

## Forensic Medical Examination in Sexual Assault cases (2018)

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## 1. Introduction

The rational for collecting forensic evidence is to link a suspect to the victim of the crime. In order to collect suitable forensic evidence, the Medical Practitioners must understand the types of evidences present in sexual assault cases. Specimens may corroborate contact between individuals or between an individual and a location; evidence of contact occurs at the time of the offence. Specimen collection should be performed soon after the incident occurred in order to minimize loss and degradation of the biological samples.

The aim of this booklet is to provide practical approaches and guidelines for Medical Practitioners to manage biological evidence for DNA analysis more efficiently and effectively. Proper management of biological evidence is critical for forensic DNA profiling as it affects the integrity of the final results. Due to this speculation, special attention has to be paid for examination of the victim and also other steps involved in selection, collection, packing, sealing, labeling, storage, preservation, transportation and maintenance of biological samples.

## 2. Role of Medical Practitioners

Medical practitioners play a dual role in responding to the survivors of sexual assault. The first is to provide the required medical treatment and psychological support. The second is to assist survivors in their medico-legal proceedings by collecting evidence and ensuring proper documentation.

Examination of a case of rape shall be conducted by a Registered Medical Practitioner (RMP) employed in a hospital run by the government or a local authority and in the absence of such a practitioner, by any other RMP (Section 164 A of Cr PC) with the consent of victim or of a person competent to give such consent on victim's behalf within twenty-four hours from the time of receiving the information relating to the commission of such offence.

The victim (minor or adult), the parent/guardian/person in whom the victim reposes trust, has the right to refuse either medico-legal examination or collection of evidence or both, but that refusal will not be taken as deny for medical treatment of survivor after sexual violence.

The examining RMP or hospital is required to inform the police about the sexual offence. However, if the survivor does not wish to lodge FIR or to involve in police investigation, RMP is bound to provide medical treatment to the victim. Informed refusal will be documented in such cases.

The stepwise approach to be followed by a RMP for a comprehensive response to the sexual violence survivor is mentioned below:

1. Initial Resuscitation/First Aid
2. Informed consent for examination, evidence collection, police procedures
3. Detailed history of offence as informed by the victim
4. Medical examination
5. Age estimation (Physical/Dental/Radiological) - if requested by the investigating agency.
6. Evidence collection as per the protocol
7. Documentation
8. Packing, sealing and handling over the collected evidence to police
9. Treatment of injuries
10. Testing/prophylaxis for STIs, HIV, Hepatitis B and pregnancy.
11. Psychological support \& counseling

## 3. Medico-legal Examination of Sexual Assault victim

- Medical Practitioners shall inform the person being examined about the nature and purpose of examination and in case of child to the child's parent/guardian/or a person in whom the child reposes trust. The medico-legal examination includes removal and isolation of clothing, scalp hair, foreign substances from the body, pubic hair, samples taken from the vagina, anus, rectum, mouth and reference blood sample.
- Per vaginum examination (two-finger test) must not be conducted for establishing an incident of sexual violence and no comment should be made on the size of vaginal introitus, elasticity of the vagina or hymen or about past sexual experience or habituation to sexual intercourse as it has no bearing on a case of sexual violence.
- Medical Practitioners should examine carefully and record the details of sexual violence informed by the victim such as injuries, bleeding, swelling, tenderness etc. Sexual violence is commonly perpetrated against females; it may also be perpetrated against males, transgender and intersex persons.
- The nature of forensic evidence collected will be determined by three main factors:-
- Nature of sexual violence
- Time lapsed between incident of sexual violence and examination
- Whether survivor has bathed or washed herself after the occurrence of the incidence.

The details of biological specimens usually collected by medical practitioners during forensic medical examination in case of sexual assault is given as detailed below:

| Specimens or samples | Collection | Purpose |
| :---: | :---: | :---: |
| Clothings | - The victim should undress on a clean white sheet of paper in order to collect any foreign matter that may fall to floor from herself or her clothing. <br> - Ensure whether the clothes are incidental or they have been changed. <br> - Items such as hosiery or bra, underpant, blouse, shirt, salwar etc. should be collected and placed in paper bags. Wet or blood-stained clothing should be air dried before packing in paper bags. <br> - Each piece of clothing must be folded inward, placing a piece of clean paper against any stain, so the stains are not in contact with the bag or other parts of clothing. <br> - Ensure packaging is properly labeled and delivered to laboratories as soon as possible. | - Detection of blood, saliva, semen, vaginal secretions etc. on clothing. <br> - Identification of victim or accused(s) by DNA Profiling |
| Sanitary pad/ <br> Tampon | - Sanitary pad must not be removed if it is attached to the underpant. <br> - If the sanitary pad was detached from the underpant at the time of medical examination, the sticky side of the sanitary pad must be covered by the waxed sheet to prevent the pad from sticking to the paper collection bag. | - Presence of spermatozoa/ semen. <br> - Identification of accused(s) by DNA profiling. |
| Condom | - The condom used during assault may be collected and swabbed separately from inner and outer surface. | - Presence of semen/spermatozoa (inner surface) and vaginal epithelial cells (outer surface). |
| Evidence on body | - This is done to collect and preserve any physical or biological evidence that may be present on the body of victim or accused. <br> - The evidence site on the body surface | - Detection of spermatozoa/ semen, saliva, blood etc. <br> - Identification of victim or accused(s) by DNA profiling. |


|  | may be determined by asking the patient, <br> by examination and by use of the <br> Ultraviolet light source, which will <br> reveal stains that are invisible in normal <br> light. <br> - The swabs in the kit should be used for <br> collecting evidence material. Moisten the <br> swabs by using Phosphate Buffered <br> Saline (PBS)/saline/molecular grade <br> water for lifting suspected stains from the <br> body surface. |  |
| :--- | :--- | :--- | :--- |


|  | and labeled. <br> - Combing the pubic hair with gloved fingers may also be assisted in obtaining samples of loose hair or debris. <br> - Any matted pubic hair which indicate the presence of blood or semen should be collected using sterilized scissors and forceps and packed in another sheet of paper which should also be folded and labeled or matted material may be collected with the help of a moistened swab. <br> - For reference purposes in order to obtain a comparative sample from the victim, pubic hair should be collected, ideally, by plucking and not by cutting the tips to obtain hair root. |  |
| :---: | :---: | :---: |
| Vulval swab | - Vulval swab should be taken prior to the collection of Vaginal or cervical swabs. <br> - To collect vulval swab, labia majora should be separated carefully with the left hand. Swabbing should be done around the inner surface of the labia minora and fossa navicularis as shown in figure 1. | - Detection of spermatozoa/ semen. <br> - Identification of accused(s) by DNA profiling. |
| Vaginal swab | - Swabs of the vaginal fornices are essential to collect any saliva or semen that may be present in vaginal area. Swabs of anterior and posterior vaginal fornices should be taken using a vaginal speculum as shown in figure 2 . | - Detection of spermatozoa/ semen. <br> - Identification of accused(s) by DNA profiling. |
| Cervical swab | - Swab should be taken from cervical orifice by collecting as much of the mucous plug as possible. The cervical swab collection along with smear preparation on slide is shown in figure 3. | - Detection of spermatozoa/ semen. <br> - Identification of accused(s) by DNA profiling. |
| Anal / Rectal swab | - In case of possible ano-rectal assault, external anal and rectal swabs should be collected. The swab should be slightly moistened with sterile water and the anus carefully swabbed, slightly extending into the anal canal. <br> - When conducting the rectal swab, gentle | - Detection of spermatozoa/ semen. <br> - Identification of victim or accused(s) by DNA profiling. |


|  | lateral traction (separation of the cheeks of the buttocks) should be applied for about three minutes to allow for dilation of the anal sphincter. The anal/rectal swab collection is shown in figure 4. |  |
| :---: | :---: | :---: |
| Oral swab | - Oral swabbing is essential to collect seminal fluid in the oral cavity where there is suspected oro-genital contact. The oral swab collection is shown in figure 5. | - Detection of spermatozoa/ semen. <br> - Identification of victim or accused(s) by DNA profiling. <br> - To corroborate oro-genital contact by the accused with the victim. |
| Penile swab and Urethral swab | - Moisten the tip of swab with a drop of sterile water and roll it around the tip (glans) of the penis including the sulcus and urethral meatus. The inside of the foreskin (if present) should be swabbed. The Urethral swab collection is shown in figure 6. | - Detection of spermatozoa/ semen, saliva etc. <br> - To corroborate Penovaginal contact between accused and victim. |
| Smear slides (Vaginal, cervical, anal, oral etc.) | - A smear on a glass slide can also be prepared by rolling a swab (Vaginal, cervical, anal, oral etc.) over a slide without rubbing it as the latter may cause the spermatozoa to break and thereby give a false negative result. <br> - Moisten the swabs by using PBS/saline/molecular grade water for lifting suspected dry seminal stains from the body surface. | - Detection of spermatozoa/ semen. |
| Nail clipping/ Nail scraping | - Fingernail clippings and fingernail scrapings from the left and the right hand should be collected and packed in a piece of white butter paper and put into a labeled and sealed envelope. | - Establish the physical contact during assault/violence. <br> - Identification of victim or accused(s) by DNA profiling. |
| Urine sample | - Urine should be taken into leak proof sterile plastic container. | - Pregnancy test. <br> - Detection of spermatozoa/ |
| Vaginal wash | - Vaginal wash should be taken into leak proof sterile plastic container. | semen. <br> - Identification of accused(s) by DNA profiling. |
| Aborted Foetus | - Foetal tissue samples should be collected in sterile plastic container and stored at $-20^{\circ} \mathrm{C}$. | - To establish paternity by DNA profiling. |


| Blood | - Around 3 ml of blood should be collected as reference blood sample in a purple cap (Ethylenediaminetetraacetic acid (EDTA)) tube for DNA Profiling. Few drops of blood should be taken on Flinders Technology Associates (FTA) Card/ Gauze piece and air dried. <br> - Approx. 3 ml of blood may be taken in grey top (Sodium Fluoride) tube for alcohol and drug tests. | - Blood grouping and DNA profile of the concerned individual <br> (victim or accused). <br> - Detection of alcohol and drugs. |
| :---: | :---: | :---: |

## Standard reference sample

During medical examination, RMP should collect reference sample (blood) from the victim/accused(s) as the DNA profile obtained from the same is required to be compared with that of evidence biological samples. In some other case, if any, the medical officer suspects that blood transfusion or bone marrow transfer has been performed with victim/accused, oral sample is preferred. However, in case of deceased victim, the sample such as blood, tissue, nail clippings, bone etc. may be collected as reference sample.


Figure 1. Vulval Swab


Figure 3. Cervical swab


Figure 2. Vaginal Swab


Figure 4. Rectal/anal swab


Figure 5. Oral swab


Figure 6. Urethral swab

## 4. Storage and Preservation of Biological Specimens

1. Evidence specimens such as clothing, sanitary pad, tampons etc. should be air dried before packing. Extreme sources of heat such as sunlight, hairdryer etc. should not be used for drying. After drying, the items should be packed and sealed in properly labeled paper (not plastic) bags. The parcels should be stored in a cool dry place.
2. Swabs such as vaginal, cervical, anal, oral, penile etc. and their smear slides should be air dried before packing and stored at room temperature. Fixative should not be used in the preparation of smear slide.
3. Hair samples/Nail clippings should be packed in a sheet of white butter paper which should be properly folded, labeled and sealed.
4. Individual foreign hairs or clumps of hair should be separately packed, sealed and labeled.
5. Urine/Vaginal wash should be collected in a leak proof sterile plastic container and stored at $4^{\circ} \mathrm{C}$ without any preservative.
6. Liquid reference blood sample should be stored at $4^{\circ} \mathrm{C}$ and should be transported in refrigerated conditions.
7. Blood stained FTA cards/gauze pieces should be air dried before packing and stored at room temperature.
8. Foetal tissue samples should never be preserved in Formalin. It should be stored at $-20^{\circ} \mathrm{C}$ and transported in refrigerated conditions.

## 5. Important Instructions to Medical Practitioners

1. Exhibits should be collected, handled and stored properly to maintain their integrity
2. Protective devices such as gloves, mask and apron should be used during biological sample collection. Gloves should be changed after collection of every sample to avoid cross contamination. Do not touch any sample with bare hands.
3. Coughing or sneezing should be avoided over the area expected to carry biological material.
4. Disposable or sterilized devices (Scissors, Forceps, Vaginal speculum etc.) should be used for sample collection to avoid cross contamination.
5. Biological evidence material should not be exposed to high temperature or intense light sources.
6. Each exhibit should be packed separately in paper envelopes and seal properly. Do not use polythene bags.
7. Chain of custody should be maintained and well documented.
8. Following case details should be properly mentioned over the packed exhibit:
A. Name of person (examinee)
B. Description of the exhibit
C. Date and time of sample collection
D. MLR No./PMR No.
E. FIR No.
F. Police station
G. Name and Signature of Medical Officer
9. CFSL Authentication forms viz. Blood sample authentication form (Annexure I), Sexual assault victim information form (Annexure II) and Aborted foetus submission form (Annexure III) and Autopsy specimen submission form (Annexure IV) should be duly filled and sent along with the sealed exhibits.
10. Attested specimen seal and signature should be sent along with the sealed exhibits.
11. Registered Medical Practitioner should follow the recommended guidelines and may use Sexual Assault DNA Evidence Collection Kit (SAECK) to collect biological specimens of victim and accused.

| Sexual Assault DNA Evidence Collection Kit (SAECK) |  |  |  |
| :---: | :--- | :--- | :---: |
| Sr. No. | Name of the item | Purpose | Qty |
| 1. | Pair of gloves | For health \& safety and to avoid <br> contamination | 04 |
|  | Mask | Blood sample collection from Examinee | 02 |
| 3. | Syringe | Body fluid collection | 02 |
| 4. | Dropper | Vaginal examination and help in <br> collection of biological specimens. | 01 |
| 5. | Vaginal speculum | 01 |  |
| 6. | Pair of comb | Collection of Pubic/Head hair | 01 |
| 7. | Nail cutter | Collection of Nail clippings | 01 |
| 8. | Ampoule of sterile <br> Distilled water/Saline/ <br> PBS | Moistening the swab for biological <br> sample collection. | 04 |
| 9. | Alcohol swab | Sterilization of surgical equipments | 04 |
| 10. | Sterilized gauze pack | Collection of body fluid stains (blood, <br> saliva etc.) | 02 |
| 11. | Filter paper | Collection of body fluids stains (blood, <br> saliva etc.) | 05 |
| 12. | EDTA vacutainer <br> (purple cap) | Collection of liquid blood sample for <br> DNA profiling | 01 |


| 13. | Sodium Fluoride vacutainer (Grey cap) | Collection of liquid blood sample for drug and alcohol testing | 01 |
| :---: | :---: | :---: | :---: |
| 14. | FTA cards | Collection of blood and saliva for storage \& preservation at room temperature | 01 |
| 15. | Foam tip swab | Collection of evidence biological samples (body fluid or dry stains). <br> Collection of seminal fluid from the oral cavity, lips, breast etc. | 06 |
| 16. | Sterile Uricol container | Collection of Urine sample and vaginal wash | 03 |
| 17. | Sterile cotton swabs | Collection of samples from vagina, cervix, anus/rectum, urethra, mouth etc. | 10 |
| 18. | Glass slides | Preparation of smear of samples collected from vagina, cervix, anus/rectum, urethra, mouth etc. | 10 |
| 19. | Pregnancy detection kit | Detection of pregnancy of the victim | 01 |
| 20. | Catch paper | Collection of any foreign matter that may fall from the body or clothing's of victim during examination. | 02 |
| 21. | Labeled evidence paper bags/white envelopes | Packing of biological specimens and related documents | 15 |
| 22. | Hand disinfectant | For health \& safety and to avoid contamination | 01 |
| 23. | Butter paper | Collection of hair, nail clippings etc. | 02 |
| 24. | CFSL Authentication forms | For authentication of biological samples collected from donor. |  |

## Appendix I

Ministry of Home Affairs, Govt. of India,
CFIs Complex, Dakshin Marg, Sector 36-A, Chandigarh - 160036.

## BLOOD SAMPLE AUTHENTICATION FORM

(To be completed by the Authorized Medical officer collecting the samples. Identity of person from whom blood sample is being collected)

| Name of |  |  | Father's/Guardian/Husband name: | Attested <br> Photograph by Medical officer |
| :---: | :---: | :---: | :---: | :---: |
| Gender: | Male [ ] Female [ ] | Age | Caste/ Origin of State: |  |
| Address: |  |  | PIN |  |
| FIR/Crime |  |  | Case No: |  |

Collection Center Name $\qquad$
Sample Collected By $\qquad$ Sample Collection Date $\qquad$
Collection Center Address $\qquad$
Storage conditions used $\qquad$


## Appendix II

CFSL/CHD/FM/106/01.09.2010/III

## (Confidential) <br> CENTRAL FORENSIC SCIENCE LABORATORY <br> DNA Division,

Ministry of Home Affairs, Govt. of India,
CFIs Complex, Dakshin Marg, Sector 36-A, Chandigarh - 160036

## SEXUAL ASSAULT VICTIM INFORMATION FORM

(To be completed by the Authorized Medical Officer who conducted the Medical examination)

1. VictimName: $\qquad$ MLR/PMR Number $\qquad$
Address $\qquad$ Age $\qquad$ Sex $\qquad$

Attested Photograph by Medical Officer

Date \& Time of assault $\qquad$ District \& State of Incident: $\qquad$
Date of Examination: $\qquad$
Number of Assailants_A_A_ Sex ___ Sex

Sexual Assault Examiner: $\qquad$
Hospital Name: $\qquad$ Hospital Telephone No.: $\qquad$
2. DETAILS OF ASSAULT: (e.g., oral, rectal, vaginal penetration/contact: perpetrator penetration of victim with fingers or with foreign object; oral contact by perpetrator; oral contact by victim; ejaculation, if known by victim, other injuries).

## 3. Pregnancy test to determine pre-existing pregnancy only.

Yes/ No/Don't know $\qquad$
4. PRIOR TO EVIDENCE COLLECTION, VICTIM HAS:

1. Bathed / Urinated /Defecated /Vomited/Had Food or Drink/ /Brushed Teeth or Used Mouthwash $\qquad$ None of the above
2. Whether Clothes changed:

Yes/ No/Don't know $\qquad$
4. For "Rape Drug" Test Blood and/or Urine Sample taken:

Yes/ No/Don't know $\qquad$
5. AT TIME OF ASSAULT WAS:

1. Contraceptives / Spermicide / Lubricant/ Condom present /used? Yes/ No/Don't know $\qquad$
2. Victim menstruating? Yes/

No/Don't
know
6. AT TIME OF EXAM WAS: Victim menstruating:

Yes/ No/Don't know $\qquad$

## 7. RECENT CONSENSUAL COITUS:

Has Victim had consensual coitus within last 5 days?
Yes/ No/Don't know $\qquad$
If yes, was birth control used?
Yes/ No/Don't know $\qquad$

What method of birth control was used? $\qquad$

Brief Description of Evidence Submitted (One item per line.)

| Parcel No. | No.of <br> Seals Description |  |
| :--- | :--- | :--- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Chain of Custody

| Parcel Description | Evidence received From | Evidence delivered To | Date | Comments |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## Examinations Requested



| Signature with stamp: | Date |
| :--- | :--- |
| Sexual Assault Examiner | Place: |

## Appendix III (Confidential)

# ABORTUS (Aborted Foetus) IDENTIFICATION SHEET (DNA PATERNITY TESTING) 

To be completed by the Authorized Medical Officer who conducted the Medical/Postmortem Examination 1. Identity of person from whom abortus sample is being collected

Name of person: $\qquad$
Address: $\qquad$
Whether the individual is juvenile or deceased? $\qquad$
2. Specimen Collection (See instructions)

Hospital Name: $\qquad$ Hospital Telephone No.: $\qquad$
Medical Examiner $\qquad$ Date $\qquad$
3. Type of Specimen(s) Collected (Please specify the portion of Abortus)
i
ii.
iii.
4. Weeks Gestation $\qquad$ Storage conditions used $\qquad$
5. Chain of Custody

Specimen sealed and released by: $\qquad$
Specimen released to: $\qquad$
Mode of release: Hand delivery $\qquad$ Mail $\qquad$
Date sent to CFSL, Chandigarh:

## Signature of Authority Medical officer

ABORTUS SPECIMEN COLLECTION INSTRUCTIONS

| Abortus collection | Wear gloves while collecting samples <br> Tissue from an abortus shall be selected by the physician and approximately $2 \mathbf{c m}^{2}$ portion must be <br> placed into a sterile plastic tube. <br> Print the mother's name and the date of collection on the label. <br> Physician should put his/her initials on the label. |
| :--- | :--- |
| Storage | Do not preserve the tissue in formalin. <br> Freeze the tissue and transport it on ice. <br> Blood sample should be collected in sterile EDTA tubes. Do not freeze the blood sample. |
| Forms | Complete the forms, documenting all the required information. <br> Sign the form where indicated to verify collecting the biological samples. |
| Packing | Package each sample separately and affix with a tamper proof seal. |

## Appendix IV (confidential)

## AUTOPSY SPECIMEN (S) SUBMISSION FORM

(To be completed by the Authorized Medical Officer who conducted the Postmortem)

1. Identity of person from whom samples are being collected:

Name: $\qquad$ Religion/Caste $\qquad$ .

Date of Death $\qquad$ Hospital Patient \# (If any) $\qquad$ -
2. Cause of Death
3. Has the individual received a blood transfusion or bone marrow transplant in the last three months?
4. Legal Contact: $\qquad$ Phone $\qquad$ .
5. Specimen Collection:

Collection Centre Name: $\qquad$
Collection Centre Address: $\qquad$
Sample Collected by: $\qquad$ Sample collection date: $\qquad$
6. Description of Samples Collected:

| Sample | Storage conditions | Other remarks |
| :--- | :--- | :--- |
|  |  |  |
|  |  |  |
|  |  |  |

Specimen Disposal: (Please check either option 1 or 2 or 3)
Note: If the disposal or return of the sample is not authorized, a Specimen(s) may be destroyed of in 1 year.
7. Chain of Custody

Specimen(s) sealed and released by $\qquad$ .

Specimen(s) released to: $\qquad$ .

Mode of release: Hand delivery $\qquad$ Mail $\qquad$ .

Date sent to CFSL, Chandigarh $\qquad$

Authorized Medical Officer Signature: $\qquad$ Date $\qquad$

