



Western Australian Auditor General's Report

Follow-up Performance Audit of *Behind the Evidence: Forensic Services*

Report 8 – June 2013





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**Office of the Auditor General
Western Australia**

7th Floor Albert Facey House
469 Wellington Street, Perth

Mail to:

Perth BC, PO Box 8489
PERTH WA 6849

T: 08 6557 7500

F: 08 6557 7600

E: info@audit.wa.gov.au

W: www.audit.wa.gov.au

National Relay Service TTY: 13 36 77
(to assist persons with hearing and voice impairment)

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WESTERN AUSTRALIAN AUDITOR GENERAL'S REPORT

**Follow-up Performance Audit of
Behind the Evidence: Forensic Services**

Report 8
June 2013



**THE PRESIDENT
LEGISLATIVE COUNCIL**

**THE SPEAKER
LEGISLATIVE ASSEMBLY**

FOLLOW-UP PERFORMANCE AUDIT OF FORENSIC SERVICES: BEHIND THE EVIDENCE (2006)

This report has been prepared for submission to Parliament under the provisions of section 25 of the *Auditor General Act 2006*.

Performance audits are an integral part of the overall audit program. They seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities, and identify opportunities for improved performance.

The information provided through this approach will, I am sure, assist Parliament in better evaluating agency performance and enhance parliamentary decision-making to the benefit of all Western Australians.

A handwritten signature in black ink, appearing to read 'C. Murphy'.

COLIN MURPHY
AUDITOR GENERAL
19 June 2013

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Auditor General's Overview



Forensic evidence has become a critical part of the investigation and prosecution of all types of crime. Inaccurate forensic analysis can compromise major cases and a lack of timeliness in providing forensic analysis can cause delays to cases in the courts. Demand for forensic services has increased substantially in recent years, and this shows no sign of slowing.

In 2006 our report, *Behind the Evidence: Forensic Services* found a backlog of uncompleted forensic tests resulting in delays in the justice system that were largely caused by inadequate coordination and prioritisation across forensic services agencies. The agencies were also not adequately planning for expected future demand.

The agencies have taken on board the findings and recommendations from our 2006 report. The backlog of testing has been eliminated, there is much improved coordination and prioritisation between agencies, services are generally timely, and there are no reported delays in the justice system. However, concerns over planning for expected increases in demand remain. Agencies need to develop robust strategies to match capacity with demand and ensure improvements are sustained.

Executive Summary

Background

Forensic services identify, collect and analyse evidence from crime scenes, sudden deaths, traffic incidents, disasters and incidents involving chemical, biological, radiological, nuclear and explosive threats. Ensuring that these services are delivered effectively, efficiently and in a coordinated way is crucial to public safety and the smooth functioning of Western Australia's criminal justice system. Inaccurate forensic analysis can adversely affect major cases and people's lives.

WA Police uses forensic analysis to guide investigations, develop prosecution cases and exclude persons of interest where the evidence justifies that. The Office of the Director of Public Prosecutions (DPP) uses forensic analysis to make a case for prosecution and the Office of the State Coroner (the Coroner's Office) uses forensic analysis to identify the cause of a death. Other stakeholders in the criminal justice system, defence counsel, people charged with crimes and their families, also have an interest in forensic services operating effectively and efficiently.

In May 2006, we tabled a report, *Behind the Evidence: Forensic Services*, which assessed the effectiveness of Western Australia's forensic services. The agencies involved were: WA Police, PathWest (part of the Department of Health) and Chemistry Centre (then part of the Department of Industry and Resources).

The 2006 audit found that while some aspects of forensic services were working well, forensic service agencies were not coordinating and prioritising their efforts. As a result, forensic services were not being provided in a timely and effective manner to meet the needs of the justice system, resulting in a backlog. The audit also found that agencies were not adequately planning for future demand, and that the lack of a suitable exhibit register to record and track forensic exhibits put the security and reliability of the exhibits at risk.

We recommended that WA Police, PathWest and the Chemistry Centre consider the impact across forensic service agencies when allocating resources, develop whole-of-service capacity to meet future demand and build on the current forensic information systems to improve access, tracking and sharing of information.

The objective of this follow-up audit was to determine if there has been an improvement in the delivery of forensic services since 2006. We assessed changes in the delivery of forensic services and focused on four questions:

- Do agencies have clear strategies and policies in place to support coordination in delivery of forensic services to government?
- Are PathWest, the ChemCentre and WA Police Forensic Division providing timely and quality information to WA Police Forensic Division, the DPP and the State Coroner?

- Have forensic information systems been enhanced to improve access, tracking and secure sharing of information?
- Is there ongoing assessment and resolution of risks related to the security and occupational safety and health of forensic exhibit collection and storage facilities?

Audit Conclusion

There has been significant improvement in the coordination and delivery of forensic services since 2006. The backlog of forensic testing has been eliminated and stakeholders can rely on the overall quality and timeliness of forensic services.

Although there is no backlog, not all agencies are consistently meeting agreed timeframes for testing, and agency laboratories are operating at or close to capacity. Agencies are not adequately prepared for further increases in the volume of testing due to expected population increase and the introduction of new testing technologies. This is a risk to maintaining the improvements in forensic services since our 2006 report.

Forensic information systems have been enhanced to improve access, tracking and security but efficiencies could be achieved by replacing the manual transcription of information between systems with system interfaces.

Key Findings

- Better communication and coordination between agencies has substantially improved service delivery and reduced duplication of effort.
- Agencies are providing analysis that meets required standards, have eliminated any testing backlog, are measuring timeliness and are largely meeting agreed targets.
- WA Police are more selective about what exhibits are tested, using a 'triaging' process to select the exhibits which are most likely to be of value in solving crime. This has been key in eliminating the testing backlog. Changes made by PathWest and the ChemCentre have also helped eliminate the backlog in forensic testing.
- The Joint Consultative Committee (JCC) of forensic agencies and the DPP is operating effectively as a forum for cooperation between agencies at strategic and operational levels. Neither the Coroner's Office nor the DPP have reported any dissatisfaction with service delivery by WA Police Forensic Division, ChemCentre or PathWest since the establishment of the JCC.
- Growing demand for testing is putting pressure on report turnaround times. Agencies' capacity to meet any future growth in the demand for forensic testing is limited.

- WA Police are concerned at the potential for ChemCentre's competing demands to affect its capacity to prioritise and complete WA Police testing requests within agreed timeframes. Legislative change in 2007 required the ChemCentre to develop and deliver scientific information and advice, on a commercial basis, to government, industry and the community. While work from WA Police accounts for 48.9 per cent of the revenue for ChemCentre Forensic Science Laboratory it only makes up 17.5 per cent of ChemCentre's total revenue.
- WA Police have centralised forensic information in the Forensic Register for ready access by authorised users and forensic information systems have been enhanced to improve access, tracking and secure sharing of information. However, there are still some areas where the implementation and use of the Forensic Register could be improved.
- Exhibits can be reliably tracked across all agencies, but manual transcription of data between different agency systems creates inefficiencies and a risk of error.
- There is ongoing assessment and resolution of risks related to the security and occupational safety and health (OSH) of forensic exhibit collection and storage facilities. The storage facilities meet security and OSH standards for handling and storing forensic exhibits.

Recommendations

ChemCentre and PathWest and WA Police should:

- establish an efficient electronic interface between their laboratory management systems and the Forensic Register to reduce the cost of manually duplicating information and the risk of transcription error
- develop strategies to address the expected increase in demand for forensic services driven by population increases and technological change

ChemCentre should:

- develop strategies to ensure all testing is done within agreed timeframes

Agency Responses

PathWest

PathWest Laboratory Medicine WA accepts the overall findings contained within the Summary of Findings for the *2013 Follow-Up Performance Audit: Behind the Evidence – Forensic Services*.

PathWest acknowledges and agrees with:

- the requirement for a Forensic Biology laboratory information management system that has an electronic interface to allow direct communication with the WA Police Forensic Register
- the finding that PathWest Forensic Biology is reaching capacity in the current premises and the requirement for suitable premises to accommodate the likely future demand for forensic DNA testing
- the need to develop and document strategies to address the expected increase in demand for forensic services driven by population increases and technological change

Western Australia Police

Whilst the audit has not examined the demand for forensic services arising from policing activities other than the investigation of crime incidents (for example, Road Traffic operations) the issues relative to how the WA Police and its partners will meet the future demand for forensic services are critical and at the forethought of current planning.

The document clearly articulates the demand for forensic services and new technologies is increasing and that the capacity, capability and performances of our partners have a direct impact on the WA Police and the State's criminal justice system. Your report supports our strategic intention to review the existing legislation, partnerships and funding arrangements underpinning the current model and progress a strategy to source additional forensic services from alternative service providers.

ChemCentre

ChemCentre provided an official response to this report on 14 June 2013, and the full text of response can be found in Appendix 2.

In its response ChemCentre welcomes this report into forensic service delivery in WA, and generally agrees with the report findings. ChemCentre provided clarifying comments on its commercial work and planning ahead for forensic service delivery.

Background

Forensic services play an important role in criminal investigations in Western Australia by assisting in the identification and analysis of evidence from crime scenes. The growth of Western Australia's population and developments in forensic science in recent years have led to a large increase in the amount of forensic testing performed by government forensic service providers. For the criminal justice system to work effectively, it is important that these services are efficient and coordinated.

There have been increases in the volume of forensic testing in the last five years :

- in 2011-12, PathWest Forensic Pathology conducted 1 875 post-mortems, an increase of 34 per cent since 2004-05
- in 2012, PathWest Forensic Biology received 30 171 requests for analysis, primarily from WA Police, an increase of 8.7 per cent since 2005
- in 2011-12, the Chemistry Centre's Forensic Science Laboratory conducted 84 862 tests on 57 041 forensic exhibits for the WA Police and the State Coroner, an increase of 70 per cent since 2004-05.

The main forensic service providers are Chemistry Centre WA (ChemCentre), PathWest Forensic Biology (PathWest) and WA Police Forensic Division, who each provide services to WA Police investigations.

- ChemCentre provides toxicology, drug and alcohol, and materials testing.
- PathWest provides DNA, hair, fabric damage and body fluid analysis, and species identification
- WA Police Forensic Division provides fingerprint, blood pattern, ballistics and explosives analysis, as well as coordinating testing from the other agencies.
- PathWest Forensic Pathology conducts post mortems primarily for the Coroner with only around four per cent performed as part of a police investigation.

WA Police investigators use results from forensic analyses to guide investigations, develop prosecution cases and exclude persons of interest where the evidence justifies that. Other key users of forensic services are the DPP, which uses forensic evidence to make a case for prosecution and the Coroner's Office, which uses forensic evidence to identify the cause of a death. The role of forensic analysis in solving crimes is outlined in Figure 1.

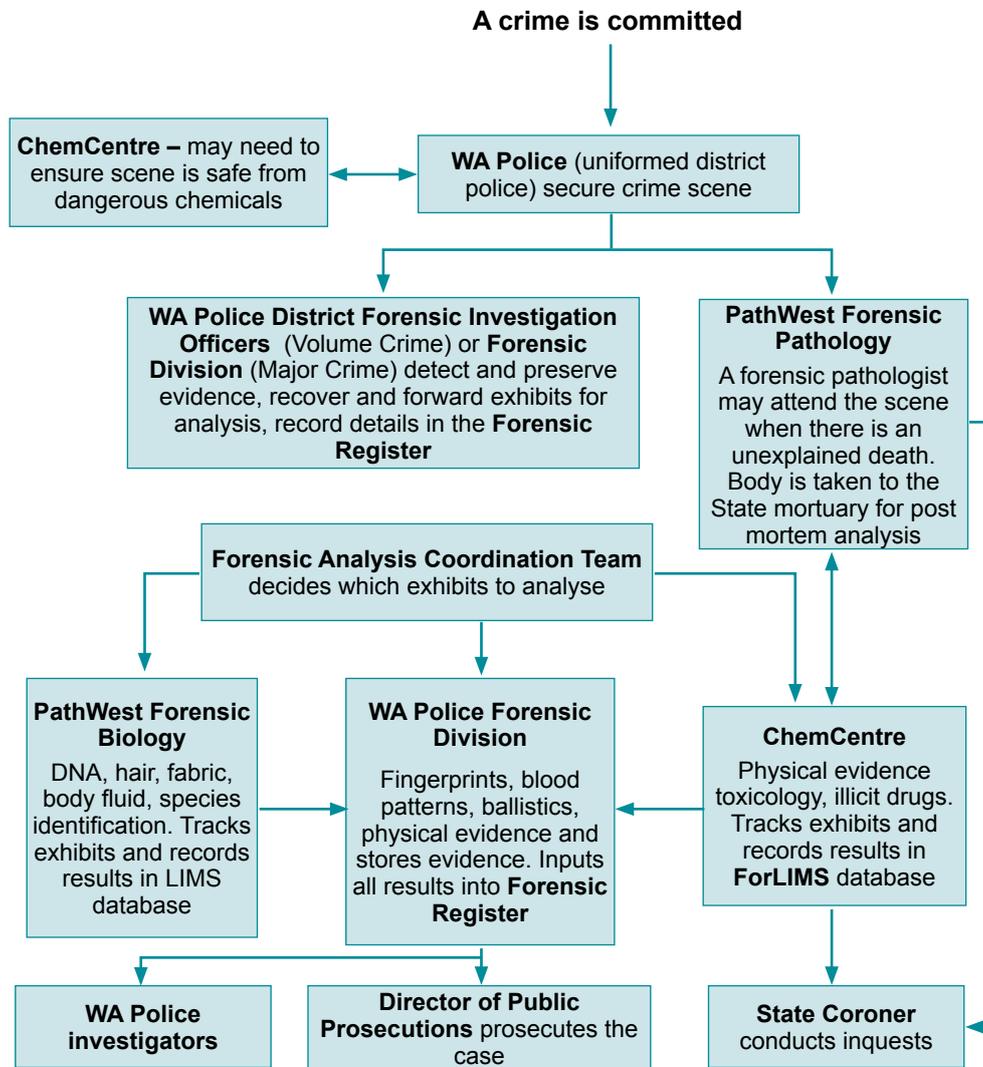


Figure 1: Forensic agencies and information systems. Special (cold case) crime and traffic matters are handled separately

In May 2006, we produced a report, *Behind the Evidence: Forensic Services*, which assessed the effectiveness of WA’s forensic services. The agencies involved were: WA Police, PathWest (part of the Department of Health) and Chemistry Centre (then part of the Department of Industry and Resources).

The 2006 report found that forensic service agencies were not working successfully together to provide test results to WA Police in a timely manner, particularly the results of illicit drug and DNA testing. It was believed that this situation was not likely to improve without whole-of-service planning and coordination.

Background

The report's key findings were that:

- delays in obtaining forensic evidence were adversely affecting the justice system, one of the most significant issues being a backlog in DNA analyses, resulting in delayed prosecutions and court adjournments
- a lack of integrated decision-making to allocate resources had resulted in bottlenecks and under-utilisation of resources
- there had been little assessment of the capacity of forensic service providers to meet future demand
- each of the principal agencies that provide forensic services was meeting, or working towards meeting, external quality standards
- the security and reliability of forensic exhibits was put at risk by the absence of a single reliable State exhibit register that recorded exhibit details and tracked movement within and between agencies
- some storage arrangements for forensic exhibits did not provide adequate security or occupational health and safety protection. Each of the agencies concerned had addressed or had strategies to address the issues identified

We recommended that WA Police and PathWest should reduce the backlog in DNA analyses, including identifying the analyses that are no longer required and agreeing priorities for requests for analysis.

We also recommended that WA Police, PathWest, and the Chemistry Centre should:

- consider the impact across forensic service agencies when allocating resources
- develop whole-of-service capacity to meet future demand and appropriate quality standards
- build on the current forensic information systems to improve access, tracking and sharing of information
- ensure ongoing assessment and resolution of risks related to the security and occupational safety and health of forensic exhibit storage facilities.

Since 2006, WA Police has introduced standardised training for forensic investigators, crime scene management protocols for serious crime, processes to ensure ChemCentre and PathWest are included when discussing and evaluating exhibits collected from serious crimes and new and upgraded case management and exhibit tracking systems.

Background

In early 2009, WA Police launched the *Scientific Investigation Strategy* in which metropolitan and regional frontline officers and District Forensic Investigating Officers (DFIOs) have primary responsibility for Volume Crime matters, whilst the Forensic Division focuses on Major Crime, serious incidents and specialist services. See Appendix 1 for Volume and Major Crime classifications.

WA Police reports that the establishment of the Volume Crime Desk and expansion of the National Fingerprint Identification System network has resulted in the quicker identification of persons of interest.

ChemCentre and WA Police Forensic Division have relocated to premises that comply with standards set by the National Association of Testing Authorities (NATA) and can accommodate current staffing levels, although ChemCentre and PathWest are both reaching capacity at these premises.



Audit Focus and Scope

The objective of this follow-up audit was to confirm that the management of forensic analysis services has improved since 2006. We assessed changes in the delivery and management of forensic services and focused on answering four questions:

- Do agencies have clear strategies and policies in place to support co-ordination in delivery of forensic analysis services to government?
- Are PathWest, the ChemCentre and WA Police Forensic Division providing timely and quality information to WA Police, the DPP and the Coroner's Office?
- Have forensic information systems been enhanced to improve access, tracking and secure sharing of information?
- Is there ongoing assessment and resolution of risks related to the security and occupational safety and health of forensic exhibit collection and storage facilities?

This audit focuses on the effectiveness and efficiency of the practice of forensic analysis services that occur after the collection of forensic evidence by police officers.

In conducting this audit we reviewed legislation, policies and documents held by ChemCentre, PathWest and WA Police. We also conducted site visits at each agency to observe practice.

PathWest Forensic Pathology was not comprehensively audited because it conducts all post-mortem examinations for the WA State Coroner, most of which are not related to any criminal proceedings. It was not the aim of this audit to assess the effectiveness or efficiency of the coronial process.

The audit was conducted in accordance with Australian Auditing and Assurance Standards.

Findings

Better communication and coordination between agencies has improved service delivery and reduced duplication of effort

Regular meetings between forensic providers and client agencies has improved communication, coordination and understanding of client needs

The expansion of the JCC to include ChemCentre and the DPP in addition to its original members, PathWest and WA Police, has significantly improved agency coordination and cooperation. The JCC was established to better coordinate forensic activities between agencies and discuss better use and allocation of resources.

The JCC currently meets quarterly to discuss interaction, service delivery and managing the expectations set by Police, the DPP and the Coroner's Office, as well as any other concerns or areas for improvement. When the JCC was established, following the original audit report, the group met monthly but recent meetings have been quarterly as the need has diminished.

The cooperation between agencies extends to operational matters, such as the evaluation of samples in major crimes, where the decision to test a sample is made by the Forensic Analysis Coordination Team (FACT), police investigators and case managers, forensic scientists from PathWest or ChemCentre or both and the DPP in consultation. Having these parties meet regularly emphasises the shared interest of everyone involved in solving a crime, a factor that contributes to a high degree of cooperation between parties. The placement of a PathWest forensic biologist on site at the WA Police Forensic Division also demonstrates the level of inter-agency cooperation that has been achieved.

Discussions with both the Coroner's Office and the DPP have revealed no dissatisfaction with service delivery by WA Police Forensic Division, ChemCentre or PathWest since the establishment of the JCC. Both offices acknowledge significant improvement since the 2006 audit and neither identified any areas for further improvement.

WA Police are concerned at the potential for ChemCentre's commercial work to take precedence over WA Police testing requests

WA Police report that even though its contractual arrangements with ChemCentre and PathWest are similar, it is concerned at the potential for ChemCentre's commercial focus to affect its capacity to prioritise WA Police testing requests and complete its analysis within agreed timeframes.

ChemCentre and PathWest Forensic Biology each have a MOU with WA Police, which is regularly reviewed. These MOUs agree the total payment to be made to ChemCentre and PathWest by WA Police for all testing and maintenance of capacity. Should the arrangement outlined in the MOU no longer suit business needs of either party then the MOU can be renegotiated at any time. The arrangement provides predictable revenue to ChemCentre and PathWest for them to sustain the full complement of skills and equipment needed.

However, unlike PathWest and WA Police Forensic Division, who work solely on police matters, ChemCentre has, since a legislative change in 2007, become a partly commercial organisation with industry contracts.

WA Police are concerned that ChemCentre's focus on full cost recovery and engagement in commercial work affects the time it takes to process WA Police testing requests.

Legislative change in 2007 allowed the ChemCentre to develop and deliver scientific information and advice, on a commercial basis, to government, industry and the community. While work from WA Police accounts for 48.9 per cent of the revenue for ChemCentre Forensic Science Laboratory, it only makes up 17.5 per cent of ChemCentre's total revenue. However, existing legislation requires WA Police to use ChemCentre to conduct drug and alcohol analysis and precludes them from using other providers for such analysis, even if it is high priority.

This creates a challenge for ChemCentre that now has to balance competing priorities. Because of the specialised nature of its personnel, ChemCentre cannot easily move testing staff from one scientific area to another to match changes in the volume of requests from WA Police. This has prompted WA Police to explore alternative providers for some tests, although the current funding model limits the extent to which this is possible. WA Police is considering seeking changes to legislation that would allow it to use private providers for work that currently must be done by ChemCentre.

ChemCentre believe that commercial work has improved the robustness of forensic toxicology services by making processes more efficient and allowing expensive equipment to be updated more frequently, both of which benefit WA Police and the Office of the State Coroner.

Forensic analysis meets standards and backlogs have been eliminated but demand is putting pressure on turnaround times

Agencies have identified and are complying with relevant quality standards

All agencies are maintaining accreditation by the National Association of Testing Authorities (NATA). This was not the case during our audit in 2006 when WA Police Forensic Division occupied premises that could not achieve accreditation. WA Police has since pursued and received NATA accreditation of its multiple laboratories across the State

All forensic agencies have strategies and detailed procedures for the receipt, handling, testing, storage and return or destruction of exhibits. These are in line with the requirements of police investigators and the NATA, from which agencies obtain their accreditation. Policies and procedures for the sampling, testing and analysis of evidence are developed internally and evaluated regularly during NATA audits.

NATA is the authority responsible for the accreditation of laboratories, inspection bodies, calibration services, producers of certified reference materials and proficiency testing scheme providers throughout Australia. NATA has MOUs with the Australian Government and various state and territory governments. The Australian Government uses NATA-accredited facilities wherever possible and encourages state and territory governments to do likewise.

Agencies have strategies and detailed procedures for prioritising, sampling, testing and storing exhibits

Forensic exhibits remain the property of WA Police from collection to destruction, including during analysis, and their use in criminal investigations is governed by WA Police's Scientific Investigation Strategy. The approval to test an exhibit is given by the Forensic Analysis Coordination Team (FACT) using a set of criteria based on historical results from similar tests. The nature of the crime determines how long evidence is retained. For serious crime, the Serious Crime Exhibit Retention Management Policy (SCERM) applies, while Volume Crime evidence is managed according to the Forensic Discipline Specific Standard Operating Procedures.

WA Police's high level strategy, the Scientific Investigation Strategy, covers the use of scientific analysis in criminal investigations and includes evidence recovery and investigation, analysis and intelligence. It also incorporates the principles of quality assurance, standardisation and training and education. Detailed procedures for handling items of evidence are contained in Standard Operating Procedures (SOPs).

Findings

In 2009 FACT, was given a mandate to investigate the management of all forensic analysis commissioned by WA Police and establish strategy, policy, procedure and business processes for forensic analysis management. FACT systematically evaluates, which forensic evidence to analyse according to how likely it is to identify an offender

Exhibits remain the property of WA Police from collection to destruction, including during analysis. Police are responsible for the chain of custody and also transport all exhibits to and from their place of analysis. Exhibits are stored in highly secure facilities. This is documented in WA Police SOPs and court rules of evidence.

For serious crime, the SCERM specifies the evidence, or 'Evidence Related Property ('ERP'), that needs to be retained and the circumstances in which it may be returned, sold or destroyed. WA Police advises that the application of the SCERM policy to the retention and disposal of exhibits requires judgement as to whether a particular exhibit is ERP. As a result, some exhibits may be kept longer than the policy requires. WA Police advise that the application of SCERM has not resulted in any known instances of critical evidence being destroyed.

For Volume Crime, evidence is managed according to the Forensic Discipline Specific Standard Operating Procedures – CSI 101: Exhibit Management. Volume Crime is primarily crime associated with property rather than a person, the majority of Volume Crime being burglary and other kinds of theft. While forensic evidence is often collected for such crimes, retention guidelines reflect a lower level of risk and are not as prescriptive as the SCERM.

Turnaround times are largely met and the backlog eliminated but ChemCentre is not meeting timeliness targets for lower priority illicit drug tests

Timeliness is being measured by WA Police, PathWest and ChemCentre and monitoring is being applied to all processing of forensic exhibits. Agencies are either reporting within agreed timeframes or are negotiating later delivery with WA Police, and the backlog found by the 2006 audit has been eliminated. This improvement is largely due to the way WA Police deals with requests for testing forensic evidence. Changes in WA Police processes now make them more selective in deciding which evidence needs to be tested because of its likely usefulness in an investigation. This 'triage' approach to testing has mitigated the underlying increase in demand for forensic services.

Changes at agencies have also helped eliminate the backlog in forensic testing. Such changes include implementing more automation, recruiting and training more staff, structural reorganisation, electronic submission of reports and introducing summary reports.

Findings

In order to assess timeliness we tested sample data from each agency showing the time between a request for analysis and first substantive response to that request. The data included all requests for analysis from a single week in March and another in September 2012.

Agreements have been reached between forensic service agencies, WA Police, the DPP and the courts that specify timeframes for delivery of forensic analysis reports. In the case of PathWest and ChemCentre, these agreements consist of MOUs that are reviewed annually. An MOU has been in between ChemCentre and the Coroner's Office since 2008-09.

PathWest commits to deliver summary reports within four weeks and full reports for use in court within 12 weeks. For some categories of crime, including serious crime and high priority property crime (as determined by WA Police) PathWest undertakes to deliver results within 48 hours, depending on the nature of the test being conducted, and often provides results overnight. Records maintained by WA Police and PathWest show that delivery times specified in the PathWest MOU with WA Police are being met and often exceeded, and WA Police Forensic Division records also show that internal response times for forensic analysis are comparable with PathWest.

Delivery times specified in ChemCentre's MOU with WA Police are not always being met. ChemCentre's MOU with Police establishes timeframes for test reports from 'same day' for Priority 7 cases to two months (Priority 2), and 'as agreed' (Priority 1). Other cases in the sample – complex cases – are not subject to specified analysis timeframes. These cases, which are defined in the MOU, are subject to negotiation between the parties.

Of the 70 ChemCentre cases in the sample that were subject to a specified timeframe, the response time was within targets only 13 times (18.6 per cent). All high priority (Priority 6 and 7) cases were analysed within agreed timeframes, while lower priority cases were more likely to take longer. Almost all late responses involved testing for illicit drugs.

Delays in drug testing were also noted in the 2006 audit report. Since then, demand for testing for illicit drugs has increased substantially and continues to grow. In 2004-5 ChemCentre performed around 50 000 tests on 23 500 exhibits. By 2011-12 the number of tests had risen to around 85 000, an increase of 70 per cent though exhibits had decreased slightly to 23 000.

Despite the increase in demand and lagging response times from ChemCentre, the backlog of cases found to exist in 2006, in both ChemCentre and PathWest, has been eliminated and neither the DPP nor the Coroner's Office currently report any impact on judicial proceedings or any dissatisfaction with forensic services.

Findings

All agencies acknowledge the importance of the establishment of FACT in May 2009 in clearing the backlog. As FACT deals with the evaluation of all forensic evidence it is in the best position to judge if there is value in submitting an exhibit for testing. Previously, officers in charge of the investigation decided which exhibits to send for testing and, in the absence of a better method, submitted for analysis all exhibits collected. This resulted in testing of exhibits which were unlikely to be useful for the investigation and helped create a backlog. The creation of FACT has led to more selective testing, thereby helping to eliminate the backlog, without any decrease in the rate at which offenders are identified and convicted (Figure 2).

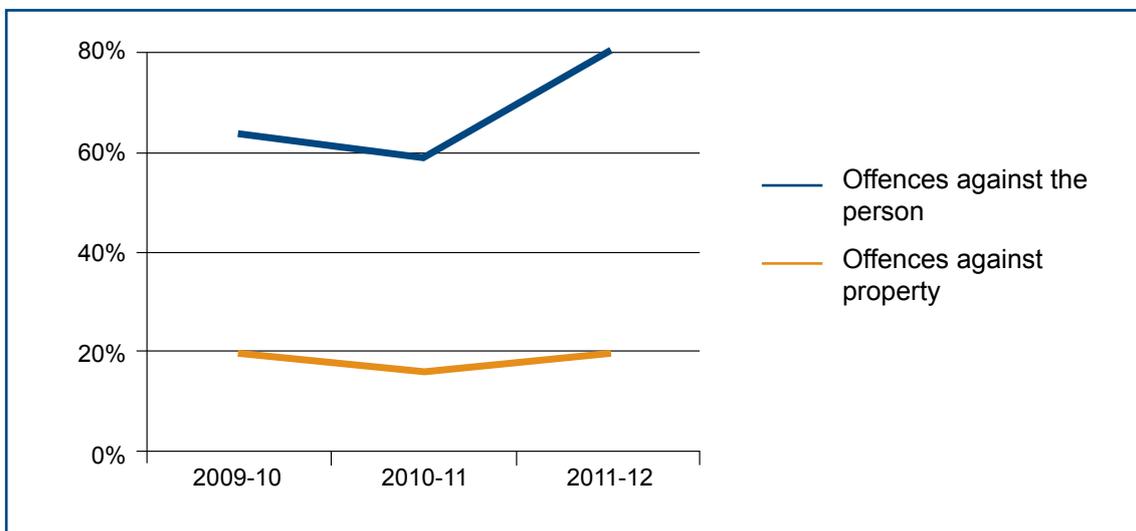


Figure 2: Sanction rates since FACT was established in May 2009. The Sanction Rate is the number of verified offences that have had an outcome or resolution divided by the total number of verified offences

The conviction rate for matters sent to trial is also unaffected (Figure 3).

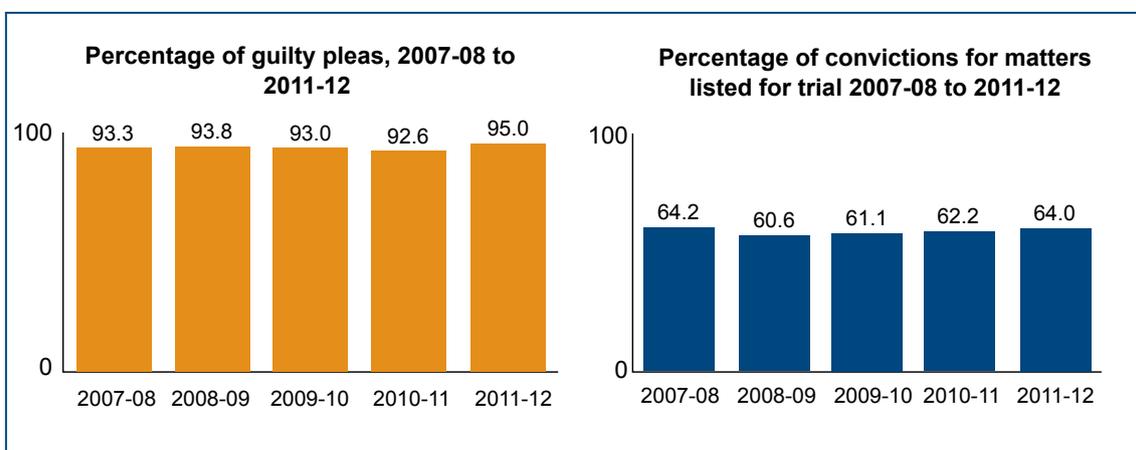


Figure 3: Percentage of guilty pleas and convictions for matters listed for trial 2007-08 to 2011-12

Findings

PathWest Forensic Pathology has seen a 17 per cent growth in the number of post-mortem examinations, from 1 599 in 2006-07 to 1 875 in 2011-12 (Figure 4). Despite this increase, PathWest Forensic Pathology has adequately managed demand and report that they have received no complaints of undue delay from the courts, WA Police, the coroner or legal practitioners. They do not have any backlog and anticipate being able to manage future increases.

Year	Number of Post Mortem Examinations Conducted by PathWest Forensic Pathology
2006-07	1 599
2007-08	1 762
2008-09	1 717
2009-10	1 815
2010-11	1 902
2011-12	1 875

Figure 4 Number of Post Mortem Examinations Conducted By PathWest Forensic Pathologists 2006-7 to 2011-12

In 2012, the National Institute of Forensic Science (NIFS) completed and reported on a project called End-To-End Forensic Identification Process Project. This was a national project, with every jurisdiction participating. This study focussed specifically on burglary offences and looked at fingerprint analysis and DNA profiling. The aim was to identify bottlenecks and inefficiencies across the end-to-end process (from the crime scene through to arrest) and to make recommendations as to how these might be addressed.

The results of this project show that Western Australia performs well in comparison to other jurisdictions in these areas. For example, Western Australia:

- was significantly above the national average for DNA analysis lead time (time from submission to analysis of DNA) with a lead time of 1.7 days, while the national average was 14.4 days
- was the fastest jurisdiction with regards to the identification lead time (time from analysis to DNA identification), with an average lead time of 4.4 days, while the national average was 20.8 days
- performed above the national average for the time taken from making a DNA identification to providing an identification to police, with an average of 5.2 days compared with a national average of 8.9 days
- performed well above the national average for fingerprint lead time (time from analysis to fingerprint identification), with the national average being 3.7 days and Western Australia taking, on average, only 0.6 days.

The capacity of agencies to meet any future increases in the demand for forensic testing is limited

Agencies face unpredictable demand as a result of changes in policing, developments in forensic technology and population increases. Trends in recent years however, indicate that demand for forensic testing is likely to continue to rise, despite WA Police being as selective as possible about what testing is requested.

We found that agencies acknowledge that they are nearing maximum laboratory processing capacity, and additional capacity is not immediately available. Training of specialist staff takes many years, which could lead to staff shortages. Space in current premises is limited, and even if new space is procured it takes time and resources for new premises to be properly set up and accredited.

Agencies currently do not have well developed strategies to address any substantial long term increases in demand. If the agencies cannot meet increases in demand, the most likely impact will be of lengthening turnaround times and even the prospect of a new backlog. ChemCentre and PathWest are addressing this issue by undertaking strategic reviews that focus on improving organisational structure and processes to increase the efficiency of service delivery.

ChemCentre is currently in the process of implementing new measures to deal with increases in demand, including:

- ensuring a pool of reporting scientists is available by increasing staff competencies through training staff in additional scientific disciplines
- restructuring the Forensic Science Laboratory to maximize flexibility, redundancy and operational focus
- the final stage of the restructure is the *Workflow Improvements Project*, commencing in July 2013. It is aimed at investigating all workflows from sample handling through to report delivery, with a goal to minimise manual and duplicate handling, automate workflow components and maximize workflow efficiencies.

PathWest is intending to undertake a process review within forensic biology later this year. This review follows an independent report into Forensic Biology and Forensic Pathology service delivery it commissioned in June 2008. The *PathWest Workforce Report* found that:

- over the next 5-10 years, there will be shortages in the Laboratory Medical Scientist workforce of 81 people by 2012-13 and 133 by 2017-18, and graduate recruitment is not adequate to remedy this
- more efficient work practices and new equipment will be needed.

Forensic information systems have been enhanced to improve access, tracking and secure sharing of information

Information about forensic exhibits is accessible to authorised personnel and can be shared in a secure and timely way, but broad access creates risk

In 2001 WA Police introduced a crime scene evidence management system called the Forensic Register. The Register provides ready access for authorised staff to information about all exhibits for all cases and tracks the transfer of evidence between Police and forensic examination centres. The Forensic Register provides secure and rapid information sharing between WA Police investigators, WA Police Forensic Division, ChemCentre and PathWest. However, there are still some areas where the implementation and use of the Forensic Register could be improved, such as the interface with ChemCentre and PathWest.

We carried out an information systems audit of the Forensic Register in 2012 and found too many staff with unnecessary access privileges. This increased the risk of unauthorised or unintentional modifications or misuse of the system and key data. WA Police's response was that they are improving governance to ensure that outsourcers and partners are limited to "least privilege" rights, which will require improved policies and the technical function to enforce them and that this will be completed by the end of 2013. Access to the Forensic Register does not create access to the physical exhibits.

Another potential problem is that authorised access, once granted, does not restrict the user from viewing information not specifically relevant to the analysis they are performing. This poses a risk of contextual bias affecting analysis and testimony.

Contextual bias occurs when knowledge about aspects of a criminal investigation influences the forensic scientist's conclusions in forming an opinion. An alternative view is that contextual bias is not a serious issue because peer reviews by other scientists minimise the likelihood of bias.

ChemCentre and PathWest consider contextual bias to be an issue that needs to be managed, so both use senior scientific staff to act as 'context managers'. ChemCentre also considers current access arrangements to the Forensic Register to be too broad.

WA Police also recognise the concept of contextual bias, but do not consider it a large enough risk to prioritise changing the Forensic Register above work on other systems. WA Police considers it possible for other external users of the Forensic Register to manage the risk within their organisations.

Forensic exhibits can be reliably tracked across all agencies

WA Police are the custodians of all case exhibits, but they do not have direct access to the laboratory management systems at ChemCentre and PathWest. Instead they rely on these agencies for details of exhibits on their sites. Laboratory management systems do more than hold forensic information for use by WA Police; they are also used for internal laboratory administration. Because of this separation and difference of purpose, each system allocates its own identifier to exhibits in addition to the identifier from the Forensic Register, and data must be manually transferred between systems. While this creates a transcription error risk, the risk is rigorously managed.

The laboratory information systems, ForLIMS (ChemCentre) and LIMS (PathWest), that agencies use to record results and track the exact physical location of exhibits on their sites are completely separate from WA Police and the Forensic Register. This means that WA Police rely on ChemCentre and PathWest for the current status or exact location of exhibits under analysis or being stored. The separation of systems also means that exhibit information needs to be manually entered into the Forensic Register, increasing the risk of transcription error.

PathWest and ChemCentre record unique identifiers allocated to exhibits by the Forensic Register but also register exhibits in their own laboratory management systems under their own identifiers. This means a forensic exhibit can be allocated up to three different identifying numbers during investigation and analysis. This creates a risk of exhibits being wrongly recorded as they are passed between agencies or analytical results being attributed to the wrong exhibit.

Notwithstanding these risks, transfer of information between these systems is rigorously managed, and all three systems are independently audited by NATA and audited internally to ensure their integrity and reliability.

Because LIMS and ForLIMS serve a number of purposes beyond the recording of information for use by WA Police, PathWest and ChemCentre consider that integration of these systems into the Forensic Register would not be appropriate. However, the addition of an electronic interface between these systems and the Forensic Register could make transfer of information between agencies more efficient and reliable. ChemCentre and PathWest recognise this. PathWest is considering the procurement of a new LIMS system which will be able to communicate directly with the Forensic Register, while ChemCentre advises that its ForLIMS system can be electronically linked with the Forensic Register but this is not yet in place.

Storage facilities meet security and OSH standards for handling and storage of forensic exhibits

Since our 2006 audit, WA Police Forensic Division and ChemCentre have relocated to different premises, all of which are secure facilities with restricted access to evidence. ChemCentre and PathWest's facilities are regularly audited by NATA for OSH and security compliance, with each meeting the required standard. Whilst WA Police Forensic Division is not audited by NATA they are subject to internal WA Police OHS and security audits that ensure appropriate standards are met.

NATA audit reports of PathWest and ChemCentre that we have viewed show that all OSH issues identified in the reports have been rectified quickly and efficiently. Internal audits of WA Police facilities also show that issues have been addressed quickly and efficiently.

NATA accreditation audits of PathWest and ChemCentre are carried out every three years with interim audits mid-way between these full audits. They include security and OSH components. NATA audits of the WA Police Forensic Division laboratories do not include security and OSH components which are undertaken within the existing WA Police governance systems.

All forensic services are carried out in secure facilities with restricted access to evidence. ChemCentre's Forensic Science Laboratory is separated from the rest of ChemCentre and is only accessible to forensic services staff. PathWest Forensic Biology is located in completely different premises to the rest of PathWest's operations. WA Police Forensic Division is located in a purpose built facility.

Each location has a secure loading dock for delivery and pickup of forensic exhibits. All forensic service areas within WA Police, ChemCentre and PathWest are protected by security systems which are designed to only allow access to those who are authorised to use those areas. For example, only those involved in drug identification and analysis have access to the drug analysis laboratory.

Appendix 1: Volume Crime and Major Crime

Volume Crime	Major Crime
• burglary	• arson
• robbery	• attempted homicide
• theft of motor vehicles	• causing an explosion
• assault	• death in custody
• indecent dealing	• deprivation of liberty
• cultivating a prohibited drug	• fatal drug overdose
• fraud	• fatal fire
• selling or supplying a prohibited drug	• going armed in public to cause terror
• missing persons	• grievous bodily harm
• indecent exposure	• homicide
	• manufacture of a prohibited drug
	• sexual assault
	• skeletal remains
	• stealing with violence
	• sudden unexplained death of an infant
	• suspicious death
	• unlawful discharge of a firearm
	• unlawful wounding

Appendix 2: Full ChemCentre Response

ChemCentre welcomes this report into forensic service delivery in WA. ChemCentre agrees with the report findings but would like to clarify your comment on the finding that relates to reported concerns about commercial work.

ChemCentre has always had a wide variety of analytical capability, a function of a historically diverse range of clients and work sources. In the 1980's the Forensic Science Laboratory (FSL) was only one of 8 laboratories that comprised the then Government Chemical Laboratories. However the ChemCentre of today, with the FSL comprising half of its laboratory operations, is far more focused on forensic service provision. ChemCentre is expected to operate at full cost recovery as a commercial direction set by successive Ministers and the ChemCentre Board when ChemCentre became a Statutory Authority in 2007.

ChemCentre is in strong agreement with the report's recommendation for the establishment of an efficient interface between ChemCentre's laboratory management system and the Forensic Register operated by the WA Police. At the invitation of the WA Police ChemCentre participated in the Forensic Register implementation project. It was unfortunate that the desired systems Interfacing was removed from the scope of project deliverables by WA Police prior to its conclusion.

ChemCentre welcomes the development of strategies to underpin the continuity of timely effective forensic services into the future. As recognised in the report there are on-going drivers across the Forensic Sciences leading to increased service volume demands and for technological advancements. ChemCentre's technology advancements aim to provide greater throughput, robustness and new capabilities and in the process raise the overall sophistication and quality outcomes of the testing and services provided to the judicial system.

For ChemCentre the underlying problem with effective strategy development is ChemCentre's limited ability to effectively plan ahead for forensic service delivery because it is subject to the amount of funding made available by WA Police for forensic service delivery. Unless a guarantee of adequate baseline funding, either from WA Police, through estimates, or a combination of both, is provided it is difficult to determine a future proofed strategy.

ChemCentre agrees with the reports assessment that all testing should be done within agreed timeframes. However there is a distinction between MOU timeframes and Judicial deadlines. ChemCentre always strives to meet the Judicial deadlines to ensure the courts are not impacted. This may cause the MOU timeframes for lower priority casework to be not consistently achieved due to case priority changes. For MOU timeframes to always be met this requires greater reporting scientist availability. Due to their specialist nature and the funding cycle the availability of reporting scientists always lags behind increases in service requirement. Strategies involving workplace efficiencies and the multiskilling of reporting scientists to achieve a more flexible work force are already in development.

Auditor General's Reports

REPORT NUMBER	2013 REPORTS	DATE TABLED
7	Fraud Prevention and Detection in the Public Sector	19 June 2013
6	Records Management in the Public Sector	19 June 2013
5	Delivering Western Australia's Ambulance Services	12 June 2013
4	Audit Results Report - Annual Assurance Audits: Universities and state training providers and Other audits completed since 29 October 2012 – and Across Government Benchmarking Audits: Recording, custody and disposal of portable and attractive assets and Control of funds held for specific purposes	15 May 2013
3	Management of Injured Workers in the Public Sector	8 May 2013
2	Follow-on Performance Audit to 'Room to Move: Improving the Cost Efficiency of Government Office Space'	17 April 2013
1	Management of the Rail Freight Network Lease: Twelve Years Down the Track	3 January 2013

Office of the Auditor General Western Australia

7th Floor Albert Facey House
469 Wellington Street, Perth

Mail to:

Perth BC, PO Box 8489
PERTH WA 6849

T: 08 6557 7500

F: 08 6557 7600

E: info@audit.wa.gov.au

W: www.audit.wa.gov.au



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