THE NATIONAL INSTITUTE OF FORENSIC SCIENCE

Dr Linzi Wilson-Wilde OAM
AUSTRALIA
HISTORY OF NIFS

1974
Committee of Enquiry Recommended Creation of a National Forensic Institute

1992
NIFS Established

1994
Inaugural Director of NIFS Appointed

1994
Best Paper Awards Established

2002
First Ian Riebeling New Practitioner Workshop Delivered

2008
NIFS Joins ANZPAA

ANZPAA Disaster Victim Identification Committee Joins NIFS

2010
John Harber Phillips Award Launched

2009
NIFS Led Forensic Standards Committee Created Under Standards Australia

2011
End to End Project Report Released

2013
NIFS Independent Review Commenced

2015
New Operating Framework and Governance Approved

Australia New Zealand Forensic Executive Committee (ANZFEC) Established

2016
NIFS Service Level Agreement Signed By 20 Agencies, Including New Zealand

NIFS Formally Becomes The National Institute of Forensic Science Australia New Zealand

ANZPAA
Australia New Zealand Policing Advisory Agency

NIFS
National Institute of Forensic Science

ERROR MANAGEMENT SYMPOSIUM - JULY 2017 | 4
NIFS GOVERNANCE FRAMEWORK

ANZPAA Board

ANZPAA
Australia New Zealand Policing Advisory Agency

ANZFEC

NIFS Groups
Each police agency representative endorsed by the Commissioner
2016-2017 WORK PROGRAM
ONGOING ACTIVITIES

Co-ordination
- ANZFEC
- CWALN
- Drug Referencing Collection
- DNA Consumables Negotiations
- ACIC
- DVI

Quality
- After The Fact
- Standards Meetings
- Proficiency Testing
- AFSSAB Re-Certifications

Education & Training
- Forensic Science Workshops
- Ian Riebeling New Practitioners Workshop

Information Management
- SAGs
- Secure Server
- Resource Register
- Website
- Newsletter

Innovation
- John Harber Phillips Award
- International Conferences
- Best Paper Awards

Best Paper Awards
- SAGs

Australia New Zealand Policing Advisory Agency

NATIONAL INSTITUTE OF FORENSIC SCIENCE AUSTRALIA NEW ZEALAND

ANZPAA

ERROR MANAGEMENT SYMPOSIUM - JULY 2017 | 8
PROJECT ACTIVITIES

Co-ordination:
- DNA Familial Policy
- Forensic Fundamentals
- End-to-End Phase 2
- Expert Testimony Req
- Rapid DNA

Innovation:
- R&I Strategy & Roadmap
- Parabon Snapshot
- Facial Identification
- Forensic Science Summit

Quality:
- After the Fact Review
- AFFSAB Future Directions
- After the Fact HTML5 Redevelopment

After the Fact Review
- HTML5 Redevelopment

UNDERSTANDING ERROR
PROFICIENCY TEST ERROR
OVERVIEW OF DATA ANALYSIS

2005 – 2015
21 Forensic Disciplines
ANZ Data
PROFICIENCY TESTS

What can we say?

Known users

Results reviewed

Known methods/systems

Not casework/consensus results

Unknown users (trainees/students)

Known methods/systems

Results reviewed

Known users

What can we say?
PROFICIENCY TESTS

What can it tell us?
Indicative guide to the error rates for the processes under testing

What can’t it tell us?
The error rate for a case, method, practitioner, discipline
**Laboratory Analysis**

- Blood Alcohol
- Body Fluids
- Breath Alcohol
- DNA Blood
- DNA Mixture
- DNA Semen
- Drug Analysis
- Flammables
- Fibres
- Forensic Biology
- Glass
- GSR Distance
- Paint

**Pattern Recognition**

- Bloodstain Pattern
- Firearms
- Handwriting
- Imprint Evaluation
- Latent Prints
- Questioned Documents
- Serial Number Restoration
- Toolmarks
DATA

21 Disciplines

2,914 Tests

21,187 Results
CALCULATIONS

Results were grouped under the following categories:

- Transcript Error
- Minor Error
- Major Error Type I
- Major Error Type II
- Inconclusive Marked Wrong
- Inconclusive Marked Right
- Test Issues

Indicative error rate calculation:

**Total Number of Major Errors (Type I & II)**

**Total Number of Results***

*excludes tests ordered but not submitted, tests with design issues etc.
RESULTS – LABORATORY ANALYSIS

5.00%  •  4.90%
4.00%  •  2.48%
3.00%  •  1.82%
2.00%  •
1.00%  •
0.00%  •

Breath Alcohol  0.00%  GSR Distance  0.00%  DNA Blood  0.00%  Blood Alcohol  0.00%  DNA Semen  0.00%  DNA Mixture  0.00%  Forensic Biology  0.02%  Fibres  0.25%  Paint  0.68%  Body Fluids  0.90%  Drug Analysis  •  Glass  •  Flammables  •
However, each year there are a number of proficiency tests that are ordered by agencies but not submitted for marking.

The estimated financial cost ($AUD) of these tests for the period 2005 – 2015 was: ~$78,000
# TESTS ORDERED – NOT SUBMITTED

<table>
<thead>
<tr>
<th>Area</th>
<th>Discipline</th>
<th>Not Submitted</th>
<th>Total Tests Ordered</th>
<th>% of Total Tests Ordered</th>
<th>Total Cost ($USD)</th>
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</thead>
<tbody>
<tr>
<td>Pattern Recognition</td>
<td>Bloodstain Pattern</td>
<td>32</td>
<td>181</td>
<td>17.68%</td>
<td>$9,920.00</td>
</tr>
<tr>
<td></td>
<td>Serial Number Restoration</td>
<td>10</td>
<td>79</td>
<td>12.66%</td>
<td>$2,100.00</td>
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<tr>
<td></td>
<td>Imprint Evaluation</td>
<td>15</td>
<td>146</td>
<td>10.27%</td>
<td>$3,600.00</td>
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<tr>
<td></td>
<td>Latent Prints</td>
<td>30</td>
<td>297</td>
<td>10.10%</td>
<td>$11,100.00</td>
</tr>
<tr>
<td></td>
<td>Toolmarks</td>
<td>11</td>
<td>124</td>
<td>8.87%</td>
<td>$2,310.00</td>
</tr>
<tr>
<td></td>
<td>Questioned Documents</td>
<td>4</td>
<td>68</td>
<td>5.88%</td>
<td>$680.00</td>
</tr>
<tr>
<td></td>
<td>Firearms</td>
<td>3</td>
<td>126</td>
<td>2.38%</td>
<td>$540.00</td>
</tr>
<tr>
<td></td>
<td>Handwriting</td>
<td>1</td>
<td>68</td>
<td>1.47%</td>
<td>$275.00</td>
</tr>
</tbody>
</table>
CONCLUSIONS

- This study does not replace need for properly designed, blind error rate studies
- Proficiency test analysis
  - Reasons for errors found in proficiency tests
  - Focus blind trials/further study
  - Monitor trends
- More attention required to proficiency tests purchased but not completed
AFTER THE FACT DATA

About 4:30am on Sunday 13th April 2015 police received an emergency call from Security Officer Ronald Agius who was performing security at the University of Western Wilkstown. Mr Agius states that about 4:20am on Sunday morning he was in the security office at the university when he noticed an alarmed fire escape door.

Detective Sergeant Julie Clark
Use the space above for notes.
Statement transcripts are NOT available during the assessment.
AFTER THE FACT DATA

Error rate per year Volume crime

Error rate: 0, 2, 10, 12, 14
AFTER THE FACT DATA

Error rate per year Major crime

Error rate

0 1 2 3 4 5 6


2012: 2.5
2013: 1.0
2014: 5.0
2015: 1.5
2016: 2.0
MINIMISING ERROR
AUSTRALASIAN FORENSIC FIELD SCIENCES ACCREDITATION BOARD
REQUIREMENTS FOR AFFSAB ACCREDITATION

- Completion of the relevant national training program minimum or equivalent
- Achievement of AFFSAB assessment requirements.
- Provision of a supporting statement from supervisor outlining applicants experience, training and competence
- Recommendation for AFFSAB assessment by the Head of the Forensic Science Service
ANNUAL REACCCREDITATION

- Annual review of competency
- Based on
  - Passing a relevant (in area of discipline) proficiency test
  - Approved by Supervisor and Head of Facility
- Submissions all crossed checked by AFFSAB
5-YEAR REACCCREDITATION

- More rigorous assessment
- Demonstrate currency and professional development
- 100 points of professional development
- Professional Development Indicators
- Core day to day discipline duties (casework, tech/admin review etc) – 40 points
- Professional development (training, mentor, research, policy, conference etc) – 40 points
- Approved by Supervisor and Head of Facility
THE ROLE OF STANDARDS
The relationship between the forensic processes and quality assurance processes
FORENSIC SCIENCE STANDARDS GLOBALLY
Internationally, accreditation of forensic laboratories is to one of the following two standards:

- **ISO 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.** Organisational level and specifies laboratory management requirements, with an emphasis on policy and documentation. It does not address the requirements for sampling and testing at the crime scene. This standard is currently being reviewed.

- **ISO/IEC 17020 – Conformity assessment – Requirements for the operation of various types of bodies performing inspection.** Criteria for inspection bodies in the examination of ‘materials, products, installations, plant, processes, work procedures or services’ to provide certification.
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

- Title: TC272 – Forensic Sciences
- Technical Committee
- Australia Secretariat and Chair
- 23 participating country members
- 18 observing country members
TC272 – FORENSIC SCIENCES - SCOPE

“Standardization in the field of forensic science.

This includes the products, techniques, methodology and reporting in broad general areas of forensic science such as:

> Detection, collection and preservation of physical evidence
> Analysis and interpretation of results and findings.”
UNDERPINNING SCIENCE
NIFS TEAM

Eva

Linzi

Dean

Rob

Ann

Steffany

ANZPAA
Australia New Zealand Policing Advisory Agency