Review of the Office of the State Pathologist

Conducted by the Royal College of Physicians of Ireland

on behalf of the Department of Justice and Equality

July 2019

Acronyms

APT Anatomical Pathology Technician

AGS An Gardaí Síochána

BAFM British Association of Forensic Medicine

BST Basic Specialist Training

CAP College of American Pathologists

CME Continuing Medical Education

CPD Continuing Professional Development

CSCST Certificate of Successful Completion of Specialist Training

CSEAS Civil Service Employee Assistance Service

CSI Coroners Society of Ireland

CUH Cork University Hospital

DipFMS Diploma in Forensic Medical Science

DoJE Department of Justice and Equality

DPP Director of Public Prosecutions

ECLM European Council of Legal Medicine

EMFPU East Midlands Forensic Pathology Unit

EQA External Quality Assurance Scheme

FRCPath Fellowship of the Royal College of Pathologists

FSR Forensic Science Regulator

GMC General Medical Council

GP General Practitioner

HOFPU Home Office Forensic Pathology Unit

HR Human Resources

HSE Health Service Executive

HST Higher Specialist Training

IANZ International Accreditation New Zealand

IMC Irish Medical Council

INAB Irish National Accreditation Board

IR Industrial Relations

LA Local Authority

MoU Memorandum of Understanding

NAME National Association of Medical Examiners

NDTP National Doctor Training and Planning

NHS National Health Service

NPAAC National Pathology Accreditation Advisory Council (Australia)

NQIP National Quality Improvement Programme

NUIG National University of Ireland-Galway

OSP Office of the State Pathologist

PA Programmed activities

PDB Pathology Delivery Board

PMCT Post-Mortem Computed Tomography

RCPA Royal College of Pathologists of Australasia

RCPath Royal College of Pathologists

RCPI Royal College of Physicians of Ireland

RCSI Royal College of Surgeons in Ireland

RTC Road Traffic Collision

SLA Service Level Agreement

SWGMDI Scientific Working Group on Medico-legal Death Investigation

TCD Trinity College Dublin

UCC University College Cork

UCD University College Dublin

VIFM Victorian Institute of Forensic Medicine

WTE Whole Time Equivalent

Glossary

Accreditation: A formal audit by independent external auditors of institutional processes against agreed industry wide standards. Passing the audit means the institution is accredited.

Audit: Evaluation of compliance with a standard.

Certificate of Satisfactory Completion of Specialist Training (CSCST): Certificate awarded on successful completion of specialist medical training, which allows entry onto the specialist division of the register with the Irish Medical Council.

Continuing Medical Education (CME) (also called Continuing Professional Development - CPD): Process of updating professional knowledge and skills throughout the medical career.

Coroner Post-Mortem. All death investigation post-mortems are directed by the coroner. The majority are performed by hospital-based pathologists. In cases which appear to involve a criminal or suspicious element, the post-mortem is done by pathologists from the Office of the State Pathologist. Coroner post-mortems do not require family consent.

Coroner Service: This is a descriptive term for the coroner service in Ireland which is a network of independent coroners operating in different jurisdictions throughout the country. The coroners' core function is to investigate sudden and unexplained deaths so that ultimately a death certificate can be issued.

Coroner System: In some jurisdictions, the coroner is the official responsible for death investigation. The coroner is primarily an institution of those countries operating a common law system**.** This is often called a 'coroner system' and may be contrasted with a medical examiner system. Coroners in Ireland are independent public officials whose quasi-judicial function is to investigate sudden and unexplained deaths. In many cases, they will arrange for a post-mortem to be carried out to help them come to a conclusion.

Critical Conclusion Check: Process which involves a forensic report being reviewed and signed off by another forensic pathologist before being released. This is to try to ensure that conclusions drawn by the report are supported by the autopsy findings. A form of peer review.

Double Doctor System: Used to describe a forensic case on which two pathologists work together.

Forensic: Relating to the courts, or more generally, the law.

Forensic post-mortem: Where a death is thought to have occurred as a result of criminal activity, or where there is a suspicion of criminal activity, the post-mortem will be undertaken by a forensic pathologist and is usually referred to as a forensic post-mortem.

FRCPath Part 1 and Part 2: Fellowship examination of the Royal College of Pathologists (FRCPath). The FRCPath examination assesses knowledge of the specialty and ability to apply that knowledge in practice. The exam is taken in two parts, Part 1 and Part 2. The Part 1 FRCPath examination is normally taken after two years of training in the chosen specialty. Part 2 is usually taken in year six or seven of training.

Forensic Pathologist: A pathologist is a physician trained in the medical specialty of pathology. The forensic pathologist is a subspecialist in pathology whose area of special competence is the examination of persons who die suddenly, unexpectedly or violently. The forensic pathologist is an expert in determining cause and manner of death.

Hospital Post-Mortem. This is a post-mortem examination carried out, not at the request of the coroner, but by the hospital for clinical or research reasons. It requires family consent.

Irish National Accreditation Body (INAB): National body with responsibility for the accreditation of laboratories, certification bodies and inspection bodies. It provides accreditation in accordance with the relevant International Organisation for Standardisation ISO 17000 series of standards and guides.

Medical Examiner System: A form of death investigation system presided over by a forensic pathologist (usually) who carries responsibilities often divided between a coroner and a forensic pathologist in a coroner system. This system often lacks the emphasis on public hearings inherent in a judicial coroners' system.

Peer Review: Review by a person of material generated by another person of the same kind. For example, review by one forensic pathologist of the report and findings of another forensic pathologist for the purpose of assuring and/or controlling the quality of the report and its findings.

PMCT: Computed Tomography (CT) scan conducted post-mortem.

Post-Mortem Examination A post-mortem examination is the examination of a body after death. It is also known as an autopsy. Post-mortems are carried out by pathologists (doctors specialising in medical diagnosis), who aim to identify the cause of death.

Proleptic Appointment: Refers to doctors near completion of higher specialist training (HST) who can apply for a consultant post and who may be appointed under open competition on condition of attaining the HST qualifications. Also where a doctor who has attained HST qualifications, applies for a consultant post under open competition and if successful, may require further specific training for the specific post and commences the post on completion of this specific training.

Quality Assurance: A step or activity designed to improve the probability that the results of the individual/organisation are reliable.

Quality Management System: The overall system within an organisation designed to improve the probability that its results are reliable.

Service Level Agreement (SLA): A service level agreement (SLA) is defined as a contract between a service provider and a customer. It details the nature, quality, and scope of the service to be provided.

State Post-Mortem (Or 'state case'): A colloquial term to describe coroner-directed post-mortem examinations performed by the Office of the State Pathologist mainly in cases of suspicious deaths and deaths in State custody or detention.

Executive summary and recommendations

Current challenges to the Office of the State Pathologist (OSP)

1. The Office of the State Pathologist (OSP) in Ireland provides a service that is essential for the administration of justice. The service is part of the wider death investigation system which, in addition to the administration of justice, is of interest to the State and to the public in providing information to families of the deceased, in public health epidemiology and in preventing future death and injury.

2. Homicides or suspected homicides are the main component of the OSP workload. The OSP is also called upon by a coroner to conduct a post-mortem examination in the case of any death where a suspicious or unusual element has been noted, or where a death occurs in custody or state detention. These are referred to colloquially as 'state cases'.

3. There are serious staffing difficulties currently facing the OSP. The Chief State Pathologist retired in September 2018 and the vacancy has not yet been filled. One Deputy will retire from the on-call rota in June 2019, at which point an Acting Deputy, currently in training, will not be fully trained. This would leave only one Deputy State Pathologist and an external locum to deliver a service that has in recent years required a rota of three full-time forensic pathologists (plus an external locum for cover).

4. The primary concern is that there will not be enough staff to deliver the state forensic pathology service to the required level. In addition, insufficient training capacity (particularly at a more experienced level) has the potential to compromise the training of the Acting Deputy.

Recruitment challenges and lack of training scheme

5. The Department of Justice and Equality (DoJE) has faced significant challenges in recruiting forensic pathologists to the OSP in recent years. Remuneration levels are cited by prospective candidates as one reason behind this. Stakeholders suggest that remuneration is not sufficiently attractive compared with remuneration of other pathologists working in hospital settings in Ireland or when compared with remuneration of forensic pathologists in other jurisdictions.

6. A worldwide shortage of forensic pathologists is evidenced by vacant posts in some jurisdictions. Services in other jurisdictions emphasise the importance of a national training scheme for ensuring national self-sufficiency in forensic pathology. In Ireland, the absence of a training scheme for forensic pathology appears to be a major factor giving rise to recruitment challenges.

Specialty recognition and training scheme

7. A pre-requisite for Irish Medical Council (IMC) approval of a training scheme is specialty recognition. In Ireland forensic pathology is not recognised as a medical specialty. It is a recognised specialty, for example, in the UK, in the United States, Canada, and Australia.

8. A 2011 application to the IMC for specialty recognition was refused on the basis that there were too few practitioners in Ireland. The IMC has since developed a new process for specialty recognition.[1] A new application needs to be made as a matter of urgency in order to establish a training scheme in forensic pathology in Ireland and thereby ensure the future of the forensic

[1] New guidance in relation to the new process is pending publication by the IMC

pathology service. It may be possible to overcome concerns regarding the small number of practitioners in this specialty by adequately arguing the service need.

Workload

9. The quality of the work carried out by the OSP is of a high standard. Relationships and interactions with stakeholders are very good. The office and its staff are very well respected by all stakeholders they interact with.

10. Including referred cases, skeletal remains and other-coroner cases (non-suspicious deaths), the OSP had 261 cases in 2017 (167 'state cases'). In 2018 this figure was 282 (of which 196 were 'state cases'), a significant increase from 2017. In January 2019, the OSP completed 20 'state cases', compared with 15 'state cases' in January 2017.

11. The OSP workload falls within recommended minimum and maximum workload limits and is comparable to workloads of other services undertaking only suspicious/homicide casework. However, unlike in some other jurisdictions, the service is not centralised and the OSP pathologists are required to travel throughout the country to carry out post-mortems, for crime scene visits and to attend inquests and Circuit Court cases

Teaching and research

12. The OSP makes a significant contribution to medical school lectures and exams (forensic medicine) and courses for other groups (e.g. Gardaí). However, much of this contribution is not recognised or rewarded.

13. Internationally, research and teaching are considered important components of a quality forensic pathology service. Opportunities for research and teaching are potential factors that attract candidates into roles in forensic pathology.

14. Training commitments can only be fulfilled with a full complement of staff. The OSP indicates that the supervision of research attachments is limited in 2019 as a result of staff shortages.

Governance and operational structure

15. The OSP sits within the Department of Justice and Equality (DoJE), where the Prisons and Probation Policy Division has oversight and governance responsibility. There is a governance agreement in place with that division.

16. When compared with governance arrangements and oversight in other jurisdictions, in particular in relation to technical oversight, there is room for improvement. In many other jurisdictions, the governance structure centres on a board or advisory body comprised of a broad group of stakeholders from within the death investigation system.

17. The OSP has a positive culture relating to quality management and their quality management system is underpinned by several internal activities including peer review/critical checking of post-mortem reports and case review meetings.

18. The current structure of the OSP as a medical unit within the DoJE does not reflect the structure of other forensic pathology services studied for this review. Many other forensic pathology services are embedded within or have strong formal links with universities and/or academic teaching hospitals. This is not the case for the OSP. This may impact on the attractiveness of roles in forensic pathology and the opportunities for research and teaching.

Specialist and external expertise

19. Access to expertise in paediatric and perinatal pathology is important for post-mortem in the paediatric context but represents a challenge both in Ireland and worldwide. In Ireland paediatric and perinatal pathology expertise to the coroner service and the OSP is mainly provided by two retired pathologists. There is currently no paediatric or perinatal pathology training scheme in Ireland.

20. Neuropathology expertise to the OSP and coronial system is provided by Neuropathologists from Beaumont Hospital, Dublin and Cork University Hospital (CUH). Neuropathology is a recognised specialty with the IMC with a formal training scheme. [2]

21. Some forensic pathology services in other jurisdictions have access to additional specialist expertise in-house, but many engage external expertise on a contract basis, some drawing on expertise from abroad.

22. The OSP has its own lab for processing histology samples, with one Senior Scientist based full-time in the OSP. This lab is currently working towards applying for accreditation with INAB.[3] Toxicology and radiology investigations are processed externally, within the framework of agreements/SLAs with the coroner, rather than directly with the OSP.

23. Access to Post-Mortem Computed Tomography (PMCT) scanning is considered important by services in some jurisdictions, both to attract good staff and for a quality future service. However, there is divided opinion as to its usefulness, particularly in cases of suspicious death. Any investment in this area by the OSP would require a stronger evidence base than currently exists.

24. In cases of skeletonised remains, the OSP sometimes requires forensic anthropology expertise. There are no anthropologists officially affiliated with the OSP. They are engaged on a case-by-case basis by the coroner.

Mortuary facilities

25. When a forensic pathologist from the OSP is directed to perform a formal forensic post-mortem examination, the examination will usually take place in the Regional General Hospital used by coroners in the involved jurisdictions. This involves co-ordinating with hospital authorities and anatomical pathology technicians (APTs) to arrange access to mortuary facilities. The forensic case must be fitted in around other non-forensic cases that require hospital facilities.

26. Forensic post-mortems in Dublin are done in Dublin City Mortuary. The OSP shares this purpose-built mortuary facility, located in Whitehall, with the Dublin Coroner. The facility is now entirely under the responsibility of the DoJE. However, given the increased use of the facility, issues of capacity are arising. These issues should be discussed by the DoJE, the OSP and Dublin Coroner to ensure optimum access for the OSP. In many other jurisdictions the forensic pathology service has its own mortuary within a centralised service model.

[2] Trainees within the Higher Specialist Training System in Histopathology can approach a career as a Specialist Neuropathologist in one of two ways: Route A: Part 1 and Part 2 FRCPath in Histopathology followed by an additional period of specialist training in Neuropathology (so that the total minimum training in Neuropathology is 2 years). Route B: Part 1 FRCPath with Part 2 slanted towards Neuropathology.
[3] The senior scientist in the OSP is working on bringing the lab up to standard for application to INAB for accreditation. This accreditation would not be specific to post-mortem material, but along lines of a hospital histology lab.

Recommendations

Current recruitment and staffing challenges.	Timeframe[4]	Action by	Dependencies
1. Address the issue of the current vacant post in the OSP.			
1.1. In light of difficulties recruiting a Chief State Pathologist, DoJE to review criteria and remuneration package for this position.	Immediate	DoJE to pursue centrally via Civil Service pay approval mechanisms.	Funding available within Department resources; Public service pay policy
2. Make roles within OSP attractive and ensure current staff are valued.			
2.1. Examine remuneration of all forensic pathologists to ensure roles in OSP are competitive in the context of the pool of available national and international candidates for positions.	Short-term	DoJE to pursue centrally via Civil Service pay approval mechanisms	Funding available within Department resources; Public service pay policy
2.2. Explore the feasibility of establishing a rotating head for the OSP.	Medium-term	DoJE	
3. Develop a plan for service delivery in the event of continued recruitment challenges.			
3.1. DoJE to explore the appointment of a locum until a full staff complement is achieved.	Immediate	DoJE, in consultation with OSP	Funding available within Department resources.
3.2. Investigate the possibility of contracting self-employed forensic pathologists from England/Wales on a fee for service basis.	Short-term	DoJE	Availability of forensic pathologists
3.3. DoJE to investigate the feasibility of reducing the travel time for OSP by having the body for post-mortem transported from coroner areas outside of Dublin to Dublin City Mortuary for the post-mortem.	Medium-term	DoJE, OSP in consultation with coroners	Mortuary (storage) capacity in Whitehall, funding for driver, family considerations

[4] Immediate: Within 6 months. Short-term: 6 months- 2 years. Medium-term: 2- 5 years. Long-term: 5 years +

Succession planning and national self-sufficiency in forensic pathology.	**Timeframe**	**Action by**	**Dependencies**
4. Make an application to the Irish Medical Council for specialty recognition of forensic pathology.			
4.1. OSP and DoJE to support RCPI in making an application for specialty recognition using the IMC's new process. OSP, RCPI and DoJE will need to engage with the HSE-National Doctor Training and Planning (HSE-NDTP) in the development of the application.	Immediate	OSP, RCPI, DoJE to engage with IMC, HSE-NDTP	Funding for application fee, IMC must open process first Workforce plan with future workforce requirements
5. Establish a training scheme to ensure national self-sufficiency in forensic pathology expertise.			
5.1. OSP to support RCPI in seeking approval for the training programme in forensic pathology from the IMC.	Short-term	OSP, RCPI, Faculty of Pathology	Specialty Recognition for forensic pathology, sufficient training capacity in OSP
5.2. DoJE to engage with OSP to explore potential for fellowship abroad as part of future training programme.	Short-term	OSP, RCPI, Faculty of Pathology	Availability of appropriate fellowship abroad, funding
6. Raise profile of forensic pathology among medical students/trainees.			
6.1. OSP to engage with RCPI to raise the profile of forensic pathology among trainees in Basic Specialist Training (BST).	Medium-term	OSP, RCPI, Faculty of Pathology	Specialty recognition and training programme in place
6.2. OSP to engage with medical schools to continue providing opportunities for recognised clinical placements (medical students) and with RCPI to develop rotations for pathology trainees (long-term).	Medium-term	OSP, RCPI, Medical Schools	Sufficient staff/training capacity within OSP

Governance and operational structure	Timeframe	Action by	Dependencies
7. Explore how the operational model of the OSP might be adapted to reflect a medical unit within an academic teaching hospital.			
7.1. DoJE to explore the potential of adopting this model.	Long-term	DoJE, OSP to engage with DoH, HSE, Medical Schools	Channels for communication between government departments
8. Establish a governance structure that provides for oversight, accountability and strategic direction, with technical competencies relevant to forensic pathology and/or death investigation.			
8.1. DoJE to establish an advisory council with representation from appropriate stakeholders in death investigation in Ireland.	Medium-term	DoJE, OSP, in consultation with stakeholders in death investigation	Willingness and availability of relevant stakeholders to participate in governance structure
8.2. Use models from similar jurisdictions to develop constitution/terms of reference for this advisory council	Medium-term	DoJE, OSP, in consultation with stakeholders in death investigation	Willingness and availability of relevant stakeholders to participate in governance structure
9. Build upon the positive foundations of quality management within the OSP to ensure confidence in the reliability of the forensic pathology service.			
9.1. Continue the peer review/critical conclusion checking and internal case review which is already part of the work of the OSP and ensure it is fully embedded into the service.	Short-term	OSP	Sufficient staff levels and training
9.2. Explore potential for access to External Quality Assurance schemes (EQA) in other jurisdictions.	Long-term	DoJE , OSP	Suitable EQA schemes in existence[6] , Funding available within Department resources
9.3. Explore the use of the National Quality Improvement Programme (NQIP)-Pathology as a template to guide quality management processes of OSP.[5]	Medium-term	OSP in consultation with Faculty of Pathology	Sufficient staff levels

[5] Note- NQIP more applicable to non-forensic post-mortem practice but could be a useful template

[6] Currently no EQA specific for forensic pathology or post-mortem

Research and teaching	**Timeframe**	**Action by**	**Dependencies**
10. Embed teaching and research within the OSP.			
10.1. Engage with Universities and other organisations to whom the OSP provides teaching support, to formalise and recognise the teaching and research contribution of the OSP.	Medium-term	DoJE , OSP, to engage with medical schools, AGS	Sufficient staff levels to deliver teaching.
Access to specialist expertise	**Timeframe**	**Action by**	**Dependencies**
11. Ensure access to paediatric and perinatal pathology expertise.			
11.1. OSP/ DoJE (in consultation with coroner service) to investigate need and feasibility of a memorandum of understanding (MoU) for forensic paediatric/perinatal pathology service with another jurisdiction.	Medium-term	OSP, DoJE, in consultation with coroners' service.	Available external expertise, Funding available within Department resources
12. Support the development of training in specialist areas.			
12.1. OSP to advise RCPI on inclusion of rotations in paediatric/perinatal pathology, neuropathology and radiology in a future forensic pathology curriculum.	Short-term	OSP, RCPI	Forensic pathology training scheme in place
12.2. OSP to support rotations in forensic pathology for future trainees in paediatric/perinatal pathology and neuropathology.	Long-term	OSP, in consultation with RCPI	Forensic pathology training scheme in place, sufficient OSP staff numbers to support rotations, Paediatric/perinatal pathology curriculum developed/training scheme approved
Mortuary Facilities	**Timing**	**Action by**	**Dependencies**
13. Maintain access to appropriate facilities for the conduct of forensic post-mortems.			
13.1. DoJE to engage with OSP and Dublin City Coroner to address issues regarding capacity for mortuary facility at Whitehall.	Short-term	DoJE	
13.2. DoJE to explore the potential for provision of a mortuary facility specifically for the OSP.	Long-term	DoJE	Funding available within Department resources

Chapter 1: About the review

Background to the review

The Royal College of Physicians of Ireland (RCPI) was commissioned by the Department of Justice and Equality (DoJE) in 2018 to conduct this review of the Office of the State Pathologist (OSP). In July 2018, RCPI established a project team to lead the work. The project team consisted of a Clinical Lead, Dr Marie Staunton, Consultant Histopathologist and Faculty of Pathology Board member, and a project lead, Mairéad Heffron. A steering group provided direction and oversight, including review and approval of this report and its recommendations. See Appendix A for the steering group membership.

Terms of reference

Full terms of reference for the review are included in Appendix B. The review was structured around seven deliverables, as follows:

1. Examine the existing OSP structure and management system with a focus on future needs and including any learnings or developments in forensic pathology service delivery from other jurisdictions.
2. Examine any barriers, if they exist, to the recruitment of appropriately qualified staff.
3. Identify the skills and expertise required within the OSP to allow it to carry out its functions, in particular how the OSP can best develop and/or access expertise in specialisms such as paediatric pathology and neuropathology.
4. Examine the potential for introducing a training scheme for forensic pathology within the OSP and outline some initial options for how this might operate.
5. Examine how research may be developed and supported within OSP, in particular how time and resources might be made available to conduct research and the potential benefits to the criminal justice system in addition to the individuals concerned.
6. Asses interaction between the OSP and the Department to ensure they are fully effective
    - communication structures
    - role of OSP in supporting policy formulation
    - role of HR in managing issues around remuneration, terms and conditions, IR etc.
7. Assess interactions with the coroner service to ensure they are fully effective.

Methodology

The project team, principally the project lead, met with stakeholders in forensic pathology in Ireland, as identified in the terms of reference of the review. The meetings took the form of semi-structured interviews. The interview topics were based on the deliverables of the terms of reference and allowed for stakeholders to introduce any ideas or issues not explicitly referred to under the deliverables. Terms of reference were shared with stakeholders in advance to provide them with context for the review. Details of all those consulted are included in Appendix C.

The terms of reference included making comparisons with forensic pathology services in two other jurisdictions. Together with the steering group, the project lead and clinical lead agreed on several jurisdictions. Based on the time allocated for the review, it was agreed that it made most sense to look at jurisdictions with a similar legal system, and where the role of forensic pathologists was broadly similar. Interviews were conducted with forensic pathologists from forensic pathology services in England, Scotland, Northern Ireland and New Zealand between July and November 2018. Meetings were conducted face to face where possible; interviews with forensic pathology services in other jurisdictions were conducted by video call and telephone. Documentation relating to forensic

pathology in Ireland and worldwide was also reviewed. Draft reports were reviewed and approved by the steering group. Those consulted as part of the review also reviewed the draft report for accuracy.

The steering group had representation from the Faculty of Pathology whose members include pathologists working in hospitals throughout the country. The Faculty of Pathology Board received updates on the review throughout the period and had the opportunity at meetings in September and November 2018 and January 2019 for discussion of issues relating to the review.

Scope

The review was tasked with examining the operation of the OSP and the recommendations are focused on this specific area. However, the steering group notes several observations in relation to the wider death investigation system. These are included as an appendix (Appendix E) and may be useful in any broader future discussion on death investigation in Ireland.

Chapter 2: Death investigation and forensic pathology

Death investigation

Death investigation is the term given to the system in place to determine cause and/or circumstances of death, in all deaths which are not certified as natural causes or where the medical cause of death is not known, or where there is not a doctor in a position to certify the medical cause. Jurisdictions vary in how the death investigation system is structured. In some jurisdictions a coroner has responsibility for the death investigation (either a medical doctor or a lawyer, depending on the jurisdiction), other have a medical examiner system, whereby a medically qualified doctor (usually a forensic pathologist) carries responsibilities often divided between a coroner and a forensic pathologist in a coronial system.

The Cordner Report, written by the Victorian Institute of Forensic Medicine (VIFM) in Australia for Ontario's 'Goudge' enquiry into paediatric pathology, refers to the purposes of the death investigation system, and is also referenced in the 2015 Hutton Review of forensic pathology in England and Wales (pg. 52). These purposes are: "

- *To ensure that defined deaths are subject to independent and accountable investigations and judicial review to underpin criminal and civil justice.*
- *To determine who has died, why and how the death occurred and to determine if further action should be taken in relation to the death.*
- *To use information derived from the investigation to try and prevent other death and injuries.*
- *To support family, friends and others directly affected by these deaths."* [7,8]

Forensic pathology

Irrespective of whether it is a coroner system or medical examiner system that is in place, the medical specialty at the heart of death investigation is pathology. Pathology is the study of disease.[9] Within pathology, histopathologists diagnose and study disease in tissues, while forensic pathology deals with the determination of the cause of death for legal purposes.

Forensic pathologists are medical doctors who are trained in anatomical pathology, histopathology and the interpretation of injuries.[10,11] Post-mortem is the main tool of these specialists in the area of death investigation and histopathologists usually train in post-mortem as part of their studies/specialisation. For the forensic pathologist, post-mortem is the core of their specialty.

Forensic pathologists have a critical and pivotal role in death investigation, examining the body of the deceased to define the cause of death, factors contributing to death and to assist with the reconstruction of the circumstances in which the death occurred. The diagnostic process involves the forensic pathologist integrating evidence from the deceased's medical history, the supposed circumstances surrounding the death, the findings of the post-mortem and the results of laboratory investigations undertaken as part of the post-mortem. The post-mortem usually involves detailed

[7] Hutton Review- A review of forensic pathology in England and Wales https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/477013/Hutton_Review_2015__2_.pdf

[8] http://www.attorneygeneral.jus.gov.on.ca/inquiries/goudge/policy_research/pdf/Cordner_Model---Forensic--- Pathology.pdf

[9] https://www.rcpath.org/discover-pathology/what-is-pathology.html

[10] OSP website. http://www.justice.ie/en/JELR/Pages/office_of_the_state_pathologist

[11] Not all jurisdictions provide specific training in the subspecialty of forensic pathology or recognise it as a distinct subspecialty (via the medical regulator).

examination of the external surface of the body of the deceased and dissection of internal organs and structures.[12]

The forensic pathologist works closely with others in the death investigation system including coroners, police and forensic scientists. They will usually provide a report to the relevant authority, detailing the post-mortem findings and may also attest to this evidence in an inquest or in criminal court.

The role of the forensic pathologist can vary between jurisdictions. In some jurisdictions forensically trained pathologists have a role in examining the living victims or alleged perpetrators of crimes, in addition to examination of the deceased.[13] In some jurisdictions, forensic pathologists are focused on suspicious deaths, while histopathologists or anatomical pathologists cover the non-suspicious but sudden deaths. In other jurisdictions, forensic pathologists examine both non-suspicious and suspicious or criminal deaths.

The importance of forensic pathology and post-mortem

The most important function of forensic pathology is to support the criminal justice system with information around cause and circumstances of death. This information is vital to support prosecution of those who have committed crimes of homicide, but also equally important to support and protect innocent parties.

In addition to the primary criminal justice system function, the Hutton review underlines the importance to society of determining an accurate cause of death: [7]

- Trend data for public health metrics.
- Geographical differences in survival of given diseases.
- Assessing success of control measures and environmental policies in reducing occupational and environmental deaths.
- Detecting changes in incidence and virulence of a disease.
- Assessing impact of inequality and poverty.
- Reviewing targeted interventions.
- Research.
- Information for surviving relatives.

The importance of forensic pathology and specifically, post-mortem practice is also considered in the Cordner Report.[14] It references:

- The value it gives to families, in identifying diseases with genetic components, allowing appropriate health care, genetic counselling to be given to family members, if required. It also allows for a factual basis for counselling of relatives in relation to the death, where there may be anxiety that an action or inaction on the part of a relative contributed to the death.
- The value to hospitals and clinicians, in providing accurate cause of death in the context of clinical audit. It aids in developing understanding of disease, and evaluation of new therapies, techniques and procedures.

[12] From application for medical council specialty recognition 2011

[13] "In Europe, and in jurisdictions with legal systems derived from continental Europe, legal medicine/medicin legale/rechtzmedizin is a medical specialty in its own right separate from pathology. It is effectively a combination of forensic pathology, clinical forensic medicine, and even forensic psychiatry." (Cordner report pg 18)

[14] Pg. 29 Cordner report

- The value to the criminal justice system. The most prominent area of forensic pathology. Objective medical evidence regarding cause and circumstances of death is fundamental to the administration of justice.
- Value to public health. Provision of accurate cause of death and mortality statistics form part of the basis for development of government health policy. Forensic pathology and post-mortem also have a contribution to medical and paramedical education and research.
- Value to society. Investigation of death in hospitals, prisons and other government institutions also is of public interest.

Post-mortem and analysis of deaths in Road Traffic Collisions (RTC) are also important as they can provide input into measures and policies to improve road safety .

Death investigation in Ireland

Ireland operates a coroner system in death investigation. What is referred to as the 'coroner service' is a network of independent coroners located throughout the country. Coroners are barristers/solicitors or registered medical practitioners and are appointed by either the Local Authority (LA), or in the case of the Dublin City Coroner, by the Minister for Justice and Equality. The coroner's core function is to investigate sudden and unexplained deaths so that a death certificate can be issued. At the end of 2016, there were 35 coroners in 39 coroner districts, with Dublin city and Cork city being the only full-time coroners.[15]

The Coroners Act 1962 is the primary legislation which governs the role and responsibilities of coroners in Ireland. It was amended in both 2011 and 2013 in certain aspects.[16] The Coroners (Amendment) Bill 2018 is currently before the Oireachtas and while there is a significant focus concerning the investigation of maternal deaths, it also introduces several other necessary reforms across a range of coronial activities and duties.

Usually when a death occurs in Ireland, the treating doctor or family doctor signs the death certificate. For several reasons, including where the cause of death is unnatural or undetermined, or where death has occurred in suspicious or criminal circumstances, the coroner in the area where the death has occurred will be contacted and may decide to order a post-mortem.[17,18]

Most of the post-mortems ordered by the coroner (approx. 96%) are conducted by HSE or hospital histopathologists as independent work outside of their HSE contracts, in hospitals in the area within which the death has occurred.[19,20] These post-mortems relate to the situation where the circumstances of death are not suspicious or criminal and may include suicides, drug-related deaths and Road Traffic Collisions. The histopathologist receives a fee of €321.40 for performing non-suspicious coroner-directed post-mortems with report to the coroner. Where attendance at the inquest is also required, the fee payable is €535.68.[21] These are referred to colloquially as 'coronial post-mortems' or 'routine post-mortems'.

In cases of suspicious and criminal circumstances, or where a death occurs in state custody or detention, the coroner or the Gardaí will contact the OSP to conduct a formal forensic post-mortem. According to legislation, "A coroner may request the Minister to arrange…a post-mortem examination

[15] Figures provided by DoJE
[16] Civil Law (Miscellaneous Provisions) Act 2011 and Civil Law (Miscellaneous Provisions) Act 2013
[17] Hospitals may also conduct their own autopsies outside of the coroner-required autopsies, for clinical research/information.
[18] http://www.justice.ie/en/JELR/coronersfulljob.pdf/Files/coronersfulljob.pdf
[19] Or supervised trainees in Histopathology
[20] OSP pathologists also do a small number (1% of all coroner-directed post-mortems) of these non-suspicious cases, also as independent work, that is not a requirement of their contract.
[21] Statutory Instruments. S.I. No. 155 of 2009. Coroners Act 1962 (Fees And Expenses) Regulations 2009

by a person appointed by the Minister". [22] The contact is made directly with the OSP by the coroner or by the Gardaí. These are referred to colloquially as 'state post-mortems'.

Office of the State Pathologist

The OSP provides a national forensic pathology service in Ireland. The main activity of the OSP is the performance of post-mortem examinations in cases of sudden, unexplained death where a criminal or suspicious element is present. In approximately 20- 25% of cases, this will also involve a visit to the scene of death. The pathologists deal with approximately 40- 50 homicides per year as well as a wide range of natural and unnatural deaths (e.g. Road Traffic Collisions, other accidents, drug-related deaths). The OSP also deals with a significant number of skeletonised remains, cold case reviews and referred cases for professional opinion. Referred cases are usually from outside the Irish jurisdiction (Northern Ireland, U.K.).[23]

In Ireland, the formal forensic post-mortems are carried out by the forensic pathologists employed by or contracted to OSP. These forensic pathologists are full medical specialists in histopathology, with additional 'on the job' training and/or qualifications in forensic pathology. OSP forensic pathologists conduct post-mortems in mortuaries around the country (depending on where the death occurs) (See Chapter 4, deliverable 1 for more information on workload of the OSP)

[22] Coroner's act 1962 http://www.irishstatutebook.ie/eli/1962/act/9/enacted/en/html
[23] OSP website http://www.justice.ie/en/JELR/Pages/office_of_the_state_pathologist

Chapter 3: Pillars of an excellent forensic pathology service

Information from interviews with stakeholders in the Irish context and interviews with services in other jurisdictions assist in identifying characteristics of an excellent forensic pathology service. Also useful are recent reports on forensic pathology services, the most notable being the Hutton Review (2015) and the Cordner Report (2007). [24,25]

The Hutton review of forensic pathology services in England and Wales provides useful background on the history of forensic pathology in those jurisdictions and information on (existing and recommended) structure and practices in forensic pathology. It outlines the clear governance framework and quality management processes that are in place for forensic pathology in England and Wales. One key difference however between the Irish system and the system in England and Wales is that in England and Wales, forensic pathology is based on a group practice model; groups of self-employed forensic pathologists or forensic pathology units of Universities are contracted to provide the forensic pathology service to the police service in different regions. A recommendation of the Hutton review was the introduction of a publicly funded salaried service for forensic pathologists, but this has not happened to date. Other recommendations from the Hutton review included:

- The establishment of a new nationally-based death investigation system, under which cases requiring post-mortem enter a forensically-led post-mortem service.
- A regionalisation of both forensic and coronial post-mortem practice (and a reduction in the number of mortuaries in use in England and Wales.)
- The introduction of a publicly funded salaried service for forensic pathologists, and job planning of coronial post-mortem sessions within National Health Service (NHS) contracts.
- Future contractual arrangements between police and group practices, based on "police user requirements for forensic pathology".
- Funding for forensic and coronial post-mortem provision to be brought together in a single independent location; e.g. through a special health authority.

The Cordner report was compiled by the VIFM, in Australia, for an inquiry into paediatric pathology in Ontario, Canada. It highlights what it sees as components of an ideal forensic pathology service that underpin the credibility of the service. These include appropriate education and training of the professionals within the service, the vital role of teaching and research, a quality management system, and a governance and regulatory regime that provides for clear responsibilities and accountabilities. It also highlights the importance of appropriate facilities, and the need for workloads that allow appropriate time for casework in addition to continuing education, research and teaching.

The forensic pathology service fulfils the role of determining cause of the death. The most important thing is that the forensic pathology service is credible in providing this information, whether this is for the criminal justice system in the case of a homicide, or for the wider societal benefit in cases of road traffic deaths.

Taking information from the reports mentioned above and from the interviews conducted as part of this review, we can consider the following to be central pillars of an excellent forensic pathology service.

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[24] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/477013/Hutton_Review_2015__2_.pdf

[25] http://www.attorneygeneral.jus.gov.on.ca/inquiries/goudge/policy_research/pdf/Cordner_Model---Forensic--- Pathology.pdf

Table 1: Pillars of an Excellent Forensic Pathology Service

Sufficient workforce	• Enough numbers to manage the workload.
	• Workload considered includes caseload + research/teaching+ audit and other additional responsibilities.
	• Caseload sufficient to ensure continued expertise.
	• Support staff sufficient in number and appropriately trained.
	• Appropriate remuneration/salary/package.
	  ○ Remuneration competitive with equivalent medical specialists (to attract sufficient numbers into the roles)
	  ○ Additional allowances that reflect the additional tasks of on-call rotas etc.

Appropriate education and training	• A clearly defined training pathway and a formally structured training scheme. • Leading to a recognised forensic pathology specialist certification. • Introduction in medical school to the training pathway. • Time for research and Continuing Medical Education/Continuing Professional Development(CME/CPD).
A clearly defined governance structure	• Allows for independent oversight. • Lines of accountability and responsibility clearly defined. • Those with assigned responsibilities under the structure have the requisite knowledge, technical competence and authority to fulfil their roles. • Codes of practice agreed by relevant stakeholders. • Ideally underpinned by legislation.
A robust quality management system	• Incorporating peer review, internal and external audit. • A system whereby any weaknesses or issues are picked up early, dealt with satisfactorily and independently.
Ready access to additional expertise.	• Paediatric pathology, neuropathology, forensic anthropology, forensic radiology. • Ideal scenario is a service which has all the additional expertise available in house. This is the case in large centres like the Ontario Forensic Pathology Service (OFPS), and the Victoria Institute of Forensic Medicine (VIFM). • In smaller jurisdictions, contractual arrangements for provision of services, within certain parameters (with SLAs), exist. • Forensic pathology training provides a grounding in some of these areas (neuropathology, paediatric pathology rotations).
Research and teaching	• Contractual arrangements that recognise research and teaching as integral components of the role of the Forensic Pathologist/the work of the unit. • Teaching both in medical school and other medical professionals involved in the death investigation system. E.g. General Practitioners (GPs). • The forensic pathology unit can also be a central hub for death investigation training; e.g. for police, Anatomical Pathology Technicians (APTs).

	• Serves as a training centre for rotations for pathology-paediatric pathology, neuropathology.
Ready access to facilities and equipment/technology of an appropriate standard	• Mortuary facilities and labs that that are owned by the forensic pathology service. • Inspected and accredited on a regular basis in line with appropriate standards. • Access to radiology and PMCT equipment and expertise as needed.
Operational structure	• Structure that meets the needs of the national death investigation system in a cost-effective way. • Centralised service. • May be more cost effective for forensic pathologists to primarily work in a centralised facility of high standard.

Chapter 4: Findings relating to deliverables

General findings

Stakeholders indicate that the quality of the work carried out by the OSP is of high standard, that relationships and interactions with stakeholders is excellent. The office and its staff are very well respected.

Deliverable 1: OSP structure, management, governance

Examine existing OSP structure and management system with a focus on future needs and including any learnings or developments in forensic pathology service delivery from other jurisdictions.

Under this deliverable, the review looked at current organisational structure and governance of the OSP. It looked at structures and governance in several other jurisdictions, focusing on those operating under a coroner system.

Staff and Appointments of the OSP

- The first official State Pathologist was appointed by the Minister for Justice in 1974.
- In 1998 a Deputy State Pathologist was appointed.[26]
- On retirement of the State Pathologist, the Deputy was officially appointed as State Pathologist in 2004.
- A new Deputy State Pathologist was appointed in 2004.
- As the number of cases continued to increase, a decision was made to hire a second Deputy State Pathologist At this point, issues in attracting forensic pathologists into Ireland became apparent. With no training scheme in forensic pathology, there were no Irish forensic pathologists to attract into the role. Around this time, an independent consultant who had been assisting in post-mortems locally and area was contracted to provide services on a rotational basis as a representative of the OSP .
- A second Deputy State Pathologist was hired in 2010 and left this appointment in 2013. A competition to recruit a replacement failed due to no suitably qualified candidates.
- The DoJE then made the decision to take on another Deputy State Pathologist who had completed histopathology training and had previously expressed interest in working in forensic pathology, as an Acting Deputy State Pathologist . The first two years of the appointment were considered a training period during which time, in addition to on-the-job training within the OSP, she also completed UK exams in forensic medical science and medical jurisprudence (pathology).[27] In March 2015, this Deputy was fully qualified and, in a position to enter fully on the rota.
- An Acting Deputy State Pathologist was appointed in September 2018, to follow the same training route.

Current staffing

Under the current structure and service delivery model, a full complement of forensic pathologist staff in OSP would be three fully trained staff (one Chief State Pathologist; two Deputy State Pathologists.) working on a full-time basis (3 WTE). This allows for a one in three on-call rota.

[26] There have been changes to the titles used in the OSP. Originally, State Pathologist and Deputy State Pathologist were the titles used, while more recently Chief State Pathologist and State Pathologist are used. However, this is not always consistent. We have used the terms of Chief State Pathologist and Deputy State Pathologist in this report. Marie Cassidy's official title was 'State Pathologist' until her retirement in 2018.

[27] Diploma in Medical Jurisprudence (Pathology), through the College of the Apothecaries, London, and Diploma in Forensic Medical Sciences

Staffing arrangements (in January 2019) are:

Table 2: OSP Staffing

Position	Detail
Chief State Pathologist	Vacant In Sep 2018, the State Pathologist retired, and a replacement has not yet been appointed. [28]
Deputy State Pathologist	This Deputy to effectively retire (come off on-call) in June 2019 leaving a single Deputy State Pathologist and an external locum (available only on a one in three basis) to continue the service.
Deputy State Pathologist	Qualified and fully on rota since March 2015.
Acting Deputy State Pathologist	Entered the office in Sep 2018 and will not be fully qualified until April 2020. It is assumed that this Acting Deputy State Pathologist will at that point fill the gap on the rota which will be left by the retirement of the Deputy in 2019.
Assistant State Pathologist	Normally works on a part-time basis for the OSP but operating on a full-time/locum basis while the Chief State Pathologist position is under recruitment. The Assistant State Pathologist, /locum is only available on a 'one in 3' basis.

Additional (non-pathologist) staff of the OSP

- One executive officer
- 2. 8 (WTE) clerical officers
- One Senior Scientist

OSP structure and governance

The OSP is a non-statutory body under the DoJE . Within the Department, the Prisons and Probations Policy Division has responsibility for the OSP.[29] There is an oversight agreement in place between the DoJE and the OSP which is reviewed and updated annually. At the time of the review it was not clear as to where the OSP would sit terms of the DoJE transformation programme.[30]

Most OSP staff indicate that they are satisfied with the relationship they have with the Prisons and Probations Policy Division. One challenge for this Division may be that it does not have technical competence in relation to forensic pathology work. The Prisons and Probations Policy Division alone, however, cannot be expected to acquire the necessary expertise as they work on broad range of policy issues. Ideally, they would be supported in their work by a board or council comprised of the necessary expertise.

[28] This vacancy advertised as Chief State Pathologist
[29] http://www.justice.ie/en/JELR/DJE_Organisation_Chart_(May_2018).pdf/Files/DJE_Organisation_Chart_(May_2018).pdf
[30] http://www.justice.ie/en/JELR/ERG%20Report.pdf/Files/ERG%20Report.pdf

The absence of an appropriate occupational health service to OSP was raised by a small number of stakeholders. This was mentioned in relation to both physical injury (needle stick/sharps incidents and infection exposure) and in relation to counselling support. The DoJE confirmed that it has a health and safety manager currently working with the OSP on putting an occupational health plan in place and all staff have counselling support available through the Civil Service Employee Assistance Service (CSEAS). This service is not considered appropriate (by OSP) for the counselling support members of the OSP would need, given their exposure to crime scenes.

Codes of practice

A code of practice has been drafted by the OSP, based on a code of practice which has been developed for forensic pathology in in England and Wales. It is mentioned that the Coroners Society of Ireland (CSI) proposed the development of this code of practice, at least as far back as 2012. The Society also proposed that an advisory board be established which would include the OSP, the Director of Public Prosecutions (DPP), officials from the DoJE and representatives of the CSI and which would support the development of such a code of practice. [31]

Workload

In 2017, a total of 5,481 post-mortems were carried out across all coroner regions.[32] The majority of these (96%) were non-suspicious coroner post-mortems carried out by hospital-based histopathologists as independent work outside of their Health Service Executive (HSE) or hospital contract. 167 (3%) of the total were suspicious post-mortems carried out by staff of the OSP, while 58 (1%) were non-suspicious/other coroner-directed case post-mortems carried out by the OSP.[33]

The workload of the OSP also includes referred cases (usually from outside the Irish jurisdiction) and skeletonised remains. These represented respectively an additional 17 and 19 cases in 2017.

Including referred cases, skeletal remain and other-coroner cases (non-suspicious deaths), the OSP had 261 cases in 2017. In 2018 this figure was 282 (of which 196 were 'state cases'), a significant increase from 2017. It is important to note that OSP suspicious or criminal cases includes any cases where there is a suspicious element, and deaths in custody and detention, and is not limited to homicide cases.

Other workload commitments include appearance at inquest and criminal court, lecturing medical undergraduates and post graduates, teaching the Gardaí and Military Police and sitting on advisory committees/ provision of expert advice to various groups e.g. The National Emergency Framework, The National Drug-Related Death Index, Government bodies and commissions, national mass fatality planning.

[31] Submission from Denis Cusack, Kildare Coroner

[32] http://www.coroners.ie/en/cor/pages/publications (annual returns)

[33] Some non-suspicious cases are done by OSP staff, but this is not a requirement of the position. These are performed, at the direction of the Dublin coroner, by two of the OSP forensic pathologists on a rotational basis

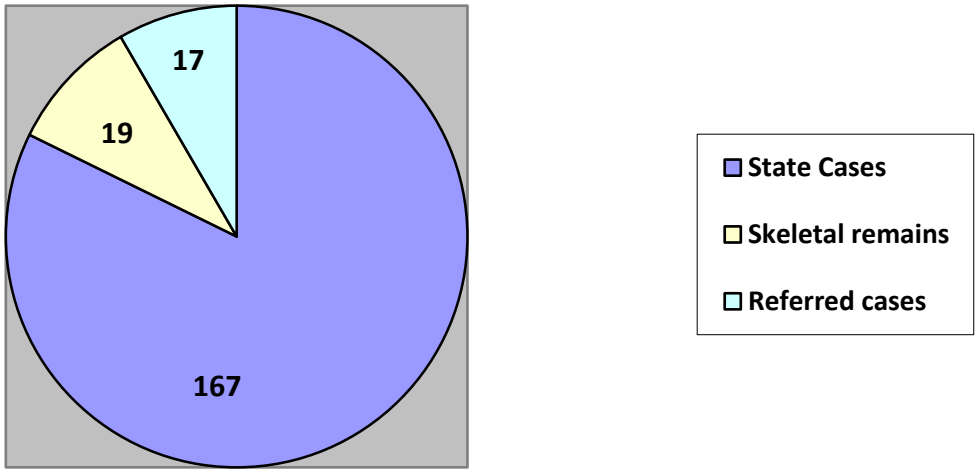

Figure 1: Cases January to December 2017.[34]

The number of referred cases has been increasing since 2015 (6 referred cases in 2015, 8 in 2016, 17 in 2017). This has workload implications as each referred case represents approximately ten hours of work.

Homicide figures have been relatively constant over the past number of years. The OSP indicates that recent issues with the Gardaí PULSE recording system have resulted in an increased request for forensic autopsies (167 in 2017, 196 in 2018). This increase has continued into 2019 (on 30th January 2017 the OSP had completed 15 'state cases' while on the 30th January 2019 the OSP had already performed 20 'state cases'). [35]

The OSP workload falls within recommended minimum and maximum workload limits (see also workload-other jurisdictions below) and is comparable to workloads of other services doing only suspicious/homicide casework. Workload of the OSP is lower than workload in those jurisdictions with a more centralised model and doing a greater number of non-suspicious post-mortems.

Workload and travel

The pathologists of the OSP conduct forensic post-mortems in the respective coronial area where the death has occurred. Of 167 suspicious or criminal cases in 2017, 65% of cases were outside of Dublin and required travel to the coroner area for conduct of post-mortem. OSP pathologists are also sometimes required to visit the crime scenes as part of their work. The OSP estimates that a crime scene visit is required in approximately 20-25% of cases (in 2017, 17.5% of 'state cases' required a scene visit, in 2016, this was 21%).

The pathologists of the OSP also travel to attend inquests. The workload audits done by the OSP indicate that in 2017, there were 7 inquest appearances and 27 criminal court appearances in Dublin. These amounted to approximately 17 working days. There were also 16 inquests which required the attendance of a forensic pathologist outside of Dublin. In general, an inquest outside of Dublin will require an entire day out of the office. These commitments amounted to 16 working days.[36]

[34] From OSP workload audit 2017
[35] Figures received from OSP by email January 2019
[36] Across all pathologists

OSP forensic pathologists estimate that in total for the unit, one day a week is spent travelling . It may be possible that some of this travel time could be reduced, if a more centralized approach were taken. However, any changes to this arrangement would require extensive consultation with the coroner service, as they have legal possession and responsibility for the body of the deceased person, and there are many additional aspects to consider such as the impact upon the family, funeral arrangements, cost of transport, viewing arrangements for families and the capacity for storage of bodies in the mortuary associated with the OSP.

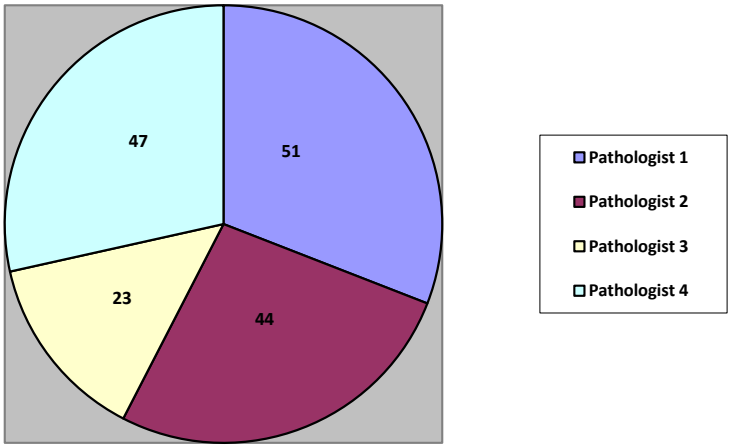

Figure 2: Distribution of suspicious or criminal cases by OSP pathologist 2017

Facilities

The OSP does not have its own dedicated mortuary for conduct of post-mortem examination. When a forensic pathologist from the OSP is directed to perform a formal forensic post-mortem examination, the examination will usually take place in the Regional General Hospital used by coroners in the involved jurisdictions. This involves co-ordinating with hospital authorities and Anatomical Pathology Technicians (APTs) to arrange access to mortuary facilities. The forensic case must be fitted in around other non-forensic cases that require hospital facilities.

Forensic post-mortem examinations in Dublin occur in the Whitehall building, in Dublin City Mortuary. This mortuary which is under the management and operation of the DoJE is also the primary mortuary facility of the Dublin coroner. Access is the responsibility of the Dublin Coroner and associated staff. In addition to the OSP forensic pathologists who conduct post-mortems in the mortuary, four external consultants (histopathologists performing non-suspicious post-mortems) also use the mortuary.

Irish mortuaries are subject to HSE health and safety standards and inspections but there are no inspections or accreditation process in place that specifically relate to the practice of post-mortem or forensic pathology. There are examples internationally that indicate that is may be possible to conduct accreditation of mortuaries through Irish National Accreditation Board *(*INAB) (but using international

forensic standards[37,38)]. The European Council of Legal Medicine (ECLM) has also published pathology service accreditation criteria.[39]

The OSP has its own laboratory for processing of histology samples with one Senior Scientist based full-time in the OSP. There is a system of lab accreditation for histology laboratories through INAB and the OSP lab is working towards this accreditation. INAB accreditation however was felt by some stakeholders to very process driven, and it is not specific to forensic facilities, although it was reported that they had some experience in accrediting forensic laboratories, for example, the Medical Bureau of Road Safety.

Quality management

Feedback from stakeholders indicate that the OSP consistently delivers work of high quality. A peer review system is in operation whereby each post-mortem report is reviewed by at least one other OSP forensic pathologist. There are also regular case review meetings. One forensic pathologist within the OSP has in recent years compiled workload audits (and is working on an annual report) which are helpful. The OSP peer review system (critical checking system) in operation is consistent with other models and it is very positively regarded by all forensic pathologists in OSP.

Some positive aspects of quality management within the OSP include:

- 'State cases' recorded on the State Pathology database as part of the DoJE system.
- Code of practice has been developed.
- OSP lab (Histology) working towards accreditation with INAB.[40]
- Critical conclusion checking (peer review of all reports).
- Case review meetings are conducted regularly.
- Quality of evidence in open court is good.
- Culture of openness to peer review and teamwork exists.

Comparison with other jurisdictions

Governance structures

Governance structures/accountability mechanisms in other countries usually involve a board or similar structure. In England and Wales, there is a very clear governance framework. Under the Home Office, the Pathology Delivery Board (PDB) is the legally designated organisation responsible for overseeing the provision of forensic pathology services in England and Wales, establishment of best practice for the specialty and for encouraging development of the profession.[41] The Home Office forensic pathology Unit (HOFPU) has operational day to day responsibility while the PDB has a constitution which specifies its role. The membership of the PDB includes nominees from the coroner's society, Crown Prosecution Service, Association of Police Authorities as well as the UK Royal

[37] In New Zealand, for example.

[38] The Irish National Accreditation Board (INAB) is the national body with responsibility for the accreditation of laboratories, certification bodies and inspection bodies. It provides accreditation in accordance with the relevant International Organisation for Standardisation ISO 17000 series of standards and guides.

[39] Mangin P, Bonbled F, Väli M, Luna A, Bajanowski T, Hougen HP, Ludes B, Ferrara D, Cusack D, Keller E, Vieira N. European Council of Legal Medicine (ECLM) accreditation of forensic pathology services in Europe. Int J Legal Med. 2015 Mar;129(2):395-403. doi: 10.1007/s00414-014-1041-x.

[40] The senior scientist in the lab is working on bringing lab up to standard for application to INAB for accreditation. This accreditation would not be specific to post-mortem material- but along lines of a hospital histology lab.

[41] PDB constitution.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/115697/constitution-pdb.pdf

College of Pathologists (RCPath), the British Association of Forensic Medicine (BAFM) and the Forensic Science Regulator (FSR).

In New Zealand, there is a National Coronial Advisory Group which is chaired by the Minister of Justice and with representation from the chief coroner and the police. This structure was changing in 2018 to form an operations group and a separate strategic group (with an associated clinical governance group).

In Victoria, Australia, the VIFM, within which the Forensic pathology service is based, is a statutory authority with its own board, the VIFM council, of which the state coroner, nominees from the chief justice and the attorney general, and the police are members (among others).

In Ontario, Canada, referenced by several people interviewed as an excellent example of a good governance structure, oversight of the Ontario Forensic Pathology Service (OFPS) is provided by the Death Investigation Oversight Council, an independent advisory agency. [42]

Many jurisdictions have legislation which places the forensic pathology service on a statutory footing. For example, this is the case in England and Wales, in Victoria (Australia) and in Ontario.

In summary, forensic pathology services in other jurisdictions examined had a governance structure that was more developed/better defined that that of the OSP. Clearly the Chief State Pathologist has responsibility for the running of the office and the provision of a reliable service to the state. However, a governance structure (for example a board to which the OSP/Chief State Pathologist is accountable) that encompasses the requisite technical competence and knowledge and involves a broad range of stakeholders is preferable in terms of maintenance of quality standards.

Operational structures

Most other services examined are embedded within, or have strong formal links with, universities and/or academic teaching hospitals. The Northern Ireland State Pathologist office for example is in the Royal Victoria Hospital in Belfast; the East Midlands Forensic Pathology Unit (EMFPU), a department of the University of Leicester, is based in the Leicester Royal Infirmary; the New Zealand Forensic Pathology Service is in the Auckland City Hospital.

Compared with these arrangements and the standalone medicolegal centres/forensic medicine centres which exist in jurisdictions such as Ontario and Australia, the OSP may be quite isolated from the clinical environment within which most of their medical specialist peers work (including consultant histopathologists who perform most of the post-mortem work in the country). They are also not formally integrated into the academic environment either. However, any change in the operational structure along these lines would require detailed consideration and consultation with the hospitals and the medical schools.

Code of practice

The England and Wales code of practice was initially developed by the Home Office (Home Office policy advisory board for forensic pathology[43]), Scientific Standards Committee, the Forensic Science Regulator (Forensic pathology specialist group) and the RCPath (forensic pathology subcommittee). Other jurisdictions including Scotland and New Zealand have used this code as a reference in developing codes of practice for their forensic pathology service. Good practice seems to be that a code is developed and/or approved and reviewed at intervals by a range of stakeholders (a policy

[42] https://www.sse.gov.on.ca/mcscs/dioc/en/pages/home.aspx
[43] The forerunner to the current Pathology Delivery Board

advisory board or other such structure). Compared with this, the OSP code of practice seems to be more of an in-house exercise. There are also European guidelines and codes of practice, which should be considered in this context.[44,45,46]

Workload

Various reports specific minimum and maximum workload limits for the number of post-mortems that would be carried out on an annual basis by the forensic pathologist. The Hutton report for example, specifies a minimum of 20 post-mortems per year to maintain good practice. Morin refers a maximum of 250, the recommended maximum from National Association of Medical Examiners (NAME).[47, 48] The ECLM also refers to a maximum of 250 post-mortems annually. [45]

In New Zealand, they adhere to a workload limit of 250 cases per year (per individual pathologist); it should be noted however that there is a greater coronial workload within this service. In Scotland, the workload per pathologist was much higher (than OSP workload). There, the stated annual workload for the forensic pathologists (Glasgow) was approximately 400 cases per year, which was considered to be too high by the Glasgow service itself. [49] However this was mainly a centralised service and covers forensic and non-forensic post-mortems. This was also the case in Northern Ireland where the individual workload was approximately 300-350 post-mortems annually.

In Leicester University/EMFPU where there were three fulltime and one part-time forensic pathologist, their total stated workload was 250 suspicious deaths/homicides a year, plus an additional 70 Road Traffic Collisions, 100 or more opinions and some mass fatality work. Elsewhere in the group practices in England and Wales, average individual caseload in 2013/2014 was approximately 60. [50] These individual caseload figures appear to be comparable to the OSP individual caseload figures.

It must be emphasised that most of these workload figures are for centralised services where the forensic pathologists do not have to travel to conduct their post-mortem investigations, unlike the OSP.

Facilities

The practice in other jurisdictions is that the forensic pathology unit/service has its own facilities for post-mortem. There are also processes in place through which these mortuaries are accredited. For example, In England and Wales, Mortuaries are inspected and licenced by the Human Tissue Authority. In New Zealand, the forensic pathology mortuary is accredited against NPAAC *(*National Pathology Accreditation Advisory Council guidelines (Australia) by IANZ (International Accreditation New Zealand-for laboratories). IANZ also examine other processes within the facility but they specifically accredit against a forensic standard.

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[44] European Council of Legal Medicine- Harmonisation of Autopsy Rules
http://eclm.info/docs/Documents/ECLM_Harmonisation_of_Autopsy_Rules_2014.pdf

[45] Mangin P, Bonbled F, Väli M, Luna A, Bajanowski T, Hougen HP, Ludes B, Ferrara D, Cusack D, Keller E, Vieira N. European Council of Legal Medicine (ECLM) accreditation of forensic pathology services in Europe. Int J Legal Med. 2015 Mar;129(2):395-403. doi: 10.1007/s00414-014-1041-x.

[46] Cusack D, Ferrara SD, Keller E, Ludes B, Mangin P, Väli M, Vieira N. European Council of Legal Medicine (ECLM) principles for on-site forensic and medico-legal scene and corpse investigation. Int J Legal Med. 2017 Jul;131(4):1119-1122. doi: 10.1007/s00414-016-1479-0.

[47] Morin, J. (2015). Forensic Pathology Workload and Complexity: Designing a Complexity System that Accurately Represents Workload. *Academic Forensic Pathology*, *5*(4), 561–570

[48]
https://www.nist.gov/sites/default/files/documents/2018/04/25/swgmdi_response_to_the_draft_report_on_increasing_the_supply_of_forensic_pathologists_in_the_united_states.pdf

[49] Workload figures are taken to include only fully qualified forensic pathologists, and not trainees.

[50] From the Hutton Review

Quality management

A reliable quality management system should operate hand in hand with an efficient governance framework. The Cordner report emphasises importance of a quality management system and provides examples of what that should comprise (see also table below).

> *"Such a system includes accreditation, the development of industry-wide standards, implemented within the institution in writing via manuals, standard operating procedures and other controlled documents, and the institutions adherence to those standards being formally and externally audited. The audit would include undertakings made, in accordance with the industry wide standard, in relation to the provision of continuing education for staff and their attendance and participation in it, for example". (Cordner Report, pg38*)

The National Institute of Medical Examiners (NAME) in the United States has prepared a checklist of accreditation standards with the stated purpose of improving the quality of the medico-legal investigation of death. These standards, which apply to systems and policies, rather than individuals have been adapted in Europe by the European Council For Legal Medicine (ECLM) to form their accreditation standards. [45]

In England and Wales, individual forensic pathologists are subject to annual external audits by the Forensic Science Regulator (FSR). This is also the case in Northern Ireland.

The table below is derived based on the quality management activities mentioned in reports on forensic pathology, and by stakeholders interviewed.

Table 3: Elements of a quality management system for a forensic pathology service

Elements of quality management systems of Forensic pathology services	**OSP- Quality Management**	**Comment**
Document control	Suspicious or criminal cases recorded on the State Pathology database as part of the DoJE system.	The system is not adequate for audit and accreditation purposes. A new laboratory information system is being investigated.
Policies and procedures; standard operating procedures	Code of practice has been developed, based on Code of Practice and Performance Standards in England and Wales.	Wider consultation/input on approval of these standards would be in line with practice in other jurisdictions.
Accreditation	OSP Lab working towards accreditation with INAB; no accreditation for mortuary. No individual accreditation	INAB accreditation not specific to forensic pathology or post-mortem practice. May need adaptation for use in future.
(Peer review) Case review meetings	Critical conclusion checking (peer review of all post-mortem reports)	This is documented on all files reviewed.
Internal audits e.g. administrative case review, technical case review	Case review meetings happen on a regular basis. These involve OSP forensic pathologists and other	A record of attendances and discussions is held at the OSP

	relevant experts involved in chosen cases.	
External audit of adherence of agreed standards		External audit may support confidence in the system, but it must be considered carefully. External audit for forensic pathologists is still a work-in-progress in the UK.
Support for CME	OSP staff facilitated with time and financial support for conferences as part of CPD/CME.	The DoJE provides financial support for this already. Protected time may be a consideration
Quality Assurance programs		National Quality Improvement Programme (NQIP) in Histopathology exists and can be a useful template. [51]
Documentation/Recording of significant incidents, quality issues and their follow-up actions/remediation		This will form part of accreditation processes moving forward. While there is a Civil Service Chief Medical Officer, there is no specialist occupational health department to deal with needle stick/sharp incidents or infection exposure.[52]
Presentation of evidence in open court, subject to cross examination	Quality of evidence in open court is good.	Expert witness training is part of the proposed curriculum for forensic pathology
Cultural attribute that promotes quality.	Culture of openness to peer review and teamwork exists	Essential to maintain this positive culture into the future.

Key points relating to deliverable 1

There are major short-term staffing challenges. There is a vacant Chief State Pathologist position, and a Deputy will effectively retire in 2019, leaving only one Deputy State Pathologist plus one external locum to provide a service that requires three full-time forensic pathologists.

Workload is within recommended limits more time is spent travelling than would be usual in jurisdictions with a centralised service.

Governance arrangement exists between DoJE and OSP via the Prisons and Probations Policy Division.

In many jurisdictions, there is a board or similar body which provides support and oversight to the forensic pathology service.

The operational structure of OSP is different to most other jurisdictions examined, where the service is embedded within a university and/or teaching hospital. This may give rise to a sense of professional isolation.

A system to approve and update codes of practice is advisable.

[51] https://www.rcpi.ie/quality-improvement-programmes/histopathology/

[52] OSP staff do however have access to emergency treatment in local hospitals.

Quality management is good and efforts to improve this should build on the positive culture that already exists.

The OSP does not have its own mortuary; this is out of step with other forensic pathology service.

Deliverable 2: Barriers to staff recruitment

Examine any barriers, if they exist, to the recruitment of appropriately qualified staff.

Under this deliverable, the review discussed barriers to recruitment with staff within the OSP and the DoJE. It also discussed the attractiveness of roles in the OSP/in forensic pathology, with pathologists working outside of OSP (in training and in consultant post), but with an interest in forensic pathology. Attractiveness of roles and barriers to recruitment were also discussed with other jurisdictions.

Worldwide challenges in recruitment of forensic pathologists

Maintenance of appropriate numbers of staff to manage the workload of the forensic pathology service is paramount. Succession planning was also mentioned by most other jurisdictions as important. However most other jurisdictions referred to a worldwide shortage of forensic pathologists and challenges in recruiting staff. Some of the services in other jurisdictions indicated they had vacancies at the time of this review.

OSP recruitment

Stakeholders cite challenges in attracting candidates to forensic pathology positions in the OSP. There were two unsuccessful Deputy State Pathologist competitions in 2014 and 2018 and an unsuccessful Chief State Pathologist competition in 2018.

Forensic pathology-lack of training path and no specialty recognition

Ireland does not have a specific training path for forensic pathology. More senior staff within the OSP studied and obtained their qualifications in other jurisdictions. More recently, a Deputy joined the office after she had completed full histopathology training and embarked on a training path described as a "master and apprentice" system, learning through on-the-job experience and taking UK-based examinations in medical jurisprudence and diploma in forensic pathology (DipFMS) (see additional detail on training paths in other jurisdictions under deliverable 4).

The absence of a training pathway appears to be a major barrier to recruitment and sustainability. While it is possible to train abroad, the concern is that a trainee may not then return, as is the case with many medical trainees/specialists in a range of specialties in recent years.

Another perceived barrier (for either an Irish person returning or a fully trained forensic pathologist entering from the UK) is that forensic pathology is not recognised here as a specialty. While a forensic pathologist may train through the RCPath route and then register with the UK General Medical Council (GMC) as a forensic pathologist (on the GMC specialist register), if they were to then come to Ireland, they would have to register with the IMC as a histopathologist, or on the general register of the IMC, which is where they would have been eligible to register immediately after completion of internship. This would not be considered professionally attractive.

Other jurisdictions mention the importance of national training schemes for developing a pool of national forensic pathologists. Both Scotland and Northern Ireland refer to challenges they face in competing with group practices (in England and Wales), where the forensic pathologist can potential earn a much higher amount for a much lower workload. Their preferred solution (NI and Scotland) is to train people who have some additional reason to stay or connection to the jurisdiction, in order to future-proof the service.

The absence of a training path also affects whether the career option of forensic pathology is even considered or explored by a medical student. In some jurisdictions, it was felt that teaching of forensic pathology within the medical school curriculum helped to raise the profile of the specialty. Without a training path, trainee pathologists are not exposed to forensic pathology and therefore the option of it as a career choice is not adequately presented to them. Unlike rotations in paediatric pathology, neuropathology, and perinatal pathology, any experience that a trainee may currently get with OSP would not form part of a formal rotation and would be instead done during annual leave, which is not attractive.

A Scientific Working Group on Medico-legal Death Investigation (SWGMDI) has developed recommendations to increase the supply of forensic pathologists in the United States.[53] Recommendations which are relevant for the Irish context and which were fully endorsed by the National Association of Medical Examiners (NAME) and the College of American Pathologists (CAP) include:

- Making forensic pathology more visible in medical school.
- Exposure of residents to forensic pathology.
- Financial incentives to attract medical students and residents.
- Competitive salaries.
- Training in practice-related challenges such as burnout.
- Formal relationship and greater integration of forensic pathology into medical schools' curricula.

Remuneration

Interviews with Irish-trained or practicing histopathologists with an interest in forensic pathology, at different career stages indicate that the lack of a training path/training posts and remuneration concerns are disincentives to taking up/applying for roles within the OSP.

Details of the OSP salary are shown in the table below. It includes the call out allowance which is capped at a maximum amount of €22,304.

Table 4: OSP Salary

	OSP- Chief State Pathologist	**OSP- Deputy**
Salary	€166,067	€146,475
Additional call out allowance (Maximum)	€22,304	€22,304
Subtotal	**€188,371**	**€168,779**

In interviews, several stakeholders suggested that remuneration of forensic pathologists of the OSP should be considered in the context of HSE consultant remuneration. It was suggested that a difference in remuneration (in favour of a HSE consultant post) could serve as a disincentive to a pursue a career in the OSP over a hospital-based career.

Given the lack of an Irish training scheme in forensic pathology, suitable applicants for the vacant Chief State Pathologist role would be expected to come from abroad. Informal feedback from stakeholders

53 https://www.nist.gov/sites/default/files/documents/2018/04/24/swgmdi_increasing_the_supply_of_forensic_pathologists_in_the_us.pdf

in other jurisdictions suggests that remuneration is an issue deterring international candidates from applying for the position.

In some jurisdictions where the forensic pathologists are employed within a state service or within a university unit, their salaries are the same as equivalent consultants employed in hospital settings. For example, consultants in the Leicester University/EMFPU have the same salary as NHS consultants; this was also the case for Scotland and Northern Ireland. The basic salary range for an NHS consultant in England, for example, is £77,913-£105,042 (approx. €87,441-€117,887). [54]

Many of these forensic pathology units, however, report the challenge that the (NHS-aligned) salaries that they offer are much lower than the salaries possible within for a self-employed forensic pathologist in a group practice in England and Wales. Based on published caseload figures, group practice forensic pathologists may be able to earn up to £300,000 annually, for a lower workload than many of the services in other jurisdictions. Given that, Ireland is unlikely to be able to attract forensic pathologists trained in the UK based on salary alone. [55]

Table 5: forensic pathologist (annual) earning potential in group practices (England and Wales)

Group practice earnings	Total	Caseload
Group practice (average)	£155,160	Maximum fee payable of £2586[56], caseload of 60[57].
Group practice (maximum)	£310,320	Caseload of 120.[58]

In New Zealand, forensic pathologists are reported to earn more than other pathologists. 2016 figures for New Zealand indicate a forensic pathologist (not chief/head) salary of $278,650 to $334,650(NZ).[59] It was mentioned (by the NZ service) that forensic pathologists can earn much more abroad.

In the United States, mean listed salary (2014) for chief medical examiners was $219,778 (approx. €194,117), for deputy chief medical examiners was $192,872(€170,353), and for other medical examiners was $183,597 (€162,161). [60] The salary in the US comes with healthcare provision and a 5% incremental increase annually.[61] In 2016 the salary in Canada (Saskatchewan) for a forensic pathologist was reported to be Can$311,196 (€208,208).[62]

Workforce planning for forensic pathology/OSP

The OSP falls into an unusual gap in terms of workforce planning of medical specialties. The National Doctor Training and Planning unit (NDTP) within the HSE has medical workforce planning responsibility and the Department of Health has a new strategic framework for health workforce planning. Under

[54] https://www.bma.org.uk/advice/employment/pay/consultants-pay-england

[55] The self-employed group practice model was not put forward by anyone as a potential future option for the Irish service. It is a very different model, and notably the Hutton review of forensic pathology in England and Wales recommended introduction of an employed model

[56] PDB minutes Nov 2017 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/744418/PDB_Minutes_Nov_2017.pdf

[57] From the Hutton review, annual average caseload per Home office registered forensic pathologist for the Greater London, South East and West Midlands group.

[58] From Hutton, maximum individual caseload within one group practice.

[59] https://netforum.avectra.com/public/temp/ClientImages/NAME/bda6cbab-6d2b-4895-9a2e-bbdb6bb32fc3.pdf (regional forensic pathologist job advert 2016)

[60] Kemp, W. L. (2014). Forensic Pathologist Salaries in the United States: The Results of Internet Data Collection. Academic forensic pathology, 4(4), 505–513. https://doi.org/10.23907/2014.065

[61] Information provided to the OSP from Deputy Chief Medical Examiner in the US.

[62] https://www.cbc.ca/news/canada/saskatchewan/saskatchewan-hires-second-forensic-pathologist-1.3654940

the OSP structure, responsibility for forensic pathology workforce planning lies with the DoJE in the context of overall Department requirements. No formal communications channel exists between the two Departments in terms of forensic pathology workforce planning. Workforce planning dialogue for the wider pathology specialty is between the Faculty of Pathology/RCPI and the HSE-NDTP.

Other barriers

Another barrier to recruitment (or conversely, if developed to a high standard, this is a factor that can attract staff) relates to facilities. A skilled professional would wish to work in an excellent service with access to the most up to date technology and equipment relevant to the profession. Again, informal feedback indicates that Ireland is not perceived as offering these excellent facilities.

The potential for research and teaching work can be a factor that increases attractiveness of a position. While in most jurisdictions this is considered important, it is not always possible in practice due to workload commitments (see also findings under deliverable 5). In Ireland, the significant teaching work of the OSP staff is not currently formalised with any academic institution and previous arrangements were with individuals rather than the OSP.

Concerns about professional isolation in a small office were also mentioned. Developing connections with other jurisdictions (e.g. potential for secondments), was mentioned by several stakeholders as important.

The high on-call commitment in combination with a lower salary than a hospital consultant is also mentioned as a barrier to recruitment.

A rotating head of the OSP was suggested as a means of making current Deputy State Pathologist roles more appealing. This model was seen to be reflective of hospital department structure and in alignment with managerial roles in other branches of clinical medicine. It was suggested this might appeal to current and future staff entering Deputy positions and would reduce any potential risk associated with a fixed 'position-for-life' appointment.

Key points relating to deliverable 2

There is a worldwide shortage of forensic pathologists

Absence of a training scheme is a major recruitment barrier because there is no domestic pool of applicants.

National training schemes are proposed by many jurisdictions as the solution to generate a domestic pool of applicants.

Recognition of specialty is a pre-requisite for a training scheme and is professionally attractive.

Remuneration may be a barrier to attracting suitable candidates for roles in the OSP, in particular the current vacant Chief State Pathologist role.

Improved facilities and technology can be attractions for recruitment.

Professional isolation within a small office may also present a recruitment barrier.

Opportunities and protected time for research and teaching can also make roles more attractive.

Deliverable 3: Skills and expertise required

Identify the skills and expertise required within the OSP to allow it to carry out its functions, in particular how the OSP can best develop and/or access expertise in specialisms such as paediatric pathology and neuropathology.

The review looked at how other jurisdictions access these skills and expertise. It also considered the development of training and/or fellowships in these areas.

Paediatric pathology

Access to specialist expertise in the area of paediatric and perinatal pathology are required in a small number of cases annually.[63,64] This expertise is of critical importance in cases where the death of a child has occurred in violent or unexplained circumstances.

The current arrangement for provision of forensic paediatric pathology expertise to the coroners' service and the OSP is that two retired paediatric pathologists plus one additional consultant pathologist based in Cork (with a 50% commitment to perinatal pathology) provide a service on a fee-for-case basis. In cases referred to the OSP, the paediatric pathologist and the OSP forensic pathologist work the case together (double doctor system) under the instruction of the relevant coroner. The concentration of this expertise in two retired professionals was felt by some stakeholders to represent a risk for the future provision of paediatric pathology expertise to the OSP for their forensic cases.

There is a much wider issue of a major deficit in perinatal and paediatric pathology in general. Such is the deficit that retired pathologists provide a perinatal pathology service to some maternity units. There is no paediatric or perinatal pathology training route in Ireland, although it was reported that the Faculty of Pathology was looking into the establishment of a training programme at the time of this report.

Given the small number of suspicious child deaths a year, it would not make sense for the OSP to provide a post for a paediatric/perinatal pathologist. It was suggested by some stakeholders that in the future (and only when the office would be fully staffed), forensic pathologists in OSP would, as part of their training in forensic pathology, develop special interest expertise in paediatric/perinatal pathology and neuropathology (and other special interest areas). Rotations in these areas are part of the RCPAth forensic pathology curriculum in the UK and also form part of the proposed curriculum in forensic pathology that has been developed by the Faculty of Pathology/RCPI.

However, to develop enough expertise to perform forensic paediatric/perinatal autopsies would require a fellowship or extensive time spent in an institution with a sufficient workload to complete training. In addition, the volume of paediatric/perinatal forensic cases per annum in Ireland would be insufficient for a pathologist to maintain their expertise in this area. This means that even with a forensic pathology training scheme, with paediatric/perinatal rotations and/or fellowships for forensic pathologists in this area, the OSP will still need to have a paediatric/perinatal pathologist available for the small number of paediatric/perinatal cases that fall under their remit annually.

It was also suggested that if a training programme in forensic pathology were established, it may be possible to offer rotations in forensic pathology to paediatric/perinatal pathologists. However, even with paediatric/perinatal pathologists with forensic training, it is likely the double doctor system for

[63] Perinatal- defined as up to 28 days of age.

[64] For example, in 2015, 10 paediatric deaths were recorded; 6 performed in conjunction with a paediatric or perinatal pathologist (remaining 4 cases were as a direct result of trauma or fire and the input of a paediatric pathologist was deemed unnecessary).

forensic cases would still be required, as a stand-alone paediatric/perinatal pathologist would be unlikely to see enough traumatic cases to maintain competency.[65]

Neuropathology

Neuropathology expertise to the OSP and coronial system is provided by neuropathologists from Beaumont Hospital, Dublin and Cork University Hospital (CUH). Neuropathology is a recognised specialty with the IMC with a formal training scheme. Trainees within the Higher Specialist Training System (HST) in Histopathology can approach a career as a specialist neuropathologist in one of two ways:

- Route A: Part 1 and Part 2 FRCPath in Histopathology followed by an additional period of specialist training in Neuropathology (so that the total minimum training in Neuropathology is 2 years).
- Route B: Part 1 FRCPath with Part 2 slanted towards Neuropathology.

Specialist areas in other jurisdictions

Accessing expertise in paediatric/perinatal pathology and neuropathology is an issue for forensic pathology services in many jurisdictions. For example, in 2019, the Northern Ireland service indicated that it was is losing its only paediatric pathologist and will be using paediatric pathology services from Alder Hey Children's NHS Foundation Trust in Liverpool. [66]

Few jurisdictions have access to paediatric or perinatal pathologists on site. In many jurisdictions, this additional expertise is accessed on a contract or fee-for-service basis. This was sometimes with individual pathologists and sometimes with national services or other external providers. The Leicester University/EMFPU is one of few services with its own paediatric pathologist on site. For neuropathology, it has contracts with three different external neuropathology providers and is in the process of developing a service (for others) in eye, bone pathology, paediatric pathology.

In New Zealand a national perinatal pathology service supports the forensic pathology unit in cases of concealed delivery and stillbirth. In Scotland, three NHS consultant paediatric pathologists do forensic work with the Glasgow forensic pathology department on a double-doctor basis.

Expertise in specialist areas was not necessarily provided by a provider/pathologist within the same jurisdiction, for example a neuropathologist from Scotland works for the New Zealand service on a fee-for-service basis.

Toxicology

Toxicology samples for OSP cases are processed externally by the State Laboratory. These samples, taken by direction of a coroner and paid for by the coroners' service, are transported from the location of the post-mortem examination to be processed by the State Laboratory.

Radiology

Radiology is used by the OSP for ballistics and in the case of Road Rraffic Collisions (RTCs). It is also often used in paediatric cases (OSP workload audit for 2015 indicated that all six of the paediatric cases that year where a paediatric/perinatal pathologist were involved had radiology performed). When needed, radiology investigations are done externally. There is a Service Level Agreement (SLA) between the Dublin Coroner and the Mater hospital for this. Outside of Dublin, radiology provision is

[65] https://www.rcpath.org/uploads/assets/uploaded/8be1acc3-eb68-4c37-b2cdfe429ca5076d.pdf
[66] All paediatric pathology services- not only forensic post-mortems.

less reliable, but the National Integrated Medical Imaging System (NIMIS) has allowed the OSP to have radiology performed in other parts of the country and subsequently reviewed by the team based at the Mater Hospital. There is one forensically trained radiologist based in the Mater hospital.

The Gardaí have mentioned the importance of prompt radiology / CT scanning, particularly in cases where death is as a result of discharge of firearms. Any delay in terms of having an autopsy completed or results becoming available may be critical to the direction of an investigation. There may be potential for training of additional radiologists in forensic radiology, as it is mentioned there are additional radiologists based in the Mater hospital with an interest in the area.

PMCT Scanning

The use of Post-Mortem CT (PMCT) scanning in forensic pathology was mentioned by services in other jurisdictions, but there was divided opinion as to its immediate usefulness for forensic pathology services. Some of those interviewed expressed reservations about the use of CT scanning, particularly in suspicious death, highlighting that it does not obviate the need for post-mortem and that is not as accurate as post-mortem in many areas. The high cost of the equipment and the support infrastructure was mentioned.

While it may offer benefits for post-mortem in non-suspicious cases, potentially reducing the need for post-mortem in some cases or reducing the need for full post-mortem in other cases, for the OSP, which is focused on suspicious cases, a stronger evidence base would be needed before such an investment could be considered.

Recognition of forensic pathologist expertise in court

One of the concerns expressed by some stakeholders was that without recognition of forensic pathology as a specialty, credentials of OSP staff could be called into question in court.

As mentioned under deliverable 2, the GMC in the UK recognises forensic pathology as a distinct specialty, whereas in Ireland, this specialty is not recognised and forensic pathologists working in the OSP are registered as histopathologists on the IMC specialist register.

Forensic pathology is not recognised as a specialty in New Zealand and pathologists are not subdivided on the register. This is not seen as an issue that affects how the evidence of the forensic pathologist is perceived in court.

Stakeholders in Ireland and from forensic pathology services in other jurisdictions highlight that it is vital that the forensic pathologists as an expert witness can demonstrate that they have the requisite skills and experience. Whether or not there is some form of accreditation in place is important, as is assurance that best practice is being followed. The DPP states that forensic pathologists (on the register, for example from the UK) from other jurisdictions have appeared in court as expert witnesses for the defence without any question of the credentials of the pathologist from the OSP being seen as lesser.

From the feedback as part of the review (both from the DPP here and from opinion from other jurisdictions), while recognition of the specialty (or lack of recognition as is the case in Ireland) may not be an issue currently, in the context of evidence in court, it would make sense to ensure the Irish forensic pathologists, with equivalent training and experience to a UK-based forensic pathologist would be able to present themselves as equal in title in a court of law. Gardaí for example indicate that anything that strengthen the cases and the evidence that the pathologist presents would be desirable.

Forensic anthropology

In cases of skeletonised remains, the OSP sometimes requires forensic anthropology expertise. There are no anthropologists officially affiliated with the OSP. They are engaged on a case-by-case basis by the coroner.

In October 2018, an unsolicited proposal was made to the DoJE for the establishment of a national forensic anthropology service.[67] From the forensic pathology service point of view, the important thing is that this expertise should be readily available. An ideal scenario could be a state employed forensic anthropologist, even on a part-time basis, with appropriate training and accreditation. The matter is under consideration by the DoJE and its relevant agencies. It is mentioned by some stakeholders that anthropologists may have expertise in forensic radiology and could assist with student supervision and research, making them potentially a valuable asset to have affiliated with the OSP, especially once a forensic pathology training scheme is established.

Key points relating to deliverable 3

Access to paediatric/perinatal pathology expertise for the OSP is important in the small number of paediatric cases seen annually, but concentration of this expertise in two retired consultants presents a risk.

There is a deficit in paediatric and perinatal pathology in general in Ireland, and there is no training route in Ireland for paediatric pathologists.

In paediatric cases, a double-doctor system operates, with a pathologist from the OSP and a paediatric/perinatal pathologist.

Training a small specialist cohort of paediatric/perinatal forensic pathologists is not recommended, but forensic rotations could form part of paediatric/perinatal pathology training.

There is expertise available in neuropathology, and a training scheme in this area.

Rotations in paediatric/perinatal pathology are included in a draft curriculum for forensic pathology that has been developed by the Faculty of Pathology as part of a proposed training scheme in forensic pathology. Rotations or fellowships in these areas for forensic pathologists of the OSP would not eliminate the need for the double doctor system, with access to a paediatric/perinatal pathologist, as the number of cases seen annually by the OSP would not be sufficient to maintain competency.

In the absence of a enough paediatric/perinatal pathologists available for forensic work in the near future, an option may be to contract services from abroad. However, the requirement for this expertise is a wider issue for the coroner service and may need to be addressed via those channels.

CT scanning equipment and support infrastructure are being brought into/developed in many jurisdictions and would be of advantage in Ireland, but of greater advantage in post-mortem in non-suspicious cases than in suspicious death post-mortem.

Expertise in forensic anthropology should be readily available to the forensic pathology service. A long-term goal may be to have a forensic anthropologist affiliated with the OSP or with Forensic Science Ireland.

[67] From Human Remains Services Ireland which carries out many of the forensic anthropology cases for AGS/ Coroners

Deliverable 4. Training scheme in forensic pathology

Examine the potential for introducing a training scheme for forensic pathology within the OSP and outline some initial options for how this might operate.

Under this deliverable the review looked at the IMC process for specialty recognition and the potential for forensic pathology to be recognised as a specialty in the future. It also considered alternatives to this path.

Importance of training scheme

The importance of having a national training scheme is mentioned under deliverable 2, as the means to ensuring national self-sufficiency in forensic pathology expertise, and a pool of forensic pathologists who want to work and remain in Ireland in the OSP.

Table 6: Current training in forensic pathology in Ireland compared with UK, and potential future options

Current training in forensic pathology in Ireland	**UK**	**Future training option- Ireland**
'Master and Apprentice' system within OSP. This is the path the current Acting Deputy is pursuing.	Recognised training scheme through RCPath.	Externally validated training scheme (recognised by the IMC);
	Trainee posts in various sites throughout UK.	OSP an accredited training site, subject to inspection by the IMC. Training posts approved by HSE-NDTP
'Trainee' must first complete CSCST in Histopathology; Usually this takes seven years post internship (BST followed by HST). This includes taking FRCPath Part 1 and Part 2 of the Royal College of Pathologists (in Histopathology.	Total period of training time is the same as for a histopathologist, that is usually, seven years post-internship. Two exam routes are possible: • Part 1 FRCPath in histopathology followed by Part 2 in forensic pathology • Parts 1 and 2 FRCPath in histopathology, neuropathology or paediatric pathology followed by the Diploma in forensic pathology.	Two years of BST, followed by another two-three years of HST before focusing on forensic pathology in the final two/three years of HST. After successful completion of training (approx. seven years), they would be fully qualified in forensic pathology (CSCST awarded in forensic pathology, and eligible to register on the specialist division of the IMC register as a forensic pathologist.
Two additional years on-the-job training with OSP, with Diploma in Forensic Medical Science DipFMS (University of Glasgow), and Diploma in Medical Jurisprudence from Society of Apothecaries.	Forensic pathologist is fully qualified on completion of training scheme	

Training posts in most other medical specialties are approved and funded through the HSE; through the NDTP and through the hospital site (hospital site provides the salary associated with the post).

Irish Medical Council process for new specialty recognition

Before a training scheme can be approved, forensic pathology must be recognised as a specialty. The IMC emphasises that specialty recognition and approval of training scheme are distinct processes. At the same time the application for specialty recognition must include information on the curriculum for the training scheme under that specialty.

Applications must come through a training body. The relevant training body in this case is the Faculty of Pathology in RCPI. Staff from OSP worked with the Faculty and with staff within RCPI on an application for specialty recognition which was submitted in 2011. A training curriculum was also developed at this stage. However, this application was refused; the stated reason being that: "The critical mass of practitioners currently engaged in this discipline is not sufficient to warrant independent recognition of a specialty".[68]

However, other specialties with small numbers of practitioners have been recognised since then. The OSP and the Faculty subsequently worked on a new application and there is correspondence between the IMC and the Faculty on this, but in 2013, the IMC made the decision not to accept any more applications for specialty recognition until they had completed a review of their process for specialty recognition.

Subsequent to that review, the council has recently changed their process for specialty recognition. Draft guidance on this process was presented at an April 2018 meeting. The final version of this guidance is pending publication; however, the draft guidance shows a three-stage process. In total the process is expected to have a duration of 18 months and involve €8000 in fees (payable at different stages of the process).

Once specialty recognition is in place, application can be made for approval of the training scheme under the specialty. A training curriculum has already been developed by RCPI/OSP/Faculty of Pathology.

For those already trained and working in the job, the potential of using route E was proposed.[69] This is where an applicant is not eligible to apply under the other categories for specialist registration and may instead apply to have their application assessed by a recognised training body. The training body will then advise the IMC on the applicant's eligibility for specialist registration.

Challenges for OSP in relation to the IMC process.

The IMC process is very much focused on the justification for a new specialty recognition based on a traditional definition of 'health service need'. Being to a large degree outside of this definition, the OSP must seek to persuade those coming from the health sector of the need for a specialty and a training scheme that principally serves the needs of the justice sector. There are of course other societal and health service needs that forensic pathology can fulfil and those should also be carefully detailed in an application.

The table below show how points in the (draft) guidance for specialty recognition might be applied in the case of forensic pathology.

[68] Letter from IMC to Dr Michael Curtis 22nd August 2011

[69] https://www.medicalcouncil.ie/Registration/Transfer-between-Divisions/Trainee-Specialist-or-General-to-Specialist-/Category-E.html

Table 7: Guidance points from the IMC Process

Guidance points from the IMC process	Relevant information from OSP/Forensic Pathology
Workforce model of care agreed with HSE.	Model of service will need to be agreed with DoJE articulating the criminal justice system need. Also need to work with HSE to describe where the service meets a health system need.
Formal training body support.	From Faculty of Pathology/RCPI- already in place.
High level training plan.	A curriculum has already been developed in the past, with RCPI/Faculty of Pathology.
Evidence of market research, stakeholder engagement or public consultation in evaluating the need of a new specialty and the associated benefits.	This review may be considered as part of the public consultation/stakeholder engagement.

Options and alternatives

The review considered several options in relation to providing specialist training in forensic pathology.

1. Maintain the status quo. Whereby a specialist in histopathology goes into an Acting Deputy State Pathologist role in the OSP and takes an additional two years to come up to full competency. During these two years, they study towards the exams mentioned above. Adding a further two years of training is not particularly appealing to the trainee who already knows early into their pathology/histopathology training that this is the area in which they want to specialise. It also does not have the status, nor the quality guarantee of a formally approved, externally validated training scheme. It can also be considered that this is an additional unnecessary two years the state is paying for a trainee.

2. The second path is to seek specialist recognition and subsequently, training scheme approval through the IMC's new process. The expected timeline for specialty recognition approval of 18 months indicates that this will not address the short to medium-term gap in OSP. It also does not seem likely that an expedited recognition would be possible. In this case a new forensic pathology specialty may be recognised (at the very earliest) in mid-2020, with (again, at the very earliest), the new training scheme being ready for intake in 2021. The advantage of this path is that there would be a full, externally validated training scheme and a clear pathway for the trainee interested in pursuing this area. It also provides for longer term succession planning and allows the DoJE time to adequately staff the OSP in order to provide the teaching and training required.

3. Trainees in Histopathology usually take seven years to get their CSCST. However, it is possible to take the part 2 exam during the sixth year of training. Trainees do this in some cases and spend their last year in a fellowship in an area of interest to them. In the case of a trainee on HST in histopathology, who wishes to go into forensic pathology, they could do their part 2 early (at the end of year 5) and use their final year as a fellowship within the OSP in forensic pathology. They would be awarded a CSCST in histopathology, but the fellowship year would be formally acknowledged by the training body. This year could form one of the two years of 'on-the-job' training that is part of the current Irish forensic pathology route. In this case, the trainee would take one less year to get to full forensic pathology certification, than would be

required under route 1 (status quo).[70] This would require approval from the histopathology training programme (towards time commitment of CSCST), and payment of salary for the training post. It would likely not be as attractive to a trainee as the more straightforward path of an approved specialist training scheme.

4. Proleptic appointments are made in medicine from time to time. This refers to appointments where a candidate is offered a post, subject to them acquiring a qualification or skill within a certain period after appointment.[71] A fellowship abroad may be the means by which this qualification or skill is acquired. There may be an option for the DoJE to fund such a fellowship abroad as a proleptic appointment within the OSP with a view to setting up the national formal training scheme in the future.

5. Recognition of the specialty of forensic and legal medicine. A submission was made to this review regarding the recognition of the specialty of forensic and legal medicine (with forensic pathology as one of several disciplines under this specialty). This is proposed on the basis that this would align the specialty recognition with other European jurisdictions. This was considered by the steering group to necessitate a much broader dialogue and analysis than was possible in the context and timeline of this review (see Appendix E for additional observations). All documentation relating to this submission has however been kept on file and shared with RCPI and the Faculty of Pathology, for their future consideration. See also Appendix F.

Key points relating to deliverable 4

A training path for forensic pathology should be externally validated, not a master and apprentice system; for status and appeal to the individual, to reduce the total length of time in training; and for quality assurance.

The IMC only approves training schemes in a recognised specialty; the first step towards this is application for specialty recognition with the IMC.

The IMC has not accepted any applications for specialty recognition in recent years but will open to applications in the near future.

The IMC process would take up to two years for approval; if needed, a short-term training solution may be to explore a fellowship abroad/proleptic appointment.

[70] However, the trainee may be less likely to pass exams early in subjects that are of less interest. A trainee would have to be exceptionally able to pursue this route.

[71] https://www.hse.ie/eng/staff/resources/hr-publications/consultantrecruitment-dec16.pdf

Deliverable 5: Research within OSP

Examine how research may be developed and supported within OSP, in particular how time and resources might be made available to conduct research and the potential benefits to the criminal justice system in addition to the individuals concerned.

Importance of teaching and research

An important part of the service provided by the OSP involves teaching of medical students at both undergraduate and post-graduate level. The two current Deputy State Pathologists have provided RSCI lectures, without any financial remuneration. OSP staff also provide lectures for Trinity College Dublin (TCD), University College Dublin (UCD), National University of Ireland-Galway (NUIG) and University College Cork (UCC). The OSP has no academic affiliation with these medical schools and are not involved in developing their curricula. As guest lecturers, OSP pathologists have the option to invoice the medical school for these lectures, but in practice this is not always done.

From time to time medical students and qualified doctors spend time attached to the OSP as part of their required electives. Between eight and ten students are placed with the OSP in a year, each for between two to six weeks.

There is also a small amount of research done (e.g. collaborative research with bioengineering at UCD on stabbing), but this is limited because of staffing issues, the lack of a more senior trainee (specialist registrar) and the prioritisation of service provision.

In addition to the current teaching commitments (see table below) and the training role associated with the establishment of a forensic pathology training post within OSP, several stakeholders suggested that the OSP would be well placed to provide training to others in the death investigation system (once it is firmly established as a forensic pathology training site, and has sufficient staff to deliver the workload). For example, the OSP has previously discussed a collaboration with the College of Apothecaries in the UK for delivery of their Diploma in Forensic Sciences through the OSP. However, the current staffing issues and lack of a trainee have meant that this is no longer an option.

Table 8: Estimation of OSP lecturing/teaching hours

Item	**Total hours**
Undergraduate and postgraduate work in Irish Medical Schools (lectures in RCSI, Trinity, UCD, NUIG, exam prep and corrections in RCSI)	44
Gardaí and military police (Forensic photography, senior investigating officer course, military police international course on death investigation)	24
Forensic radiology course UCD	3
Histopathology study day	7
RCSI Forensic nursing diploma	2.5
Secondary School Science, Technology, Engineering and Maths (STEM) promotion and mini-med programmes	6
Invited talks (conferences, grand rounds etc)	6
Total hours	**92.5**
Total days	**11.5**
Calculations: *One day = Eight hours. Hours indicated include prep time estimated at one hour per lecture item (May be more in reality)	

From a service point of view, engagement in teaching and research adds to the credibility of the office and its staff and the evidence they provide in court. From the individual practitioner's perspective, it helps to keep up to date and to structure knowledge in way that is helpful in court.

Research supported by the work of a forensic pathology service, and the wider death investigation system can have far-reaching societal and public health benefits. For example, research relating to Road Traffic Collision (RTC) fatalities can lead to policy change in road safety. Research can be useful in describing trends in substance abuse deaths, in studying occupational fatalities and identifying unusual infectious disease deaths.

Other jurisdictions

The importance of teaching and research is highlighted in the Cordner report.

> *"In most parts of the developed world, there is a very close connection between clinical medicine services in major hospitals, and academic or university-based teaching and research. Service provision is informed by the intellectual rigour of research and teaching within a university framework, and the research and teaching are informed by the reality of service provision. The strongest parts of clinical medicine are those parts most strongly represented in the structures of the major university hospitals. Credibility in forensic pathology is likewise. A forensic pathology service required to teach and research will more likely be a forensic pathology service that keeps up to date and is intellectually alert."* (Cordner report pg33)

Research is considered important in most jurisdictions/services, but time is cited as a major factor that limits the amount of research that can be done. The benefit to the service and its importance for the reputation of the forensic pathology service was mentioned. "Without it the specialty stagnates" stated a forensic pathologist interviewed.

Some benefits relating to research mentioned by stakeholders in Ireland and forensic pathology services in other jurisdictions are captured in the table below:

Table 9: Individual, service and societal benefits of research in forensic pathology and related areas.

Research-benefits to the individual	**Benefits to the system/service**	**Benefits to society**
Keeps individual stimulated in the subject and up to date.	Speaks to the credibility of the service and the individual credibility when presenting evidence in court.	Potential to inform public policy- e.g. in road safety.
Attractive from a professional point of view to engage in research and to publish results.	Publication of high-quality research raises profile of service internationally.	Useful information for occupational health and safety.
Allows collaboration with other public health bodies such as the National Drug-related Death Index and the Health Research Board.	Up to date knowledge of current trends in drug use. Awareness of public health issues in the community.	Develops understanding of trends in death from substance abuse. Public health information – information on epidemics and infectious disease deaths.

The close links many forensic pathology services have with universities should in theory support this research role. However even some services which were based within universities do not always have a workload which allows them to participate in research to the extent they desire (from interviews). Contractual arrangements that provide for protected time for research and teaching may be one way to support research. In the UK for example, the forensic pathologists of Leicester University/EMFPU are employed on academic contracts, with a number of PAs (programmed activities) for research defined as part of the contract.

Research fellow

One of the tasks of the review under this deliverable was to examine the potential for a research fellow position. Based on how research is done in other jurisdictions, it appears that it would be preferable and more in keeping with practice in other jurisdictions, to allow all staff to take on a certain amount of research and teaching responsibility, rather than concentrating the research in one individual. However, this can only happen in an adequately staffed department where the workload and travel are fairly distributed and protected time for research is a realistic option.

Research funding

Other jurisdictions mention that there is not much funding available for forensic pathology research. For example, the EMFPU, generates its own funding for their research, through the service provided to the Home Office, and through courses they run for external professionals.

Key points relating to deliverable 5

Pathologists of the OSP deliver lectures/modules to medical schools, specialist histopathology trainees and to Gardaí.

Research in forensic pathology is important, for the individual, for the quality of the forensic pathology service and for the benefit of society.

Many jurisdictions cite workload challenges as a barrier to conducting research. Teaching commitments can only be delivered by OSP if there is a full complement of staff.

Contracts that specify protected time for training and/or academic posts could be useful.

Situation of forensic pathology service within an academic teaching hospital with formal links to a university may support the research role of OSP (see deliverable 1)

Deliverable 6: Interactions between OSP and DoJE

Assess interaction between the OSP and the Department to ensure they are fully effective- communication structures- role of OSP in supporting policy formulation- role of HR in managing issues around remuneration, terms and conditions, industrial relations (IR) etc.

As mentioned under deliverable 1, the OSP is a non-statutory body under the DoJE. Within the DoJE the Prisons and Probations Policy Division has responsibility for the OSP and there is an oversight agreement in place between the OSP and the Department. OSP Human resources (HR) are managed through the DoJE central HR role.

Interactions with the Prisons and Probations Policy Division were broadly seen as positive by OSP staff, The lack of technical competency in the area of forensic pathology or death investigation in general on the part of the division was mentioned; not as a failing on that part of the individuals of that unit, but rather as a gap in the overall system of governance. In most other jurisdictions, oversight is

provided via a council or board with representation from a wide range of stakeholders in the death investigation system. This board can also provide a forum for development and discussion of policy relating to forensic pathology and death investigation in general.

Interactions with An Gardaí Siochána (AGS)

From both the OSP perspective and the perspective of AGS, the relationship with the Gardaí is seen in a positive light. It is reported that there is open exchange of information and a collaborative relationship. The relationship is not described formally as in some other jurisdictions, but this does not appear to present any issues.

The OSP role in training of new Garda recruits and detective training courses is considered very important, and it is stressed by ASG that this should be continued.

Interactions with the Director of Public Prosecutions (DPP)

The DPP view on the interactions with OSP is that the relationship is good and there is a high degree of confidence in the evidence presented by the forensic pathologists of the OSP in criminal cases. The view of the DPP was sought in relation to the (lack of) specialty recognition in forensic pathology. This was not viewed as a concern by the DPP in terms of the credibility of the OSP as expert witnesses. The DPP states that forensic pathologists (for example from the UK) from other jurisdictions have appeared in court as expert witnesses for the defence without any question of the credentials of the pathologist from the OSP being seen as lesser. They see the crucial point is ensuring that the pathologists of the OSP have the appropriate training. From an OSP staffing point of view, the DPP stresses the importance for the criminal justice system that a forensic pathology service would be available into the future and expresses concern about issues in recruiting forensic pathologists to the OSP.

Mass fatality work

The OSP participates in mass fatality planning, in the context of the national framework for major emergency management.

Key points under deliverable 6

Interactions between the OSP and the DoJE are generally good. Establishment of an advisory council can ensure a robust governance structure, supported by staff within the DoJE.

A future advisory council can also be a forum for relevant policy development and dialogue.

Communication is good between the OSP and stakeholders such as the DPP and the Gardaí.

Training provided by the OSP for Gardaí is of value and should be continued. These training commitments can only be delivered by OSP if there is a full complement of staff.

Deliverable 7: Interactions with the coroner service

Assess interactions with the coroner service to ensure they are fully effective.

The coroner service essentially comprises the coroners appointed as quasi-judicial officers to the various districts (county and sub-county) throughout the country. Coroners are either barristers/solicitors or registered medical practitioners and are appointed by either the Local Authority (LA), or in the case of the Dublin City Coroner, by the Minister for Justice and Equality. All coroners are members of the Coroners Society of Ireland (CSI), a professional body governed by an elected Council and which organizes continuing professional education meetings for the coroners. The

coroner's core function is to investigate sudden and unexplained deaths so that ultimately a death certificate can be issued. However, there is also a broader remit in relation to discovering the facts and circumstances of deaths and in making recommendations in the prevention of further deaths. In a small number of death investigations, the coroner's inquest contributes to the State fulfilling its obligations under Article two of the European Convention on Human Rights.

At the end of 2016, there were 35 coroners in 39 coroner districts, with Dublin city and Cork city being the only full-time coroners.[72]

It may arise that where a body is discovered by An Garda Síochána, that the OSP will be contacted prior to the coroner. However, in practice there is little difference in time as the coroner's direction will be required.

Access to the mortuary facility at Whitehall needs to be clarified to ensure that the post-mortem requirements of both the Dublin Coroner and the OSP are sufficiently regarded. OSP had raised this as an issue. There may be a need to clarify the arrangements for operation/management and access to ensure appropriate access for the OSP.

Additional observations relating to the coroners' service and coroner post-mortems in general, which arose in the context of the review are noted in Appendix E.

Key points relating to deliverable 7

Access to the mortuary facility at Whitehall needs to be clarified to ensure that the post-mortem requirements of both the Dublin Coroner and the OSP are sufficiently regarded

[72] Figures provided by DoJE

Chapter 5: Recommendations

Current recruitment and staffing challenges

1. Address the issue of the current vacant post in the OSP

The recent retirement of the State Pathologist and impending retirement of one of the Deputy State Pathologists pose serious risks to the service. Immediate action is required if the workload is to be kept at levels that guarantee the quality of the work, and the health and job satisfaction of the continuing staff. If staff numbers reduce further than the current one in three rota, it will pose a health risk to the remaining staff and will compromise the training of the Acting Deputy.

The most pressing staffing issue facing the OSP is the vacant Chief State Pathologist position. There are some indications from this review that remuneration is a barrier to recruitment, in relation to this vacancy. A review of the criteria and remuneration package should be done as soon as possible in order to address this issue. A number of stakeholders suggested this may include an additional allowance for the Chief State Pathologist position, based on the clinical director allowance in the HSE.

1.1. In light of difficulties recruiting a Chief State Pathologist, DoJE to review criteria and remuneration package for this position..

Timeframe[73]: Immediate

Action by: DoJE to pursue centrally via Civil Service pay approval mechanisms.

Dependencies: Funding available within Department resources; Public service pay policy

2. Make roles within OSP attractive and ensure current staff are valued.

To ensure in general that all OSP positions are attractive from a remuneration point of view, and that current staff feel valued, all remuneration packages should be examined in both the international and national context.

It may also be attractive to pathologists of the OSP to establish a rotating head/Chief State Pathologist position. This would be in alignment with managerial roles in other branches of clinical medicine. It may appeal to current and future staff in Deputy State Pathologist positions and would reduce any potential risk associated with a fixed 'position-for-life' appointment. Exploration of this model is recommended.

An additional means of demonstrating that staff are valued is to have appropriate occupational health services/supports in place. This is already underway by the DoJE however, and thus is not included as a specific recommendation.

2.1. Examine remuneration of all forensic pathologists to ensure roles in OSP are competitive in the context of the pool of available national and international candidates for positions.

Timeframe: Short-term

Action by: DoJE to pursue centrally via Civil Service pay approval mechanisms**.**

Dependencies: Funding available within Department resources; Public service pay policy

[73] Timeframes
Immediate: Within 6 months
Short-term: 6 months- 2 years
Medium-term: 2- 5 years
Long-term: 5 years +

2.2. Explore the feasibility of establishing a rotating head for the OSP.

Timeframe: Medium-term

Action by: DoJE

Dependencies: n/a

3. Develop a plan for service delivery in the event of continued recruitment challenges.

If staffing difficulties continue in the short-term, the option of a locum for a fixed period may be considered, if such expertise is available.

There is also the option to look to the self-employed forensic pathologists of England and Wales to work on cases in Ireland on a fee for service basis. This may be a costly option as their fee for case is approximately £2500.

Another option may be to reduce the time spent on travel by forensic pathologists of the OSP by having the bodies transported to a centralised facility for post-mortem, rather than having the OSP forensic pathologist travel to the coroner area to perform the post-mortem. A change of this nature, however, would require extensive discussion with coroners and local authorities. Aspects that would need to be considered include the impact on the family and any additional costs involved. Priority should be placed on ensuring adequate numbers of pathologists to deliver the service under the current arrangements.

3.1. DoJE to explore the appointment of a locum until a full staff complement is achieved.

Timeframe: Immediate

Action by: DoJE, in consultation with OSP (to determine potential locum availability)

Dependencies: Funding available within Department resources, availability of forensic pathologists.

3.2. Investigate the possibility of contracting self-employed forensic pathologists from England/Wales on a fee for service basis.

Timeframe: Short-term

Action by: DoJE

Dependencies: Funding available within Department resources, availability of forensic pathologists

3.3. DoJE to investigate the feasibility of reducing the travel time for OSP by having the body for post-mortem transported from coroner areas outside of Dublin to Dublin City Mortuary for the post-mortem.

Timeframe: Medium-term

Action by: DoJE, OSP, in consultation with Coroners

Dependencies: Mortuary (storage) capacity in Whitehall, funding for driver, family considerations.

Succession planning and national self-sufficiency in forensic pathology.

4. Make an application to the Irish Medical Council for specialty recognition of forensic pathology.

Ensuring that there is a national pool of expertise in forensic pathology in the future can only be done through the establishment of a training scheme in forensic pathology. Recognition of forensic pathology as a specialty is a pre-requisite for a training scheme. Specialty recognition is also important for ensuring the status of forensic pathology (which has a bearing on attractiveness of roles/career path).

RCPI/Faculty of pathology, in collaboration with the OSP should develop this proposal as soon as possible after the IMC finalises its guidance for recognition of new specialties.

The public consultation that is a requirement of the IMC guidance may wish to draw from this review to comprehensively articulate the 'service need' for forensic pathology. The application should also highlight the societal and health system benefits of forensic pathology as a discipline.

As part of the application for specialty recognition, a plan for training numbers based on future workforce requirements will be needed.

4.1. OSP and DoJE to support RCPI in making an application for specialty recognition using the IMC's new process. OSP, RCPI and DoJE will need to engage with the HSE-National Doctor Training and Planning (HSE-NDTP) in the development of the application.

Timeframe: Immediate

Action by: OSP, RCPI, DoJE to engage with IMC, HSE-NDTP

Dependencies: Funding for application fee, IMC must open process first, workforce plan with future workforce requirements

5. Establish a training scheme to ensure national self-sufficiency in forensic pathology expertise

There is a need for an externally validated training scheme in forensic pathology in Ireland. Without it, the country cannot hope to staff a service. Many jurisdictions emphasise the worldwide shortage of forensic pathologists and the need to develop a national pool of expertise via a national training scheme. Various options have been outlined for the establishment of a training scheme in forensic pathology (under deliverable 4). The one preferred by this review is for the recognition of a training scheme by the IMC (subsequent to recognition of the specialty of forensic pathology). In this, the Faculty of Pathology/RCPI has already developed a curriculum.

Exploration of a fellowship abroad in forensic pathology as part of a future training programme may also be useful. It would allow a trainee to have exposure to a centre with higher caseload, for example, and would be a positive affiliation for the OSP. This may be useful as a means of bridging any training gap while a training scheme in forensic pathology is not yet established.

5.1. OSP to support RCPI in seeking approval for the training programme in forensic pathology from the Irish Medical Council.

Timeframe: Short-term

Action by: OSP, RCPI, Faculty of Pathology.

Dependencies: Specialty Recognition for forensic pathology, sufficient training capacity in OSP.

5.2. DoJE to engage with OSP to explore potential for fellowship abroad as part of future training programme

Timeframe: Short-term

Action by: OSP, RCPI, Faculty of Pathology.

Dependencies: Availability of appropriate fellowship abroad, funding.

6. Raise profile of forensic pathology among medical students/trainees

In order to attract medical students and pathology trainees into forensic pathology, there should ideally be a training pathway (recommendation 4 and 5). However, this alone may not be enough to generate enough interest in forensic pathology as a career.

There is already a foundation in place with the OSP teaching commitments in medical schools. Placements and collaborations with final year medical students on project are also currently done by OSP staff and this should continue. Where possible the project collaborations should be formalised, and students made aware of the opportunities at an early stage in their medical degree. Rotations for pathology trainees would also help to raise the profile. All of these require enough staff for their successful delivery.

6.1. Action: OSP to engage with RCPI to raise the profile of forensic pathology among trainees in Basic Specialist Training (BST).

Timeframe: Medium-term

Action by: OSP, RCPI, Faculty of Pathology.

Dependencies: Specialty recognition and training programme in place

6.2. OSP to engage with medical schools to continue providing opportunities for recognised clinical placements (medical students) and with RCPI to develop rotations for pathology trainees (Long-term)

Timeframe: Medium-term

Action by: OSP, RCPI, Medical Schools

Dependencies: Sufficient staff/training capacity needed within OSP.

Governance and operational structure

7. Explore how the operational model of the OSP might be adapted to reflect a medical unit within an academic teaching hospital.

It is recommended to explore the potential for modelling the OSP/forensic pathology service of the future, along the lines of a medical unit, within an academic teaching hospital, with strong links to the associated university. This would reflect international practice, would reduce any sense of isolation of the current structure, would be more attractive to prospective staff, and would better support a research and teaching function of the OSP.

7.1. DoJE to explore the potential of adopting this model.

Timeframe: Long-term.

Action by: DoJE to engage with DoH, HSE, Medical Schools

Dependencies: Channels for communication between government departments

8. Establish a governance structure that provides for oversight, accountability and strategic direction, with technical competencies relevant to forensic pathology and/or death investigation.

Oversight and accountability are crucial, and while there are governance arrangements in place between the DoJE and the OSP, there are models from other jurisdictions, such as Ontario, which provide for a greater breadth of stakeholder engagement, and a technical competency in death investigation that is currently lacking.

To provide the requisite support and oversight to the OSP, we recommend establishment of an advisory council or similar structure with relevant representation from interested stakeholders (including the DoJE). The establishment of such an advisory council should support the work of the OSP, while at the same time, maintaining the independence and objectivity of the OSP. The council should also include representatives of the Coroner Society of Ireland.

This council would have an advisory and policy role and should ensure that policy formulation relevant to the OSP would have the involvement of representatives from the OSP. It would ensure the approval and reviews of codes of practice for the forensic pathology service by the required stakeholders. The Chief State Pathologist would be directly accountable to the council.

8.1. DoJE to establish an advisory council with representation from appropriate stakeholders in death investigation in Ireland.

Timeframe: Medium-term

Action by: DoJE , OSP, in consultation with stakeholders in death investigation.

Dependencies: Willingness and availability of relevant stakeholders to participate in governance structure.

8.2. Use models from similar jurisdictions to develop constitution/terms of reference for this advisory council.

Timeframe: Medium-term

Action by: DoJE , OSP, in consultation with stakeholders in death investigation.

Dependencies: Willingness and availability of relevant stakeholders to participate in governance structure.

9. Build upon the positive foundations of quality management within the OSP to ensure confidence in the reliability of the forensic pathology service.

Establishment and adherence to quality standards and inspections of the work of the service against these standards are crucial to ensure a trusted forensic pathology service into the future. A culture of quality management exists in OSP and should be supported and enhanced. The NQIP in histopathology can provide a useful template to ensure a robust approach to quality management activities. [74] ECLM standards for accreditation of forensic pathology services can also provide a useful reference.

There is also a precedent of Irish pathologists accessing external quality assurance (EQA) schemes in other jurisdictions, on a fee per participant basis. The feasibility of a similar arrangement could be explored for the forensic pathologists of the OSP.

9.1. Continue the peer review/critical conclusion checking and internal case review which is already part of the work of the OSP and ensure it is fully embedded into the service.

Timeframe: Short-term

Action by: OSP

Dependencies: Sufficient staff levels and training

9.2. Explore potential for access to External Quality Assurance (EQA) schemes in other jurisdictions.

Timeframe: Long-term

Action by: DoJE , OSP

Dependencies: Suitable EQA schemes in existence[75], Funding available within Department resources.

9.3. Explore the use of the National Quality Improvement Programme (NQIP) -Pathology- as a template to guide quality management processes of OSP.

Timeframe: Medium-term

Action by: OSP in consultation with Faculty of Pathology

Dependencies: Sufficient staff levels

[74] Note- NQIP more applicable to non-forensic post-mortem practice but could be useful template
[75] Currently no EQA specific for forensic pathology or post-mortem

Research and teaching

10. Embed teaching and research within the OSP.

Opportunity for research and teaching makes forensic pathology roles more attractive to prospective candidates. It also enhances the reputation and credibility of the service (nationally and internationally) and broadens its societal and health system benefit.

Research and teaching can only happen when time is made available for it and where it is considered part of the core workload and not an additional 'add-on'.

Staff from the OSP already engage in teaching work and research and this contribution should be recognised and rewarded. Ideally, contracts with staff of the service should provide for research and teaching time and managerial and operational arrangements should facilitate the staff in protecting that time.

In the absence of formal affiliations with medical schools, ensuring the visibility of forensic pathology as a future career for medical students is a challenge.

The situation of the forensic pathology service within an academic teaching hospital (recommendation 7) could potentially support this research and teaching function.

The forensic pathology service has the potential to become a centre for teaching , not only for medical schools, but also for teaching and in-service courses for professionals working in related areas. For example, the OSP already delivers training to Gardaí in relation to the services they provide, and this is valued highly.

10.1. Engage with Universities and other organisations to whom the OSP provides teaching support, to formalise and recognise the teaching and research contribution of the OSP.

Timeframe: Medium-term

Action by: DoJE , OSP, to engage with medical schools, AGS

Dependencies: Sufficient staff levels to deliver teaching.

Access to specialist expertise

11. Ensure access to paediatric and perinatal pathology expertise.

The dearth of paediatric and perinatal pathology expertise in Ireland is a concern for pathology in general. The OSP sees a small number of paediatric cases annually, but access to this (perinatal/paediatric pathology) expertise for these cases is vital. In the main, a small number of retired pathologists are relied upon for provision of this expertise, and this presents a risk for the future availability of such expertise (not only for the OSP but also for the greater number of other coroner cases which require this expertise).

Few services internationally have paediatric/perinatal pathologists on staff. Many operate on a fee for service basis, some across jurisdictions.

Sustainable arrangements for access to paediatric and perinatal pathology expertise should be explored in consultation with the coroners' service. It may be helpful to explore possibilities for formal arrangements/memorandum of understanding (MoU) with paediatric pathology expertise in other jurisdictions.

11.1. OSP/ DoJE (in consultation with coroner service) to investigate need and feasibility of a MoU for forensic paediatric pathology service with another jurisdiction.

Timeframe: Medium-term

Action by: OSP, DoJE, in consultation with coroners' service

Dependencies: Available external expertise, Funding available within Department resources

12. Support the development of training in specialist areas.

Training in paediatric/perinatal pathology and neuropathology fall under the remit of RCPI. There is currently a training scheme for neuropathology, but none for paediatric or perinatal pathology.

In the future, the OSP may be able to support training in these areas (for example in facilitating rotations for paediatric/perinatal pathology trainees and neuropathology trainees) However, this will only be possible when there is a forensic pathology training scheme in place and when the OSP has adequate staff and training capacity.

Incorporating rotations in paediatric/perinatal pathology for forensic pathology trainees (as is done in forensic pathology training schemes in the UK) would help to increase the knowledge of paediatric/perinatal pathology among forensic pathologists. The draft forensic pathology curriculum specifies rotations in these areas. However, a rotation through the area will not mean that a forensic pathologist is capable of performing a forensic autopsy in a paediatric setting, and the OSP (and the coroners service) will still need access to this external expertise for the conduct of paediatric post-mortem (on a double doctor basis).

Rotations in forensic pathology for paediatric/perinatal pathology (in the future, should a training route be established in Ireland) and neuropathology trainees may help to increase the pool of paediatric/perinatal pathologists and neuropathologists who would provide services to a death investigation service.

12.1. OSP to advise RCPI on inclusion of rotations in paediatric/perinatal pathology, neuropathology and radiology in a future forensic pathology curriculum.

Timeframe: Short-term

Action by: OSP, RCPI

Dependencies: Forensic pathology training scheme in place.

12.2. OSP to support rotations for future trainees in paediatric/perinatal pathology and neuropathology

Timeframe: Long-term

Action by: OSP, in consultation with RCPI

Dependencies: Forensic pathology training scheme in place, sufficient OSP staff numbers to support rotations, Paediatric/perinatal pathology curriculum developed/training scheme approved.

Mortuary facilities

13. Maintain access to appropriate facilities for the conduct of forensic post-mortems.

The practice in many other jurisdictions is that the forensic pathology unit/service has its own facilities for post-mortem. The OSP shares the purpose-built mortuary facility in Whitehall with the Dublin Coroner. The facility is now entirely under the responsibility of the DoJE. However, given the increased use of the facility, issues of capacity are arising. These issues should be discussed by the Department, the OSP and Dublin Coroner to ensure optimum access for OSP.

Ideally the mortuary/mortuaries and labs in use by the OSP should be inspected according to forensic standards. Although mortuary facilities are subject to HSE health and safety standards and inspections, these standards may not be adequate for the practice of post-mortem, in particular forensic post-mortem. If in the future, there was a dedicated mortuary for the OSP, specifically for the provision of the forensic pathology service, the OSP would be able to explore options for accreditation of that mortuary according to forensic standards. The OSP may also then be able to advise the coroner service regarding potential options for accreditation of hospital mortuaries used for post-mortem.

13.1. DoJE to engage with OSP and Dublin City Coroner to address issues regarding capacity for mortuary facility at Whitehall.

Timeframe: Short-term

Action by: DoJE

Dependencies: n/a

13.2. DoJE to explore the potential for provision of a mortuary facility specifically for the OSP.

Timeframe: Long-term

Action by: DoJE

Dependencies: n/a

List of Appendices

See additional documents for appendices.