Guidance

DNA Anti-Contamination – Forensic Medical Examination in Sexual Assault Referral Centres and Custodial Facilities

FSR-G-207

ISSUE 1

© Crown copyright 2016

The text in this document (excluding the Forensic Science Regulator’s logo and material quoted from other sources) may be reproduced free of charge in any format or medium, providing it is reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown copyright and its title
1. INTRODUCTION ........................................................................................................3
2. SCOPE ....................................................................................................................4
3. IMPLEMENTATION ...............................................................................................4
4. MODIFICATION ....................................................................................................4
5. TERMINOLOGY .....................................................................................................4
6. ANTI-CONTAMINATION MEASURES (Codes section 19.2) ................................5
7. PROFESSIONAL RESPONSIBILITY .....................................................................6
   7.1 Personnel: Training and competence (Codes sections 17 and 18) ...............6
8. FACILITIES ...........................................................................................................7
9. PACKAGING AND GENERAL CHEMICALS AND MATERIALS (Codes section 12) ...9
   9.2 Consumables .....................................................................................................9
   9.3 Equipment .......................................................................................................10
   9.4 Use of personal barrier / protective equipment (FSR-G-208 section 18.3.18-20) ...11
10. METHODS AND PROCEDURES ..........................................................................12
11. DOCUMENTATION ..............................................................................................13
   11.1 Exhibit labelling ............................................................................................13
   11.2 Note taking and record keeping (Codes section 15) ....................................13
   11.3 Statements and reports (Codes section 25) ................................................14
12. REVIEW ..............................................................................................................14
13. ABBREVIATIONS ...............................................................................................14
14. REFERENCES ......................................................................................................15
15. GLOSSARY ........................................................................................................17
1. **INTRODUCTION**

1.1.1 The purpose of this document is to provide guidance for the ‘forensic medical’ examination of persons.

1.1.2 This interim guidance sets out the Forensic Science Regulator’s minimum DNA anti-contamination recommendations for the forensic medical examination of persons examined in sexual assault referral centres (SARCs) or custodial settings such as police custody suites.

1.1.3 All healthcare professionals (HCP) providing forensic science services including evidential sample collection shall take due regard of the Forensic Science Regulator’s *Codes of Practice and Conduct for Providers and Practitioners in the Criminal Justice System* (the *Codes*)\(^1\) as it applies to them.

1.1.4 In the examination process the principle is to minimise the inadvertent transfer of DNA material that could lead to the risk of a miscarriage of justice. This includes the risk of wrongful conviction(s) or wrongful acquittal(s), obstructing or delaying investigation(s).

1.1.5 There are potentially many routes by which contamination may occur; FSR-P-302 (section1) provides further detail. By controlling the environment, personnel, consumables and sampling procedures it is possible to minimise the opportunities for contamination events; some example contamination routes are provided in the table 1 below.

<table>
<thead>
<tr>
<th><strong>Direct transfer</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>Environment/item</td>
</tr>
<tr>
<td>Environment/item</td>
<td>Sample</td>
</tr>
<tr>
<td>Consumable</td>
<td>Sample</td>
</tr>
<tr>
<td>Person</td>
<td>Environment/item</td>
</tr>
</tbody>
</table>

**Indirect transfer – secondary transfer**

<table>
<thead>
<tr>
<th>Environment/item</th>
<th>Examinee</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment/item</td>
<td>Consumable</td>
<td>Sample</td>
</tr>
<tr>
<td>Environment/item</td>
<td>Practitioner</td>
<td>Sample</td>
</tr>
<tr>
<td>Environment/item</td>
<td>Environment/item</td>
<td>Sample</td>
</tr>
<tr>
<td>Person</td>
<td>Examinee</td>
<td>Sample</td>
</tr>
<tr>
<td>Person</td>
<td>Environment/item</td>
<td>Sample</td>
</tr>
<tr>
<td>Sample 1</td>
<td>Environment/item</td>
<td>Sample 2</td>
</tr>
</tbody>
</table>

---

### Indirect transfer – tertiary transfer

<table>
<thead>
<tr>
<th>Person</th>
<th>to</th>
<th>Environment/item</th>
<th>to</th>
<th>Consumable</th>
<th>to</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>to</td>
<td>Environment/item</td>
<td>to</td>
<td>Examinee</td>
<td>to</td>
<td>Sample</td>
</tr>
<tr>
<td>Environment/item</td>
<td>to</td>
<td>Environment/item</td>
<td>to</td>
<td>Examinee</td>
<td>to</td>
<td>Sample</td>
</tr>
<tr>
<td>Environment/item</td>
<td>to</td>
<td>Environment/item</td>
<td>to</td>
<td>Practitioner</td>
<td>to</td>
<td>Sample</td>
</tr>
<tr>
<td>Sample 1</td>
<td>to</td>
<td>Environment/item</td>
<td>to</td>
<td>Examinee</td>
<td>to</td>
<td>Sample 2</td>
</tr>
</tbody>
</table>

Table 1: Examples of routes where contamination of DNA may occur

2. **SCOPE**

2.1.1 This guidance covers the minimum DNA anti-contamination practices and processes for the taking of personal samples and recovery of other trace evidence for forensic analysis from examinations, carried out in sexual assault referral centres or custodial settings such as police custody suites.

3. **IMPLEMENTATION**

3.1.1 This guidance is available for incorporation into an organisation’s standard practice, operating procedures and quality management system from the date of publication and immediate implementation is strongly recommended. Full compliance with the requirements set out in this guidance is expected by April 2017.

4. **MODIFICATION**

4.1.1 This is issued as interim guidance. Detailed requirements will be issued in due course, therefore the status of some of the guidance may be changed from good practice (should) to a mandatory requirement (shall/must).

5. **TERMINOLOGY**

5.1.1 The word ‘shall’\(^2\) has been used in this document where there is a corresponding requirement in the Forensic Science Regulator’s Codes; the word ‘should’\(^3\) has been used to indicate generally accepted practice where the reason for not complying or any deviation shall be recorded.

---

\(^2\) In good medical practice ‘shall’ equates to ‘must’, which is used for an overriding duty or principle.

\(^3\) In good medical practice ‘should’ is used when providing an explanation of how to meet the overriding duty and where the duty or principle will not apply in all situations or circumstances, or where there are factors
6. **ANTI-CONTAMINATION MEASURES (Codes section 19.2)**

6.1.1 The Codes provide detailed requirements on contamination avoidance, monitoring and detection; section 19.2.2 of the Codes describes steps to be taken in establishing procedures relevant to contamination control.

6.1.2 From conducting a hazard or risk-based analysis (for example, process mapping) with respect to contamination, the following conditions to prevent cross-contamination should apply:

a. The practitioner undertaking the forensic medical examination of a complainant should not provide any medical examination or any other service to the alleged suspect in the same case, for example, where the suspect is in custody.

b. Where the provider of forensic medical practitioners delivers services to both the SARC and custodial settings, there should be two separate rotas in operation to ensure that the forensic medical practitioner available for sexual offence forensic medical examinations of complainants is not used for custody medicine at that time.

c. In the event that multiple complainants from the same crime attend the SARC at the same time, or multiple suspects from the same alleged crime are in custody at the same time, staff should ensure that they do not have contact with multiple individuals linked to the same crime, in order to prevent cross-contamination.

d. Police officers shall already have general forensic awareness training to maintain and record separation of potentially conflicting or cross-contaminating activities to ensure that suspects and complainants are transported separately and that each individual is dealt with by different practitioners.

---

outside the forensic practitioner/healthcare professional’s control that affect whether or how guidance can be followed. See the General Medial Council (GMC) *Good Medical Practice Guide*.

4 In exceptional circumstances (for example, very remote locations) where it becomes necessary to use the same forensic practitioner/healthcare professional, the reason and rationale behind the decision and the steps that have been undertaken to reduce the risk of contamination shall be documented. For example, cleaning of mobile equipment including the outer surface of a medical bag; showering including hair wash; and a change of clothes shall be recorded and documented in the sexual assault referral centre (SARC) and/or custody record as appropriate and disclosed in any subsequent report or statement.
If it becomes apparent that this practice has been breached then the appropriate information shall be documented, brought to the attention of the appropriate personnel and disclosed in any subsequent report or statement.

7. PROFESSIONAL RESPONSIBILITY

7.1 Personnel: Training and competence (Codes sections 17 and 18)

7.1.1 The training and competency requirements set out in sections 17 and 18 of the Codes should apply.

7.1.2 All healthcare professionals working in the police custodial setting or Sexual Assault Referral Centres (SARC) should have undergone training and assessment of competency\(^6\)\(^7\) in the forensic areas within which they are working and should work within their competence. This includes personnel with responsibility for the decontamination cleaning of the forensic areas of the facility (for example, crisis worker).

7.1.3 Processes should be in place for assessing and maintaining on-going competency, for example, this can include peer review, feedback on environmental monitoring, samples taken, information provided to accompany submissions for analysis and laboratory test results\(^8\)\(^9\).

---

5 See FSR 206 section 6.1.7-9, 6.1.20 and 6.2 for further information on DNA anti-contamination strategy.

6 The UK Association of Forensic Nurses (UKAFN), College of Paramedics and Faculty of Forensic and Legal Medicine (FFLM) have agreed that the minimum competency standard for all healthcare professionals (nurses, paramedics and doctors) working in the fields of general forensic medicine or sexual offence medicine should be either the UKAFN Advanced Standards in Education and Training (ASET) or the Licentiate of the Faculty of Forensic and Legal Medicine (LFFLM). [http://www.fflm.ac.uk/2015/10/spress-release-doctors-nurses-and-paramedics-working-in-police-custody-call-for-standards-to-protect-patients-and-avoid-miscarriages-of-justice/](http://www.fflm.ac.uk/2015/10/spress-release-doctors-nurses-and-paramedics-working-in-police-custody-call-for-standards-to-protect-patients-and-avoid-miscarriages-of-justice/)


8 Procedures to assess quality and feedback to the practitioner or service provider should be in place having been developed collaboratively between the providers of forensic practitioners and the police.

9 Nittis, M., Stark, M. (2014) Evidence based practice: Laboratory feedback informs forensic specimen collection in NSW.
7.1.4 In addition to adhering to any professional requirements (for example, from the Faculty of Forensic and Legal Medicine [FFLM], Royal College of Paediatrics and Child Health [RCPCH] and college of paramedics) or regulatory requirements (for example, from the General Medical Council [GMC] and Nursing and Midwifery Council [NMC]), the code of conduct for forensic science practitioners given on page 11 of the Codes shall be followed.

8. FACILITIES

8.1.1 As a minimum this guidance applies to any room or area used for receiving persons for examination, medical examination and/or sample collection/storage.

8.1.2 There should be a named person within the facility with responsibility for ensuring that a suitable environment is provided. This will enable the practitioner to carry out their duties appropriately, without compromising the integrity of any material or samples recovered. Any quality issues should be reported to this named person.10

Accommodation and environmental conditions (Codes sections 19.1, 19.2.3 and 23.3)

8.1.3 An identified room where the forensic medical examination or sample collection will take place should be designated the ‘DNA clean’/‘forensic examination’ area in readiness for use.

8.1.4 Walls, floors and furniture should be of smooth finish, sealed and resistant to deterioration from frequent cleaning.11

8.1.5 Chairs should be height adjustable and shall be made or covered by non-porous material such as vinyl, which can withstand frequent cleaning.

8.1.6 Drawer units should provide sufficient storage capacity to enable work surfaces to be kept clear, other than for equipment in use.

8.1.7 There should be no strong air currents, notably from fans, vents or windows that may be positioned near the examination, sampling and packaging areas. The

10 This should include informing the police forensic submissions/science unit.
11 Any new build post-October 2016 shall be required to meet the ideal practice as standard.
management of cleaning, monitoring, handling and sampling procedures shall take account of the risk of contamination (Codes 19.2.2a).

8.1.8 Decontamination (deep) cleaning of the whole forensic area using cleaning agent(s) and method(s) demonstrated to be effective\textsuperscript{12} \textsuperscript{13} in removing levels of DNA detected using routine profiling methods (Ballantyne et al., 2015) should be carried out at least monthly to remove build-up of DNA contamination, see FSR-G-208 section 8.6)

8.1.9 Cleaning should be undertaken wearing sufficient barrier clothing (\textit{ibid.}, section 9.4) and glove management to prevent, as a minimum, transferring DNA from:
   a. room and items to self;
   b. self to room and items;
   c. items to room;
   d. items to items; and
   e. room to room.

8.1.10 As a minimum, cleaning of high risk surfaces and equipment\textsuperscript{14} shall be undertaken prior to each examination. In sexual assault referral centres (SARCs), cleaning of high risk areas shall also be carried out after each examination.

8.1.11 A record of the cleaning shall be maintained. As a minimum this should record date, time and operator.

8.1.12 The number of persons accessing the medical examination room shall be minimised by restricting access (Codes 19.2.3) to authorised personnel. The documentation held shall record as a minimum, the date and time when each client was examined, the practitioner(s) and any other persons in attendance.

\textsuperscript{12} National Institute of Justice Forensic Technology Center of Excellence, (2011) \textit{Comparison Study of Disinfectants for Decontamination}.

\textsuperscript{13} Examples of cleaning agents include 10% sodium hypochlorite (bleach, Presept\textsuperscript{\textregistered}) solution, 1% Solution Rely+On\textsuperscript{\textregistered} Virkon\textsuperscript{\textregistered}, Microsol (10 %) and Distel (1%) (Trigene Advance).

\textsuperscript{14} These are surfaces and items that have a risk of transferring DNA directly to the examinee or to the consumables used to recover and package samples and exhibits.
8.1.13 There should be a programme of testing rooms, areas and/or equipment to assess whether the decontamination policy is both effective and has been carried out properly, i.e. environmental monitoring, see FSR-G-208 section 8.7).

9. PACKAGING AND GENERAL CHEMICALS AND MATERIALS (Codes section 12)

9.1.1 Customers and providers shall ensure that any sample, packaging and/or collection kits they use are fit for purpose.

9.1.2 Areas used for the storage and handling of consumables, samples and exhibits shall be secure and access shall be restricted to authorised personnel only (Codes 23.3).

Packaging

9.1.3 The packaging of collected material shall preserve the integrity of the potential material for forensic examination and minimise the risk of loss, degradation or contamination.

9.1.4 As a minimum this should include:

a. separate packaging of items where the packaging of items together is likely to compromise them;

b. the appropriate packaging for the size, condition and forensic analysis requirements of the material recovered; and

c. secure sealing.

9.2 Consumables

9.2.1 Consumables are single-use commodities used in the collection, preservation and processing of material for forensic analysis, and are bought and used routinely. These include barrier / personal protective equipment, tamper evident

---

15 This can be demonstrated by consumable manufacturers and kit assemblers meeting the requirements set out for DNA consumables in BS ISO 18385:2016 Minimising the risk of human DNA contamination in products used to collect, store and analyse biological material for forensic purposes and for other non-DNA consumables in the publicly available specification (PAS) 377:2012 Specification for consumables used in the collection, preservation and processing of material for forensic analysis – Requirements for product, manufacturing and forensic kit assembly.

16 The requirements for drying cabinets and temporary storage areas are set out in FSR-G-206 section 10).
containers, swabs, and packaging that comes into direct contact with the material for forensic analysis. A consumable can also be equipment used in the collection, processing and safe handling of the material, for example, disposable tweezers or scissors.

9.2.2 Consumables utilised shall be such that they minimise the risk of DNA contamination. As a minimum, sampling items such as swabs and water that are declared as free from detectable human DNA\textsuperscript{17}/forensic DNA grade\textsuperscript{18} shall be used. A record of the batch/lot information shall be recorded.

9.2.3 Whether stored at the facility, in the examination room or carried by the practitioner, as a minimum swabs, water ampoules, barrier clothing (suits, aprons and sleeve covers), gloves and exhibit bags shall be protected from the environment, either by outer protective packaging or packaged as part of a kit.

9.3 Equipment

9.3.1 Based on the risk assessment (Codes 19.2.2a) wherever possible the use of reusable equipment (for example, tweezers, scissors or pens) should be avoided.

9.3.2 Equipment that is not disposable and needs to be reused (for example, colposcope, stethoscope, computer keyboards, mouse) shall be decontaminated between each examination.

9.3.3 The cleaning agent(s) and method used shall be demonstrated to be effective in removing detectable levels of DNA\textsuperscript{19} and do not interfere with downstream DNA processing. A cleaning process example is as follows.

a. Items not suitable for immersion in fluid without being damaged should be thoroughly cleaned using disposable cleaning roll or wipes liberally wetted with a chemical that inactivates and removes DNA. If equipment will have direct contact with sampling materials or has health and safety implications

\textsuperscript{17} Human DNA is not detectable by the most sensitive DNA profiling techniques available.

\textsuperscript{18} Demonstrated by compliance to BS ISO18385:2016 \textit{Minimising the risk of human DNA contamination in products used to collect, store and analyse biological material for forensic purposes}.

\textsuperscript{19} Examples of cleaning agents include 10% sodium hypochlorite (bleach, Presept\textsuperscript{TM}) solution, 1% Solution Rely+On\textsuperscript{®} Virkon\textsuperscript{®}, Ethanol (70% w/w) and Chlorhexidine Digluconate (2.5%w/w) wipes, Isopropyl Alcohol (70%) wipes (Azo wipes), Microsol (10 %) and Distel (1%) (Trigene Advance).
then the cleaning process should ensure that all residues of the cleaning agent is removed, for example, by cleaning with sterile water. Where equipment or items are susceptible to corrosion, then an appropriate cleaning agent that does not corrode\textsuperscript{20} should be used.

b. Small items thought to be contaminated that are suitable for immersion in fluid without damaging them should be submerged in a cleaning agent, scrubbed/wiped down to remove material. If equipment will have direct contact with sampling materials or has health and safety implications then it should be rinsed in sterile distilled water and placed in clean sealed protective packaging (for example, bag, plastic box) in readiness for the next use.

9.4 Use of personal barrier / protective equipment (FSR-G-208 section 18.3.18-20)

9.4.1 For the examination, persons who are not critical to the examination or support of the victim should be excluded where possible, for example, police and family members; all in attendance shall as a minimum wear protective barrier clothing as defined below:

a. disposable barrier clothing to cover exposed/bare skin and the outer clothing to prevent DNA transfer onto outer clothing, which is subsequently transferred onto a handled item or another person, such as scrubs or aprons and disposable sleeve covers;

b. non-latex powder free\textsuperscript{21} gloves (for example, nitrile).

It is also preferable for a mask and mob cap to be worn.

9.4.2 Hands shall be decontaminated before donning gloves, and following their removal.

\textsuperscript{20}Activ8™ contains no oxidising or corrosive ingredients and can therefore be used with confidence on all surfaces including fabrics and carpets. King’s College London and Metropolitan Police Service (2015) Cleaning project.

\textsuperscript{21}The powder in many types of gloves has been found to inhibit subsequent DNA analysis and can potentially contaminate items being handled, therefore powdered gloves should be avoided.
9.4.3 Double gloving with changes of the top gloves when handling different sample sites, before handling equipment or after touching any other surfaces, such as taps, door handles, bins, curtains, shall be employed.

9.4.4 For the cleaning activities, the following protective barrier clothing shall be worn and put on in the following order:

a. face mask;
b. overshoes;
c. mob cap;
d. inner base gloves;
e. disposable lab coat, ‘scrubs’ scene suit or apron and sleeve covers; and
f. outer gloves.

9.4.5 Protective barrier clothing shall be changed after every forensic examination, cleaning or maintenance task.

9.4.6 The protective barrier clothing shall be appropriately disposed of after use (Codes 23.4).

10. METHODS AND PROCEDURES

10.1.1 Prior to using the examination room the forensic medical practitioner shall satisfy themselves that adequate cleaning has taken place. If there is any doubt as to the integrity of the cleanliness then in addition to the couch cover, disposable sheeting shall be placed onto surfaces such as trolley, table, desks to act as a barrier prior to use.

10.1.2 Any quality or integrity issue shall be brought to the attention of the centre or appropriate facility manager and a record of the issue, date, time and to whom the matter was reported shall be documented.

10.1.3 Following investigation it could require escalation to the Forensic Science Regulator; examples are provided in the Codes section 14.1.

10.1.4 A record of all persons in attendance at any time and the protective measures taken during the examination shall be maintained.
10.1.5 The Faculty of Forensic and Legal Medicine (FFLM) sampling guidelines should be followed.

10.1.6 If required to use moistened swabs for sampling, then fresh clean gloves shall be worn to open the water ampoule and the initial drops of water shall be discarded as a means to flush the nozzle before wetting the swab; if the nozzle makes contact with any contaminated surface then the water ampoule shall be discarded.

10.1.7 All exhibit bags should be labelled and sealed before they are transported for storage, either within the facility or at an agreed alternative storage facility. This should be the responsibility and ownership of the practitioner collecting the items (Codes 23.3).

10.1.8 Forensic medical practitioners are categorised as individuals who pose a high risk for DNA contamination, see FSR-P-302 section 7.5 and as such shall provide DNA samples for elimination purposes (Codes 19.2.5 and FSR-P-302).

11. DOCUMENTATION

11.1 Exhibit labelling

11.1.1 The packaging of all items shall be labelled so that it allows for the chain of custody to be tracked. As a minimum, labelling shall include:

a. a unique identifier (for example, barcode or a combination of date/case number/operator/consecutive numbering);

b. description of the item;

c. the person and/or location from which the item was collected.

d. the date and time that the item was collected;

e. the name or identifier of the person who collected the item.

11.2 Note taking and record keeping (Codes section 15)

11.2.1 Any decision made by the professional shall be recorded along with the reason for making the decision. Where an expected course of action is not followed, then the reason for doing so shall be documented in the record.
11.2.2 Notes shall contain sufficient detail to enable the practitioner to generate a statement, if required, at a later date.

11.3 **Statements and reports (Codes section 25)**

11.3.1 Due regard should be taken of the disclosure obligations and the requirements set out in the *Criminal Procedure Rules* and *Criminal Practice Directions* ((Ministry of Justice) for experts. Though duties to the court of professional witnesses and experts are similar, it should be borne in mind that the court can deem an individual an expert to give an opinion based on their experience and knowledge; in addition, opinion evidence may rely on the statements provided by other practitioners. Legal obligations are set out in FSR-I-400 and disclosure requirements in the Association of Chief Police Officers (ACPO) and the Crown Prosecution Service (CPS) guidance for experts.

12. **REVIEW**

12.1.1 The Forensic Science Regulator welcomes comments. Please send them to the address as set out at: [https://www.gov.uk/government/organisations/forensic-science-regulator](https://www.gov.uk/government/organisations/forensic-science-regulator), or email: FSREnquiries@homeoffice.gsi.gov.uk

13. **ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPO</td>
<td>Association of Chief Police Officers, now replaced by the National Police Chiefs’ Council (NPCC)</td>
</tr>
<tr>
<td>CoP</td>
<td>College of Paramedics</td>
</tr>
<tr>
<td>CPS</td>
<td>Crown Prosecution Service</td>
</tr>
<tr>
<td>DNA</td>
<td>Deoxyribonucleic acid</td>
</tr>
<tr>
<td>FFLM</td>
<td>Faculty of Forensic &amp; Legal Medicine of the Royal College of</td>
</tr>
</tbody>
</table>

---

22 The forensic scientist may rely upon the statement from the forensic medical practitioner when evaluating and forming an opinion of their scientific findings.
Physicians
FSR Forensic Science Regulator
HCP Healthcare Professional
ISO International Organisation for Standardization
PPE personal protective equipment
SARC sexual assault referral centre
UKAFN United Kingdom Association of Forensic Nurses

14. REFERENCES


Forensic Science Regulator  


King’s College London and Metropolitan Police Service (2015) Cleaning project. Personal communication to the Forensic Science Regulator DNA specialist group meeting. 10 July 2015.


**GLOSSARY**

**DNA clean area:** Area in which appropriate DNA contamination prevention measures should be maintained at all times.

**DNA contamination:** The introduction of DNA, or biological material containing DNA, to an exhibit, or subsample derived from an exhibit during or after its recovery from the scene of crime or a person. In the context of the Facility this could occur for any of the following reasons.
a. Poor practice\textsuperscript{23} employed by staff using fixtures and fittings and/or collecting forensic samples.

b. DNA contamination from anybody who has had access to the forensic waiting room and/or the medical examination room. Here key risk groups are people from whom elimination DNA profiles have not been taken and included in an elimination database (FSR-P-302), and therefore may be inadvertently associated with a crime rather than being identified as contamination. These may include visitors, contractors and people accompanying a complainant into the forensic waiting room and/or the medical examination room.

c. Insufficient use of cleaning regimes, or ineffective cleaning reagents used, as part of a general forensic clean or a subsequent deep clean.

d. Residual DNA from the manufacture/maintenance of fixtures and fittings that have not been deep cleaned.

**Consumables:** Single-use commodities used in the collection, preservation and processing of material for forensic analysis, which are bought and used up recurrently. These include personal protective equipment, tamper evident containers, swabs, and packaging that come into direct contact with the material for forensic analysis. A consumable can also be equipment used in the collection, processing and safe handling of the material, for example, disposable tweezers and scissors.

**Facility:** For the purpose of this document, this includes any room or area used for receiving persons for examination, medical examination and/or sample collection/storage.

**Forensic DNA grade:** Consumables certified to having met the requirements in BS ISO 18385:2016.

**Human DNA free:** Human DNA is not detectable by the most sensitive DNA profiling techniques available.

\textsuperscript{23} It should be noted that even good practice does not eliminate the risk of contamination; it only helps to minimise it.
Personal Protective Equipment (PPE): Items, for example, clothing and gloves, which are used to prevent skin and mucous membrane exposure when in contact with blood and body fluid on or from any complainant. PPE is also worn to protect the practitioner from contact with harmful chemicals, for example, during decontamination, and to minimise the chance that the wearer causes inadvertent DNA contamination.

Practitioner: For the purpose of this document, the term is used to describe personnel involved in the recovery of material for forensic analysis, including those who are responsible for cleaning and DNA contamination, for example, forensic physicians, forensic nurses, paramedics and crisis workers, i.e. all appropriate healthcare professionals.