evidence to submit to the crime lab for analysis, according to jurisdictional policy.
- Collect other evidence.
- Keep medical specimens separate from evidentiary specimens collected during the exam.

Recognize the evidentiary purpose of the exam. During the exam, examiners methodically document physical findings and facilitate the collection of evidence from patients' bodies and clothing. The findings in the exam and collected evidence often provide information to help reconstruct the details about the events in question in an objective and scientific manner.¹⁸⁹ Of course, health care needs and concerns of patients may be presented in the course of the exam that should be addressed prior to discharge. However, patients must understand that the exam does not provide routine medical care. For example, a pap smear will not be done during the female pelvic exam.¹⁹⁰ (This chapter focuses on evidentiary components of the exam. Other chapters in the protocol discuss more fully medical and other related needs and concerns of patients.)

Collect as much evidence from patients as possible, guided by the scope of informed consent, the medical forensic history, exam findings, and instructions in the evidence collection kit. Evidence collected during the exam mainly includes biological and trace evidence. To reconstruct the events in question, evidence collected is used in four potential ways in sexual assault cases:

- To identify the suspect;
- To document recent sexual contact;
- To document force, threat, or fear; and
- To corroborate the facts of the assault.

Be aware of and document evidence and injuries that may be pertinent to the issue of whether the patient consented to the sexual contact with the suspect. In the majority of sexual assaults, patients know the suspects. For example, according to the National Crime Victimization Survey, in 2008, 57 percent of rapes/sexual assaults involved offenders who were nonstrangers.¹⁹¹ Most nonstranger suspects and many stranger suspects (if confronted by professionals in the criminal justice system) will claim that the patient consented to the sexual contact.¹⁹² Consent claims typically stem from a lack of evidence and documentation concerning force and coercion. Thus, evidence and documentation of physical findings related to whether

¹⁸⁹ Note that while exam findings and evidence collected from patients are important in reconstructing the events in question, during a criminal investigation, law enforcement officials look for additional evidence that will create a more complete picture of the event.

¹⁹⁰ Drawn from L. Ledray, SANE Development and Operation Guide, 2000, p. 79.

<http://www.ojp.usdoj.gov/ovc/publications/infores/sane/saneguide.pdf>, SANE Development and Operation Guide, 1998, p. 63.

¹⁹¹ U.S. Department of Justice, Bureau of Justice Statistics, *Female Victims of Violence*, <http://www.bjs.gov/content/pub/pdf/fvv.pdf>

¹⁹² J. Archambault and D.K. Faugno, Overcoming a Consent Defense to Sexual Assault, *Journal of Emergency Nursing*, 27:204–208, April 2001.

force or coercion was used against patients (e.g., findings that reveal injuries, alcohol or drugs taken involuntarily, or signs of a struggle) are important in these types of cases. However, the absence of physical trauma does not mean that coercion/force was not used or prove that patients consented to sexual contact.¹⁹³ Also, some physical findings that suggest force are not necessarily indicative of a sexual assault. It is important to remember that if an investigation takes place, law enforcement officials will look for additional evidence that may help to overcome a claim of consent.

Understand how biological evidence is tested.¹⁹⁴ Semen, blood, vaginal secretions, saliva, vaginal epithelial cells, and other biological evidence may be identified and profiled by a crime lab. The information derived from the analysis can often help determine whether sexual contact occurred, provide information regarding the circumstances of the incident, and be compared to reference samples collected from patients and suspects for identification purposes. A primary method used by crime labs for testing biological evidence is DNA (deoxyribonucleic acid) analysis.¹⁹⁵ The most common form of DNA analysis used in crime labs for identification is called polymerase chain reaction (PCR). PCR allows the analysis of evidence samples of limited quality and quantity by making millions of copies of very small amounts of DNA. Using an advanced form of PCR testing called “short tandem repeats” (STR); the laboratory is able to generate a DNA profile, which can be compared to DNA from a suspect or a crime scene.¹⁹⁶

Distinguish patients’ DNA from suspects’ DNA. Blood or buccal (inner cheek) swabbings should be collected from patients for DNA analysis to distinguish their DNA from that of suspects. (Procedures for collecting these samples are provided later in this chapter.) If the case is reported to law enforcement, patients’ biological samples and DNA profiles should be used only for investigation of the sexual assault, and their DNA profiles should not be uploaded into CODIS.¹⁹⁷ Neither biological samples nor DNA profiles should be provided to law enforcement or prosecution for another case in which patients may be suspects, inadvertently given to health insurance carriers, or used for research purposes without patients’ consent.¹⁹⁸ Criminal justice agency policies should be in place and followed for the secure storage of biological samples and appropriate disposal of these samples and DNA profiles.

Prevent exposure to infectious materials and risk of contamination of evidence. Examiners should take precautions during the exam to prevent exposure (to both patients and health care staff) to bloodborne pathogens and other potentially infectious materials. For example, it is important to follow facility policies on washing hands, handling contaminated needles and other contaminated sharps, wearing protective equipment, and minimizing splashing, spraying, and spattering of these materials. (For more information on this topic, see *B.1. Sexual Assault Forensic Examiners.*)

With the ever-increasing sensitivity of DNA analysis, there is a greater chance that accidental contamination can be detected. Forensic evidence, which is usually small in volume, can be contaminated and diluted by foreign DNA. Every precaution should be taken by all first responders to reduce outside contamination and dilution of evidence. For example, examiners should wear non-powdered gloves¹⁹⁹ and change them throughout the exam/evidence collection whenever cross-contamination could occur or when moving to different body surface areas. Examiners and other responders should seek guidance from their crime labs on procedures to prevent contamination.

¹⁹³ L. Ledray, *SANE Development and Operation Guide*, 2000, p. 63.

<http://www.ojp.usdoj.gov/ovc/publications/infores/sane/saneguide.pdf>.

¹⁹⁴ Section drawn from *Understanding DNA Evidence: A Guide for Victim Service Providers* by the National Commission on the Future of DNA Evidence; the *West Virginia Protocol for Responding to Victims of Sexual Assault*, 2002, pp. 31–32; and the *California Medical Protocol for Examination of Sexual Assault and Child Sexual Abuse Victims*, 2001, p. 40.

¹⁹⁵ DNA determines each person’s individual characteristics. An individual’s DNA is unique except in identical twins. DNA in the cell nucleus is genetic material inherited from biological parents. (Drawn from Arkansas’ *Sexual Assault: A Hospital/Community Protocol for Forensic and Medical Examination*, 2001.)

¹⁹⁶ There is a concern that if DNA evidence is found, prosecutors may not utilize other evidence, especially when labs have limited resources. But because persons known to victims commit the vast majority of sexual assaults, DNA findings must be used in conjunction with other forensic evidence recovered, particularly when issues of consent arise. Law enforcement investigators and prosecutors should receive training on maximizing the use of all forensic evidence collected.

¹⁹⁷ In the fall of 2003, legislation was introduced to implement the President’s DNA Initiative provisions that would bar the inclusion of elimination samples in CODIS. These samples include those obtained from sexual assault victims, as well as individuals with whom they had recent consensual sex prior to the exam.

¹⁹⁸ An exception is that a forensic lab may input frequency information related to the DNA profiles in its statistical database. Victims’ identity remains anonymous.

¹⁹⁹ Drawn from Connecticut’s Video Training Program, Part 1, *The Examination: Sexual Assault Evidence Collection*, 1998.

Understand the implications of the presence or absence of seminal evidence.²⁰⁰ The relevance of semen evidence in cases involving male suspects covers the spectrum, depending upon case facts. Semen is composed of cellular and liquid components known as spermatozoa (sperm) and seminal fluid. Semen evidence is valuable because it can be used to positively identify suspects.²⁰¹ However, it is critical to note that failure to recover semen is not an indication that a sexual assault did not occur. There are a number of reasons why semen might not be recovered in these cases: Assailants may have used condoms, ejaculated somewhere other than in an orifice or on patients' clothes or bodies, or not ejaculated at all. Semen may have been depleted by frequent ejaculation prior to the sample in question.²⁰² Chronic alcohol or drug abuse, chemotherapy, cancer, infection (e.g., mumps or tuberculosis), or congenital abnormalities also may suppress semen production. Other factors may contribute to the absence of detectable amounts of semen evidence. For example, significant time delays between the assault and collection of evidence may cause loss of semen evidence, semen may be washed away prior to the exam or improperly collected, and an object other than a penis may have been used for penetration.

Modify the exam and evidence collection to address the specific needs and concerns of patients. Examiners should be aware that patients' beliefs might affect whether and how certain evidence is collected. For example, patients from certain cultures or religious backgrounds may view hair or fingernails as sacred and decline collection of hair evidence. (For more information on this topic, see *A.2. Victim-Centered Care*. Accommodating mobility impairments is discussed in footnotes for this chapter. For details on accommodating communication needs and responding to verbal and nonverbal cues, see *C.4. The Medical Forensic History*.)

Explain exam and evidence collection procedures to patients. Whatever the methods used for seeking informed consent from patients for the exam and evidence collection, the full nature of procedures and options should be explained. Examiners may provide some basic information prior to starting the exam and additional information as the exam proceeds. For example, if specialized equipment is used, examiners can explain to patients, at some point prior to its use, what the equipment is, how it will be used, for what purpose, and how long the procedure will take. Encourage patients to ask questions and to inform examiners if they need a break or do not want a particular part of the exam or evidence collection done. (For more information on obtaining informed consent of patients, see *A.3. Informed Consent*.)

Conduct the general physical and anogenital exam and document the physical findings on body diagram forms.²⁰³ In addition to instructions included in the evidence collection kit, the exam should be guided by the scope of informed consent and the medical forensic history.

In the course of the exam, examiners may question patients about trauma related to the assault. These questions should be specific enough to yield clinically relevant information. For example, simply asking if patients are injured or hurt anywhere is not focused enough—they may not know where they are injured until examined and/or asked questions such as if they hurt in specific body locations.

General physical examination. Obtain patients' vital signs, note the date and time of the exam, physical appearance, general demeanor, behavior, and orientation, and condition of clothing on arrival. Record all physical findings (which include observable or palpable tissue injuries; physiologic changes; and foreign materials such as grass, sand, stains, dried or moist secretions, or positive fluorescence) on body diagram forms. Be observant for redness, abrasions, bruises, swelling, lacerations, fractures, bites, burns, and other forms of physical trauma. Potential traumatic findings should be palpated to assess for tenderness and induration. On dark-skinned individuals, it may be difficult to identify these areas and they may need to be sought out specifically.

²⁰⁰ Drawn from the *West Virginia Protocol for Responding to Victims of Sexual Assault*, 2082, pp. 32, and New Hampshire's *Sexual Assault: A Hospital Protocol for Forensic and Medical Examination*, 1998, pp. 26–27.

²⁰¹ In the absence of sperm, certain seminal fluid components may be used to identify semen.

²⁰² If assailants who had a vasectomy ejaculated, their seminal fluid would not contain sperm.

²⁰³ This section on performing the exam is primarily drawn from the American College of Emergency Physicians' (ACEP) *Evaluation and Management of the Sexually Assaulted or Sexually Abused Patient*, 1999, pp. 103–107. Much of the ACEP exam procedures were based on the *California Medical Protocol for Examination of Sexual Assault and Child Sexual Abuse Victims*.

Anogenital examination.²⁰⁴ During the female genital exam,²⁰⁵ examine the external genitalia and perineal area for injury, foreign materials, and other findings in the following areas: abdomen, thighs, perineum, labia majora, labia minora, clitoral hood and surrounding area, perurethral tissue/urethral meatus, hymen,²⁰⁶ fossa navicularis, and posterior fourchette. The use of a colposcope during the external genital exam enhances viewing microscopic trauma and may provide photographic documentation.²⁰⁷

Then examine the vagina and cervix for injury, foreign materials, and foreign bodies. Use a colposcope or other magnifying device if available. In some jurisdictions, toluidine blue dye may be used to highlight trauma, either with or without the use of a colposcope.²⁰⁸ Examine the buttocks, perianal skin, and anal folds for injury, foreign materials, and other findings. If rectal penetration is reported or suspected, an anoscope can be used as a tool to identify and evaluate trauma (it may also be used to help obtain anal swabs and trace evidence).

For male patients, examine the external and perineal area for injury, foreign materials, and other findings, including from the abdomen, buttocks, thighs, foreskin, urethral meatus, shaft, scrotum, perineum, glans, and testes. Document whether patients are circumcised.

Documentation of findings. Record findings from the general physical and anogenital exam on appropriate body diagram forms. Detailed descriptions of findings should be provided as required. During the exam, collect evidence as specified in the evidence collection kit and photograph anatomy involved in the assault according to jurisdictional policy. Follow jurisdictional policy regarding documentation, photography, and collection of bite mark evidence.²⁰⁹

Collect evidence to submit to the crime lab for analysis, according to jurisdictional policy.²¹⁰ The following evidence from patients, along with completed documentation forms, typically is submitted to the crime lab designated by the jurisdiction.²¹¹ Jurisdictions may require collection of additional or different

²⁰⁴ If patients are mobility impaired, review their history at this stage. In patients with spinal cord injury (SCI), the level of injury and any history of autonomic dysreflexia will have to be noted and given special attention. Other considerations in these patients are histories of muscle spasm and triggers for both muscle spasm and autonomic dysreflexia. Examiners should be sure to ask about things such as whether these patients have ever had a speculum exam, what this experience was like, what the most comfortable position would be for the anogenital exam, and any history of autonomic dysreflexia with a speculum exam. (Commonwealth of Massachusetts's *SANE Protocol*, 2002, p. 36.) Transgender individuals with a masculine identity and those with a constructed vagina may sustain additional physical and emotional damage when vaginally assaulted.

²⁰⁵ Some patients may not have previously had a gynecological exam and need a detailed explanation and support during this part of the exam. (Drawn from L. Zarate, 2003, *Suggestions for Upgrading the Cultural Competency Skills of SARTs*, Arte Sana Web site, 2003.)

²⁰⁶ The Tanner Scale of Secondary Sexual Development is a sexual maturity rating scale that defines a child's stage of puberty. (American Professional Society on the Abuse of Children, *Glossary of Terms and the Interpretation of Findings for Child Sexual Abuse Evidentiary Examinations*, p. 7.) These developmental stages are relevant to the interpretation of physical findings in child and adolescent cases. There is a relationship between Tanner Stages and hymenal development. Physical findings must be evaluated in the context of hymenal development for the interpretation of findings. (The *California Medical Protocol for Examination of Sexual Assault and Child Sexual Abuse Victims*, 2001, p. 61.)

²⁰⁷ Colposcopes have magnifying lenses ranging from 4x to 30x power and can have 35-mm camera or video camera attachments. Colposcopes have a green filter that enhances the visualization of scars, unusual vascular patterns, and genital warts. Examiners can use the colposcope to obtain magnified images of the oral pharynx, genital, and rectal areas. Minor skin and/or mucosal trauma such as abrasions, lacerations, petechiae, focal edema, hymeneal tears, and anal fissures are more easily seen with magnification, and photographs can be taken for documentation. Attached video cameras can also record images. (Drawn from the *California Medical Protocol for Examination of Sexual Assault and Child Sexual Abuse Victims*, 2001, p. 58).

²⁰⁸ The use of toluidine blue dye is controversial in some jurisdictions (e.g., it may be perceived by the court as changing the appearance of the tissue) and not universally used. When employed, toluidine blue dye (1-percent aqueous solution) should be applied by cotton swab before any internal or digital speculum examination. Although DNA evidence will be preserved, care should be taken to avoid letting dye enter the vaginal vault. Excess dye may be blotted away with 1-percent acetic acid solution or lubricating jelly. Toluidine blue dye cannot separate consensual from nonconsensual lesions. Patients should be advised that small traces of the dye might shed in their clothing over the 2 days following the exam. (Information on use of this dye is drawn from the American College of Emergency Physicians' *Evaluation and Management of the Sexually Assaulted or Abused Patient*, 1999, p. 117.)

²⁰⁹ In addition to documenting, swabbing, and photographing bite marks, an odontologist may need to make casts. Without a cast, teeth cannot be matched to suspects. The American College of Emergency Physicians' *Evaluation and Management of the Sexually Assaulted or Abused Patient*, 1999, pp. 111–112, offers guidelines for bite mark documentation.

²¹⁰ Much of this section was drawn from the American College of Emergency Physicians' *Evaluation and Management of the Sexually Assaulted or Abused Patient*, 1999, pp. 103–107.

²¹¹ In some cases, it may be appropriate to submit evidence to the FBI Laboratory. It accepts cases from any duly authorized law enforcement agency. However, if the case is not a FBI case and the jurisdiction has capability to analyze DNA, then the DNA Unit of the FBI Lab will generally not accept the case. Cases that occur on Indian reservations may be submitted directly to the FBI Lab from local or tribal law enforcement agencies, the Bureau of Indian Affairs, or the FBI and will be worked on by the Indian Country Evidence Task

specimens. Trained examiners should use the medical forensic history and the physical assessment of the patient to guide the evidence collection process. Instructions supplied in the kit may be helpful as a guide for those who are not experienced in the process of evidence collection. However, it should be recognized that the kit instructions should not be read in front of the patient, which could be cause further emotional trauma in the aftermath of the assault. If any requested evidence is not collected, examiners should note reasons on documentation forms.

Collect clothing evidence. Clothing frequently contains important evidence in sexual assault cases. It provides a surface upon which traces of foreign materials, such as semen, saliva, blood, hairs, fibers, and debris from the crime scene, may be found. While foreign matter can be washed off or worn off the body, the same substances often can be found intact on clothing for a considerable length of time following an assault. Damaged or torn clothing may be significant, as damage may be evidence of force (do not cut through any existing holes, rips, or stains on clothing). If the examiner detects damage to the clothing, ask the patient if that damage was related to the assault or present prior to the events in question. Evidence on patients' clothing can be compared with evidence collected from suspects and crime scenes. Common items collected from patients include underwear, hosiery, blouses, shirts, and pants. Coats and shoes are collected less frequently because they are less likely to have evidentiary value and their loss may represent a significant financial burden for victims.²¹² Transgender individuals may be unwilling to part with prostheses and similar items for reasons of safety and/or cost.

Procedures for collecting clothing, underwear, and foreign material dislodged while undressing include the following:

- Place a clean hospital sheet on the floor as a barrier. Then place the collection paper on the barrier sheet. Be careful to prevent evidence transfer. Document all findings. Ask patients to disrobe (assisting them as requested and then draping them appropriately).²¹³ When disrobing, have patients remove shoes and then undress over the collection paper to catch any foreign material that is dislodged.²¹⁴ If someone assists, she/he should wear gloves.
- Collect clothing pertinent to the assault. First determine if patients are wearing the same clothes worn either during or immediately following the assault. If so, the clothing should be examined for any apparent foreign material, stains, or damage. When the determination has been made that items may contain possible evidence, those items should be collected. If it is determined that patients are not wearing the same clothing that they did either during or immediately after the assault, examiners should inquire as to the location of that clothing. If that clothing has not been brought to the exam site, information on clothing location should be provided to law enforcement (if involved) so that clothing can be retrieved and examined before any potential evidence is destroyed.²¹⁵ In addition to collecting underwear worn at the time of or immediately after the assault, it may also be important to collect underwear patients are wearing at the time of the exam (if relevant to the case).
- Be sensitive about how much clothing to take as evidence. For example, take patients' coats or shoes only if it is determined that there may be evidence on them. The exam site can coordinate with advocacy programs to ensure that replacement clothing is available for patients in a range of

Force. Should a jurisdictional lab not have a hair examiner but have the capability to analyze DNA, items requiring only DNA analysis should not be submitted. Items such as clothing that will be examined for both DNA and trace evidence should be submitted to the FBI Lab first. These items will be returned after processing for trace evidence and can then be sent along with DNA-only evidence to the jurisdictional lab. Do not submit items to the FBI Lab for trace evidence analysis after they have been previously examined by another lab. For more information or help submitting a case to the FBI Lab, contact your local FBI office or see the *Handbook of Forensic Services* at <http://www.fbi.gov/about-us/lab/handbook-of-forensic-services-pdf>.

²¹² Paragraph drawn from the *West Virginia Protocol for Responding to Victims of Sexual Assault*, 2008, p. 32.

<http://www.fris.org/Resources/PDFs/Books/WVProtocol.pdf>.

²¹³ If patients are concerned about disrobing in front of advocates and/or personal support persons, they can turn around, hold up a sheet to shield patients, or leave the room while patients disrobe.

²¹⁴ For patients with mobility impairments, put the foreign material collection sheet on the exam table and leave in place until the exam is completed. If patients prefer to disrobe in their wheelchairs, sheets can be tucked in around the wheelchair to catch debris. Avoid putting chairs on paper, as debris from wheels may contaminate evidence. (Commonwealth of Massachusetts *SANE Protocol*, 2002, p. 33.)

²¹⁵ Paragraph drawn from the *West Virginia Protocol for Responding to Victims of Sexual Assault*, 2008, p. 33.

<http://www.fris.org/Resources/PDFs/Books/WVProtocol.pdf>. In the course of the exam process, additional crime scene items that could be potential evidence may be identified and should be collected and preserved.

sizes. This clothing is critical in some instances (e.g., a patient may own only the clothing that is being collected).

- If female or transgender male patients are menstruating, collect tampons and sanitary napkins. Air-dry them as much as possible and then place them in a separate paper collection bag.
- Follow jurisdictional policy for handling and transporting wet evidence that cannot be dried thoroughly at the exam site (e.g., wet clothing, tampons, and sanitary napkins). Ensure that it is packaged in leak-proof containers and separated from other evidence when being transported. It is critical to alert involved law enforcement representatives and crime lab personnel about the presence of wet evidence and the need for its immediate analysis or further drying.²¹⁶
- After drying items according to jurisdictional policy, place each piece of clothing and collection paper in a separate paper bag, label, seal, and initial the seal. If additional bags are needed, use new grocery-style paper bags only. The barrier sheet is not submitted as evidence.
- Tape/seal bags closed; label, seal,²¹⁷ and initial the seal.

Collect debris.²¹⁸

- Collect obvious debris on patients' bodies (e.g., dirt, leaves, fibers, and hair) on a collection sheet—package, label, seal, and initial the seal.
- Fingernail evidence: ask patients whether they scratched the suspects' face, body, or clothing. If so, or if fibers of other materials are observed under patients' fingernails, collect fingernail clippings, scrapings, and/or swabbings, according to jurisdictional policy.²¹⁹ If fingernail scrapings are collected, package fingernail scrapings and tools used to obtain the sample, label, seal, and initial the seal. Cut broken fingernails at the remaining jagged edge for later comparison. If artificial fingernails or nail extensions are being worn by the patient, another nail should be enclosed as a known sample if one is missing. Package, label, seal, and initial the seals.
- If requested, assist patients in putting on exam gowns after clothing and debris are collected.

Collect foreign materials and swabs from the surface of the body. Carefully inspect the body, including head, hair, and scalp, for dried or moist secretions and stains (e.g., blood, seminal fluid, sweat, and saliva) and other foreign material. Use an alternate light source to assist in identifying evidence. Obtain swabs from any suspicious area that may be a dry secretion or stain, any moist secretion, any area that fluoresces with longwave ultraviolet light, and any area for which patients relate a history or suspicion of bodily fluid transfer (e.g., licking, kissing, biting, splashed semen, or suction injury). Also collect swabs from potentially high-yield areas (e.g., neck, breasts, or external genitalia) if the history is absent or incomplete.

- Use a moist swab to collect dry secretions, followed by a dry swab. Swab moist secretions with a dry swab. Separate swabs should be used for every sample area collected. Follow jurisdictional policies regarding the number of swabs required to collect each specimen.
- Swab bite marks. In some jurisdictions, an initial moist swabbing followed by a dry swabbing has been shown to result in full DNA profiles.
- Optional—smear swabs onto microscope slides, according to jurisdictional policy.
- Cut matted head, facial, or pubic hairs bearing crusted material (or flake off material if possible) and place in an envelope.
- According to jurisdictional policy, air-dry all specimens, package swabs and slides separately, label, seal, and initial the seals. Note that coding of evidence must allow the crime lab to know which swab was used to prepare which slide.
- If teeth are flossed prior to oral swab collection, package used floss (if available), label, seal, and initial the seal.

²¹⁶ Drawn from Connecticut's Video Training Program, Part 1, *The Examination: Sexual Assault Evidence Collection*, 1998.

²¹⁷ Do not use saliva to seal envelopes; rather, try using moistened gauze pads or paper towels. (Drawn from Connecticut's Video Training Program, Part 1, *The Examination: Sexual Assault Evidence Collection*, 1998.)

²¹⁸ Debris-containing evidence may be found on equipment, such as wheelchairs, scooters, canes, wheelchair pads, assistive communication devices, catheters, and service animals, used by some patients with physical impairments. Swab equipment and/or animals for evidence, if appropriate, according to jurisdictional policy. Always ask patients for permission to do so.

²¹⁹ Some jurisdictions routinely collect fingernail samples and photograph fingernail damage that may have been related to the assault.

Collect hair combings. Follow jurisdictional policy for collecting hair combings. The purpose of this procedure is to collect hair shed by suspects that may have been transferred to patients' hair. Hair combings may also reveal other foreign materials. It is important to examine head, facial, and pubic hair for secretions, foreign materials, and debris and collect as appropriate (see above for collection of debris and foreign materials). Pubic hair combings may be necessary if the assault involved the genital area of patients, according to jurisdictional policy. To collect pubic hair combings:

- Use the comb and collection paper provided for this procedure.
- Place the unfolded paper under patients' buttocks and comb hair toward paper (patients may comb).
- Fold comb with debris/hair into paper. Package paper, label, seal, and initial the seal.

Collect hair reference samples as needed.²²⁰ Follow jurisdictional policy for collection of hair reference samples.²²¹ Many jurisdictions do not routinely collect plucked head and pubic hair reference samples. Some will only collect these samples if the lab requests it at a later time. In other jurisdictions, both samples are collected routinely unless otherwise indicated or declined by patients.²²² Whatever the jurisdictional policy, patients should always be informed about the purpose of collection, procedures used to collect samples, discomfort that may be involved, and how these samples may be used during the investigation and prosecution. If hair reference samples are not collected at the initial exam, it is important to inform patients that there might be a need to collect these samples for crime lab analysis at a later date. They should be aware that hair evidence collected at a later date may not be as conclusive as if it is collected at the time of the initial exam (e.g., due to the fact that hair characteristics can change over time).

When these samples are collected, the indications, timing, and techniques vary. Jurisdictional policies should be in place and followed. Give patients the option of collecting samples themselves.

Collect oral and anogenital swabs and smears. Patients' consent, the medical forensic history, and exam findings should guide collection of oral and anogenital specimens. In general, specimens should be collected only from orifices and areas surrounding the orifices that patients report to be involved in the assault.²²³ Keep in mind that some patients may be vague about the type(s) of sexual contact that occurred. Examiners can help clarify which orifices were involved by asking appropriate questions. If there is uncertainty about involved orifices (e.g., because patients have little memory of the assault, were unconscious or incoherent, or do not understand what occurred), collection from oral, vaginal, and anal orifices (with patients' permission) may be appropriate. In some jurisdictions, policy calls for collection from all three orifices. Again, patients' consent is needed to collect these samples. Things to note when collecting these swabs and smears:

- Caution patients who use a bathroom prior to the exam that evidence may be present in pubic, genital, and anal areas and urge them not to wash or wipe away secretions until after evidence collection.
- When taking a swab, examiners should take care not to contaminate the collection with secretions or materials from other areas, such as vaginal to rectal or penile to rectal.

²²⁰ See footnote under hair combing regarding patients with limited mobility.

²²¹ Crime labs use reference samples to determine whether or not evidence specimens collected are foreign to patients. There is a lack of consensus across jurisdictions about whether to collect these samples routinely during the initial exam. Head and pubic hair reference samples from patients can provide a source of comparative information for forensic scientists, but these samples are not needed in many cases and can be retrieved from patients at a later date if necessary. If the samples are not taken at the time of the exam, however, patients may be reluctant to return later for collection. Also, hair characteristics may change over time. For patients, gathering these samples can be a painful and embarrassing procedure that follows the trauma of the assault. But, given the choice of having samples taken at the initial exam or at a later date, many opt to get it over with during the exam. Hair pulled or cut from patients is rarely used to prosecute a case. With the advent of DNA technology, the court's use of these reference samples declined. Yet, particularly in cases where DNA evidence is not available, hair reference samples could be useful evidence. SARTs (or involved responders) should ensure that their decisions about collecting hair reference samples reflect current best forensic practices, advances in technology, and the need for sensitivity to patients.

²²² Note that a patient may believe hair is sacred and thus may be reluctant or decline to have hair evidence collected.

²²³ It is important to note, however, that there is a lack of consistency across jurisdictions as to whether specimen collection from all orifices is routine or conducted on a case-by-case basis, based on the assault history and exam findings.

- Follow jurisdictional policy for collecting swabs (and the number of swabs used to collect a sample), smearing swabs on slides, and drying and packaging swabs and slides. Also, follow jurisdictional policy for timeframes in which samples should be collected unless otherwise indicated.
- Do not stain or chemically fix swabs or smears.
- When preparing slides, note that coding of evidence material must allow the crime lab to know which swab was used to prepare which slide.
- Document any foreign substance or material introduced by health care providers (e.g., lubricating jelly on a speculum or betadine prior to introduction of a catheter).

Oral sample²²⁴

- Place swabs together to collect specimen from oral cavity between gums and cheeks and under tongue. Remove dentures and swab with same swabs.
- Optional—smear swabs onto two microscopic slides.
- Air-dry swabs and slides.
- Package slides and swabs, place in envelope, label, seal, and initial the seal.

External genital sample²²⁵

- Swab external genital dry-skin areas with swabs (blind swabbing by protocol or history), at least one dry and one moistened with a drop of sterile, distilled, or deionized water, according to jurisdictional policy.
- Optional—smear swabs on two microscope slides.
- Air-dry swabs and slides.
- Package slides and swabs, place in envelope, label, seal, and initial the seal.

Vaginal/cervical sample

- Use swabs together to collect a sample from vaginal pool. It is prudent to collect swabs from both the vagina and cervix, regardless of time between assault and exam.
- Optional—smear swabs onto microscope slides.
- Air dry swabs and slides.
- Package slides and swabs, place in envelope, label (specifically indicating sampling site), seal, and initial the seal.

Wet-mount evaluation.²²⁶ Some jurisdictions require examiners to conduct wet-mount examinations of vaginal/cervical secretions for motile and nonmotile sperm in cases in which a male suspect may have ejaculated in a patient's vagina.²²⁷ Because sperm motility decreases quickly with time and removal from the vagina/cervix,²²⁸ wet-mount evaluation during the exam can provide the only opportunity to see sperm motility.²²⁹ The presence of motile sperm may help narrow the timeframe that the crime could have occurred.

²²⁴ One jurisdiction also collects a lip/lip area swab and smear and an oral rinse if there was oral contact.

²²⁵ Note that cleansing the area for catheterization and/or applying Lidocaine may dilute or contaminate the evidence. Therefore, when Lidocaine is applied to the perineal and anal areas to minimize the risk of autonomic dysreflexia, it should be done only after swabbing the external genitalia for evidence. If catheterization is required either for evidence collection or to empty the bladder for speculum examination, it should be done only after swabbing the external genitalia. (Commonwealth of Massachusetts *SANE Protocol*, 2002, p. 38.)

²²⁶ Note for clarity that this and the next paragraph discuss wet-mount evaluation for sperm. However, wet-mount evaluation of vaginal secretions for infection (e.g., yeast infection and STIs) may also be done during the exam if medically or forensically indicated. Hospital lab personnel usually analyze these samples.

²²⁷ If and when wet-mount evaluation for sperm is done, examiners should exercise discretion conducting this procedure in the presence of patients and be sensitive in explaining the implications of positive and negative wet mounts to patients (if they want to know). Examiners should remind law enforcement investigators that a lack of sperm does not mean an assault did not occur and that the crime lab will later examine prepared slides using stains and other techniques not available to examiners. Thus, if sperm is present, the lab's rate of identification will probably be higher than it was for examiners. Providing this information might help deter misinterpretation of results.

²²⁸ In most cases, sperm becomes nonmotile in the vagina within 10 to 12 hours after ejaculation. (Drawn from W. Green, M. Kaufhold, and E. Schulman, *Sexual Assault Evidentiary Exam Training for Health Care Providers*, Participant Manual, 2001, p. 39 of Module 7.) Both motile and nonmotile sperm may be found in the cervix for longer periods of time after the assault than in the vagina. Sperm may not be found after an assault for many reasons (see section in this chapter on the importance of semen evidence).

²²⁹ Drawn from W. Green, M. Kaufhold, and E. Schulman, *Sexual Assault Evidentiary Exam Training for Health Care Providers*, Participant Manual, 2001, p. 39 of Module 7.

In most jurisdictions, however, the crime lab is responsible for all analysis of evidence²³⁰ and examiners do not do the wet-mount evaluation for sperm.²³¹ Follow jurisdictional policy on whether wet-mount evaluation for sperm is needed and methods of evaluation. If it is required, examiners must be educated on use of the microscope, identification of sperm, and reporting their findings and have quality assurance mechanisms in place to assure the accuracy of their findings.

- If necessary, prepare a wet-mount slide according to jurisdictional policy. Dab one swab collected from the vaginal pool on a slide.²³² Typically, the slide is prepared by placing one drop of normal saline onto the “dab” of vaginal material just placed on the slide. Place a cover slip on the slide.
- View for presence of sperm under a microscope at 400x or by using a phase contrast or other optically staining microscope (within 10 minutes of preparing slide).²³³
- Air-dry this swab and slide (not removing the cover slip).
- Package swab and slide, place in envelope, label as “wet mount” (specifically indicating sampling site), seal, and initial the seal.

While the speculum is still in place and after all swabs and evidence have been collected, any necessary medical cultures may be taken, if medically indicated.

Penile sample

- Slightly moisten swabs with distilled water and thoroughly swab the external surface of the penile shaft and glans. Swab all outer areas of the penis and scrotum where contact is suspected. Avoid swabbing the urethral meatus.
- Gently roll the swabs over one of the microscope slides, according to jurisdictional policy.
- Air-dry swabs and slides.
- Package slides and swabs, place in envelope, label, seal, and initial the seals.

Immediately following this procedure, any necessary medical cultures should be taken.

Perineal area sample²³⁴

- If there was vaginal/anal contact, there may be leakage of semen in the perineal area. Use an alternate light source on the anal area and flake off or swab areas of dried secretions using a moist swab followed by a dry swab.
- Optional—smear swabs on microscopic slides, according to jurisdictional policy.
- Flaked dried secretions should be placed into the provided container. Air-dry swabs and slides and package them separately. Place in envelope, label, seal, and initial the seal.
- Avoid contaminating anal/rectal samples by cleansing the perianal area after external secretions and foreign materials have been collected.

Anal/rectal sample²³⁵

²³⁰ A possible exception may be toxicology analysis.

²³¹ While crime labs can reliably identify the presence of sperm on permanent stained slides, they cannot identify motile sperm due to time delays. Information about the presence or absence of sperm and motile sperm obtained at the time of the exam can impact the investigation and patients' decision making. One concern related to examiners doing wet-mount evaluations for sperm is that their findings may be different than those of crime labs (e.g., the examiner may not detect sperm, while the crime lab does).

²³² Alternate methods for obtaining materials for wet mounts: a sample may be collected from a vaginal aspirate or fluid from the lower bill of speculum after withdrawing it from vagina, or sperm are occasionally found on microscopic urinalysis. (W. Green, M. Kaufhold, and E. Schulman, *Sexual Assault Evidentiary Exam Training for Health Care Providers*, Participant Manual, 2001, p. 38 of Module 7.)

²³³ Examiners rather than hospital lab personnel should view these slides. Otherwise, delays between preparation of slides in the exam room and analysis in the hospital lab could cause a negative result (e.g., sperm present, but not motile). Also, those involved in the chain of custody of this evidence should be kept to a minimum.

²³⁴ See the next footnote for patients with spinal cord injury and/or history of autonomic dysreflexia.

²³⁵ Note that for patients with spinal cord injury and/or history of autonomic dysreflexia, collection of anal/rectal samples is performed only with the highest level of awareness of risks and with observance of precautionary steps. Possible triggers for autonomic dysreflexia are anxiety, pelvic exam (a cold speculum or the pressure of manipulating a speculum or manipulation of the cervix and pressure on the uterus), rectal exam or swabbing, impacted bowel, urinary retention, a kinked catheter, a bladder infection, and deep skin lesion. Some symptoms are highly elevated blood pressure, nasal congestion, sudden onset of headache, flushing, sweating, shortness of breath, and muscle spasm. Precautions against a possible attack requires an empty bladder or leg bag for the exam; application of lidocaine gel to perineum and/or anal area before exam; examination performed in a semi-supine position; slow insertion and minimal manipulation of a warm speculum; constant monitoring of blood pressure and “checking in” with patients; having rapid acting anti-hypertensive

- Collect swabs from the anal cavity.²³⁶ Avoid contact with external skin surfaces.
- Optional—smear swabs on microscopic slides, according to jurisdictional policy.
- Air-dry swabs and slides.
- Package swabs and slides, place in envelope, label, seal, and initial the seal.

At this time, any additional examinations or tests involving the anus should be conducted.

Known blood or saliva sample or buccal (inner cheek) swab for DNA analysis and comparison. Many samples collected during the exam contain a mixture of secretions. To interpret DNA profile results obtained from these swabs, it is essential to know the DNA profile of patients. Patients' DNA reference samples are used for this purpose. Follow jurisdictional policy regarding the type of samples accepted by the crime lab. Collection of a buccal swab or saliva sample is encouraged unless it is medically or forensically necessary to take blood. If a blood sample is collected, the most noninvasive method of collection should be used.

Buccal swabs: Decide on a case-by-case basis whether it is appropriate to collect a buccal swab reference sample for DNA typing rather than a blood sample. For example, a blood sample may not be needed or patients might not allow blood to be drawn. (Note that buccal swabs and saliva samples are not suitable for blood typing and serology.) If oral copulation is asserted or suspected, a buccal swab or saliva sample for patients' DNA reference may be contaminated. In those cases, blood is usually the better reference sample. However, examiners should consult local crime labs to ensure their collection methods reflect the lab's preferred method.

- Buccal swab: Have patients rinse their mouths with tap water and then expose the inner cheek area. Swab this area with gentle pressure. Air-dry the swab, package, place in envelope, label, seal, and initial the seal.

Dry Blood

- If drawn blood is not being collected for medical or toxicological purposes, consider dry blood collection because it is a less invasive method of blood collection and is easier to store.²³⁷
- Using a betadine swab, wipe the tip of the left or right ring finger.
- Using a sterile lancet, prick the finger.
- While holding the finger over the circles on the blood collection card, milk the finger, allowing two drops of blood to fall in a circle. Repeat procedure for any remaining circles as required by jurisdictional policy (it may not be necessary to fill all circles).
- Allow blood to air-dry according to jurisdictional policy. Fill out the patient's name on the first line. Package according to jurisdictional policy, then place in envelope, label, seal, and initial the seal.

Drawn Blood

- In order to minimize patients' discomfort, collect drawn blood needed for the reference sample at the same time blood is collected for medical or toxicological purposes.
- Blood for the reference sample may be collected in lavender-top and/or yellow-top blood drawing tubes. These colored tubes contain preservatives suitable for forensic blood typing. The color to use

medication on hand; and making health care staff aware of risks and on alert. Treatment for autonomic dysreflexia includes stopping the exam, bringing patients to sitting or semi-supine position, and involving emergency medical staff immediately who can administer a fast-acting anti-hypertensive medication. (Commonwealth of Massachusetts *SANE Protocol*, 2002, p. 40.)

²³⁶ If needed, an anoscope can be used to identify anal injuries and obtain anal swabs after perianal cleansing. These swabs should be obtained by direct visualization from the rectal mucosa visible above the tip of the anoscope. If patients are unable to tolerate a water-moistened anoscope or anal speculum, lightly coat the instrument with lidocaine jelly or use manual traction and obtain samples from the anal canal. If a lubricant (other than water or saline) or lidocaine jelly is used, document its use and the reason for it. (The *California Medical Protocol for Examination of Sexual Assault and Child Sexual Abuse Victims*, 2001, p. 48.) The examiner should use discretion in determining whether a case warrants the use of the anoscope for medical and/or forensic purposes, as well as obtain patients' informed consent for anoscopy. Particularly if a patient has been anorectally penetrated, that patient may be uncomfortable with the use of the anoscope and could possibly even feel revictimized by it. The discomfort this procedure may cause the patient should be weighed against its potential medical or forensic uses.

²³⁷ Several state protocols indicate dry blood collection is an acceptable method to obtain known DNA samples.

is typically specified by the designated crime lab.²³⁸ If tubes are included in the evidence collection kit, check expiration dates and replace if expired.²³⁹ Mix according to jurisdictional policy.

- Write the patient's name, date and time of collection, and the collector's initials on the tube. Package according to jurisdictional policy, then place in envelope, label, seal, and initial the seal.

Collect other evidence. Other evidence may be collected beyond what is needed for the sexual assault evidence collection kit. This could include toxicology samples or other evidence based on the unique facts and circumstances of the case.

Miscellaneous swabs may be collected, depending upon the area of contact noted in the medical forensic history. Some jurisdictions are collecting wet to dry swabs from the surfaces surrounding orifices that were penetrated or that had touch contact during an assault (e.g. area surrounding the mouth in the case of an oral assault, or the inner thighs in a vaginal penetration).

Toxicology samples. Make the decision about whether to collect toxicology samples for forensic purposes, what to collect, and collection methods according to jurisdictional policy. Do not put toxicology samples in the sexual assault evidence collection kit, unless otherwise indicated. Identify which forensic labs the jurisdiction has selected to analyze these samples, choose a lab, and follow transfer policies. (See C.7. *Alcohol- and Drug-Facilitated Sexual Assault* for more information on collecting toxicology samples.)

Dental floss. Use of dental floss is not recommended for additional evidence collection in cases with oral penetration. Flossing can create increased opportunity for infection through microtrauma to the gums.

Keep medical specimens separate from evidentiary specimens collected during the exam. Specimens collected for medical purposes should be kept and processed at the medical facility, and specimens collected for forensic analysis should be transferred to the crime laboratory or other specified laboratories for analysis (with patients' consent). It is not necessary to maintain the chain of custody on medical specimens—instead, follow exam facility policy for documenting medical care and storing medical records. Exam sites that perform exams for military installations should consider Memoranda of Understanding to address such issues as storage of evidence.

²³⁸ The *California Medical Protocol for Examination of Sexual Assault and Child Sexual Abuse Victims*, 2001, p. 52.

²³⁹ Drawn from Connecticut's Video Training Program, Part 1, *The Examination: Sexual Assault Evidence Collection*, 1998.