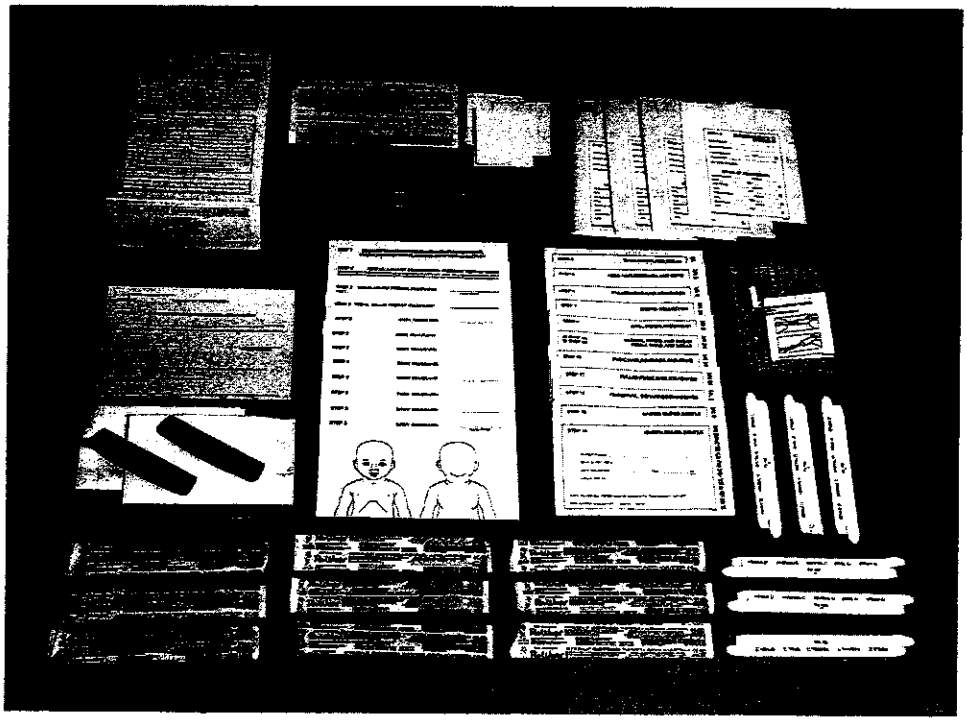

FIGURE 13-2 Female Victim Sexual Assault Evidence Collection Kit
Courtesy of Sirchie Fingerprint Laboratories.

INJURIES TO THE VICTIM

Injuries to the victim, such as bruising, lacerations, and bitemarks need to be documented as part of the medical examination. It is important to note that some bruises may not be apparent at the time of the initial medical examination, so it may be necessary to make follow-up examinations of the victim at daily intervals up to a week postassault in order to provide documentation of the bruises. The investigator should note any injuries to the victim and evaluate the need for follow-up medical examinations and documentation of bruise development. **Bruises** are a light bluish-red after a few hours, purple within a few days, green-yellow at the end of a week, and brown after a week. The bruises disappear in about two to four weeks.[4]

BITEMARK INJURIES

Bitemark injuries may have two types of evidence present, saliva from the assailant and dental impressions. The saliva may be typed in the DNA system. The dental impressions from the assailant's bitemarks may be identifiable and must be properly documented with photography and, in some instances, with silicone casting material. It is very helpful to have a forensic odontologist examine the bitemarks and prepare the photographic and casting documentation.

BLOOD EVIDENCE

Injuries to the assailant may have transferred **blood** to the victim's clothing or body surfaces. Bloodstain evidence on the victim's body surfaces should be collected at the medical examination of the victim. Blood standards from the victim and any suspects need to be collected for comparison with any bloodstain evidence obtained from the victim (see the section on blood samples from living subjects in Chapter 7). Injuries to the victim may have transferred bloodstains to the assailant, so the clothing from any suspect should be examined closely for bloodstains.

TRACE EVIDENCE: HAIRS AND FIBERS

The violent nature of a sexual assault will often create a transfer of trace evidence such as hairs and fibers from assailant to victim and from victim to assailant, or from either to the

SEMEN STAINS

Dried semen stains have a characteristic shiny, mucoid appearance and tend to flake off the skin. Under an ultraviolet light, semen usually exhibits a faint blue-white or orange fluorescence. Fluorescent areas usually appear as smears, streaks, or splash marks. Since freshly dried semen may not fluoresce, swab each suspicious area with a separate swab whether it fluoresces or not (see the section on collection that follows). Fluorescent areas observed under ultraviolet light may not be semen stains, and independent confirmation of the presence of semen by the forensic laboratory is necessary to identify the stain as a semen stain. Collect the suspect stains for submission to the forensic laboratory for analysis (see the section on collection of dried or moist stains that follows).

SUBTLE INJURY

Rope marks, recent contusions, and other subtle injuries may be more visible with the aid of a Wood's Lamp. A visual examination is necessary to differentiate between old or recent trauma. *Note that bruising may not be fully developed at the time of the forensic examination, and follow-up examinations at twenty-four-hour intervals should be scheduled.* Ultraviolet (UV) light photographs of the bruises should also be considered, as UV photographs may sometimes reveal detail not visible with digital photography.

Collection of dried or moist stains from the body

Dried or moist stains identified through the general physical examination and the Wood's Lamp or forensic light source scan should be collected, packaged separately, and labeled as to location on the body. The stains should be collected in the following suggested manner:

- **Semen, saliva, or bloodstains**
  Semen, saliva, or bloodstains should be sampled with sterile swabs, dried, the swab head protected with a shield or folded paper bindle, and packaged in an envelope. Alternatively, the swabs can be packaged in a "swab box" (see Figure 7-7, Chapter 7), sealed in the swab box (which allows for drying of the swab), labeled appropriately, and sealed in a paper envelope. The envelope containing the swab bindle or swab box should be labeled with standard identification data.
- **Semen in the pubic hair**
  If semen or other unidentified material is found in the pubic hair, the examiner should cut out the matted hairs bearing the material and package in a bindle. The bindle should be packaged in an envelope, standard identification data affixed, and the envelope sealed with tape.
- **Recording location of semen, saliva, or bloodstains**
  If semen, saliva, or bloodstains are found, the examiner should record the location of the stains on the body and note any injuries to the victim that may account for bloodstains.
- **Moist stains or secretions**
  The examiner should follow these steps for the collection of moist stains or secretions on the patient's body:
  - Moist stains or secretions should be collected with a dry swab to avoid dilution. As many swabs as necessary should be used to collect the entire stain.
  - The swab(s) should be dried and packaged in the same manner as for dried secretions (discussed earlier).
  - Diagrams should be used to record the location(s) of secretions on the body.

Collection of foreign materials from the victim's body

FOREIGN MATERIALS SUCH AS FIBERS, HAIR, GRASS, AND DIRT

These materials should be packaged in a separate paper bindle for each location of the body. Use tweezers, or gently scrape the substance(s) into a bindle with a clean tongue depressor or the back of a scalpel blade.

BINDLE AND ENVELOPE LABELS

Each bindle should be labeled with a description of the material and the location from which it was collected, folded and sealed with tape, placed in a manila type envelope, and the envelope sealed. The manila type envelope should be labeled with standard identification data and the location on the body from which the item was recovered. Evidence seals must be initialed with the collector's initials.

DIAGRAM THE LOCATION OF RECOVERED EVIDENCE

The examiner should use diagrams to record the location of foreign materials found on the body. The diagrams will assist in describing the location of the recovery sites during testimony.

CASE NOTES

The examiner should make a record in the case notes as to whether or not specimens or foreign materials were found and collected.

Procedures for bitemarks and bruises

PHOTOGRAPHIC EVIDENCE AND PROCEDURES

- Photographs may be taken in accordance with hospital procedures or by the local law enforcement agency (typically, the photographs are taken by law enforcement personnel).
- Properly taken photographs of bitemarks and bruises can assist in the identification of the person or object inflicting the injury. Individuals can be identified by the shape of bitemarks. A forensic odontologist (dentist) should be consulted in these cases, especially if the bitemark is indented or has broken or perforated the skin. Silicone casts of the mark may be indicated in these cases.
- Close-up photographs of bitemarks or other wounds should be taken with the film plane as parallel to the subject area as possible, that is, the camera should be held with the line of view perpendicular to the body surface ("normal" to the surface) being photographed (see Figure 3-9 in Chapter 3). Including a scale or other measuring device in the photograph is also necessary to depict size.
- The name of the photographer should be noted in the case notes.

GENERAL CONSIDERATIONS FOR BITEMARK PHOTOGRAPHS

- Photographs can be a valuable supplement to the case file and may be necessary in situations that cannot be adequately documented in diagrams (e.g., bitemarks or massive injuries).
- Sensitivity to patient's concerns about undressing should be considered as to whether hospital personnel or a male or female law enforcement officer takes the photographs.
- Patients should be appropriately draped for all photographs.
- Any camera may be used as long as it can be focused for nondistorted, close-up photography. The SLR camera with a macro lens is especially well suited for the close-up photographs.
- Bruises and bitemarks may not be obvious immediately following an assault. It is recommended that the law enforcement agency arrange for follow-up inspection and additional photographs after the bruising has developed fully. *Photographs should be taken for six days at twenty-four-hour intervals, since bruises and bitemarks may become more apparent with time and may show better definition in the photographs.*
- In the processing of photographs, it is preferred that photographs be processed by the local law enforcement agency.

PARTICULATE DEBRIS AND SALIVA FROM BITEMARKS

- Each bitemark and the immediate surrounding area should be swabbed with a separate swab moistened in distilled water to collect saliva residue from the perpetrator. The swabs should be labeled and must be air-dried before packaging.

- The dried swabs should be placed in separate envelopes or swab boxes. Each envelope should be labeled with standard identification data and sealed appropriately.
- The examiner's case notes should reflect whether or not swabs were collected from the bitemarks.

Examination of body orifices and associated structures performed by designated staff at the rape treatment center or hospital

PUBIC HAIR COMBINGS

- A clean sheet of examination paper should be placed beneath the patient's buttocks to catch any hairs or fibers dislodged by the combing or brushing.
- With a strong light and/or a Wood's Lamp, the pubic hair should be examined carefully for matted semen stains.
- Pubic hair containing suspected semen should be cut close to the skin, placed in a bindle, and packaged separately in an envelope. The envelope should be labeled with standard identification data, and the examiner should note the collection in the examination notes.
- Pubic hairs should be combed with a new, unused comb or brush. Any hairs obtained should be packaged in an envelope with the comb or brush used. All envelope openings should be sealed with tape to prevent loss of the hairs.
- The clean sheet under the buttocks should be collected in bindle fashion and sealed with tape. The bindle should be labeled, placed in a paper bag, and the bag labeled with standard identification data.

PUBIC HAIR STANDARDS

The examiner should pull or cut *close to the skin* a total of forty to fifty hairs, taking eight to ten hairs from the different areas of the pubic hair (see Figure 6-4, Chapter 6). The pubic hair standard should be sealed in a bindle and placed in an envelope. The envelope should be sealed and labeled with standard identification data.

HEAD HAIR STANDARDS

To collect head hair standards, pull or cut close to the skin approximately fifteen to twenty hairs taken from each of several areas to include the front, back, each side, and crown for a total of seventy-five to one hundred hairs (see Figure 6-3, Chapter 6). The patient may feel more comfortable pulling the hair rather than letting the examiner pull the samples. The patient should be carefully instructed to pull only a few strands at a time if the patient elects to collect the samples.

VAGINAL SWABS

- Preferred sequence of specimen collection:
  1. Swabs of labia majora and labia minora.
  2. Swabs of liquid deposit in posterior fornix.
  3. Swabs of cervix. (*Note:* The cervix should be typically avoided, as sperm can be found in the cervical mucus for up to seven days postcoitus, unless seventy-two hours have elapsed since the assault.)

  Sterile cotton swabs should be used to swab the labia majora and labia minora of the vulva. The swabs should be air-dried and packaged in an envelope or swab box. The envelope should be labeled with standard identification data.
- Collection of posterior fornix contents:
  - Any liquid pooled in the posterior fornix should be collected using dry sterile swabs.
  - A slide smear should be prepared from each swab collected from the pool. Each [illegible] should be labeled with standard identification data.
  - [illegible] application of tape to swab shaft

- Slide smears from swabs should be air-dried. Each slide should be labeled to correspond to the swab used for that slide and packaged in a slide mailer. Preservatives, fixatives, or stains should not be applied to the slide smears.
- After collection of samples with swabs, the examiner should **aspirate** the remaining vaginal pool, if present, and place the aspirate in a sealed vial such as a red-top Vacutainer™. One drop of this aspirate should be examined for motile sperm, and the observations should be recorded in the case notes.
- All swabs should be dried thoroughly in a swab dryer (one hour is usually sufficient for thorough drying in the swab dryer). Swab dryers are available from crime scene equipment suppliers (see Appendix 13-A).
- Once dried, swabs should be packaged in the appropriately labeled envelopes from the sexual assault examination kit. The envelopes should be sealed, and standard identification data should be entered on the envelope. Envelopes should be placed in the examination kit for transport to the forensic laboratory.

EXAMINATION FOR MOTILE SPERM

The examiner should prepare a wet mount slide to determine the presence or absence of motile or nonmotile sperm in the vagina of the sexual assault victim. The presence of motile sperm in the vaginal pool indicates recent penetration and ejaculation. The absence of motile sperm, however, does not negate the possibility of recent penetration and ejaculation, since sperm tend to become immobile rapidly in the vaginal environment. Since sperm motility can be observed only on an unstained wet mount slide, the motility examination must be performed under a microscope as a part of the emergency room examination. The slide also has evidential value and must be retained and submitted along with other evidence collected from the patient. Even when sperm are not observed initially in the unstained slide for the motility examination, they may be detected on subsequent examination of the dried, stained smear because of the increased visibility imparted by the slide staining.

The undiluted **aspirate** of the vaginal vault is the best specimen to use for the motile sperm search (if there is insufficient liquid in the vaginal pool for aspiration, the vaginal pool lavage specimen should be used for the motile sperm search). The examiner should add one drop of aspirate to a drop of saline or nutrient on a microscope slide, cover immediately with a coverslip, and examine under the microscope. If there is insufficient aspirate for the sperm search, the examiner can place one drop of sterile saline on a slide, agitate one of the posterior fornix swabs in the drop of saline, and cover with a coverslip for the examination. The examiner should examine the slide immediately (within five to ten minutes) using a biological microscope at a magnification of at least 400 power to determine whether or not sperm are present, and if present, if motile. A phase contrast microscope or staining microscope, if available, is helpful for this purpose. The slide used for the motile sperm search should be air-dried and packaged in a slide mailer. The slide mailer should be labeled with standard identification data. The examiner should record the presence or absence of motile or nonmotile sperm in the case notes.

ORAL SWABS (WHEN INDICATED BY HISTORY)

Note: Patients may be reluctant to report penetration of oral or rectal cavities.[5] The oral cavity should be examined for injury and the area around the mouth for evidence of seminal fluid. Particular attention should be given to the frenulum beneath the tongue, the base of the lower lip, and the pharynx for exudates, lacerations, and contusions, using the following procedures:

- The area around the mouth exterior, including the lips, should be swabbed. Collect dried secretions with a swab moistened with distilled water. Collect moist secretions with a dry swab to avoid dilution of the specimen.
- The oral cavity should be swabbed using separate swabs for the following areas: (a) space between lower teeth and cheeks and (b) space between tongue and teeth (both sides of the frenulum).

- Evidence preservation procedures:
  - **a.** Prepare dry **oral swabs** in the same manner as for vaginal swabs.
  - **b.** Package dried swabs in envelope or swab box labeled "Oral Swabs."
  - **c.** Label sealed envelope or swab box with the standard identification data.

BLOOD SAMPLES

The following blood samples should be drawn from the patient:

1. Blood for DNA typing: yellow-top tube (ACD-B), or purple-top tube (EDTA).
2. Blood for blood-alcohol determination: gray-top tube containing preservative and anticoagulant, DUI tube, or use DUI kit.
3. Blood for toxicology (controlled substances, "roofies," GHB, etc.): gray-top tube.

Blood for alcohol and toxicology is necessary to show, when certain drugs or elevated levels of alcohol are present, evidence of the ability or inability to provide informed consent.

The liquid blood samples must be kept *refrigerated* until submission to the forensic laboratory.

Collection of fingernail scrapings

Fingernail scrapings may contain a variety of evidential materials including blood, tissue, hairs, fibers, or other foreign materials from the crime scene environment or from the assailant. If history indicates or if foreign material related to the assault is observed, the examiner should collect fingernail scrapings with the following procedure:

- Use a clean stick (use the other end of a sterile swab wooden handle) to collect scrapings from under the fingernails. Swabs from the fingernails can also be collected using distilled water. I use one swab per hand.
- Place scrapings from each hand into a separate bindle. Label each bindle, place in an envelope, seal the envelope, and label with standard identification data.
- Record examination findings and any evidence collected in the case notes.

ANUS/RECTUM EXAMINATION AND EVIDENCE COLLECTION PROCEDURES

In sexual assaults involving penetration of the anus by the assailant, the examiner should perform **anus and rectum examinations** of the patient. The examination may reveal injuries to the patient and/or the presence of foreign materials.

Since penetration of the anus/rectum may be underreported because of its disagreeable subject matter, the institution of the examination of this area as a routine in the sexual assault examination may be advisable.

EXAMINATION FOR INJURY AND FOREIGN MATERIALS

The examiner should examine the buttocks, perianal skin, and anal folds for injuries and for the presence of seminal fluid, dried or moist secretions, bleeding, fecal matter, evidence of lubricant, and any other foreign materials. Any injuries observed should be documented in the case notes and photographed. Foreign materials and stains observed should be noted in the case notes and collected using the following procedures:

- Collect dried and moist secretions and foreign materials from the area around the anus.
- Collect two rectal swabs if indicated by patient history and/or physical findings. Rectal swabs must be collected by a method that prevents the transfer of semen that may be present on the perianal area into the rectum. To prevent contact between the swab and the anus during the introduction of the swab into the rectum, the examiner should do the following:
  1. Clean the area around the anus after the examination and collection of evidence.
  2. Dilate the sphincter by using a small, nonlubricated speculum moistened with warm water or by instructing the patient to use the lateral recumbent or prone knee-to-chest position.

the suspect's statements if they are volunteered. Suspects should be given the respect and medical treatment that any patient deserves. Medical professionals must remain objective and must avoid the assumption that the suspect is guilty.

CONSENT/AUTHORIZATION FOR THE EXAMINATION

- The signature of the investigating law enforcement officer should be obtained to authorize payment for the evidential examination at public expense, or
- An authorization should be obtained pursuant to local agreements for payment of examination costs.

PATIENT HISTORY

- Pertinent medical information of patient history should be obtained.
- Information on anal–genital injuries, surgeries, diagnostic procedures, or medical treatment within the past sixty days should be obtained to avoid confusing prior lesions with injuries related to the alleged assault.

CLOTHING COLLECTION

Condition of Clothing The examiner should note the condition of any clothing worn during the alleged incident upon arrival of the suspect at the examining room. Note any rips or tears or the presence of foreign materials. Foreign materials may include fibers, hair, twigs, grass, soil, splinters, glass, bloodstains, or semen stains.

Collection of Clothing The examiner should place on the floor one large sheet of paper on top of another of similar size (three-foot-wide butcher-type paper is recommended, or standard examination room paper may be used). The examiner should have the suspect remove shoes and socks before standing on the paper to protect clothing from contamination. The examiner should record in the case file whether or not any clothing was collected.

General physical examination

PHYSICAL EXAMINATION

A general physical examination (head to toe) of the suspect for injuries and other evidence of the reported assault should be conducted by the examiner.

GENERAL PHYSICAL APPEARANCE

The examiner should note in the case file any indication of use of drugs or alcohol, for example, odor, needle puncture marks, pupillary reaction, horizontal or vertical nystagmus, slurred speech or impaired coordination, and also whether the defendant is right- or left-handed.

VITAL SIGNS DATA

The examiner should record blood pressure, pulse, temperature, and respiration.

GENERAL DESCRIPTION DATA

The examiner should record the height, weight, eye color, and hair color of the suspect.

Examination for physical evidence

EXAMINE PUBIC HAIR FOR DRIED OR MOIST SECRETIONS AND FOREIGN MATERIALS

Secretions dried on the pubic hair should be collected by cutting the matted hair, placing in a bindle, placing the bindle in an envelope, entering standard identification data on the envelope, and sealing the envelope.

PUBIC HAIR COMBINGS

- Prior to combing the pubic hair, a sheet of new examination paper should be placed under the suspect's buttocks in order to catch any falling hairs or other trace evidence.
- The pubic hairs should be combed with a new, unused comb or brush. All hairs obtained should be placed in an envelope with the comb or brush used. All

envelope openings should be tape sealed, and standard identification data entered on the envelope.

- The sheet of paper under the buttocks should be folded bindle style, labeled with standard identification data, sealed, and packaged in a paper bag. The paper bag should be tape sealed, and standard identification data entered on the bag.

PUBIC HAIR STANDARDS

Pull or cut close to the skin a minimum of forty to fifty hairs from different areas of the pubic region (see Figure 6-4, Chapter 6).

HEAD HAIR STANDARDS

Pull or cut close to the skin approximately fifteen to twenty hairs taken from several areas to include front, back, sides, and top for a total of approximately seventy-five to one hundred hairs (see Figure 6-3, Chapter 6).

OTHER BODY HAIRS

Take hair samples from any area where the suspect may have lost hairs during the assault. Take twenty to twenty-five hairs close to the suspect area by pulling. Place recovered hairs in a bindle, add standard identification data, place bindle in an envelope, label envelope with standard identification data, and tape seal all openings of the envelope.

BLOOD SAMPLES

Collect approximately 5–7 cc in the following tube types:

- DNA (and other genetic markers) typing: purple-top tube (EDTA).
- Blood alcohol: gray-stoppered tube (DUI kit).

EXTRA SWAB IN SEXUAL ASSAULT EXAMINATION KIT

The extra swab included in the sexual assault kit may be used as a penile swab. Vaginal or oral epithelial cells from the victim may be found and typed for DNA.

RELEASE OF SPECIMENS AND RECEIPT FOR SAME

The blood samples and physiological stains should be given to the investigating officer. Obtain a signed receipt for all materials given to the investigating officer. The biological materials should be refrigerated and submitted to the forensic laboratory as soon as possible by the officer.

FINGERNAIL SCRAPINGS

Fingernail scrapings should be obtained if indicated by the history of the assault or if foreign material related to the assault is observed. Collection of fingernail scrapings should be recorded in the case file.

DRY OR MOIST SECRETIONS ON BODY

Dried and moist secretions, stains, and foreign materials from the body including the head, scalp, facial, and body hair should be collected in the same manner as for female victims.

WOOD'S LAMP (OR FORENSIC LIGHT) EXAMINATION

The entire body should be scanned with a long-wave ultraviolet light (Wood's Lamp). Each suspicious stain or fluorescent area should be swabbed with a separate swab. A forensic light source may be used instead to scan the body surfaces, making sure that all individuals in the room (including the suspect) are wearing appropriate protective goggles.

USE OF DIAGRAMS TO DOCUMENT OBSERVATIONS

Diagrams should be used to record the location of identifying marks such as scars, tattoos, or birthmarks; and the location, size, and appearance of injuries and evidence of foreign

materials. Signs of injury may include erythema, abrasions, bruises, contusions, induration, lacerations, fractures, bleeding, bites, burns, or stains. Label the Wood's Lamp findings "W.L."

Examination of mouth

- The oral cavity should be examined for injury and the area around the mouth for evidence of seminal fluid or vaginal epithelial cells.
- The area around the mouth should be swabbed if indicated. The examiner should collect two swabs from the oral cavity for seminal fluid up to six hours postassault. Prepare two dry mount slides.

EXAMINATION OF EXTERNAL GENITALIA

- The penis and scrotum should be examined for signs of injury, the presence of dried or moist secretions, feces, lubricants, foreign materials, and venereal lesions. Note if circumcised and if there are signs of vasectomy.
- Injuries to the penis may include bites and lacerations, abrasions of the glans, tearing of the mucocutaneous junction of the meatus, or linear abrasions caused by nails or teeth. In uncircumcised males, foreign materials may be retained on the penis, particularly on the glans or in the sulcus.

PENILE SWABS

- A minimum of two **penile swabs** should be collected. Moisten both swabs with distilled water, and swab external surface of the penis.
- One swab from the urethral meatus and one swab from the glans and shaft should be collected (medical personnel only).
- Fecal matter, if present, should be noted.
- Each swab should be labeled indicating the location from which it was taken, and the swabs should be air-dried and packaged in appropriate tubes or envelopes.
- Swabs should be packaged in separate tubes or envelopes. Envelopes should be labeled with standard identification data and sealed with tape.

STD CULTURE SPECIMENS

A specimen for gonorrhea culture should be collected from the urethra as a baseline by medical personnel only. Other STD cultures should be taken as indicated.

RECORD FINDINGS AND DOCUMENT SPECIMENS COLLECTED

Any findings and the specimens collected should be recorded in the case notes and on the diagrams prepared.

TREATMENT BY MEDICAL PERSONNEL

Treatment for injuries, venereal disease, and tetanus prophylaxis may be initiated if appropriate. If treatment is not initiated and the suspect is in custody, an appropriate referral to a treating physician at the local jail or holding facility should be made.

MINATION OF ADULT MALE VICTIM OF SEXUAL ASSAULT[6]

1. Triage.
   - **a.** Triage immediately.
   - **b.** Provide private room.
   - **c.** Assign patient coordinator.
   - **d.** Contact rape crisis center or appropriate agency for victim/witness services.
2. Consent and notifications.
   - **a.** Obtain patient consent for medical and evidential examinations.
   - **b.** Notify proper authorities per legal requirements.
   - **c.** If patient consents to medical examination and treatment only.