



Best Practice Manual for Scene of Crime Examination

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ENFSI



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1. AIMS

This Best Practice Manual (BPM) aims to provide a framework for the procedures, quality principles, training processes and approaches to the forensic examination of scenes of incidents.

This BPM can be used by ENFSI Member Institutes and other agencies to establish and maintain working practices in the field of Scene of Crime Examination that will deliver reliable results, optimize the quality of the information obtained and produce robust evidence. The use of consistent methodology and the production of more comparable results will also facilitate the interchange of data.

The term BPM is used to reflect the scientifically accepted practices at the time of issue. It does not imply that the practices laid out in this manual are the only good practices used in the forensic field. In this series of ENFSI Practice Manuals the term BPM has been maintained for reasons of continuity and recognition.

2. SCOPE

This manual addresses the entire forensic process at the scene of crime as covered in the standard ISO/IEC 17020 and ILAC-G19, from the arrival of the first officer at the crime scene to the point where the report from the crime scene is written. It encompasses the systems, procedures, personnel, equipment and accommodation requirements for the whole process.

The process has various stages of action including:

- Undertaking initial actions at the scene
- Developing a scene examination strategy
- Undertaking scene examination
- Interpreting scene findings and ordering further examination
- Reporting findings

The law enforcement framework and the legal systems within which scene examination takes place will determine the degree of direct control that an individual Scene of Crime Examiner (SCE) has over each stage of the process, but even where they are not directly involved in any particular stage, they should have access to comprehensive advice on best practice.

3. DEFINITIONS AND TERMS

The following definitions are used in this document

Audit: A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives [ISO 8402: 1994 - 4.9].

Calibration: Operation that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement uncertainties provided by measurement standards and corresponding indications with associated measurement uncertainties and, in a second step, uses this information to establish a relation for obtaining a measurement result from an indication [International vocabulary of metrology - Basic and general concepts and associated terms ISO/IEC Guide 99: 2007 - 2.39, also known as JCGM 200: 2012].

Chain of custody: The chronological documentation that records the sequence of custody, control, transfer, analysis, and storage/disposal of evidence.

Competence: The ability to perform the task of a certain role by virtue of their training and/or experience and demonstrated knowledge, skills and abilities.

Competence Assessment: A formal assessment to check whether or not an individual meets the standards of performance [QCC-CAP-006].

Contamination: Contamination is the incidental transfer of substances or trace materials to the scene or exhibits, which will be subject to forensic examination.

Crime scene: The term “crime scene” is used to identify a scene of incident prior to establishing whether a criminal or illegal action has taken place or not. The crime scene is not solely restricted to the location of the incident, but also includes areas where relevant acts were carried out before or after the crime. Suspects and victims who are subject to an examination for the recovery of forensic and/or medical evidence can also be considered to be crime scenes.

Customer: The customer is the authority/person(s) requiring the crime scene examination. Whilst ultimately this is the Criminal Justice Service/Public Prosecutor and the public, for all practical purposes the customer is the Senior Investigating Officer (SIO) responsible for the outcome of the investigation to which the crime scene is related.

Documents, records: As a rule, documents and records can be stored in either hard copy or electronic form. Appropriate regulations must be in place governing access, authorization and storage.

Evidence: Evidence is anything which may prove or disprove an assumption to be true, e.g. an exhibit, or the lack of expected findings.

Exhibit: An exhibit is an item or sample recovered as part of an investigation. This includes everything recovered from a crime scene including swabs, whole objects, debris, etc. and derived items like casts of footprints, finger mark lifts, etc.

First Responder: The first officer arriving at the crime scene. This person is responsible for all immediate action taken at the scene of the crime. Their responsibility ends when the officer

responsible for the crime scene takes over official responsibility for the crime scene investigation. Also known as 'first intervener'.

Forensic process: Forensic process is the gathering, evaluation and assessment of all types of evidence using scientific procedures as well as the location, documentation and preservation of evidence.

Forensic Strategy: This forms the foundation for the application of forensic science to the investigation and will inform scene examination plans/strategies. See also Scene Examination Plan/Strategies.

Investigator: A person trained to perform crime scene examinations and/or investigations. Other names used include Scene of Crime Officer, Crime Scene Investigator, and Scene of Crime Examiner.

Management/Case Review: A review of the case file and report to ensure that the customer's needs have been properly addressed in compliance with laboratory policy and that the report content is editorially correct.

Quality Assurance: All the planned and systematic activities implemented within the quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfil the requirements for quality [ISO 8402: 1994 - 3.5].

Quality Control: Operational techniques and activities that are used to fulfil the requirements for quality [ISO 8402: 1994 - 3.4].

Quality Management System (QMS): This term is used to refer to the documented system for managing the technical aspects, quality, administrative procedures, etc. of an organization.

Scene of Crime Examiner (SCE): A person competent to perform crime scene examinations. Other names include Scene of Crime Officer (SOCO), Crime Scene Investigator, and Scene Examiner.

Scene Examination Plan/Strategies: Devised by the SCE or Crime Scene Manager (CSM) to meet the requirements of the Forensic Strategy and to maximize the forensic opportunities. See also Forensic Strategy.

Standard Operation Procedure (SOP): Authorized, documented specified way to carry out an activity or process [ISO 21043-1: 2018]

Trace Evidence/Material: Used in this document to refer to any potential evidence types at the scene, e.g. DNA, fingerprints, footwear marks, fibres, hairs, glass, paint, soil etc.

Validation: The confirmation by examination and the provision of effective evidence that the particular requirements for a specific intended use are fulfilled [ISO 8402: 1994 - 2.18].

Verification: Where the techniques or procedures adopted have been validated elsewhere, the organization is required to carry out a verification exercise to demonstrate that it can achieve the same quality of results in its own environment.

4. RESOURCES

4.1 Personnel

People are likely to be the most important resource in any forensic process. To allow staff to work effectively and efficiently, everybody concerned in the process must understand the nature of the tasks and the human qualities required to perform them. The key roles, responsibilities and competencies required by these post holders are provided in this manual.

4.1.1 Roles and Responsibilities

The size and operating system of different organizations may vary, therefore absolute standardization of personnel cannot be achieved. It is also accepted that an individual may be responsible for more than one defined role and this manual states where this is the case.

The key roles recognized for the examination of crime scenes are:

- Scene of Crime Examiner (SCE) – an individual whose primary role is the initial assessment at a crime scene and the subsequent collection of material for detailed scientific examination.
- Crime Scene Manager (CSM) – The central role of the CSM (or equivalent) is to supervise the scene examination and facilitate the input of specialists so that the maximum evidence and information is extracted from the scene. The Crime Scene Manager will be directly responsible to the Senior Investigating Officer (SIO) and the Scientific Support Coordinator for the management of the crime scene.

First Officer Responding – The first officer attending is responsible for all initial measures at the scene of a crime. This concerns police practices like aversion and termination of dangerous attacks, initial general assistance, first aid, calling for necessary assistance, (including forensics), and protecting the crime scene area to avoid contamination.

Other roles involved in the examination of crime scenes may include:

- Crime Scene Coordinator
- Reporting Scientist
- Senior Investigator
- Forensic Medical Examiner
- Plan Drawer
- Exhibits Officer
- Coroner's Officer

An overview of these roles (including the qualifications and competencies required) is provided in the Appendix.

4.1.2 Competence Requirements

ENFSI wishes to promote consistent and reliable scientific evidence throughout the whole forensic process from the scene of crime to court. ENFSI members should strive to have a formal and documented system for assessing the competence of their forensic practitioners, and must accept and abide by the ENFSI Code of Conduct (reference number BRD-GEN-003). The competence assurance system shall be an integral part of the quality system according to ISO/IEC 17025 and/or ISO/IEC 17020.

The qualifications, competencies and experience that individuals require to carry out the various aspects of crime scene examination will depend on the intellectual and practical demands of the various aspects of the work. This manual identifies the standards of competence required for different roles including the training required and the assessments that will be applied.

4.1.3 Qualification and Experience

The practitioner should be educated to an appropriate standard and have successfully completed recognized training as defined by their organization. The ENFSI Scene of Crime Working Group (SoC WG) is currently working towards developing an agreed European Scene of Crime Examiner curriculum.

4.1.4 Competencies

Performance Based Standards for Forensic Science Practitioners have been developed by the ENFSI QCC Competence Assurance Project (CAP) Group for use by all ENFSI forensic science practitioners (reference to QCC-CAP-003).

The standards are presented in a generic format. They cover the 'forensic' process from the actions of the first officer attending the scene, through scene examination, examination in the laboratory, interpretation and reporting to presenting evidence in court. They are not prescriptive, recognizing that there may be more than one acceptable way of carrying out a task.

The standards are written in terms of the desired outcome of carrying out a task. They describe **WHAT** a competent practitioner should be able to achieve but not **HOW** that outcome is achieved. In addition, they indicate the knowledge and understanding that a forensic practitioner needs to achieve competent performance.

The standards relevant to crime scene examination are contained within the following activities:

- Activity A: Undertake initial actions at the scene of the incident
- Activity B: Develop a scene investigation strategy
- Activity C: Undertake the scene investigation
- Activity D: Interpret scene findings and order further examination
- Activity I: Documentation of findings

The following experience and areas of competence would be expected as the minimum standard for the key roles defined above:

First officer attending – knowledge of procedures (including health and safety requirements) applicable to undertaking initial actions at the scene of an incident. This includes ensuring control is taken of the scene so that it is protected for those individuals who carry out detailed investigation of the scene.

- Activity A: Undertake initial actions at the scene of the incident
 - Standard A1: Undertake initial preservation and control actions at the scene

Scene of Crime Examiner – knowledge of the theories, techniques and procedures (including health and safety requirements) applicable to the following:

- Activity A: Undertake initial actions at the scene of the incident
 - Standard A1: Undertake initial preservation and control actions at the scene
- Activity B: Develop a scene investigation strategy
 - Standard B1: Determine the requirements of the investigation
 - Standard B2: Make assessment of the scene and determine requirements

NB. The development of a scene investigation strategy for complex incidents will become the responsibility of a multi-disciplinary team of police investigators and forensic practitioners, including experts/specialists. The Scene of Crime Examiner should only undertake this activity within the parameters of their knowledge, training, experience and local requirements.

- Activity C: Undertake the scene investigation
 - Standard C1: Establish and preserve control of the scene
 - Standard C2: Prepare to examine the scene
 - Standard C3: Examine the scene
 - Standard C4: Collect potential evidence material
 - Standard C5: Pack items and samples
- Activity D: Interpret scene findings and order further examination
 - Standard D1: Analyse the likely sequence of events
 - Standard D2: Decide on which items and samples are to be examined further
 - Standard D3: Transfer the items to the designated locations
 - Standard D4: Store items and samples
- Activity I: Documentation of findings
 - Standard I1: Produce report
 - Standard I2: Participate in consultation before trial
 - Standard I3: Present oral evidence to courts and inquiries

Crime Scene Manager (or equivalent) – knowledge/awareness of the theories, techniques and procedures (including health and safety requirements) applicable to Activities A – D & I as above. They will also demonstrate competence in the management and supervision of staff.

4.1.5 Training and Assessment of Competence

Training programs and processes for assessing that trainees have achieved the required level of competence should be in place (refer to QCC-CAP-006).

A trainee should be recognized as competent only when they have been assessed as meeting the defined standards of performance and only then be permitted to undertake scene examination under the minimum of supervision, in the relevant area.

4.1.6 Maintenance and Reassessment of Competence

4.1.6.1 Maintenance of Competence

Scene of Crime Examiners must maintain on-going competence and demonstrate evidence of this. It is generally agreed that practitioners should be carrying out scene examinations on a regular basis. All training and the outcome of the assessments should be documented on the individual's training records.

There should be a system of ongoing assessment, and in addition, a complete re-assessment should be performed at regular intervals in accordance with the organization's quality management systems procedures.

Guidance should be provided on the assessment and the sources of evidence required for the ongoing assessment of competence(s) in any particular work area for each of the role types involved.

Evidence to maintain competence should reflect recent work and actual knowledge/experience.

Examples of these sources of evidence are:

- successful involvement in a specified number of examinations of that type in the previous period of time
- documentary evidence of examinations reproduced by other 'competent' members of staff
- peer review (including re-examination of exhibits)
- performance in competence tests
- assessment through internal and external audits
- feedback including customer and defence examinations
- evidence of registration by an external accreditation body on competence assessment
- review of a portfolio of recent experience (e.g. court performance, publications, training, projects, workshops, seminars, conferences.)
- validation/verification projects
- participation in proficiency tests/collaborative exercises

4.1.6.2 Reassessment of Competence due to change of Circumstances

If an individual cannot provide documents to show that he/she has actively carried out work in the relevant area within a period of time, the competence of this individual should be deemed to have lapsed. This should also be the case if the assessor is not satisfied with the evidence provided.

In such instances a development plan should be put in place to facilitate any required refresher/new learning to enable the individual to re-attain a competent standard.

Before individuals can carry out casework they must demonstrate that they have regained a competent standard for the competence required. For this re-assessment a procedure should have been developed that may include, e.g.

- practical tests
- written and oral examinations
- role-play exercises, e.g. simulated court situations
- scene examinations conducted under close supervision
- a portfolio of previous work

4.1.7 Case Review

It is important that protocols for case review are established. These may include:

- statement/report review by line manager or competent individual to ensure compliance with organizational requirements and legal frameworks
- review (walkthrough) of a major crime scene by a competent individual

Case reviews must be appropriately documented and signed by both the reviewer/peer and Scene of Crime Examiner.

4.1.8 Management Review

A fundamental aim of management review is that the customer's requirements have been adequately addressed and that a value for money service has been provided.

Management review may include:

- key Performance Indicators
- customer satisfaction
- data on detections

4.1.9 Audit

Audits covering all aspects of crime scene examination (operational, research and development, training etc.) should be conducted on a regular and planned basis by an appropriate individual in conjunction with the Quality Assurance (QA) Manager.

Where scene examinations are reviewed in audits, they should normally be chosen randomly.

Records of each audit must be kept. These must include the date of the audit, the name of the auditor, the findings and any corrective actions necessary.

All corrective actions must be designated to a nominated, appropriate individual for completion by an agreed specified date. The QA Manager should ensure that the action is completed as agreed.

4.2 Equipment

The equipment (including consumables) available for Crime Scene Examination should preferably include:

- Personal Protective Equipment (gloves, overalls, mask, booties, etc.)
- Photographic camera, filters and tripod
- Video Camera
- Flashlights
- Metrical and ABFO scales, numbers, arrows
- Different types/sizes of sterile packaging
- Different types/sizes of sterile containers
- Evidence seals/tape
- Measuring devices
- Tweezers
- Forensic light source and viewing filters
- Fingerprint powders
- Fingerprint brushes
- Swabs for body fluid / DNA recovery
- Presumptive tests (blood, semen, saliva, etc.)
- Footwear casting materials
- Electrostatic Dust Lifter
- Lifters/ casting materials
- Tool Kit
- Chemical enhancement supplies
- Disinfectant
- Marking evidence flags,
- Cords/strings
- Forceps
- Tape
- Etc.

Quality assurance procedures for equipment are described in 7.4 and 7.5. Consumables used in the recovery of DNA evidence should be DNA grade. Quality assurance procedures for materials are described in 7.6.

4.3 Reference materials

When the SCE is competent to carry out presumptive testing, reference material (e.g. blood, semen) should be used before testing to confirm the validity of the results.

4.4 Facilities and environmental conditions

When necessary, the scene of crime should be protected from environmental effects (rain, heat, sunlight, snow, etc.) by using appropriate equipment such as tents and cover sheets. All items recovered from the crime scene should be stored in a secure place to prevent the contamination or degradation of the evidence.

Accommodation should guarantee:

- separation between exhibits where required to prevent cross contamination
- details of any access control measures that are necessary, e.g. for security and anti-contamination control
- the measures required to ensure good housekeeping and any special requirements when appropriate

Basic accommodation that should be available at the scene is described in 4.4.1 - 4.4.5.

4.4.1 Material storage area

Protected space for safe storage of all the equipment, material and the chemicals. This area could be physically adjacent to or separated from the scene of crime.

4.4.2 Dressing area

Area used to apply appropriate personal protective equipment (PPE) before accessing the scene of crime. Access to personnel who are not involved at the scene of crime should not be allowed.

4.4.3 Evidence area

Protected space for safe storage of all the items collected from the crime scene. The items should be properly packaged and temporarily stored in this dedicated area until the end of the crime scene examination. Attention must be paid to contamination with respect to other forensic traces.

4.4.4 Dedicated areas

Vehicle examination areas should be considered and where possible those should be close to the laboratory or located in a protected space, like a garage.

4.4.5 Waste area

Protected space for safe storage of waste.

4.5 Materials and Reagents

There is a significant diversity of materials and reagents for use in conducting a crime scene examination. The SCE only should use validated materials and reagents.

The materials and reagents used in a Crime Scene Examination may include:

- Fingerprint powders
- Small Particle Reagent
- Cyanoacrylate
- Ninhydrin
- Amido Black
- Leuco Cristal Violet

- Hungarian Red
- Coomassie Blue
- Presumptive tests for Blood, Saliva; Urine and Semen
- Presumptive tests for copper and iron
- Luminol
- BlueStar

5. METHODS

5.1 Introduction

The methodology used in a particular crime scene examination depends on the customer requirements (e.g. only the search and collection of a type of trace or a full crime scene examination), the size and characteristics of the crime scene (e.g. open space, in a house, in a vehicle, etc.) and also the environmental conditions. In addition, the resources available (human, equipment and materials) may define the method.

Crime scenes are normally classified in one of two categories:

- Volume Crime: minor crimes, e.g. fraud or burglary (the exact crime types will vary between jurisdictions). In general, there will be a focused search for specific evidence types (e.g. DNA, fingerprints, footwear marks).
- Major crime: serious incidents like homicide, attempted homicide, sexual offences and other serious offences. A complete extensive search for evidence is required, which will have a significant impact on the resources available.

5.2 Generalist methodology

Taking into consideration the remarks above, the following general methodology can be provided:

5.2.1 Arrival at the Crime Scene

Upon arrival at the crime scene the SCE (or the CSM) shall:

- gather all available information
- assess the position of cordon(s) and adjust these if required
- assess whether any forensic traces are in danger of being lost (e.g. due to bad weather), and collect these immediately (see 5.3.2.1)
- identify the possible route taken in / out by the perpetrator(s)
- develop a strategy (in conjunction with the relevant investigators and experts) for entering the scene for an initial assessment or 'walk-through'

5.2.2 Initial Assessment of the Crime Scene

The SCE (or CSM) should then enter the crime scene and make an initial assessment. An initial 'walk-through' of the scene will help to familiarise the SCE / CSE with the scene layout and identify any health and safety risks.

This initial assessment can also help to determine the following:

- identify the route that personnel should take in the scene to avoid contaminating / disturbing potential traces
- manner of death / identity of the deceased (if a body is present)
- the immediate investigative priorities
- what equipment may be needed
- what personnel / experts may be needed

The initial assessment should not disturb the body or other items at the scene. Items that need to be moved to obtain access (e.g. mail inside the door entrance) must be photographed in situ beforehand.

General photographs should then be taken of the scene.

Visible traces and areas believed to contain forensic traces should be marked / labelled or protected to prevent their contamination / destruction.

A forensic strategy should then be developed (in conjunction with the relevant investigators and experts) for how the search and collection of traces will be performed in a methodical manner.

The first sketch of the crime scene should also be made.

5.2.3 Examination of the Crime Scene

The scene can now be examined in accordance with the agreed forensic strategy.

If there is a corpse present it should ideally be examined first. This examination must be carried out by a Forensic Pathologist and the body should be transported to the Mortuary as soon as possible thereafter.

The personnel inside the scene during the crime scene examination should be in contact with the CSM / Investigator to pass and receive information as promptly as possible.

5.2.4 Search & Collection of Traces Inside the Scene

All traces should be identified with a marker / label where appropriate, and will then be photographed in both wide and close-up images. They must be described in the scene notes and identified in the crime scene sketch, and will then be collected. Search and collection of visible traces is performed first.

The next stage is to perform a search for invisible traces using the appropriate equipment (e.g. forensic light sources).

A final examination of the scene will then take place to locate traces that may be less obvious. This may involve a search inside items of furniture, or moving objects to search an area that was previously inaccessible.

5.2.5 Search & Collection of Traces Outside the Scene

A search for traces outside the crime scene should also be carried out. All traces should be identified with a marker / label where appropriate, and will then be photographed in both wide and close-up images. They must be described in the scene notes and identified in the crime scene sketch, and will then be collected.

5.2.6 Completing the Crime Scene Examination

After the crime scene examination has been completed the SCE (or CSM) will inform the investigative authority about the results of the crime scene examination, including the exhibits collected, to demonstrate that the agreed forensic strategy has been fulfilled.

5.2.7 Peer Review

If applicable, peer review is handled through the organizational SOPs.

6. VALIDATION

6.1 Validation

Validation is the confirmation by examination and the provision of effective evidence that the particular requirements for a specific intended use are fulfilled.

For established technical procedures documents of the validation should be retained and be available for inspection.

The SCE should use only validated techniques and procedures for the examination of crime scenes.

Validation requires as a minimum that:

- there is an agreed requirement for the technique or procedure
- the critical aspects of the technique or procedure have been identified and the limitations have been defined
- the methods, materials and equipment used are demonstrated to be fit for purpose, robust and reliable in meeting the requirement
- there are appropriate quality control and quality assurance procedures in place for monitoring performance
- the technique or procedure is fully documented
- the results obtained are reliable and reproducible
- the technique or procedure has been subjected to independent assessment, and where novel, preferably also peer review
- the individuals using the technique or procedure have been trained and have demonstrated that they are competent

Where the techniques or procedures adopted have been validated elsewhere, the organization is required to carry out a verification exercise to demonstrate that it can achieve the same quality of results in its own environment.

6.2 Estimation of uncertainty of measurement

The estimation of uncertainty can be determined at the end of the validation process.

7. **QUALITY ASSURANCE**

7.1 Introduction

Given the precise and critical nature of forensic examinations, it is highly desirable that it can be demonstrated that there are effective quality control and quality assurance measures in place. ENFSI wish to promote consistent and reliable evidence throughout the whole forensic process, from scene of incident to court. It is the policy of ENFSI that all Member organizations should have achieved, or should be taking steps towards, ISO 17020 compliant accreditation for their crime scene examination activities. In determining this policy, ENFSI accept that progress will be slower in some countries than in others for a number of reasons, including differences in national accreditation systems and operation of legal systems. Where ISO 17020 compliant accreditation cannot be achieved, ENFSI encourage the use of other quality management standards with broadly equivalent objectives.

7.2 Purpose

The purpose of this section of the Manual is to provide advice to Member organizations that will assist them to put into place a quality system that will provide a systematic approach to crime scene examinations so as to establish and maintain working practices that will provide reliable and fit for purpose results. The approach should also ensure that the quality of the derived information is maximized and therefore provide robust evidence. Adherence to the guidelines should also provide a greater degree of consistency across organizations which will, in turn, facilitate the interchange of data and the construction of meaningful databases.

7.3 Proficiency Testing/Collaborative Exercises

ISO 17020 does not include any requirement for proficiency testing. However, proficiency tests (PT) and/or collaborative exercises (CE) should be used to test and assure the working quality and the competence of the practitioners within an organization. The document called "Guidance on the conduct of proficiency tests and collaborative exercises within ENFSI" (QCC-PT-001 issue number 001 27/06/2014) provides information for the ENFSI Expert Working Groups (EWGs) on how to organize PTs and CEs for their members. At least one PT/CE test per year, if available, should be done.

7.4 Documentation

The organization should have a documented Quality Management System for controlling all systems, processes and methods used in the examination of crime scenes.

The QMS should include requirements for the following minimum documentation relating to crime scene examination to be maintained:

- Casework administration procedures:
 - details of systems for the safe storage of casework material
 - records of all transfers of possession of casework material, for proof of the chain of evidence
 - records of all relevant communications
 - details and results of all examinations carried out
 - original crime scene examination notes and statements/reports
 - records of case file review
- Equipment:
 - inventories of equipment held and those responsible for them
 - Records of commissioning, suitability for purpose and validation records
 - maintenance schedules and records of breakdowns, work carried out etc.
 - calibration records
- Materials and chemicals:
 - Records of acceptance testing
- Documents and standard operating procedures:
 - for the examinations and processes used
 - for calibration and quality control
 - for documentation and presenting results
- Training:
 - competence standards, training programs and assessment protocols
 - training packages
 - training/competence records for individuals

7.5 Equipment

The equipment inventory should record the manufacturer, model, serial number, date of acquisition, date placed in service and the current location for each piece of equipment.

The manufacturer's operating manual for each item of equipment should be readily available at the work place together with the repair and maintenance documents.

The performance of each item of equipment should be checked in accordance with the requirements of the examination document and records kept.

Only appropriate and properly operating equipment should be employed in crime scene examination, and then only within the limits of the performance checks carried out.

7.6 Material and Reagents

All materials and reagents used for crime scene examination should be of a suitable quality and have been demonstrated as fit for purpose.

Reagents should be shown to be functioning correctly with a reference sample prior to their use in casework. The results of these tests should be recorded...

All reagents, whether produced internally or obtained from external suppliers, should be labelled with their identity, concentration (if appropriate), date of preparation or receipt,

date of opening, date of expiry and any special storage or safety requirements necessary to comply with organizational policy or other regulations.

7.7 Storage facilities

Any items recovered from the crime scene for storage or further examination should be handled in an appropriate way which prevents the contamination or degradation of the evidence. In some instances, such as DNA recovery, an appropriate environment will be an ISO 17025 accredited laboratory. Storage areas for exhibits should be of an appropriate standard.

Accommodation should ensure:

- segregation between incompatible activities in order to prevent cross contamination
- details of any access control measures that are necessary, both from the point of view of anti-contamination control and security
- recommendations on the measures required to ensure good housekeeping, detailing any special requirements as appropriate

8. **HANDLING ITEMS**

8.1 Recovery of Forensic Evidence from the Crime Scene

Before exhibits are recovered, the forensic unit should consider the conditions encountered on-site to ensure that the exhibits can be documented and recovered with minimal disturbance. Consideration should be given as to the sequence in which samples are taken.

Seized material should be handled in such a way that contamination or destruction/degradation is avoided.

Control/reference materials must be kept strictly separate from any surfaces, items, clothing or people with whom it might subsequently be significant to establish contact.

Recovery of exhibits and sampling will be case specific and reference should be made to organizational SOPs to ensure that the appropriate samples are taken and are truly representative of the material available.

Consideration should be given to the following general points in the advice:

- the order/sequence of sampling
- identifying the right items to sample and how to ensure they are representative
- the minimum amount of material required to obtain meaningful results for interpretative purposes
- the amount and number of separate control samples required
- guidance on methods for sampling that aid/assure the prevention of cross contamination
- the need to preserve material for subsequent analysis by others (prosecution or defence)

8.2 Preservation and Packaging

The material for recovery needs to be protected from interference or alteration and from the possibility of subsequent degradation and contamination. Health and safety issues must also be taken into consideration.

Suitable containment is normally achieved through the selection and correct use of approved packaging material. Packaging materials must be appropriate for the given applications and compliant with organizational SOPs.

Precautions must be taken to ensure the integrity of evidence, reduce the risk of contamination and minimize degradation. These will include:

- sealing containers to prevent accidental loss or contamination
- providing adequate protection to containers during transportation and storage to prevent loss through damage / contamination
- checking items at all stages of transfer throughout the chain of custody to ensure that their integrity has not been compromised
- all items should be packed and sealed as soon as they are taken, using bags or containers of an appropriate size

Packages should be sealed in such a way that all gaps are covered and secure, e.g. folded bags should be sealed with adhesive tape along all open edges and not by stapling.

Once sealed, packages should not be re-opened outside of the laboratory environment. If under exceptional circumstances they are re-opened then comprehensive documentation detailing the conditions under which they are opened must be made.

8.3 Labelling and Documentation

To guarantee the integrity of the item, it is essential to be able to prove who has handled it and what they have done with it. The organization must have SOPs to describe how items and evidential material recovered from an incident should be logged and labelled at the time of seizure, where appropriate.

The crime scene examination must be comprehensively documented. Documentation may include electronic notes, hand written notes, voice recorded notes, sketches and diagrams, photographs, video recordings, etc.

Contemporaneous records should be made at the time of seizure, describing the exact locations from where the items were recovered at the scene. It is also helpful to mark this location on a sketch/plan of the scene or person.

Labels must be attached to each package at the time of packaging. Whilst the legal status and use of labels can vary, the minimum details that must be recorded and be directly and unequivocally attributed to each package are:

- a unique identifying number/barcode
- the name of the person and organization (e.g. police force, pathology department, etc.) responsible for collecting and packaging the material

- a concise and accurate description of the material
- the location or person from where or from whom the material has been seized
- the date and time the material was seized

8.4 Transport

SOPs should include reference to transportation arrangements including reference to any constraints governing the movement of materials of interest. These should include:

- local postal restrictions
- regulations limiting the movement of 'dangerous' materials (e.g. flammable materials, compressed gases, pathogenic organisms, etc.)
- the need for import/export licenses when moving materials (e.g. drugs) across national frontiers

The method of transport should be chosen to ensure that the integrity and state of preservation of the materials is maintained. The mechanisms for maintaining full records of all involved in the transportation should also be covered, so that the chain of custody is complete.

9. ASSESSMENTS

9.1 Establishing the customer requirements

The decision for a SCE to attend a scene will be made in reference to the organizations scene attendance criteria and related policies. This may also include response to current local crime trends.

It is essential before starting any examination at a scene to understand, or agree with the customer, the purpose of the examination requested. This should be expressed in terms of what the customer is seeking to establish rather than a menu of tasks to be carried out.

Documents should be in place to determine:

- what information is being requested in respect of scene examinations
- the customer's priorities for the investigation
- what other information is or may be available
- what constraints may exist (e.g. the need to preserve material for other purposes, cost)
- the intended end use of the information, i.e. intelligence or evidence

This may be defined in the forensic strategy for the investigation. All scene examinations should be carried out within the parameters of the forensic strategy. These considerations should be included in the final report.

9.2 Feedback to/from customer

It is also important to have in place communication protocols for feedback to and from the customer as their requirements may change before, during or as a result of scene examination. Issues that may affect the requirement or priorities include:

- changes in the direction of the investigation
- changes in the status of a scene, e.g. weather conditions

- changes in the status of suspects and victims
- changes in the urgency for information
- new and significant information coming to light
- the impact of results already reported
- contamination issues

9.3 Case assessments

9.3.1 Introduction

Whether examining the scene of an incident, recovering potential evidential material from a suspect or victim, or dealing with material to be examined in the laboratory, the next step should be to assess what is technically possible and what is necessary in order to meet the customer's requirement.

The general approach to case assessment will be the same regardless of the evidence types involved and an individual's involvement in an investigation. This manual provides advice on the general aspects of case assessment but the detail, which will apply to specific crime scene examinations, will be defined within each organization's SOPs.

Any work carried out will be to meet a particular customer requirement. At each stage, however, it is important that the course of action selected is based on an assessment of information available at the time and this may change.

9.3.2 Cognitive bias

This BPM does not cover all different categories of cognitive bias but can point out the most critical facts to be aware of when conducting a crime scene examination.

It is essential to guard against bias during the crime scene examination where many processes require subjective evaluations and interpretations.

- Risk of bias is lower when results are clear and unambiguous. Risks are greater when results are complex, of poor quality and there is an increased reliance on subjective opinion.
- Risks are lower when there is a methodical approach with defined standards built on principles that have been tested and validated, and greater when the approach is un-researched, ad hoc and personal to the SCE.
- Risks are lower when SCEs are well trained, experienced and continuously meet acceptable standards of competence - they are greater when SCEs are inexperienced, unmonitored and left to adopt their own approach.
- Risks are lower when interpretation is checked by a competent peer who conducts a separate interpretation that is fully independent and without influence from another peer. Risks are lower when checking is more rigorous and/or conducted collaboratively.

It is important that the SCE avoids being misled during the entire process of the crime scene investigation, particularly during the information gathering stage and initial assessment of the crime scene. The SCE should always bear in mind that information provided by first responder(s), investigators, victim(s), suspect(s) and witnesses may have been affected by their interpretation of the event, or could even be false.

This does not mean that the SCE shall shield themselves from interacting with investigators, but they must be aware of and understand that bias can occur.

9.3.3 Information requirements

The type and extent of the information that will be required to make a proper assessment of the crime scene will vary from case to case. However, as a minimum, the following information should be sourced:

- what is suspected or known to have occurred before, during and after the incident
- the persons involved
- the sequence and timings of events
- the nature and characteristics of the items that may have come into contact
- the persons responsible for and the sequence and timing of events in the recovery of items submitted for examination
- what kind of protective measures have been taken by first responders on the scene before the SCE arrives

This information may be obtained from several sources including the initial incident recording, the first responder, the investigating officer, the victim(s) and witnesses.

During the scene assessment consideration should also be given to the potential occurrence of contamination, that is, the undesirable introduction of substances or trace materials to exhibits that will be subject to forensic examination.

In order to assess contamination risks, it is necessary to establish whether:

- there was any opportunity for transfer between the suspect(s) and victim(s) prior to the incident
- there has been any opportunity for transfer between the suspect(s) and victim(s) and the scene, or items seized from the suspect(s) and victim(s) and the scene, since the incident
- were items recovered relating to the suspect(s), victim(s) or scenes, properly handled/packed in separate areas, by different people at different times?
- was there any opportunity for secondary transfer between suspect(s), victim(s) and/or scenes?

Throughout the scene examination reassessment may be necessary as further information becomes available or circumstances change.

9.4 Assessments at the scene

There is normally only one opportunity to carry out an examination and recover relevant material from the scene of an offence or incident. It is vitally important, therefore, that all the

possible evidential avenues at the scene are considered before any practical work commences.

All relevant available information about the incident should be obtained before starting any examinations and an agreement should be reached with the customer as to what is required to be ascertained. All possible hypotheses, from all sources, should be considered as part of this process.

Based on the customer requirement and the potential scientific and technical processes appropriate for the crime scene examination the Scene of Crime Examiner should develop a scene examination strategy. The aim of the scene examination strategy should be to maximize recovery of forensic evidence and information from the scene within the parameters of the forensic strategy, existing policies and with due regard to cost effectiveness.

In developing the scene examination plan, consideration should be given for other experts/specialists to attend the scene in support of the investigation or in compliance with organizational policy.

It is best if the scene can be preserved until all the experts are available. Where this is not possible or practicable, each scene examiner should ensure that adequate records are made of the scene prior to any disturbance of the scene on their part and during their subsequent examinations.

10. SCENE EXAMINATION

10.1 Undertaking the scene examination

This section of the manual describes the recommended approaches for the preservation, recording and recovery of items and other material during crime scene examination. It must be remembered, however, that in most instances the scene may contain multiple evidential opportunities. It is essential, therefore, for full consultation between all interested parties to be undertaken before any work is commenced if the maximum information is to be extracted from the scene.

10.2 Scene preservation

All scenes, indoor, outdoor or vehicles, should be protected at the earliest opportunity to reduce the risk of the loss of any material or post-incident movement or contamination.

Particular emphasis is given in this manual to the procedures for the preservation of evidence and the avoidance of contamination. Advice is given to assist individuals to manage the specific risks associated with crime scene examinations.

The guidance is directed towards ensuring that nothing is done by anybody attending the scene of an incident, or by others responsible for taking samples from the victim(s) or suspect(s), that may lead to the loss, degradation or contamination of forensic evidence.

Preservation of the crime scene is paramount and must be considered from the moment an incident is reported. The first contact officer and first responder have a responsibility to ensure the scene is preserved to the greatest possible extent to give the Scene of Crime Examiner(s) the maximum opportunity for forensic recovery.

All personnel attending the crime scene have a responsibility to ensure their actions do not compromise the recovery of forensic evidence.

Scene preservation measures should include, as a minimum:

- removal of non-essential personnel from the scene and subsequent controlled entry by means of a scene log
- cordons around the crime scene and other areas with potential forensic yield
- establishing and using a Common Approach Path
- wearing appropriate barrier (protective) clothing

Anti-contamination precautions should be based on the assumption that any trace evidence types may be subject to contamination and therefore should encompass all potential risks. Measures are required to reduce the possibility of cross contamination prior to the safe packaging of the materials at the crime scene.

The minimum preventative measures include:

- ensuring equipment is clean before deployment
- use of a validated cleaning method for equipment and surfaces
- correct storage, transport and handling of consumables
- the use of the correct protective clothing and disposable equipment
- the effective management of the collection of different items in the same case for which connections are being sought
- the use of different personnel for collecting material from the victim(s) and each suspect
- when suspects are transported or interviewed ensure different vehicles, rooms and officers are used
- having checks in place to ensure that recovered items, or materials obtained from them, cannot be mixed up with or transposed with other items or materials
- the preventative measures required to avoid cross-contamination due to local environmental conditions
- the principle that after material has been recovered, packaged and sealed it must only be re-opened under controlled conditions (refer to section 8.2 Preservation and Packaging)

No one should attend or examine multiple scenes unless this is absolutely unavoidable and must then have thoroughly decontaminated themselves (e.g. by replacing PPE). To minimize the possibilities of contamination it is preferable to examine all items relating to one individual or scene before commencing with items relating to other people or scenes.

10.3 Documentation of the scene

The crime scene should be accurately recorded prior to evidence recovery. The exception to this would be if there was a risk of losing evidence, e.g. through inclement weather, whilst this process was being carried out. However, in this instance and if practicable, markers should be used to indicate where evidence has been recovered from. The extent and level of details of this recording may be limited in first instance, however it will ensure that a record of the scene prior to any further disturbance is captured.

The aim of recording the scene is to be able to clearly show the scene and any items within, for the following purposes:

- briefing authorized parties
- evidential purposes
- recording of any significant features of the scene
- prior to examination and subsequent recovery of items
- recording of any significant items.
- to allow reconstruction of the crime scene

The methods used to record the crime scene can include:

- writing (including typing notes on an electronic system)
- drawing
- voice recording
- video
- 3D laser scanning
- plan drawing
- 360° imaging
- still photography
- unmanned Aerial System (drone) photography

The documentation should be carried out in a methodical manner to ensure all areas are captured thoroughly and should be continued throughout the examination as necessary.

The documents required to support conclusions shall be such that in the absence of the original member of staff, another competent member of staff could evaluate what had been performed, interpret the data and if necessary repeat the activity.

10.3.1 Documentation of findings

The SCE's findings are normally provided in the first instance in written form, as a report or statement of witness, for use by the investigator and/or the prosecutor/court. Oral evidence, in addition, may be required subsequently.

10.4 Searching the scene

Abnormalities or irregularities at the scene shall be recorded and be clarified before the on-site examination begins (e.g. signs of a disturbance or clean-up or point of entry damage being inconsistent with the victim's statement).

Scenes should be searched systematically and thoroughly for the relevant materials, targeting and prioritizing areas, which in the context of what has been alleged, are most likely to yield significant material of evidential value.

Specialist light sources may be used to locate potential evidence that cannot be visualized using white light sources. SCEs using this type of equipment must be fully trained in its use and ensure appropriate health and safety measures are taken to protect themselves and others present at the crime scene.

Items/areas of interest should be noted to ensure all potential evidence is subsequently recorded and recovered. The use of numbered markers should also be considered to assist with the recording of the scene. The area and parameters of the search should be agreed and documented.

Additional searches may be carried out by specialists, for example dogs or specialist search teams. Such searches should be co-ordinated via the Crime Scene Manager (or equivalent) to prevent contamination and loss of evidence.

10.5 Reconstruction of the scene

Reconstruction of events can be particularly relevant for the investigation and can be undertaken in different methods. The assumptions and limitations of reconstructions should be noted. The following methods could be used in reconstruction:

- *Physical reconstruction* is a process where the interpretation (as far as possible) of the position, format, set and framework of all the items at the crime scene, using physical, chemical, biological and mathematical principles allow to determinate the sequence of events, the position of the victim and the aggressor, etc. This assist the interpretation of the events by the SCE.
- *Ad-hoc* testing (e.g. test to explain a determined blood pattern) can be carried out either at the scene or at a later stage in the investigation and must be fully recorded including any assumptions made and the value and limitations of the test.
- Use of *computer modelling* (e.g. explanation of a bullet trajectory) must be approached with caution and all assumptions, limitations and uncertainties associated with the models clearly recorded.

10.6 Evaluation / interpretation

Reaching this point in the crime scene investigation, it is important to determine if the purpose of the examination has been achieved. It is also important to conclude if further examinations of items or the scene are necessary. The forensic unit shall also decide if samples need to be sent away for further examination to a forensic laboratory or to subcontractors or other organizations. This decision may depend on organizational SOPs.

Following the examination of a crime scene where there is a large number of forensic exhibits, a conference between the senior investigator, scientific support coordinator, CSM, exhibits officer and forensic scientist should take place to determine if any further examinations are required. A formal record of the decisions will be made.

Items recovered from the crime scene that require further detailed forensic examination should be identified and an evidence recovery plan should be developed for each item.

Where there is more than one item and/or evidence type involved in the examination of a case, priorities and sequences for the examinations will need to be considered. Before commencing any examinations within a case, the following matters should be considered:

- the urgency and priority of the customer's need for specific aspects of the information
- the other types of forensic examination which must be carried out and whether examination for a particular evidence type or by a given examination technique will compromise subsequent examinations
- which evidential types or items have the potential to provide the most information in response to the various propositions and alternatives
- the perishable nature of any material that may be present
- health and safety and/or security considerations

Considerations for further examinations should also include:

- the availability of items for examination

- the amount of material, within the items, available for examination
- the number and nature of the different forensic examination techniques that will be usable, dependent on the above
- the potential value of the information available from each technique and which will provide the most information in response to the various hypotheses

11. PRESENTATION OF FINDINGS

11.1 Written presentation of findings

The purpose of the report/statement is to provide the reader with all the relevant information in a clear, concise, structured and unambiguous manner, to make the task of assimilating the information as easy as possible.

Whilst formal advice is available on the format of documents and statements, the scope for consistency may be limited by the requirements of the criminal justice system for the country of jurisdiction. In general, however, the following may be included:

- the unique case identifier
- the name and address of the organization where the witness is employed
- the purpose of the examination, as agreed with the customer
- the identity of the witness, and evidence of his/her status and qualifications where this is a requirement
- the signature of the author
- the date the report/statement of witness was signed
- the date of attendance at the crime scene that has been examined
- a list of all recovered material
- details of all relevant information
- details of the examinations carried out
- the results of the examination
- comment covering any item or part of the crime scene that was not examined, and the reasons for this
- details of any material forwarded for further examination, including reference to the chain of evidence

Subjective or speculative information/observations should be avoided wherever possible. The use of a tabular format and images can be a helpful aid in presenting the information clearly.

11.2 Oral presentation of findings

Persons expected to present oral testimony should have received instruction and/or mentoring in the procedural requirements of the particular criminal justice system in which the evidence is to be presented.

Only information that is supportable by the examinations carried out should be presented, unless specifically directed by the court.

The SCE should resist responding to questions that take them outside their field of expertise unless specifically directed by the court, and, even then, a declaration as to the limitations of their expertise should be made.

12. HEALTH AND SAFETY

Health and safety considerations are extremely important at all stages of the forensic process. The materials dealt with can be inherently hazardous and/or often found in hazardous circumstances but the exact facts are not always known or communicated to all involved.

Consideration also needs to be given to the fact that materials may have to be handed back to others with no scientific training or particular facilities for handling the materials.

Ultimately, they may go back to members of the public or could be encountered by them in situations such as at court. There is an obligation on those involved in the forensic process to ensure the safety of anyone handling materials that are inherently hazardous or rendered hazardous by the scientific examinations performed.

In setting up any process, it is suggested that as a minimum the following should be carried out:

- an assessment of the hazards at the scene of incidents where crime scene examinations are to be carried out and how to minimize these
- an assessment of the risks involved in all the scientific processes carried out at the crime scene
- the documenting of any safe systems of work (or equivalent) required, the details of which should be provided in the Standard Operating Procedures (SOPs)
- the appropriate protective clothing and equipment for all processes involved in the examination of crime scenes is identified in the SOPs
- the mechanism for documenting and communicating the risks associated with any stage of the process and especially where materials may be brought into the public domain (e.g. courts)

13. REFERENCES

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- [5] ISO/IEC 17020: 2012, *Conformity assessment - Requirements for the operation of various types of bodies performing inspection*
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- [10] ISO 21043-1: 2018, Forensic Sciences. Part 1: Terms and definitions
- [11] ISO 21043-2: 2018, *Forensic Sciences - Part 2: Recognition, recording, collecting, transport and storage of items*
- [12] *European Crime Scene Management Good Practice Manual*, United Kingdom, 2000, produced as part of the European Crime Scene Management Project
- [13] Forensic Science Regulator, *Guidance, Cognitive Bias Effects, Relevant to Forensic Science Examinations*, Issue 1, 2015

14. AMENDMENTS AGAINST PREVIOUS VERSIONS

- Moved text to appropriate section

APPENDIX: ROLES AND RESPONSIBILITIES

In a coordinated approach of the crime scene, several specialists are attending the crime scene, each with their specific role and responsibility. The exact titles, roles and responsibilities may vary per country.

First officer attending

The action of the first officer attending the crime scene is crucial to its subsequent successful examination and the recovery of all available evidence. It is therefore essential that all officers are aware of the importance of scene preservation and the actions they need to take to ensure that any subsequent scene examinations are not compromised. The first officer attending is responsible for all initial measures at the scene of a crime.

A summary of their responsibilities is provided in the table below.

Task	Activities
<u>Assess the scene</u>	<ul style="list-style-type: none"> • Primary function: Preservation of life • Considering and recording contamination risks • Taking notes of the names of all persons at the scene
<u>Protect the scene</u>	<ul style="list-style-type: none"> • Identifying the extent of the scene and setting cordons • Preventing access by any other persons • Protecting the scene if there is a likelihood of a loss or damage to evidence by adverse weather, etc.
<u>Communicate the situation at the scene</u>	<ul style="list-style-type: none"> • Inform control of the full situation • Request specialist support and a supervisor
<u>Commence log of scene</u>	<ul style="list-style-type: none"> • Recording of all persons, police and other agencies from outside the cordon, together with vehicles attending the scene. Date and time of arrival and departure, and reason for visit are recorded as well. • Recording of any initial actions taken to preserve the integrity of evidence.

First police supervisor

The first police supervisor is usually the highest-ranking officer present at the scene. The responsibilities of this person are summarized in the table below.

Task	Activities
<u>Ensure that the above actions have been completed</u>	<ul style="list-style-type: none"> The actions mentioned in the previous paragraph, allocated to the first attending officer, have to be completed
<u>Review and/or implement appropriate cordons</u>	<ul style="list-style-type: none"> It is better that cordons are set too large than too small: they can always be reduced later.
<u>Protect the scene</u>	<ul style="list-style-type: none"> Where there is a likelihood that physical evidence may be damaged or destroyed by weather conditions or other means, undertake appropriate emergency preservation.
<u>Establish a rendezvous point</u>	<ul style="list-style-type: none"> A rendezvous point should be established at the outer cordon The rendezvous point should be communicated to all staff so that they can report to the officer responsible for the Crime Scene Entry Log on arrival at the scene.

Crime Scene Examiner

Following the actions taken by the first officer and supervisor at the scene, a Scene of Crime Examiner (SCE) will attend and make an early assessment, taking any actions necessary to further preserve the scene prior to starting the examination. In the case of serious and major crime the SCE may wait for the Crime Scene Manager (or equivalent) before commencing the examination. In these cases, the Senior Investigator, in consultation with the Crime Scene Manager, will agree a scene examination plan based upon this early assessment and the overarching forensic strategy. Most often a multi-disciplinary team including SCE's and forensic specialists / experts participate in this strategy setting along with the CSM and SIO.

Apart from the assessment, it is the responsibility of the Scene Examiner to locate and gather photographic, video, forensic and fingerprint evidence, using a variety of techniques. He/she should also document all actions carried out with regard to the preservation and recovery of evidence.

The responsibilities of this person are summarized in the table below:

Task	Activities
<u>Examination at the scene</u>	<ul style="list-style-type: none"> On arrival, review and revise the scene protection afforded by a properly managed cordon Initiate a Scene Examination Log of all evidence gathering activities undertaken.

	<ul style="list-style-type: none"> • Establish what police action has already taken place at the scene. • Identify, search and secure a Common Approach Path to the scene or deceased and ensure that this is identified by the use of crime scene tape. • Undertake an initial assessment of the scene and communicate the findings to the Crime Scene Manager • Documentation of the initial scene by use of video, photographic equipment and/or sketch plans. • Take any necessary actions to secure and preserve physical evidence • Prior to removal of the deceased record its position by suitable means • Search for, identify, preserve and recover all types of contact trace evidence • Provide specialist support to Forensic Scientists and other Scientific Support personnel at the scene • Ensure the integrity and security of evidence recovered from the scene • Provide appropriate documentation of all actions taken to the Crime Scene Manager • <u>An indexed album of all photographs taken should be available for the Crime Scene Manager and passed to the Investigative Authority, if needed</u> • Provide consultancy regarding the submission of forensic evidence for examination
<p><u>Post-mortem examination</u></p>	<ul style="list-style-type: none"> • Photograph the deceased to assist with identification. • Photograph the deceased to show injuries, using scales and other indicators as necessary • Receive samples taken from the deceased by the forensic pathologist and assist in packaging, exhibiting and storing these • Package and exhibit deceased's clothing in liaison with the Exhibits Officer

	<ul style="list-style-type: none"> • Take fingerprints and palm prints of the deceased at the conclusion of the post-mortem and footprints where it may assist the investigation. Consider the use of other forensic specialists in the identification process (e.g. Forensic Odontologists) • Attend any subsequent Pathologist's examination of the body, whether it be for the Defence or Prosecution, taking any further forensic samples and photographs as required • Ensure that any weapon taken to a post-mortem is packaged in a way that , the Pathologist can view it without the exhibit being opened polythene
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Forensic pathologist

The tasks carried out by the forensic pathologist are summarized in the table below.

Task	Activities
<u>Attend the scene</u>	<ul style="list-style-type: none"> • Give an estimate of the time of death • Assist in the interpretation of the scene with reference to general disposition of the body and its surroundings • Identify the remains as human, its gender and approximate age. On occasion, the movement of a body from the scene may hamper the findings at a subsequent post-mortem examination. The examination of the body in situ, by a Pathologist, may prove invaluable.
<u>Carry out the post mortem examination</u>	<ul style="list-style-type: none"> • Determine the cause of death • Comment on how death occurred and give a scientific/medical evaluation as to the time of death • Produce a body plan of the deceased, recording every injury • Examine all injuries to the deceased, giving indications as to the sequence of the attack, nature of weapons used and degree of force used • Provide comparison between any recovered weapons and injuries sustained • Take anatomic samples for further analysis

Crime Scene Manager

The central role of the Crime Scene Manager is to supervise the scene examination in a way that facilitates the input of specialists so that the maximum evidence and information is extracted from the scene. The Crime Scene Manager will be directly responsible to the Senior Investigator and the Scientific Support Co-ordinator for the management of the crime scene. Scene examination should be driven by any available intelligence and directed pro-actively to solve investigative problems. This will be achieved by attention to the following points:

- Assess, prioritise and advise the Scientific Support Co-ordinator (if appointed) on the requirement for Scientific Support services
- Provide for a structured approach, co-ordinate resources and disseminate information concerning scene examinations, briefing Scene Examiners accordingly
- Ensure all persons entering the scene wear protective clothing, overshoes, face masks and gloves and that they are exhibited
- Provide advice and quality assurance on all scientific matters, including the storage and packaging of exhibits and release of the scene
- Recording of all actions and policy decisions within an appropriately designed Crime Scene Manager's Log Book
- To receive actions from the Scientific Support Co-ordinator (if appointed) in relation to scene examinations, forensic and other scientific support matters
- Ensure compliance with Health and Safety legislation and regulations
- Brief the Scientific Support Co-ordinator and Senior Investigator on completion of the scene examination prior to its release
- Ensure the welfare needs of those attending the scene are met
- If not appointed, carry out the duties of the Scientific Support Co-ordinator
- Take responsibility for receipt and co-ordination of all scene examination documents created during and subsequent to the scene examination
- Take responsibility for all photographic albums produced
- In complex cases such as those involving multiple scenes it may be necessary to appoint a number of Crime Scene Managers, one for each crime scene. In consequence, a contamination log should be kept in such cases in order that no problems arise in this area. In such cases it is recommended that a Crime Scene Manager be appointed for each scene to ensure that no contamination occurs
- In cases of multiple offenders, it is recommended that a different Scene Examiner is used for each individual

Scientific Support Coordinator

The role of the Scientific Support Coordinator (or Crime Scene Coordinator) within the major incident management team is to ensure:

- All aspects of the scene examination are conducted in a coordinated manner
- A full range of Scientific Support techniques are made available
- Effective and efficient communication channels between Scene of Crime Examiners and the investigation team are essential in every case
- The optimum use of forensic, photographic and fingerprint evidence
- The Senior Investigator is fully informed and properly advised
- The provision of accurate briefings to all agencies involved in the investigation
- Minimum risk to Investigating Officers from any health hazards
- Quality assurance of scene examination and subsequent forensic submissions
- Through liaison, a structure and priority for any subsequent examination of forensic submissions
- A full debrief on completion to consider items of good practice/strategy for future use, health and safety and risk assessment.

Senior investigator

The Senior Investigator is the law enforcement officer in charge, and therefore has overall responsibility for the management of the investigation, including the scene examination. The Senior Investigator acts as the interface between investigators and crime scene officers, forensics scientists, experts and the justice and prosecution services. The duties of the Senior Investigator also include conferring with the court or prosecution service with regard to further measures following consultation with the crime scene officers and investigators, forensic scientists and other experts.

Forensic Scientist

A forensic scientist can enhance the scene examination, possibly increasing the value of the recovered evidence in the criminal justice chain. The decision as to whether or not a Forensic Scientist attends the scene should normally be made by the Scientific Support Co-ordinator following consultation with the Senior Investigator.

The presence of a Forensic Scientist can enhance the scene examination in the following ways:

- Advising on the most appropriate items/samples to be taken to further advance the investigation
- Examination and interpretation of the scene to establish the sequence of events leading up to an incident
- Giving an opinion on whether the information provided by witnesses is supported by the scientific evidence

- Applying techniques not available to scientific support staff to locate or enhance scientific evidence
- On completion of the scene examinations to fully brief the Senior Investigator and provide a preliminary, written, scene examination report outlining all the main observations

Other experts

The Scientific Support Co-ordinator will decide whether the attendance of other specialists is required at the crime scene in consultation with the Senior Investigator. The scene of any crime involving the loss of life warrants the deployment of a scientific support coordinator or a designated crime scene manager. However, the level of response needs to be tailored to the nature and complexity of the offence being investigated.

Forensic Medical Examiner

It is the role of the forensic medical examiner (where appropriate) to certify the death of the deceased, to record the time this was done and to give the Senior Investigator an estimate of the time of death and any opinion as to the cause.

Firearms/Ballistic experts

In cases involving the use of firearm or explosive device, it should be ensured that an appropriate Forensic Scientist attends the scene to direct and advice on the recovery of all available evidence if needed.

Plan drawer

It is the responsibility of the plan drawer to record the crime scene. First, the crime scene is drawn as it is initially found. As the search progresses, the plan drawer records the finding of any items which may be relevant. In some circumstances the Plan Drawer prepares a plan of the scene showing the zoning for the search.

Exhibits officer

The exhibits officer has a responsibility throughout any major enquiry for the receipt, control, security, continuity and co-ordination of all exhibits and their subsequent movements. This will culminate in the provision of an accurate recorded exhibits and the availability of all exhibits required throughout the criminal justice process. In certain instances, it may be necessary to appoint more than one Exhibits Officer to prevent contamination of evidence.

The primary duties of the Exhibits Officer are:

- Maintain a continuous liaison with the Crime Scene Manager to facilitate all actions relating to physical evidence packaging
- To receive all exhibits coming into Police possession during the course of the investigation
- If required by the Senior Investigator, to attend all post-mortem examinations and receive all exhibits taken by the Forensic Pathologist or Scene Examiner

- Ensure all exhibits have been recorded and suitably described prior to receipt and to bring all relevant evidence to the notice of the Senior Investigator at the earliest opportunity
- To ensure appropriate storage and security of all exhibits, throughout the investigation
- Ensure that all items are correctly packaged, presented and labelled with full proof of continuity
- Compile a complete and contemporaneous master record of all exhibits and their subsequent movement.
- Obtain full statements from all officers submitting exhibits or responsible for their movement, to ensure proof of continuity
- In consultation with the Scene Examiner and the Crime Scene Manager, prepare and forward all forensic, fingerprint and other items to the appropriate department or agency for examination, identifying exactly the scientific examination required
- Provide a photocopy of all appropriate documentary exhibits for the Senior Investigator and investigation teams

Coroner's Officer

In case a body is present, a Coroner's Officer may be present at the crime scene as well. The coroner must enquire into all cases of sudden or unnatural death within his or her jurisdiction. The coroner's officer performs duties on behalf of the coroner. The role is as follows:

- To liaise with the Senior Investigator and the Coroner to obtain permission to use a forensic pathologist
- To liaise with the mortuary to arrange facilities and staff who will assist the pathologist to perform the post-mortem examination
- Provide continuity of identity of the deceased

This list of roles is drawn from the European Crime Scene Management Good Practice Manual, produced as part of the European Crime Scene Management Project, UK 2000. It is not an exhaustive list and the role titles and duties may vary among organizations.