Chief Medical Officer

T: 0131-244 2799
E: CMO@gov.scot

The Scottish Government
Riaghaltas na h-Alba

Dear Colleague,

CHIEF MEDICAL OFFICER'S RAPE AND SEXUAL ASSAULT TASKFORCE – ENVIRONMENTAL MONITORING REGIME

The Chief Nursing Officer and my predecessor wrote to you on 16 August 2019 to roll out the national DNA Decontamination Protocol following approval by the Lord Advocate. The purpose of the Protocol is to provide a DNA decontamination procedure for the decontamination of Forensic Medical Examination facilities. This procedure is only relevant when a Forensic Medical Examination is required and the procedure should be applied immediately prior to and after each Forensic Medical Examination. The Protocol was approved subject to the development of an underpinning Environmental Monitoring Regime to demonstrate the effective use of the Protocol and to provide assurance of the stringency of forensic evidence gathered.

Under the remit of the Rape and Sexual Assault Taskforce, a multi-agency group has developed the attached national Environmental Monitoring Regime which has now been approved by the CMO Taskforce and the Lord Advocate.

Environmental monitoring is a proactive measure to gather information on the effectiveness of anti-contamination measures. The principle of environmental monitoring is to undertake a programme of testing on a periodic basis to check that the DNA Decontamination Protocol for the area in question is both effective and has been carried out properly.

Compliance with both the Protocol and the Regime will ensure that Forensic Medical Examination facilities are decontaminated and environmentally monitored to a national standard that will ensure the forensic integrity of material recovered for DNA analysis.

From 1 April 2022, Public Health Scotland will collect data against the Healthcare Improvement Scotland Standards and Quality Indicators. This includes a specific indicator on decontamination of Forensic Medical Examination facilities.

From the Chief Medical Officer
Professor Sir Gregor Smith
Chief Nursing Officer
Professor Alex McMahon

31 March 2022

SGHD/CMO(2022)15

Addresses

For action
NHS Board Strategic Leads (CMO Taskforce)
For information
NHS Infection, Prevention and Control Managers
Environmental Monitoring Short Life Working Group members

Further Enquiries to:

Mark Burgess
CMO Taskforce
St Andrew's House
EDINBURGH EH1 3DG

Tel: 07900 769 762
Email: mark.burgess@gov.scot

This data will form part of Public Health Scotland's Annual Report as well as the monthly Management Information provided to health boards.

With lead responsibility for infection prevention and control for your health board, you must ensure that this Regime is implemented within the Forensic Medical Examination service. You should also ensure that this letter and associated documentation is shared with any medical, clinical or other staff involved in delivery of this service.

Should you have any questions on any aspect of the Regime, please contact the Scottish Police Authority – Forensic Services by emailing SPANHSEnviro@spa.police.uk.

Many thanks in anticipation of your support in this matter.

Yours sincerely,

Gregor Smith *Alex McMahon*

Professor Sir Gregor Smith
Chief Medical Officer

Professor Alex McMahon
Chief Nursing Officer

DNA Environmental Monitoring Regime

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Amendment History

Issue Number	Approved Date	Approved By	Details of Amendment
V0.1			Initial Version
V0.2			Comments from Environmental Monitoring SLWG
V0.3			Comments from Board Leads
			2.1.1 noted NHS to become owner
V0.4			Amendments by SPA re envelopes and rota

DNA Environmental Monitoring Regime

1 Objective

1.1 To monitor background levels of DNA in Forensic Medical Facilities where Forensic Medical Examinations are carried out.

1.2 To demonstrate that DNA decontamination procedures are effective and have been carried out properly.

2 References/Forms

- FS-B National Infection Prevention Control Manual (NIPCM) http://www.nipcm.hps.scot.nhs.uk
- FS-BIO-0180: DNA Decontamination guidelines for Forensic Medical examinations
- National Specification Document for Health Boards on Rape and Sexual Assault Healthcare and Forensic Services – currently in draft
- FSR-G-207: DNA Anti-contamination – Forensic medical examination in sexual assault referral centres and custodial facilities
- FS-BIO-0041: DNA EM and Consumable Testing
- DNA EM Testing Record Spreadsheet

3 Health & Safety

Before starting work, ensure all staff involved in the decontamination of forensic examination rooms are familiar with the relevant Risk Assessments and COSHH Forms, plus any other safety documents referred to in them.

4 Environmental Conditions

N/A

5 Equipment

Bulbous tip swab (WA Products B22724)
Breathable Tamper Evident bag (swab size)

6 Reagents

Sterile/de-ionised water

7 Procedure

General Principles

7.1 Environmental Monitoring (EM) is a proactive measure to gather information on the effectiveness of anti-contamination measures. Surfaces and items that are routinely in contact with health care professionals, patients and/or casework samples should be sampled. The principle of EM is to undertake a programme of testing on a periodic basis to check that the decontamination protocol for the area in question is both effective and has been carried out properly.

7.2 EM must be carried out in areas where samples that may undergo subsequent DNA testing are routinely taken. EM samples are taken by swabbing relevant areas and equipment. No unnecessary extraneous items that may act as contaminants should be brought into a forensically secure area.

7.3 EM samples taken within facilities used for Forensic Medical Examinations will be analysed by Scottish Police Authority Forensic Services (SPA FS) using the same DNA process that is carried out to obtain DNA profiles for SPA FS casework and SPA FS EM samples.

7.4 Items that should be sampled for EM have been added to an EM Schedule (See Appendix B). These items have been reviewed and their contamination risk assessed. Items are categorised as either 'high risk' or 'low risk'. 'High risk' items are considered potentially more likely to contaminate samples directly or by secondary transfer than 'low' risk items. High risk items will be sampled more frequently than low risk items.

7.5 Additional non-routine EM sampling may be carried out in certain circumstances, for example:

- If a contamination incident has occurred
- After maintenance has been carried out
- After a change of function of the room.

Environmental Monitoring contamination and casework contamination

7.6 It is important to make the distinction clear between EM contamination, which highlights a potential risk to casework samples, versus actual sample contamination. If a sample is contaminated resulting in a casework result being compromised, this will be reported to the Crown Office and Procurator Fiscal Service (COPFS) or Police Scotland immediately by SPA colleagues. However, if EM contamination is detected, this will be dealt with between the SPA and NHS so that steps are taken to prevent sample contamination.

7.7 Any instances of EM contamination shall be thoroughly investigated by the SPA. An EM contamination event does not equate to casework sample contamination, and therefore an EM contamination event alone would not necessarily trigger a report to COPFS or Police Scotland. If 'significant' contamination is detected from environmental monitoring the potential impact on casework results must be assessed and a review of cases that may have been affected by the contamination event carried out by SPA where appropriate.

8 Recording DNA EM

8.1 Healthcare Improvement Scotland (HIS) Quality Indicator 7 relates to the decontamination of facilities with the data sources stating that "Service audit of SPA decontamination logs supported by environmental monitoring." The logs that are taken as part of the EM process form part of that audit in adhering to the Quality Indicator.

8.2 A record must be kept of all EM samples taken, when they were taken and who took them. This will allow for a permanent record demonstrating the EM schedule has been adhered to. This will also detail if an item has passed or failed EM therefore enable facilities to note any trends of any items failing EM.

8.3 Details of sampling must be recorded timeously on the **DNA EM Testing Record** spreadsheet. This spreadsheet should be held electronically and updated by relevant personnel as each stage is completed. All Health Boards will use the same version of the spreadsheet and it should be stored electronically on a shared drive as per local agreement. This is a separate process to the Decontamination Protocol log which is a hard copy document that requires to be updated by the relevant individual who has completed the decontamination process.

8.4 The frequency of EM has been determined for each item based on the contamination risk and is detailed on the EM Schedule (see Appendix B)**.** More frequent sampling may be carried out if considered appropriate e.g. following implementation of a new process, area/item where contamination has been found.

8.5 The EM schedule should be reviewed annually by the relevant member of Health Board staff and a record should be kept and may be shared with the SPA on request. A new **DNA EM Form** should be created for each financial year (Apr-Mar) to ensure that it is still appropriate and pertinent in relation to the results of any trend analysis undertaken around failing/passing items.

9 Sampling Procedure – Cleaning and Decontamination

9.1 EM should reflect the environment in which samples are routinely handled. As this procedure is designed to test the effectiveness of the DNA Decontamination protocol all areas should be thoroughly cleaned following standard operating procedures and decontaminated following FS-BIO-0180: DNA Decontamination guidelines for Forensic Medical examinations, prior to sampling for EM.

9.2 The name of the individual who has carried out this cleaning/DNA decontamination must be recorded on the DNA EM Form. Where possible, this should be a different person to that taking the DNA EM sample. To provide assurance that all staff are decontaminating work areas effectively, care should be taken to ensure areas are cleaned by different individuals each time, where possible.

10 Sampling method and schedule

10.1 Details about the areas or items that should be sampled are specified in Appendix B (EM Schedule).

10.2 'Open ended' bulbous swabs, distilled water and breathable tamper evident bags will be provided by SPA for EM sampling. The swabs and water will have been batch tested by SPA FS to ensure they are 'DNA free'.

10.3 The label on the swab casing should be completed to detail where the sample was taken, this should include the facility and what room if a suite has more than one examination room, if the swab is a 'wet' or 'dry' swab and the name of the practitioner taking the sample. For example;

Stirrups – wet
Archway
Examination Room 1
C Rogers
30-03-2021

10.4 The area/ item will be swabbed with a swab wetted with the water provided (wet swab) then swabbed immediately after with a dry swab. The swabs should be returned into their casing and black 'plug' on the end of the casing should be removed and discarded. It is crucial the plug is removed from the end of the swabs to ensure they dry.

10.5 Once completed for all areas/items, the swabs should be returned to the breathable tamper evident bag and the bag sealed. As long as the black plugs have been removed from the end of the swab casing the swabs will dry within the breathable bag and there is no requirement to freeze the swabs.

10.6 The label on the breathable bag should then be completed to detail who took the samples, the date and the medical facility. The breathable bag containing the swabs should be placed in a paper envelope addressed with the relevant SPA FS site for transfer via courier. Pre-addressed envelopes will be provided with the EM kits.

NB White envelopes will be provided for routine samples. Buff coloured envelopes will be provided for any re-samples taken from 'failed' items. This will allow SPA to differentiate between re-samples that must be processed urgently and routine samples.

10.7 Once the samples have been taken, the appropriate columns of the DNA EM Testing Record must be updated with the relevant details to demonstrate EM sampling has been completed.

10.8 Each Health Board will carry out EM sampling, as described in steps 10.4-10.6. Sampling will be carried out within the first 3 days of the month they are due to be taken. The sampling rota detailing which months each Health Board will sample is detailed in individual EM sampling rotas which SPA FS will provide to SARCS.

10.9 Samples must be submitted to SPA FS by the 10th of the month. Any samples submitted after the 10th of the month will miss the allocated EM DNA batch which will result in a delay in the agreed turn-around time.

11 DNA Processing of Samples and Analysis of Results

11.1 All EM samples will be analysed by SPA FS. SPA FS will endeavour to analyse and provide results for routine samples within 21 days of submission. Samples taken from items that have 'failed' EM will aim to be turned around quicker than routine samples with an urgent turnaround of seven working days on critical items such as the colposcope and examination couch.

11.2 Swabs will be processed in an identical fashion to crime stain sample swabs i.e. swabs for case work.

11.3 The criteria for a sample passing or failing has been set by SPA FS and reflects thresholds set for SPA FS for EM of its own laboratories. The results will be assessed based on validated interpretation rules applied by SPA FS laboratories.

11.4 Results from the EM samples will be fed back to the appropriate NHS service manager by SPA, via email. This will detail samples analysed and if they have passed or failed.

11.5 The service manager should update the pass/fail section of the **DNA EM Testing Record** noting if the sample has passed or failed. Any failed samples will require re-sampling, following the above steps (10.4-10.6).

11.6 If contamination has been detected and a sample has failed this must be escalated as quickly as possible, following the local Board adverse event management process, for example, Datix, Safeguard etc. This should be followed up by a local adverse event review.

11.7 The investigation should include immediate re-sampling of the failed item. The item should be thoroughly cleaned and decontaminated following FS-BIO-0180: DNA Decontamination guidelines for Forensic Medical examinations prior to re-sampling.

11.8 The failed item should be removed from service until a subsequent re-sample has been analysed and the item has subsequently passed.

11.9 It is recommended that data relating to failed items is routinely reviewed to establish if any trends or patterns can be noted. Results from EM should be shared with staff at local team meetings, paying particular attention to any failed items. Data on failings may be requested by external partners for monitoring against the HIS Indicators.

12 Supplies

12.1 If EM sampling kit stocks are running low, Health Boards can order these directly by contacting the Scottish Police Authority using the contact details below.

13 Point of Contact

13.1 Any questions about the EM regime should be sent to: SPANHSEnviro@spa.police.uk

DNA Environmental Monitoring Regime

APPENDIX A

EM regime – Glossary of terms

Primary transfer – A transfer of DNA to objects or another person through direct contact for example if a person handles an item they may transfer their DNA onto it.

Secondary transfer – When DNA is transferred to an object or a person, indirectly, through an intermediary, for example, if person A handles and object then person B handles the object. Person B may pick up DNA from person A.

DNA Contamination – The introduction of DNA, or Biological material containing DNA to a sample from another sample, person or the environment.

High risk item – Items that are more likely to contaminate samples.

Low risk item – Items deemed at a lower risk of contaminating samples.

DNA Environmental Monitoring Regime

APPENDIX B

Environmental Monitoring Schedule

SSARC Facility:

Item	Risk of Item	Details of sampling	Frequency of sampling
Examination Couch Controls	High	Areas most handled	Every 3 months
Examination Couch Stirrups	High	Representative area of upper surface	Every 3 months
Examination Chair	High	Top/back used to move chair, adjustment controls	Every 3 months
Colposcope Mouse	High	Upper surface of mouse	Every 3 months
Colposcope Keyboard	High	Keyboard Keys	Every 3 months
Over-head light	High	Where light is touched to move or turn on	Every 3 months
Work surface used for samples during examination	Low	Representative area of surface	Every 6 months
Sink taps	Low	Where handled	Every 6 months
Handles of Cupboards in examination room	Low	Inner and outer surface of handle	Every 6 months
Waiting room furniture	Low	Representative area of upper surface	Every 6 months

Sampling Schedule:

Calendar period	Details of sampling
Quarter 1	High and Low risk items
Quarter 2	High risk items
Quarter 3	High and Low risk items
Quarter 4	High risk items

N.B. Items should be cleaned and decontaminated following FS-BIO-0180: DNA Decontamination guidelines for Forensic Medical examinations prior to sampling.