

Annual Report

2002



PATH CENTRE

The Western Australian Centre for
Pathology and Medical Research



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OUR VISION

PathCentre will provide world-class pathology services supported by innovative research and development.

OUR MISSION

PathCentre is committed to improving the health of the people of Western Australia by providing quality pathology services that are customer focussed, competitive and supported by excellence in teaching and research.

OUR CORE VALUES

OUR CLIENTS

Our clients are fundamental to our success. We will respect them and their needs.

OUR PATIENTS

We will be sensitive to patients' needs, respect their dignity and ensure confidentiality.

OUR PEOPLE

Our people are our most valuable asset. We will support them to achieve their full potential in an environment of equal opportunity.

We will foster an environment of open communication, participation and respect for individual opinions and contributions.

OUR WORKPLACE

Our workplace will be safe and will be based on honesty, courtesy, teamwork and adaptability to change.

THE COMMUNITY

We will actively serve the community and be responsive to its needs.

PROFESSIONALISM

We will operate ethically and at the highest levels of professionalism.

1902

Formal organised pathology practice in Western Australia begins with the appointment of Dr George Hugh Spencer Blackburne as Medical Officer and Bacteriologist within the Government's Central Board of Health.



A 'Tent Hospital' during the Goldrush Period

Chairman's Report

Having been a Board Member of PathCentre for a total of six years and its Chairman since 1999, I feel well qualified to say that 2001/2002 marks the maturity of the organisation.

Surrounded by tumultuous change in public sector health, PathCentre has calmly, professionally and very economically attended to the pathology needs of the State's public patients (as well as a significant number of private patients), assisted the Department of Health with its public health endeavours, carried out the coronial autopsies requested by the State Coroner with great skill, care and dignity, assisted the Government to respond to last year's VRE outbreak and to the anthrax scares following the September 11 disaster, and geared up to carry out the DNA CRIMTRAC forensic testing in addition to its usual forensic workload, as well as attending to important teaching and research obligations.



Ms Jennifer Pickworth

In some respects the changes that were wrought by Government in 2001/2002 bear close resemblance to those experienced at PathCentre at its inception in 1995. The early years at PathCentre focussed on settling the amalgamation process, implementing a voluntary redundancy scheme, achieving cost savings and moving off deficit funding to a fee for service model. These corporate aims and aspirations have been achieved at PathCentre. It is worth noting that PathCentre significantly supplements the cost of pathology testing to the State from profits generated by its private sector work. PathCentre has won and continues to maintain a valuable share in private pathology work in Western Australia. On behalf of all the Board members I thank the staff and management of PathCentre across the State for their commitment and sheer hard work in realising these achievements.

Whilst maintaining its critical role as a professional service provider and a centre of excellence, PathCentre has nonetheless developed a keen commercial focus. PathCentre well understands, having achieved major efficiencies through cost cutting and its organic growth program, that to continue to pursue cost savings for the State it must mimic its private sector counterparts and grow its business. The Board reiterates its advice and that of several expert reports to Government to proceed with the public sector pathology amalgamation process that was commenced with the establishment of PathCentre. PathCentre is the appropriate vehicle to complete this amalgamation. It has a demonstrated history of successful change management, it has by far the lowest, most transparent cost structure and it has the professionalism, commitment, resolve and sensitivity to ensure that the public interest is not disadvantaged by such a merger.

Part way through 2001/2002 the Government commenced a program of review (to which the PathCentre Board responded) of all public sector agencies and corporations, with a stated object of abolishing them and merging their functions into an appropriate Government department in the absence of compelling circumstances to maintain the agency or corporation as an independent entity. PathCentre is a statutory corporation with the powers of a State trading concern. As mentioned earlier, PathCentre's private business and private patient work load pays a significant dividend to the State in the form of reduced public patient pathology outlays in the many hospitals it serves. Additionally, and as mentioned earlier, PathCentre carries out sensitive and confidential work that makes it imperative to be sustained as an independent organisation.

While the appointed members of the Board of PathCentre have changed over the years, the management team has been a constant and strong guiding hand. The Board commends the CEO, his senior management team and the front-line managers who together provide the essential and necessary blend of skills for successfully running such a complex organisation.

2001/2002 saw the Board adopt an optimistic outlook for the future of the organisation, encapsulated in the development of a Strategic Plan, based on a rolling five year period. I have no doubt whatsoever that PathCentre will be judged as an organisation that must be maintained for the benefit of the State. Equally, if sound commercial judgements continue to be made, I have no doubt PathCentre will be used as the vehicle to complete the amalgamation of public sector pathology providers in Western Australia.

Personally, I thank each of the other Board members for their time and contributions to Board initiatives and for the enthusiasm that they all bring to PathCentre for the benefits that its growth and success offers to pathology as a discipline, the entire public hospital system and the health sector as a whole in the State.

Ms Jennifer J Pickworth
Chairman, PathCentre Board

Key Achievements 2001/2002

Accreditation

As of February 2002 all PathCentre laboratories became, in effect, fully accredited under the National Association of Testing Authorities/Royal College of Pathologists of Australasia (NATA/RCPA) regime. All laboratories which had been inspected and assessed received full accreditation and, as at June 30, only a few remaining laboratories in rural areas were due for inspection and assessment within weeks. This means that for the first time the entire PathCentre laboratory system is fully accredited to the rigorous standards of the NATA/RCPA system.

Changes to Patient Billing

Commencing 01 April 2002 PathCentre's method of billing for (non-State) Medicare private patients was through Medicare, the universal nation-wide system operated by the Health Insurance Commission. The previous arrangement of funding for this work through the Health Program Grant scheme of the Commonwealth Department of Health was abolished. The change of system was a major logistic exercise which was achieved by PathCentre well within the time constraints imposed by the deadlines for the introduction of the new arrangements.

Efficiency Gains

PathCentre once more achieved efficiency gains during 2001/02. The work output per employee improved around 2% with a relative improvement of 3% in staff costs per item of service, compared to the overall increase in staff costs.

Market Share

Notwithstanding the increasingly aggressive competitive environment, PathCentre's privately referred work volume rose around 6% which represents, approximately, maintenance of our market share; overall work volume from all sources, public and private, rose 3%.

Teaching and Research Outputs

PathCentre's outputs in teaching, research and centre of excellence referral activities generally increased in 2001/02. This represents an outstanding contribution by our staff who are subject to constantly increasing routine work demands as well as financial constraints.

Strategic and Business Planning

Management at all levels, working together with the Board of PathCentre, assisted in the development of the Board's Strategic Plan for 2001/02 and beyond. The Plan was finalised in October 2001. It was then adapted by the management team into a practical Business Plan which addressed the required strategies and which was then signed off by the Board. Implementation of the elements of the Business Plan commenced during the first half of 2002.

Provision of Services to Public Hospitals

For another year the heavily discounted fee rate for items of pathology service provided to public hospitals was maintained and, yet again, this was in the face of further cuts by the Commonwealth to the official Schedule of Fees on which our public hospital fee rate is based. This continues PathCentre's considerable contribution to State savings in health costs which for the past two years has been at the expense of our reserves. In May 2002 the Director General of Health agreed with us that this situation needs to be reviewed for 2002/03.



Dr Chotoo Bhagat, Clinical Director of Biochemistry in his laboratory

Other Noteworthy Highlights of 2001/2002

- PathCentre, through the expertise of our Division of Microbiology & Infectious Diseases, offered practical advice and tangible support during two major episodes which occurred during the year - the first related to several serious 'white powder' scares in Western Australia around the time of the anthrax episodes in the United States of America, and the second was in relation to the VRE outbreak in some Perth hospitals. Our help was vital and was greatly valued and appreciated.
- PathCentre staff were the main promoters and organisers of two international medical conferences held in Perth - the first in September 2001 being the Melioidosis World Conference (combined with the Inaugural Workshop on Emerging Infectious Diseases of the Indian Ocean Rim), and the second in March 2002, the Australasian Thalassaemia Conference and Workshop, which brought together experts from around the world, to discuss this group of haematological conditions.
- PathCentre's own system, *PathCentre Direct*, of electronic reporting of test results direct to requesting doctors' computers has been rolled out to the offices of more than 875 doctors comprising over 148 medical practices and clinics throughout Western Australia. This system is easily the most robust and efficient in the market and is installed by our staff at no cost - but with a view to enabling doctors to better utilise our services.
- The PathCentre Prize for the top student in the third year of the Bachelor of Science (Medical Science) at Curtin University was awarded to Mr Ross Hedley.
- PathCentre's Clinical Staff offered a 3 year PhD scholarship through The University of Western Australia for applied research in association with a University researcher and a PathCentre specialist to be taken up in a PathCentre laboratory; the opportunity exists for a postgraduate student to take up this scholarship in 2003.
- PathCentre was an active supporter of the Lotteries State Microarray Facility established during the year on the Nedlands campus. For full details see the article entitled *Microarray: A New Initiative for PathCentre* in this Annual Report.
- PathCentre has signed off on new industrial agreements with staff involving separate agreements for doctors (which are yet to be finalised at AMA-Government level), our 'miscellaneous' workers, mainly in the Supply and Customer Liaison sections, and for the laboratory and support staff of scientists, laboratory assistants and clerical officers.
- PathCentre responded to a number of official enquiries and made a number of submissions including those to:
 - The WA Government Review of Statutory Authorities
 - The Department of Health Country Health Services Review
 - The Department of Health Corporate and Clinical Support Shared Services Group's call for Expression of Interest for Shared Pathology Services in the metropolitan area
 - The WA Government Inquiry into Response by Government Agencies to Complaints of Family Violence and Child Abuse in Aboriginal Communities
- PathCentre's Chairman and Chief Executive Officer met with the Minister for Health in October 2001 for discussions on funding issues, service levels, public sector pathology policy and related matters.
- PathCentre's Forensic Biology unit was visited by the Minister for Police in November 2001.



Report of the Chief Executive Officer

Pathology is an ever changing discipline. Who, 100 years ago, would have envisaged how this vital diagnostic arm of medicine would have progressed - initially through the development of greater understanding of disease processes, then application of that knowledge to the development of laboratory techniques to assess altered body function and structure, the advent of ever increasingly sophisticated instruments to assist the pathologist and medical scientist, eventually to the current use of computers, rapid throughput volume testing and now the application of genomics and its spin-offs. Just 100 years ago, in 1902, the first organised practice of pathology in Western Australia commenced with the appointment of Dr George Hugh Spencer Blackburne as Medical Officer and Bacteriologist within the Government's Central Board of Health. His main concerns were with the great infections of the day - diphtheria, bubonic plague, tuberculosis and typhoid. This Annual Report shows a very different picture indeed. Because this is the 'Centenary Year of Pathology in Western Australia' we have, throughout this Report, traced some highlights of the advance of pathology in our State over these 100 years.

This then brings me to 2002 and PathCentre's performance to June 30. PathCentre continued to amply fulfil its charter. Notwithstanding the many efficiency measures we have introduced over the past several years, in 2001/02 yet further efficiency gains were made. Total turnover increased to \$53m. Our sources of private revenue won in the open market place continued to significantly subsidise our public sector operations, holding down the costs of pathology services to our public hospitals and providing ongoing savings to their budgets. However, this 'dividend' to the State has now clearly been shown, as identified in the accompanying Financial Report, to be at the expense of PathCentre's reserves. I am able to report that in May 2002 the Director-General of Health, Mr Mike Daube, agreed to review with us, during 2002/03, the business model by which we operate to ensure our viability, while at the same time maintaining the efficiencies we have achieved in order to keep Department outlays to the minimum commensurate with service requirements. The upcoming Review will need to consider issues such as the relevance and quantum of the current pathology Schedule fees regime and other funding levels, and also duplication of staffing, equipment and effort in WA State public sector pathology.

A major item affecting our revenue is the manner of application of the Commonwealth Schedule of Fees for items of pathology service. This Schedule is the basis, in different ways, of both our public and private revenue. Without detailing its complexity, it is unfortunate that the Schedule is heavily biased against a public sector agency such as PathCentre. Moreover, recent changes to the Schedule arranged in consultation, mainly with private pathology interests, have exaggerated this bias, which can now be up to 30% or more in favour of private pathology providers. PathCentre has made submissions addressing this bias to a recent Commonwealth Government 'Review of Commonwealth Legislation for pathology arrangements under Medicare' covering the operation of the Schedule. The report of the Review is due for publication in the second half of 2002. In a further attempt to redress the imbalance between public and private pathology, a new national public sector pathology organisation has been formed for the first time in Australia. This National Coalition of Public Pathology (NCOPP), which has member-participants from all States and Territories, has now been incorporated and is beginning to make its voice heard. I have strongly supported the foundation and development of NCOPP and have now been co-opted to its national Executive. Through these channels I hope that the playing field can eventually be levelled so that public sector pathology providers, which genuinely use the Commonwealth Schedule as the basis of their revenue stream, can be adequately and appropriately funded.

Pathology, as has been so obviously demonstrated in recent times by the private sector, is a volume-related business. Whereas aggregation of pathology business has been that sector's response to the need to drive efficiency, in our State, apart from PathCentre, there are four additional smaller public pathology operations. The viability of all these vital public pathology laboratories needs to be assured and will no doubt also be a major consideration for the Director-General's Review.

1911

The laboratory, now of the Public Health Department, transferred to 57 Murray Street, used extensively by the local medical profession and the Perth Public Hospital (RPH). 121 histological samples examined.

57 Murray Street



Although there have been great financial pressures on PathCentre during the past 12 months, it is again gratifying to record that the other elements of our charter have not been neglected. Our teaching and research commitment and output are undiminished, a tribute to the dedication and professionalism of our outstanding and talented pathologists and scientists for whom I wish to publicly acknowledge my great respect. Their research endeavours and their publication as evidence of their intellectual pursuits are proudly recorded in this Report; the research is overwhelmingly in areas with direct application to current diagnostic and health issues and is critical to the maintenance of the high standards we all seek in health care delivery.

To underscore the quality of our services we have sought the accreditation of our entire laboratory system, and all 24 Branch Laboratories, as well as our central Nedlands campus, have, or are about to, achieve full accreditation status.

In public health we have upgraded our systems and enhanced cooperation with the newly designated 'Population Health' components of the Department of Health.



Dr Keith Shilkin

Our services in forensics have been augmented to keep abreast of rapid developments in that field. We have continued our support of the academic pursuits of The University of Western Australia in this area. Their courses touch on the many and varied aspects of the forensic sciences and we are happy to offer our depth of knowledge, our special expertise and the benefits of our unique and vast practical experience in their lecture programs and other forums.

During the year a Strategic Plan was developed by the Board who worked on it together with our management team. The Plan outlines a guiding path for the organisation over the next few years; the actions to be taken in line with the Plan are sure to strengthen PathCentre as an efficient, focussed, service-oriented public sector pathology operator.

PathCentre is now a sound pathology service provider having come a long way since our early days, this past year being one of further advances. We have developed a strong reputation within the State, throughout Australia and beyond. This may perhaps be exemplified by my being invited, as one of only two public sector representatives nationally, to speak about PathCentre and our progress at the Royal College of Pathologists of Australasia's 'Business of Pathology' showcase session as part of Pathology Week, organised by the College in Sydney in March 2002. I was proud to describe PathCentre's successes to the large mixed audience at this function, and our story was very well received. The future augers well for PathCentre and the timely Review of pathology by the Director-General's group, now in train, offers opportunities for PathCentre and the Department to improve on the solid foundations which have been established for public pathology in Western Australia.

Dr Keith B Shilkin
Chief Executive Officer



Report on Operations



PATH CENTRE

Statement of Compliance

REPORT ON OPERATIONS

2002

ANNUAL REPORT

**The Hon Bob Kucera APM MLA
MINISTER FOR HEALTH**

In accordance with Section 66 of the *Financial Administration and Audit Act 1985*, we hereby submit for your information and presentation to Parliament the Report of the Western Australian Centre for Pathology and Medical Research (PathCentre) for the year ended 30 June 2002.

The report has been prepared in accordance with the provisions of the *Financial Administration and Audit Act 1985*.

Signed at Nedlands this 29th day of August 2002



Ms J Pickworth
Chairman



Dr KB Shilkin
Chief Executive Officer



Operational Summary

REPORT ON OPERATIONS

Enabling Legislation and Responsibility

The Western Australian Centre for Pathology and Medical Research (PathCentre) was established as an agency on 10 April 1995 by the *Agencies (PathCentre) Notice 1995*, made by the Lieutenant-Governor and Deputy of the Governor in Executive Council under Section 7B of the *Hospitals and Health Services Act 1927*. The agency has no subsidiary bodies.

PathCentre is responsible to the Minister for Health.

Mission, Outcomes and Objectives

PathCentre's government desired outcomes and broad objectives were specified in its establishing Notice, as follows:

- to provide pathology services to meet the requirements of the (Health) Department, public hospitals, private hospitals, public patients, private patients, medical practitioners and any other person or body;
- to provide clinical teaching or research facilities or both for pathology services;
- to act as reference centre and centre of excellence for pathology services;
- to provide public health services and advice to the Department, any other department of the State or Commonwealth, any local authority and any other person or body;
- to provide forensic science services to the public and private sectors;
- to undertake commercial exploitation of any research undertaken by, or of any intellectual property rights belonging to, PathCentre for any purpose relating to the carrying on of the agency.

Board and management have defined PathCentre's Vision in the following terms:

PathCentre will provide world-class pathology services supported by innovative research and development.

PathCentre's Mission statement is as follows:

PathCentre is committed to improving the health of the people of Western Australia by providing quality pathology services that are customer focussed, competitive and supported by excellence in teaching and research.

Administrative Structure

The PathCentre Board

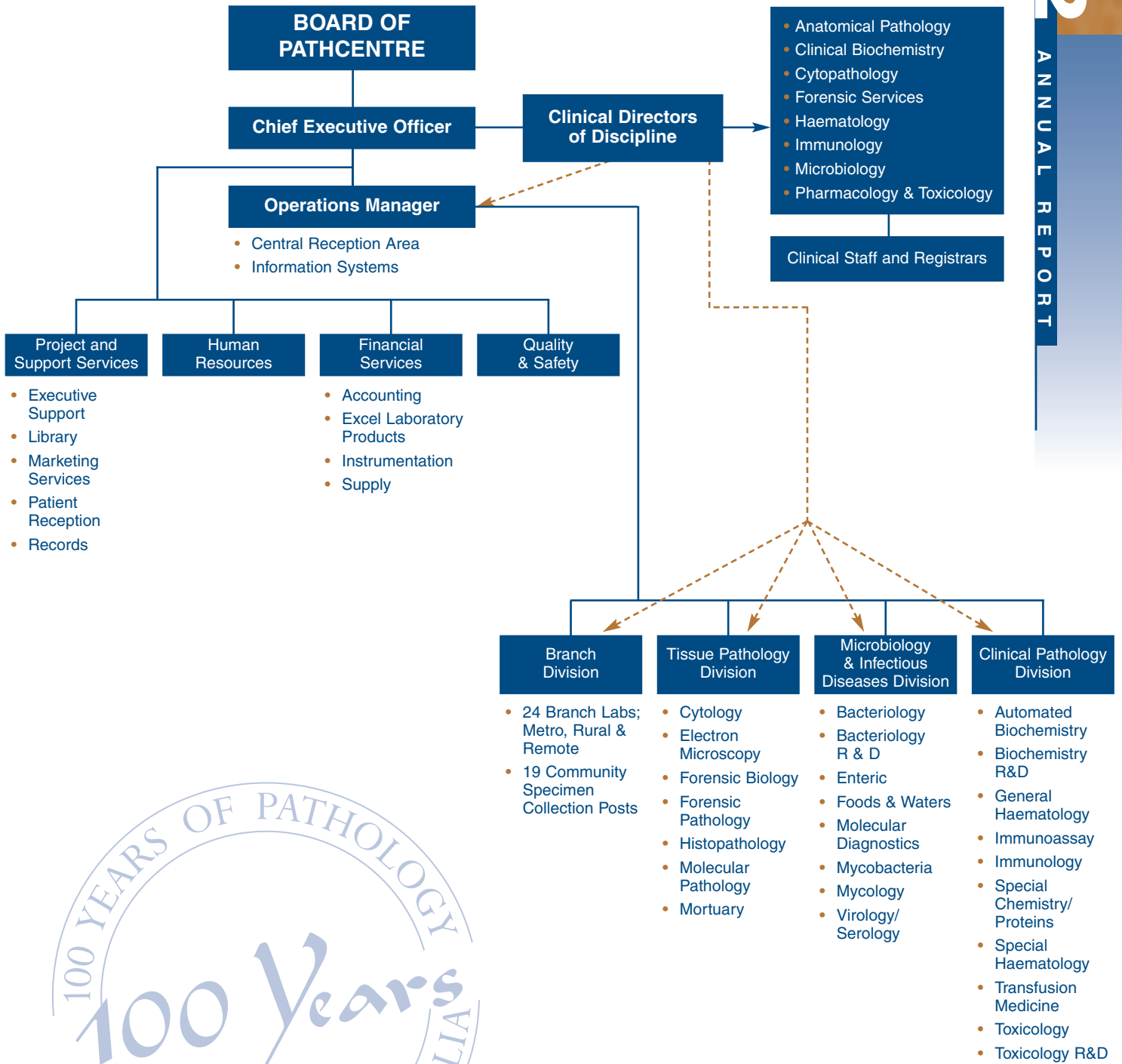
Members of the Board are appointed by the Executive Council under section 7C of the *Hospitals and Health Services Act 1927*. The Board met ten times during 2001/02. In addition to the regular full Board meetings, much of the Board's work was accomplished through Committees whose membership consists of both Board members and management representatives: there are four such Committees dealing with matters relating to Audit, Finance, Medical and Scientific Research and Quality Improvement.

The following Board members held office during the year. Their terms of appointment, attendance at Board meetings and contributions as Board Committee members were:

Board Member	Expiry date of appointment	Number of meetings attended	Committee membership
Ms Jennifer J Pickworth <i>BJuris, LLB</i>	30 June 2003	10	Aud
Dr Anne Donnelly <i>MBBS, MRACMA, Postgrad Dip Health Admin</i>	30 June 2003	8	
Dr Robert A Dunstan <i>BAppSc, Grad Dip Comp, MSc, PhD</i>	30 June 2003	9	
Mr Peter D Eastwood <i>FCA, FAICD</i>	30 June 2003	10	Aud, Fin
Dr Keven J Turner <i>BSc(Hons), PhD, DSc, FRCPath</i>	30 June 2003	10	MSR
Dr Keith B Shilkin, Chief Executive Officer <i>MBBS, FRCPA, FRCPath, FHKCPath</i>	Ex officio	10	Fin, MSR, QI

Organisational Chart

REPORT ON OPERATIONS



Senior Officers

The senior executive officers of PathCentre and their responsibilities are:

Chief Executive Officer: Dr KB Shilkin

Operations Manager: Mr DR Taylor

Financial Controller: Mr JS Fryer

Managing Scientists:

Dr GN Kent	<i>Clinical Pathology Division</i>
Mr RA Bowman	<i>Microbiology & Infectious Diseases Division</i>
Dr P Caterina	<i>Tissue Pathology Division</i>
Mr JM Fogarty	<i>Branch Laboratories Division</i>

Clinical Directors:

Dr DV Spagnolo	<i>Anatomical Pathology</i>
Dr CI Bhagat	<i>Biochemistry</i>
Dr FA Frost	<i>Cytology</i>
Dr CT Cooke	<i>Forensic Pathology</i>
Dr WN Erber	<i>Haematology</i>
Dr PN Hollingsworth	<i>Immunology</i>
Dr DW Smith	<i>Microbiology & Infectious Diseases</i>
Assoc Prof DA Joyce	<i>Pharmacology/Toxicology</i>

Principal Office

PathCentre's principal office and central laboratories are at The Queen Elizabeth II Medical Centre, Hospital Avenue, Nedlands, telephone (08) 9346 3000, facsimile (08) 9381 7594. It also maintains Branch Laboratories and collection centres in 43 other locations, mainly hospitals, throughout Western Australia.

Publications

A listing of publications by staff members can be found at the end of this Annual Report. The agency also publishes a quarterly newsletter, *PathCentre News*, for the medical and health community in Western Australia. All these publications are available from PathCentre.

Contracts with Senior Officers

Other than normal contracts of employment or service, the Board is not aware of any existing or proposed contract which a senior officer, or a firm of which the senior officer is a member, or an entity in which the senior officer has a substantial financial interest, has made with PathCentre.

Ministerial Directives

No Ministerial directives were received during the year.

Operations

PathCentre's operations are structured so as to comply with the Government's Policy on Pathology Services, which outlined three main aims for the public funded laboratories: first, to simplify management by unifying the complex service arrangements on The Queen Elizabeth II Medical Centre site; second, to ensure the Western Australian community received the best possible return on its funds by setting up the laboratories to work to best practice and on a commercial basis; and third, to ensure there was no reduction in services and no adverse effect on laboratories, teaching, research, community service or public health work.

As can be seen from the administrative structure chart, PathCentre has four laboratory divisions - Clinical Pathology, Microbiology & Infectious Diseases, Tissue Pathology and Branch Laboratories - each under the control of a Managing Scientist with responsibility for the day-to-day operations of the division. Clinical Directors for each pathology discipline have responsibility for professional and clinical issues but are not directly involved in management. A detailed report on the operations of each division is presented in the following pages.

Pricing of Outputs

Diagnostic pathology testing is generally charged on a fee for service basis at prices based on the Commonwealth Medical Benefits Schedule (CMBS) issued by the Health Insurance Commission. Other testing is generally priced on a commercial basis.

Fixed subsidies remain in place for some services rendered to the Department of Justice. PathCentre, with Department of Health assistance, has made repeated efforts to move to an output based funding system for these services as is required to conform to Government policy. The Department of Justice has consistently declined to consider any change. PathCentre management will again attempt during 2002/2003 to replace the subsidy arrangement with a more appropriate model. The Department of Health has indicated that it will support such a change.

Staffing

Full Time Equivalent staffing was 629.8 as at 30 June 2002.

Industrial Relations

No industrial disputes arose during the reporting period.

Equal Employment Opportunity

PathCentre has complied with Equal Employment Opportunity (EEO) mandatory reporting requirements for 2001/2002 and applies EEO principles through its EEO Management and Diversity Plan, and Human Resource policies.

Workers' Compensation

The number of active workers' compensation claims for 2001/2002 continued to be low and the projected average cost per claim remains lower than the insurance fund average cost per claim. The management focus continues to be on early intervention strategies to assist injured workers back to work safely. Agreement has been reached with an external Occupational Health Physician to provide expert medical advice on the management of more difficult claims.

Public Sector Standards

PathCentre has ensured compliance with Public Sector Standards in relation to Human Resource Management, the Western Australian Public Sector Code of Ethics and PathCentre's Code of Conduct through continuous internal process review.

No submissions relating to alleged breaches of human resource standards were lodged during the reporting year.

Freedom of Information

PathCentre received numerous requests for medical opinions, details about tests done and for tissue samples. Six valid applications were received and six were dealt with. Of the six, there was one decision, concerning a classification review matter, to defer giving access to documents still in the deliberative process stage. This led to one refusal to grant access to documents. Subsequently a request for internal review was received and it was decided to give access to documents.

PathCentre was the subject of one complaint to the Information Commissioner. All documents were supplied to the Commissioner's office. This complaint was found to be without substance. Therefore no determination was required under the Act and PathCentre authorised for the documents at the Office of the Information Commissioner to be destroyed.

Disability Services

All major objectives of the PathCentre Disability Services Plan were achieved in previous years. There are no new initiatives.

Compliance with Section 175ZE of the Electoral Act 1907

During the 2001/2002 financial year PathCentre incurred \$30,199 for the use of media advertising agency Marketforce and \$4,289 for the use of direct mailing organisation Post Data.



Divisional Reports

REPORT ON OPERATIONS

DIVISION OF CLINICAL PATHOLOGY

Diagnostic and Clinical Services

As a tertiary pathology service provider PathCentre continues to be at the leading edge of the range of pathology tests provided for patients throughout Western Australia. Consequently some of the tests that we provide are either not listed in the CMBS or are reference centre tests where the rebate is considerably below the cost of providing the service. This is most apparent in areas such as therapeutic drug monitoring in patients who receive organ transplants but the principle applies to all areas of tertiary level pathology. The Division has considerable difficulty in maintaining services for which there is no payment in the CMBS or where the Schedule cones out a referred test which we feel we should perform out of concern for the individual's well-being.

Biochemistry

Drs Bronwyn Stuckey and John Walsh have been appointed as Endocrine Biochemists to assist with the clinical interpretation of tests for endocrine disorders. Their contribution, especially for fasting metabolic bone study (FMBS) reports, has been invaluable. With their help, the FMBS report format has been revamped and considerably improved. During the past year, osteocalcin and C-terminal telopeptide (CTX) assays, markers of bone formation and resorption, respectively, have been evaluated. These tests were shown not to add any significant value to the diagnostic tests already performed as part of FMBS and consequently have been discontinued.

New tests introduced during the past year were ACTH (a pituitary hormone), thyroglobulin and anti-thyroglobulin antibody (markers for monitoring thyroid cancer patients). Pro-Brain Natriuretic Peptide and Pro-collagen type 1 N-terminal Peptide assays are presently being evaluated as markers for cardiac failure and bone turnover, respectively.

During the past year, three new instruments were acquired - a Varian Cary Eclipse fluorimeter (replaced a 20-year old fluorimeter), a DataPro random access analyser (replaced a 16-year old analyser) and a Helena SPIFE 3000 (serum protein and immunofixation electrophoresis) replaced a capillary zone electrophoresis system.

Haematology

Dr Gavin Cull joined the Haematology staff in September 2001. Dr Cull has specific interests in the diagnosis, biology and treatment of chronic lymphocytic leukaemia, stem cell transplantation and immunotherapy of lymphoma and multiple myeloma. Dr Cull is jointly employed by PathCentre and Sir Charles Gairdner Hospital. PathCentre has one Haematology Registrar post, currently filled by Dr Bradley Augustson. This position has become extremely busy due to increased workload. There have been a number of medical scientist vacancies. By the end of the year the majority of these will have been filled.

A new flow cytometric test for hereditary spherocytosis was introduced by Ms Janine Davies in Flow Cytometry. This is a screening test for hereditary spherocytosis (HS) and is based on the abnormal proteins in the red cell membrane of patients with HS. This test has virtually replaced the osmotic fragility test that was the standard screening test for HS. A number of laboratories in Western Australia are now referring samples to PathCentre for this new test. The successful introduction of this new test was presented at the Australian Flow Cytometry Group meeting in November. New molecular biology tests for thalassaemia have been developed and will be introduced for routine diagnostic work in July 2002. These tests utilise a multiplex PCR for the more common thalassaemia mutations and deletions.

Work in Transfusion Medicine increased by 15% over the previous year. This has been due to the centralisation of antibody screens from Branch Laboratories and an increase in the number of crossmatches. Despite this, blood issued for transfusion by PathCentre Nedlands to Sir Charles Gairdner Hospital remains static. There has been a 22% increase in blood films referred for Haematologist's comment by PathCentre Branch Laboratories. The increased number of referred films has had a significant impact on Haematology Registrar and Haematologist workload.

Haematology has had a successful year in research, as measured by publications in peer reviewed journals. Publications have appeared in major transfusion, haemostasis and anaesthesia journals. The areas have included thrombophilia, platelet genotyping, haemostasis in cardiac surgery and transfusion methodology. Staff in Haematology have also presented at major national meetings on microarray in haematology and massive transfusion.

Immunology (Autoimmunity and Immunopathology)

The volume of testing has decreased slightly during the year. Some efficiencies have been achieved by better electronic reporting of results from work lists and direct transfer of data from the radioisotope counter to the ULTRA system for some assays (anti DNA, anti GAD and anti AchR). After a considerable delay, electronic results transfer between the immunology laboratory at PathCentre and the laboratory at Royal Perth Hospital (between which there is a degree of rationalisation and co-ordination of the test repertoire) has begun with one panel now being transferred each way. When electronic transfer is available for all tests there will be improvement in turn-around time and improved efficiency.

A test for detection and measurement of autoantibodies to Soluble Liver Antigen has been introduced. This will improve the detection and classification of autoimmune chronic hepatitis.

Clinical Pharmacology & Toxicology

Our staff continue to provide a prompt and comprehensive service to clients for both testing of drugs of abuse and for routine therapeutic drug monitoring. However, constraints in funding of leave replacement has made it difficult to maintain optimal turn-around times in some areas. Significant attention is being paid to maintaining accreditation standards. This effort has immediate benefits in that it ensures compliance with good laboratory practice and will also make the task of the next re-accreditation much easier. One 15-year old high performance liquid chromatograph was replaced during the year.

The range of therapeutic drug monitoring tests was reviewed in March 2002 and a number of less frequently requested high performance chromatographic assays were discontinued. Nevertheless, the laboratory continues to provide a comprehensive reference service for local and interstate clients.

Research and development is proceeding at a steady pace. Presently, assays for the immunosuppressant drugs sirolimus and mycophenolic acid are being developed with a view to introducing these into the routine service. We also have productive research collaborations with the Sir Charles Gairdner Hospital (Dr R Goucke), Royal Perth Hospital (Prof TE Oh and Dr M Paech), Graylands Hospital (Dr F Ahmad and Ms L Fellows), the Clinical Toxicology Unit at the Royal Newcastle Hospital (Dr G Isbister and Dr A Dawson) and various researchers at The University of Western Australia. *Ad hoc* clinical collaborations continue to arise for analysing and

publication of new observations that develop during clinical care in toxicology and clinical pharmacology, for example, observations on the efficacy of haemodialysis in arsenic poisoning (with Dr D Blythe), of leflunomide disposition in renal failure (with Ms J Beaman and Dr G Luxton), and on the outcome of methanol poisoning (with Dr G Kan and Dr G Rangan).

Accreditation

The requirements for NATA/RCPA accreditation of the Branch Laboratories have had a significant impact on Haematology and Biochemistry. Electronic supervision of daily work, review of internal and external quality assurance, teaching and training, and Branch Laboratory supervisory visits have all been performed.

Accreditation reassessment to *AS ISO/IEC 17025 – 1999 General Requirements for Competence of Testing and Calibration Laboratories* and *ISO/IEC 17025 Application Document – Supplementary Requirements for Accreditation in the Field of Medical Testing* (2000 Version one) was carried out in the Autoimmunity and Immunopathology sections in December 2001 and resulted in successful continuing accreditation for this laboratory.

The three clinical pathology disciplines (Biochemistry, Haematology and Clinical Pharmacology & Toxicology) have current NATA/RCPA accreditation and are due for reassessment in 2003. In addition, Clinical Pharmacology & Toxicology remains accredited to *Australian Standard AS4308 (Procedures for the collection, detection and quantitation of drugs of abuse in urine)*.

Staff Achievements

Mr D Pearce was awarded his Doctor of Philosophy degree from The University of Western Australia in December 2001 for his thesis entitled *"Markers of collagen metabolism"*.

Ms S Chan was awarded her Doctor of Philosophy degree from The University of Western Australia in May 2002 for her thesis entitled *"The development and application of clinically based assays for the detection of cartilage turnover"*.

Dr T Mould has been the Registrar in Clinical Immunology Sir Charles Gairdner Hospital and in Autoimmunity and Immunopathology in PathCentre for the last 18 months. In that time she has passed the Part I and Part II examinations for Fellowship of The Royal College of Pathologists of Australasia (RCPA).

Dr EM Lim, Registrar in Clinical Biochemistry passed her part I of the RCPA Chemical Pathology examinations and won the prize for the best candidate in the 2001 Membership examinations of the AACB.

Dr DJL Joske was awarded a Health Consumer Council of WA Certificate of Excellence in December 2001 for outstanding work with cancer patients. The Australian Health Care Association/Baxter Health Care Innovations Award, September 2001, was awarded to Sir Charles Gairdner Hospital Cancer Shared Care Project, for which Dr Joske was in a large part responsible.

Other Achievements and Highlights

Dr Wendy Erber Australasian Thalassaemia Workshop: Staff in PathCentre Haematology organised the inaugural Australasian Thalassaemia Workshop. This was held in Perth on 21-22 March 2002. The Australasian Thalassaemia Workshop exceeded all expectations with 80 registrants from throughout the South East Asian region and beyond, as well as from Australia, attending. The meeting successfully brought together workers involved in the field of thalassaemia diagnosis and testing. Collaborations will result which should improve diagnostic testing and screening for thalassaemia in Australasia. PathCentre has had discussions with the Public Health Genomics Unit in the Department of Health WA regarding establishing a Western Australian Thalassaemia Registry. PathCentre is well placed to become the reference centre for thalassaemia diagnosis in Western Australia.

Dr Wendy Erber Development of an On-Line Internal Haematology Quality Assurance Program (FlyingFish) for PathCentre: This new approach to internal quality assurance for medical scientists throughout PathCentre (Branch and Nedlands) has been highly successful. This program, introduced in 2001, has simplified and standardised performance in haematology and blood transfusion reporting. In addition to internal quality assurance, the FlyingFish has been educational and hence useful for continuing professional development. PathCentre scientists enjoy this new on-line format. The FlyingFish program can be tailored to individual requirements and hence is applicable to all disciplines of pathology. Interest in this approach has been received from various pathology organisations.

Dr John Beilby was the Chairman of the Organising Committee for the RCPA – AACB Chemical Pathology Course held in Perth this year. The senior staff in Clinical Biochemistry played a leading role in the organisation and delivery of the Chemical Pathology Course, helping to make it an outstanding success.

Associate Professor Ken Ilett spent the period September to December 2001 on sabbatical leave at the Department of Clinical Pharmacology, University of Otago (Christchurch Hospital, Christchurch), New Zealand as Visiting Associate Professor. Work during this time focussed on drug excretion in breastmilk as part of a long-standing collaboration with Professor Evan Begg's research group. Dr Ilett and Professor Begg also wrote a review on methods for investigation of drug transfer into human milk and this has since been accepted for publication in the Journal of Human Lactation.

Ms Maria Moy visited the Haematology Department of Queen Mary Hospital, Hong Kong, for one week's laboratory work experience in February 2002 to learn some advanced techniques used in thalassaemia diagnosis.

Dr Neil Kent was elected President of the Australasian Association of Clinical Biochemists (AACB) at its AGM in October 2001.



DIVISION OF MICROBIOLOGY AND INFECTIOUS DISEASES

Diagnostic and Clinical Services

Clinical services remained high throughout this year. Formal inpatient consults to SCGH were 396, as well as there being a heavy demand for the Infectious Diseases beds. Similarly outpatient referrals from SCGH and the community were high, the number of initial and follow-up visits being 992. In addition, the Consultants in this Division provide advice to the Domiciliary Nursing Service regarding management of home intravenous antibiotic therapy, and clinical advice within and outside the Metropolitan region.

Surveillance of Communicable Diseases

Influenza surveillance continued funded by the Department of Health Western Australia. Sentinel general practices throughout the Metropolitan area continued to operate. The influenza season was significantly larger than in the previous two years and occurred at the expected time. Two strains circulated, an influenza H3 type and an influenza B strain. The latter was not well matched with the vaccine strain and there was concern that there would be substantial disease even in immunised individuals. However, influenza B activity remained quite low. During the year diagnostic methods for detection of the newly discovered respiratory virus, metapneumovirus, were developed. A number of positive cases were identified, particularly in children. Further studies on the epidemiology of this virus are underway, including its role in adult respiratory illness and pneumonia in the elderly.

Genotyping of our genital papilloma viruses is largely complete and, as expected, HPV type 16 was the most common. Types 18, 31, 58 and 66 were the other major types detected. This has allowed modifications to be made to the diagnostic PCRs in order to detect all the important genotypes in our population.

Arbovirus surveillance continued in collaboration with the Arbovirus Research and Surveillance Group and Department of Health. There was single definite human MVE infection in a young adult male infected near Wyndham. He developed serious nonfatal encephalitis. A further case of probable MVE encephalitis was detected in Broome, with good recovery. Ongoing activities include a seroconversion study in the Midwest and Gascoyne regions, studies of RRV incidence and impact in the Southwest, and vector

competence studies in mosquitoes. Ross River virus and Barmah Forest virus infections continued, though not at a particularly high rate due to the absence of any heavy activity in the southwest.

Work on the epidemiology of *Chlamydia pneumoniae* infection and its relationship to cardiovascular disease has been completed. Previous publications, plus a recent one submitted on the Busselton population study have failed to show a clear serological relationship between *C. pneumoniae* infection and manifestations of cardiovascular disease, such as myocardial infarcts or strokes. If this is to be studied properly, then it will require methods that can reliably detect active chronic or recurrent infections. This is not being pursued at PathCentre.

Professor Tom Riley continues his program, funded by the Department of Health of Western Australia, to establish comprehensive surveillance for nosocomial infections and to measure the impact of these important diseases. Other studies are looking at the impact of modified antibiotic prescribing policies on antibiotic resistant organisms in hospitals, as well as improved methods for strain identification in order to identify clusters of organisms.

Other studies led by Dr Tim Inglis are continuing into the epidemiology and pathogenesis of melioidosis in the north and linking environmental surveillance with human disease, in collaboration with the Menzies School of Health Research in Darwin and Townsville General Hospital.

Molecular Diagnostics/Tissue Culture

Over the past year the workload has remained high in the area and the laboratory has continued to expand the range of assays. The PCR for meningococcus has been utilised more widely and the assay has been further developed to provide serotype data in positive cases. This has been useful in gathering more complete epidemiological data in culture-negative cases. Conversion of the assay to a real-time PCR method is well developed.

Adopting real-time PCR methodology, which has significant diagnostic advantages, has been a focus of the laboratory over the past 12 months. Supply of appropriate equipment has recently been put to tender and the plan for the near future is to convert many of the high throughput assays to real-time. It is envisaged

that implementation of the technology will make a significant contribution to the efficiency and speed with which PCR results can be produced.

Work has remained stable in the tissue culture area over the last year. Most culture-based assays have now been switched to PCR although the laboratory still maintains a wide range of cell lines to complement other methods of diagnosis. The laboratory also produces a range of consumables that are used in some of our in-house serology assays, making these assays particularly cost-efficient.

Automation (Hepatitis/HIV)

From a management perspective, the last year in the Automated Serology laboratory has been mostly one of consolidation and widening the scope of client services. Clerical and registration functions within the Virology and Serology areas were reviewed in light of accumulated experience with the ULTRA system and better electronic links with the Branch Laboratories, culminating in a more efficient and effective registration function.

Client service has been improved with the introduction of more frequent testing schedules for a number of assays including HBsAg neutralisations, HCV immunoblots and quantitative HBC and HCVs. There was a high level of syphilis testing from the Kimberley region and further refinement of the syphilis testing algorithm saw the introduction of the TPPA to replace the FTA-IgG. Improvements were also introduced in the Helicobacter antibody testing.

Discussions with existing commercial clients saw the introduction of redesigned dedicated request forms to Perth Bone and Tissue Bank, Donate West and Lions Eye Bank. A contract was also signed with Verigen Australia Pty Ltd to undertake donor testing for chondrocyte culture and implantation. Renegotiation of an existing contract with the Australian Red Cross Blood Service resulted in a widening of the confirmatory testing undertaken by PathCentre.

During this financial year, the number of confirmed HIV positive patients was 57, 40 males and 17 females. Of these, three females and seven males were already known to be HIV positive, and one male was not within Western Australia. All were HIV-1 infections.

General Serology

Ongoing review has resulted in a number of changes to current methods. Leptospirosis serology (macroscopic agglutination) now covers six serovars, with the addition of australis and zanoni serovars. Other additions to the test range include Q fever phase one IgA, measles IgG EIA and *L. pneumophila* urinary antigen. A new melioidosis antigen test has also been evaluated and will be introduced shortly. Discontinued tests include HIV IFA, HTLV IFA and rubella IgM sucrose gradients.

Bacteriology

The year in the Bacteriology section has been dominated by consolidation of the centralisation of metropolitan Branch Laboratory bacteriology testing and by assistance to the country Branches in their drive to achieve NATA accreditation.

In the previous 12 months, Mr Leigh Mulgrave visited the majority of our country Branches in preparation for NATA medical audits. On the initial visit Mr Mulgrave worked through a tailored checklist to ensure that all the necessary quality system and technical elements were in place prior to the Branch's first audit by NATA.

Mycobacteriology

The Mycobacteria Laboratory continued to consolidate its technology base during the year. Sequenced-based identification of atypical mycobacteria is now the routine procedure and this has considerably improved turn-around times and accuracy. Two public databases (RIDOM and GenBank) are used to support mycobacterial identifications. Susceptibility testing of *M. tuberculosis* is now performed by the automated MGIT System, a move away from the radiometric method with its associated waste-disposal and safety problems. An in-house nested specimen-direct test for *M. tuberculosis* detection has now been validated and has proven a reliable molecular tool for both pulmonary and non-pulmonary smear positive cases.

Mycology

The staffing of the Mycology laboratory changed over the past year with the resignation of Ms Linda Wulff who served the section for 27 years and assisted in developing the high reputation the section enjoys today.

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The Broome Commonwealth Health Laboratory is opened.



The Broome Commonwealth Health Laboratory

The section has continued its development of molecular-based methods with most identification of *Nocardia* species now performed by sequencing. The reporting practices in routine superficial mycoses have been reviewed resulting in a wider range of comments relevant to current medical opinion in the area. Laboratory recording processes were also reviewed with a reduction in the use of written request forms in the 'skins' area. Investigations are also currently underway to implement bar-coding of imaged forms to improve efficiency in the area.

Enteric

The past 12 months has been a steady year in terms of work activity. The previous 12-month period saw an influx of large numbers of illegal immigrants at the Curtin Detention Centre and our planning had been for a continuation of those circumstances. As most people will now appreciate, circumstances changed and workflow returned to more usual levels.

With the centralisation of all enteric microbiology to the Nedlands campus, the last year has seen the introduction of a seven-day service that has reduced reporting times to our Branch Laboratories. Involvement with the national OzFoodNet program continued to develop. This nationally sponsored program is aimed at developing better epidemiological information on some common food-borne pathogens, with the emphasis on campylobacter and salmonella. In discussion with colleagues at Grace Vaughan House, staffing and procedures have been improved which should see a continuation of these new standards.

Foods and Waters

Activity in Foods and Waters over the past 12 months has mainly concentrated on the implementation of a new computer system. After some early setbacks, the laboratory decided to proceed with a product called LabWare and this has been very successfully installed over the past six months. LabWare replaced an in-house system that was installed some 15 years ago and which had been experiencing increased down time over the past few years. Many features of the new LabWare system should enable the laboratory to improve reporting through a variety of electronic reporting options. Discussions with our main clients are well underway to achieve this goal.

As part of our NATA assessment in November 2001 to ISO/IEC 17025 standards, the detection of *Salmonella* and *Listeria monocytogenes* by PCR was added to our registration. We were the first food-testing laboratory in the State to gain accreditation for PCR detection of pathogens.

Following the investigation of a patient infected with *E. coli* O157:H7, cacciatores was identified as the source of the infection with samples from the patient's fridge and, subsequently, the place of manufacture also yielded *E. coli* O157:H7. This finding was significant, as it was the first time *E. coli* O157:H7 had been isolated from a ready to eat food in Western Australia. The Environmental Health Section subsequently submitted in excess of 250 carcass and rectal swabs taken from cattle, pigs and sheep for analysis. *E. coli* O157:H7 was detected in a small number of samples tested during early 2002. Workload in the food section has been increasing over the past year with a broadening scope of testing being undertaken. In conjunction with Environmental Health, some 2000 milk samples were examined for antibiotic residues. This has been part of an on-going collaborative investigation between PathCentre and Environmental Health. Further development of chromogenic methods has also been undertaken. Workload in the Waters Laboratory has also increased by 4% compared to last year. There has been continued participation in the national Co-operative Research Centre for Water Quality and Treatment with a number of tests undertaken, including Cryptosporidium, f-RNA and somatic bacteriophage. Further development of Cryptosporidium testing has been slow while requesting authorities grapple with sampling strategies and interpretation of results. In the meantime, the laboratory has continued its participation in national proficiency programs and performed at a level acceptable for NATA accreditation.

Molecular Typing

This section of the laboratory has emerged over the last two to three years from the Division's Research and Development focus on molecular typing. Over that time many typing methods and typing algorithms have been developed and the range of molecular typing approaches now includes pulse field gel electrophoresis, ribotyping and sequencing. These are used in conjunction with complementary phenotypic methods used in other parts of the laboratory, including serotyping and gas chromatography for whole-cell fatty acids.

The software used with these typing methods has also been further developed. The BioNumerics software package has been used in the laboratory's participation in a national case-controlled study of campylobacter infections coordinated by OzFoodNet.

Accreditation

The Division continued with a busy schedule of Accreditation issues. NATA Medical assessed the laboratory in May 2001 and we received feedback in September 2001 that all requirements had been met and that the laboratory was now accredited to ISO/IEC 17025 (1999) standards.

NATA Biological assessed the Waters Laboratory in October 2001 and the Foods Laboratory in November 2001. By agreement, a combined response to NATA was submitted in January 2002 addressing a very small number of requirements raised. NATA replied in May 2002 that both areas met all the standards to ISO/IEC 17025, which included additional signatories and accreditation for PCR detection of salmonella and listeria in food samples.

In addition to the NATA audits, the Australian Quarantine Inspection Service (AQIS) inspected the Division in October 2001. This inspection was to assess the continuation of the Division's culture collection and import licence and resulted in continuation of our AQIS licence.

Staff Achievements

Mr M Aravena-Roman was invited as Guest Researcher to the Enteric and Special Bacteriology Reference Laboratories, Division of Health Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Ga. USA in April 2002.

Dr David Smith was elected to a three-year term as Chairman of the National Public Health Laboratory Network. He was also elevated to Clinical Associate Professor in The University of Western Australia Department of Microbiology.

Professor Tom Riley was awarded a personal Chair in the Department of Microbiology of The University of Western Australia.



1940-1945 *This period of war-time saw a considerable volume of pathology work performed for the armed forces despite staff and equipment shortages.*

DIVISION OF TISSUE PATHOLOGY

Diagnostic and Clinical Services

The Division of Tissue Pathology over the past 12 months has continued to provide the highest quality and cost effective services within the fields of Anatomical Pathology and Forensic Services for the community of Western Australia.

The Division has undergone change at the management level with the appointment of Dr Paul Caterina to the position of Managing Scientist in January 2002. Dr Caterina succeeded Dr Darrel Whitaker, the Divisional Manager since the inception of PathCentre in 1995. Dr Whitaker is acknowledged for his tremendous contribution to the development and management of the Division as a whole and, whilst having relinquished his administrative duties, he will continue to be a valuable contributor to Anatomical Pathology by resuming full-time employment within the Cytology Unit under the Clinical Directorship of Dr Felicity Frost.

The demand for diagnostic and clinical services within Anatomical Pathology in comparison to the preceding 12 month reporting period has been maintained. There has been consolidation in the total number of cases referred for Histopathology, Cytology and Electron Microscopy testing, areas which generate CMBS revenue, and also in the specialist diagnostic molecular pathology section. The cumulative case count totals for Histopathology, Cytology and Electron Microscopy for 2001/2002 financial year increased 3% in comparison to the 2000/2001 financial year. This increase in case count translates into an increase in CMBS-derived revenue of 2% compared to the 2000/2001 financial year.

The Anatomical Pathology diagnostic outputs have been produced to the standard required by our clients despite ever-present external factors applying upward pressure on costs. Responsible management at the section level over the past 12 months, together with superb efforts by all staff, have ensured that expenditure was kept to a minimum whilst still maintaining the highest quality outputs within the turn-around time benchmarks set for each of the diagnostic areas.

Non-CMBS-derived revenue within Anatomical Pathology has also increased over the past 12 months with strong growth in referred clinical trial work and non-clinical trial-related research

projects. Anatomical Pathology has managed to absorb the growth in these two areas of operation, which are totally separate to provision of diagnostic and clinical services, without a commensurate increase in staffing. This commitment by Anatomical Pathology staff, together with continued participation in collaborative research with numerous health professionals and maintenance of teaching programs, reaffirms the mission of Anatomical Pathology to provide excellence in teaching and research.

Clinico-pathological meetings were conducted regularly throughout the year by Anatomical Pathology pathologists for medical specialists from wide-ranging clinical disciplines. The level of service provided in this important area of clinical interface, and for teaching, was greatly improved by refurbishment of the Anatomical Pathology Seminar Room. The refurbishment included the installation of high-resolution projection equipment, allowing simultaneous projection of light microscopic histopathology and cytology slide preparations to a freestanding colour monitor and data projector. The equipment also allows simultaneous projection of microscope images and computer-generated presentations. This major capital expenditure program, a culmination of two years planning, now provides a state-of-the-art facility which will serve Anatomical Pathology and the Division as a whole in the areas of teaching and quality improvement for years to come.

The implementation of the first phase of voice recognition technology during March 2002, to augment the conventional dictaphone typing of pathology reports in the diagnostic areas of histopathology and cytology, has reduced the reporting burden within the Anatomical Pathology office and contributed to an overall reduction in report turn-around times. Currently two of twelve pathologists are using voice recognition technology and plans are gradually to increase the number of users over the next twelve months. The relatively seamless integration of the technology into the system of reporting was facilitated by solid planning by all involved, particularly Mr Andrew Witt from the Information Services section at PathCentre.



Enhancements to specimen registration procedures within Anatomical Pathology which are currently underway, and which involve collaboration between staff from Anatomical Pathology, Central Registration and Information Services, have not only improved the efficiency of voice-generated reporting, but have also impacted positively on specimen processing and report turn-around times.

Within the area of Diagnostic Cytology, Pathologists with expertise in Fine Needle Aspiration (FNA) techniques continue to provide this specialist service throughout the metropolitan area. Dr Felicity Frost, Clinical Director of Cytology, together with Dr Bastiaan de Boer, Dr Amanda Segal and Dr Greg Sterrett take this valuable diagnostic service closer to patients' homes by responding to bookings made at clinics at Armadale, Bentley, Rockingham, Mandurah and Stirling. Community clinics complement the FNA service provided at Nedlands, which includes the Breast Centre and Thyroid Clinic within Sir Charles Gairdner Hospital.

Another initiative introduced by the Cytology Unit in conjunction with the Division of Microbiology & Infectious Diseases is reflex testing for high risk human papillomavirus (HPV) DNA by a PCR method on all abnormal cervical cytology cases which are accompanied by Thin Prep (liquid based) specimens. Reflex testing has been shown to be beneficial in triaging women with minor Pap smear abnormalities to either colposcopy, or return to routine screening, depending on the presence or absence of high risk or oncogenic HPV types in the liquid based sample.

The PathCentre Cytology Unit and the Cancer Foundation of WA co-sponsored a multidisciplinary meeting to discuss adenocarcinoma of cervix and its precursors. Dr Heather Mitchell, the head of the Victorian Cervical Cytology Registry and one of the principal architects of the Australian Cervical Screening Program was the invited speaker. Drs Felicity Frost and Amanda Segal from the PathCentre Cytology Unit were also invited speakers.

Accreditation

Accreditation success for Anatomical Pathology at the Laboratory Practice Standard ISO/IEC17025 was achieved with the NATA/RCPA accreditation assessment for the Histopathology, Cytology and Electron Microscopy services and the Mortuary facilities conducted Monday 18 March 2002.

The scope of audit was very thorough and all-encompassing with the assessment team spending a very full day reviewing all aspects of operations within the sections under assessment. All staff within Anatomical Pathology are to be congratulated for this achievement as it is testimony to their commitment and to the high standard of work performed here at PathCentre. These sentiments were reflected by the assessment team who, at the exit meeting, also wished to pass their congratulations on to the entire staff.

Forensic Services

The Forensic Services disciplines at PathCentre, Forensic Pathology and Forensic Biology, both under the Clinical Direction of Dr Clive Cooke, continued to provide a high level of service to the Coroner and Western Australian Police Service (WAPS) and, ultimately, the community as a whole.

Over the past twelve months, the Forensic Pathology team have continued to pass on their high level of expertise and knowledge to local, interstate and international professionals in the field. At the international level, the established relationship between Forensic Pathology and those in Sri Lanka was consolidated by the one-year secondment of Dr Bandula Abeysinghe to Forensic Pathology PathCentre. The link was further strengthened with the invitation to Dr Clive Cooke to be external examiner for the Forensic Medicine MD examinations at the Postgraduate Institute of Medicine in Sri Lanka.

The level of activity within Forensic Biology heightened considerably over the past 12 months as the section continued to plan and prepare for increases in items referred for DNA analysis from WAPS, together with increases in referrals anticipated from the introduction of the *Criminal Investigation (Identifying People) Act 2002*. Four additional scientists and a Property Officer were employed to maintain outputs in compliance with quality system requirements and to maintain case turn-around times. Additional laboratory space was procured, and refitted for item receipt and evidence examination, to cope with the additional workload. During this process of expansion, regular consultative meetings have continued with WAPS to ensure continued provision of services at the level required.

Dr Gavin Turbett, Section Manager, Forensic Biology has been directly involved with two other important planning issues over the past twelve months - the introduction of CrimTrac, the national DNA database, into the Forensic Biology section and the planned relocation to Midland.

Both issues are progressing, with the latter, a long-term project, currently in consultation phase, which has involved meetings since February 2002 with the Project management team and architects.

The Forensic Biology team also submitted a response to the Government of WA, Gordon Enquiry, 'Enquiry into response by Government agencies to complaints of family violence and child abuse in Aboriginal communities', addressing the specific term of reference, 'Comment on any limitations of DNA testing in the Aboriginal Community'.

Staff Achievements

Appointment of Emeritus Consultant

On the recommendation of the Clinical Directors, the PathCentre Board has appointed Professor Max Walters as Emeritus Consultant. Professor Walters was a Consultant Pathologist at PathCentre until December 2001.

Examination success

Dr D Robson and **Dr M Newman** attained Fellowship of the Royal College of Pathologists of Australasia by passing the final Part II examinations of the College.

Ms C Garbin graduated with Postgraduate Diploma in Forensic Science from The University of Western Australia.

Dr KA Margolius graduated with Bachelor Degree in Law from Murdoch University.



Managing Scientist, Dr Paul Caterina



Divisional Reports

REPORT ON OPERATIONS

DIVISION OF BRANCH LABORATORIES

The Division of Branch Laboratories has a complex of 24 Branch Laboratories and 19 collection centres which continue to provide pathology services across metropolitan and rural Western Australia. The laboratories provide on-site routine diagnostic services in haematology, immunohaematology, biochemistry and microbiology, and refer more complex tests to the Central PathCentre laboratories in Nedlands.

Over the last year there has been continuous review of tests available in Branch Laboratories. Where possible, there has been centralising of some testing, producing improved efficiency and reduced cost per test. This policy will continue, with PathCentre management continually consulting with doctors, hospitals and communities to ensure the highest quality service and commitment to the people of Western Australia. PathCentre is very mindful of the special needs of rural and remote communities and, where possible, will increase and improve services.

Work originating from Branch Laboratories and collection centres has increased a modest three percent over the last year. Of this work, approximately 56% is performed in the local laboratory.

Some medical services, such as renal dialysis and oncology, continue to be decentralised from Perth teaching hospitals to regional hospitals and some metropolitan non-teaching hospitals. These new services often require significant pathology input, usually within strict time constraints. In every case, our Branch laboratories have responded well to the changes required to implement these additional medical services.

Services in Branch Laboratories are constantly being seriously challenged by the ever-increasing expectations of doctors, communities and hospitals throughout the State. There are two major factors affecting the ability of Branch Laboratories to respond to these changing community needs. Firstly, there is greater awareness and knowledge of general health issues which have increased the demand for immediate services, including pathology. The second is the increasing number of hospitals which employ salaried medical officers to provide emergency and casualty services to communities. The increasing cost of private doctors' medical

insurance in certain clinical disciplines has also produced more salaried positions with 'automatic' insurance cover, which produces a reduction in the availability of such services outside the public hospital system. This results in more people presenting to hospitals and requiring pathology services, particularly outside normal hours. Over the last year there has been a significant increase in after hours commitment by laboratory personnel, with an increase in costs. The need for a commitment of these small Branch work groups to work out of normal hours creates additional staffing difficulties.

The increased demand for services outside of normal hours may mean an increase in staff that is not commensurate with workload and is not commercially viable. However, as a consequence of the demand, modified working hours have been introduced in Bunbury, Swan Districts, Armadale and Mandurah laboratories.

The PathCentre Branch Laboratories continue to be an integral part of the local community, providing work experience for students of schools, colleges and universities. They are often involved in school health education programs, staff members give talks to community groups and participate in hospital educational activities. When required, staff actively participate in formal teaching in Universities and TAFE colleges. It is usual for Branch Laboratories to be involved with education and training of community and remote area nurses.

Diagnostic and Clinical Services

The Australian Red Cross Blood Service constantly reviews services throughout the State, which last year resulted in a re-arrangement of services in several rural and remote areas including some centralisation of services to Perth. Although this does not appear to have impacted on the availability of blood products, there has been an increased responsibility for Branch staff to maintain stocks, monitor storage conditions and assist hospital staff in general maintenance. Laboratory accreditation to Australian Standards has also uncovered equipment such as Blood Bank refrigerators that cannot meet current standards. Ongoing consultation with the Department of Health WA will be necessary to resolve this issue in the immediate future.

The demise of Ansett has also had a significant impact on pathology services in the north of the

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The first pathology course is taught to fourth years in the Medical School to WA medical students returned from eastern states medical schools. Central Public Health Laboratories moved to the new Perth Chest Hospital (later the Sir Charles Gairdner Hospital) and expanded their work to include the laboratory work of that hospital.

State. Actual flights have reduced in number and from some centres flight times cause delays not previously experienced. For example, blood stocks from the Australian Red Cross Blood Service in Perth bound for Kununurra are now routed through Darwin because of poor flight connections in Broome. Problems are experienced getting emergency replacement equipment to some laboratories in the north. Often plane cargo space is unavailable causing delays, and in some instances labile chilled or frozen products are simply off loaded due to other priorities and without notification to us, causing the products to be no longer useable.

PathCentre Direct downloads results immediately they are validated to doctors' desktop computers. This has proved to be very robust and easy to use, and a further 270 doctors have been added to the system, making a total of around 875 doctors. This system has also proven to be useful in certain areas within hospitals, improving the availability of validated results and avoiding their need to rely on telephone enquiries. There has also been an increase in the number of hospitals having access to their local PathCentre laboratory database. This availability has stimulated many requests for direct access to patient results, but has highlighted concerns over confidentiality. Occasionally access must be denied, which is unpopular, but confidentiality is a priority in most circumstances.

Accreditation

A further nine Branch Laboratories have undergone NATA/RCPA accreditation assessment in the last year. The remaining laboratories are scheduled for NATA/RCPA assessment in July and August 2002. July will also see the beginning of reassessments for Branches previously accredited.

The successful development of our computerised 'Quality Assurance Package' has had a significant impact on the supervision of the scientific quality in Branch Laboratories. This package allows each individual laboratory to enter daily quality control results and gives numerical and graphical reports. Quality measures, such as Westgard rules, are automatically applied and require an immediate response. This information is then downloaded to Nedlands where it is available for individual laboratories or is automatically compiled to give comparative data and graphs across all laboratories and for specific analysers. This supervisory interface, along with high quality centrally controlled documentation, as well as the commitment of our staff, has resulted in NATA/RCPA assessors highly commending PathCentre Branch Laboratories for a quality system that has set a bench mark for Australia.

Challenges for the Future

A major challenge facing PathCentre's rural service is the ever-increasing expectation and demand by rural and remote communities for medical services similar to Perth. A significant part of that increased expectation applies to pathology, especially for our laboratory service to be available outside normal hours. Over the last year the extra hours worked by our staff has increased. If this comprehensive laboratory service is to remain viable, consideration will need to be given to the proper funding of this increase in demand as extra staff need to be engaged.



Microarray: A New Initiative for Path Centre

REPORT ON OPERATIONS

Microarray is an exciting emerging technology with considerable potential for medical scientific advancement. Among other uses, it provides a snapshot of the genes expressed in tumour tissue and is an immensely powerful tool that can help to resolve problems of tumour classification, disease diagnosis and prognosis. The microarray uses RNA extracted from a tissue enabling production of the complementary cDNA which is hybridised to a biochip to measure the expression of all known genes in a cell or tissue of interest. Highly sophisticated optics measure the various genes' fluorescent signals, which are converted to gene expression data by specialised software.

In 2001, a Microarray Advisory Group with an Executive Committee was established to determine the feasibility and possible applications of microarray technology at PathCentre. The Microarray Advisory Group consisted of representatives from all Divisions in PathCentre with the Executive Committee comprising Dr Keith Shilkin, Dr Dominic Spagnolo, Dr John Beilby and Dr Wendy Erber (Convenor).

The opportunity for PathCentre to use this technology has arisen as a result of the establishment of the Lotteries State Microarray Facility (LSMAF) on the Nedlands campus. The board of the LSMAF represents the four public universities in Western Australia. Generous funding from the Lotteries Commission of WA enabled the purchase of the two complementary technologies of Affymetrix and cDNA microarray. Following meetings with the Executive Officer of the LSMAF, Dr Nigel Swanson, PathCentre entered into a collaborative agreement to provide a scientist to work closely with the LSMAF to develop the microarray service while researching microarray applications for PathCentre. The Microarray Advisory Group recommended the appointment of a Scientist for two years in the first instance to establish techniques to utilise microarray for research and diagnostic pathology and to assist the LSMAF in establishing cDNA microarray. The position was advertised in June 2001 and following a formal interview process Ms Anthea Downs commenced as PathCentre Microarray Scientist on 06 August 2001.

Ms Downs is well qualified for this work, having a strong background in molecular biology. She undertook special training in microarray fabrication and hybridisation at The Australian Genome Research Facility (AGRF) which is

located at the Walter and Eliza Hall Institute for Medical Research (WEHI) in Melbourne. The AGRF, established as part of the Commonwealth Government's Major National Research Facility (MNRF) Program, is a state-of-the-art facility for the collection of molecular genetic information and associated bioinformatics.

In collaboration with the AGRF, PathCentre has developed the 'Leuk709' microarray for the analysis of gene expression in leukemias and lymphomas. A molecular diagnostic study into chronic lymphocytic leukemia (CLL), which will utilise this custom-made microarray, is in progress.

Other collaborative activities include a study of "Gene Expression in Malignant Plasma Cells in Multiple Myeloma Patients with Monosomy 13q" with the Department of Haematology and the Medical Research Fund (MRF) at Royal Perth Hospital and a study into "Monocyte Gene Expression in Juvenile Arthritis" with the Department of Paediatric Rheumatology at Princess Margaret Hospital for Children.

Future studies are planned including mapping the evolution of gene expression in follicular lymphoma and measuring correlates with clinical outcome.

PathCentre's vision in developing microarray technology and in contributing to the work of the Facility on our campus is already bearing fruit.

Visiting lecturer Professor Dennis Lo and Ms Anthea Downs



1961

Collection centres established at Collie and Busselton Hospitals. Laboratories established in Geraldton, Northam and Derby. Claremont Mental Hospital sheltered workshop established to clean and supply laboratory equipment to the Public Laboratories.



Original Collie Laboratory

Division of Clinical Pathology**Biochemistry**

Dr CI BHAGAT MD, MBChB, MSc, MAACB, FRCPA Clinical Director
 Dr JP BEILBY BSc(Hons), PhD, FAACB [Adjunct Senior Lecturer – UWA]
 Dr GN KENT BSc(Hons), PhD, FAACB
 Dr E ROSSI BSc(Hons), PhD, MAACB
 Dr BGA STUCKEY MBBS, BA, FRACP (Endocrine Biochemist – Part time)
 Dr SD VASIKARAN MBBS, MD, MSc, FRCPA (Honorary Clinical Biochemist)
 Dr JP WALSH MBBS, BA(Hons) PhD, FRACP (Endocrine Biochemist – Part time)

Haematology

Dr WN ERBER MD, DPhil(Oxon), FRCPA Clinical Director [Clinical Associate Professor – UWA]
 Professor CG BEGLEY MBBS, PhD, FRACP, FRCPath (Honorary Haematologist)
 Dr CH COLE MBBS, FRACP, FRCPA (Paediatric Haematologist – Part time)
 Dr GPM CRAWFORD MD, FRACP, FRCPA, FRCP (Honorary Haematologist)
 Dr GM CULL MBBS, FRACP, FRCPA, DM (Part time SCGH)
 Dr RP HERRMANN MBBS, FRACP, FRCPA (Honorary Haematologist)
 Dr DJL JOSKE MBBS, FRACP, FRCPA (Part time SCGH)
 Dr MS WARD MBBS, ChB, MRCP, FRACP, FRCPA (Locum – Part time)

Immunology

Dr PN HOLLINGSWORTH MBBS, DPhil(Oxon), FRACP, FRCPA, Clinical Director (Part time SCGH)
 Dr PJ ZILKO MBBS, MRCP, FRACP, FRCPA (Honorary Immunologist)

Pharmacology & Toxicology

Associate Professor DA JOYCE MBBS, MD, FRACP Clinical Director (UWA)
 Associate Professor KF ILETT BPharm, MPS, PhD (UWA)
 Professor JW PATERSON MBBS, BSc, AKC, FRCP, FRACP, FRCPA (Emeritus Consultant)

Division of Microbiology & Infectious Diseases

Dr DW SMITH MBBS, BMedSc, FRCPA Clinical Director [Clinical Associate Professor – UWA]
 Dr CL GOLLEDGE MBBS (Hons), BSc(Med), MRCP(UK), FRCPA, FACTM, DTM&H
 Dr GB HARNETT PhD, MASM, FIBS, FAIMS
 Dr TJJ INGLIS BMDM, FRCPath, DTM&H, FRCPA
 Professor TV RILEY PhD, BAppSc, MAppEpid, FRCPath, MAIMS, FASM, FAAM (Joint appointment with UWA)
 Dr DJ SPEERS MBBS, BSc(Hons), FRACP, FRCPA (Part time SCGH)

Division of Tissue Pathology**Anatomical Pathology**

Dr DV SPAGNOLO MBBS, FRCPA Clinical Director [Clinical Professor – UWA]
 Dr WB DE BOER MBBS, BMedSc, FRCPA
 Dr FA FROST MBBS, FRCPA, FIAC
 Associate Professor JM HARVEY MBBS, FRCPA (UWA)
 Dr F HUGHES MBChB, BAO, FFPATH, FRCPath
 Dr A NARAN MBChB, FFPATH, FRCPA, MRCPATH,
 Professor JM PAPADIMITRIOU MOA, MBBS, BA, MD, FRCPA, FRCP, FRCPath, FIBiol, CBiol (UWA)
 Dr PD ROBBINS MBBS, FRCPA [Clinical Senior Lecturer – UWA]
 Dr W ROBINSON MBBS, FRCPA
 Dr A SEGAL MBBS, FRCPA
 Dr KB SHILKIN MBBS, FRCPA, FRCPath, FHKCPath [Clinical Professor – UWA]
 Dr R SINNIH DSc, PhD, MD, MBChB, BAO, FRCPI, FRCPA, FRCPath (Locum – Part time)
 Dr B SNOWBALL MBBS, DCH, FRCPA
 Dr SA SPARROW MBBS, FRCPA, MIAC (Part time)
 Dr GF STERRETT MBBS, FRCPA, FIAC [Clinical Associate Professor – UWA]
 Professor MN-I WALTERS AM, JP, MBBS, MD, FRCPA, FRCPath, FRACP (Emeritus Consultant)
 Dr D WHITAKER FIMLS, PhD, MRCPATH, MAIMS, CFIAC

Forensic Pathology

Dr CT COOKE *MBBS, FRCPA* Clinical Director [Clinical Senior Lecturer – UWA]

Ms AM BUCK *BAppSc, MSc, DipTech* (Forensic Anthropologist – Part time)

Dr GA CADDEN *MBBS, BMedSc, DMJ*

Dr IR DADOUR *BSc(Hons), PhD* (Honorary Forensic Entomologist)

Dr S KNOTT *BDS, DipForOdont* (Forensic Odontologist – Part time)

Dr KA MARGOLIUS *BSc, MBBCh, FRCPA, FFPATH, MIAC, FACLM, LLB*

Professor GR STEWART *BSc, PhD, DSc* (Honorary Forensic Botanist)

Corporate

Dr KB SHILKIN *MBBS, FRCPA, FRCPath, FHKCPath* Chief Executive Officer

Mr DR TAYLOR *BAppSc, GradDipComp* Operations Manager

Mr JS FRYER *FCA* Financial Controller

Mr TJ NEILL *CMAHRI* Human Resource Manager

Mr H CARMAN *BAppSc, GradDipBus* Safety and Quality Improvement Officer

Miss MS WOODS *BAppSc, GradDipBus* Project and Support Services Manager

Mr RA BOWMAN *BAppSc, MSc, GradDipMgt, FASM* Managing Scientist Microbiology & Infectious Diseases Division

Mr JM FOGARTY *BAppSc* Managing Scientist Branch Laboratories Division

Dr GN KENT *BSc(Hons), PhD, FAACB* Managing Scientist Clinical Pathology Division

Dr P CATERINA *BAppSc, PhD* Managing Scientist Tissue Pathology Division



1963

The first electron microscope for medical diagnosis was acquired and installed in the UWA Department of Pathology.



The first electron microscope

PathCentre Lunchtime Forums

REPORT ON OPERATIONS

2002

ANNUAL REPORT

DATE	SPEAKER	TOPIC
11 July 2001	Dr Marsali Newman Dr Jodi White Dr Yu-Wei Goh <i>Anatomical Pathology Registrar Presentations</i>	Core imprint cytology: a new approach to same day diagnosis in the Breast Assessment Centre. Flow cytometry and lymph node fine needle aspiration cytology in the diagnosis of non-Hodgkin's lymphoma. Extraskeletal myxoid "chondrosarcoma": a neuroendocrine tumour?
25 July 2001	Dr Peter Hollingsworth <i>Immunology</i>	Varieties of arthritis.
08 August 2001	Assoc Prof David Joyce <i>Pharmacology/Toxicology</i>	Saliva: suitable for drugs of abuse screening.
22 August 2001	Ms Janine Davies, Ms Dianne Grey and Mr Nick Michalopoulos <i>Haematology</i>	What's new in haematology?
12 September 2001	Ms Claudia Thomas Ms Sherine Chan Ms Tane McNiven <i>Post-Graduate Student Presentations</i>	The changing epidemiology of <i>Clostridium difficile</i> -associated diarrhoea at Sir Charles Gairdner Hospital. Assays for detecting cartilage turnover in disease. Utilising biochemical markers for early detection of cartilage breakdown.
19 September 2001	Dr Chotoo Bhagat <i>Biochemistry</i>	Novel marker for cardiac failure – BNP.
03 October 2001	Dr Greg Sterrett, Dr Amanda Segal and Dr Felicity Frost <i>Cytology</i>	The dilemma of adenocarcinoma of the cervix. A failure of screening?
17 October 2001	Dr David Smith <i>Microbiology & Infectious Diseases</i>	Improving the diagnosis of sexually transmitted infections in remote area populations.
31 October 2001	Ms Suzanne Cairns, Mr Jeremy Taylor and Dr Dominic Spagnolo <i>Anatomical Pathology</i>	Molecular diagnosis of T cell lymphoma.
14 November 2001	Dr Gavin Turbett and Dr Cathy Lincoln <i>Forensic Biology</i>	Investigating sexual assault.
05 December 2001	Mr John Martires <i>Central Reception Area</i>	Seven months in East Timor.
20 February 2002	Assoc Prof David Joyce and Assoc Prof Ken Ilett <i>Pharmacology/Toxicology</i> .	C2 monitoring for Cyclosporine. Alcohol and amphetamines in cannabis using drivers.
06 March 2002	Dr David Joske <i>Haematology</i>	The Glivec story - is this the magic bullet for CML?
20 March 2002	Dr Lindsay Murray <i>Biochemistry</i>	Comatose patient.
03 April 2002	Dr Myfanwy Plunkett and Dr Anthony Barham <i>Anatomical Pathology</i>	Registrar presentations.
01 May 2002	Dr Clive Cooke <i>Forensic Pathology</i>	Forensic usefulness of injuries (how injuries give us information about the weapon).
15 May 2002	Dr Peter Hollingsworth <i>Immunology</i>	Are you a chimaera?
29 May 2002	Assoc Prof Ken Ilett <i>Pharmacology/Toxicology</i>	Target concentration monitoring for olanzapine in schizophrenia.
12 June 2002	Dr Wendy Erber and Dr Brad Augustson <i>Haematology</i>	Flying fish in haematology.
26 June 2002	Dr Ric Rossi <i>Biochemistry</i>	Shift work – can we adapt to night work and day sleep?

Performance Indicators



PATH CENTRE

Auditor General's Report

PERFORMANCE INDICATORS



AUDITOR GENERAL

To the Parliament of Western Australia

**THE WESTERN AUSTRALIAN CENTRE FOR PATHOLOGY AND MEDICAL RESEARCH
PERFORMANCE INDICATORS FOR THE YEAR ENDED JUNE 30, 2002**

Scope

I have audited the key effectiveness and efficiency performance indicators of The Western Australian Centre for Pathology and Medical Research for the year ended June 30, 2002 under the provisions of the Financial Administration and Audit Act 1985.

The Board is responsible for developing and maintaining proper records and systems for preparing and presenting performance indicators. I have conducted an audit of the key performance indicators in order to express an opinion on them to the Parliament as required by the Act. No opinion is expressed on the output measures of quantity, quality, timeliness and cost.

My audit was performed in accordance with section 79 of the Act to form an opinion based on a reasonable level of assurance. The audit procedures included examining, on a test basis, evidence supporting the amounts and other disclosures in the performance indicators, and assessing the relevance and appropriateness of the performance indicators in assisting users to assess the Centre's performance. These procedures have been undertaken to form an opinion as to whether, in all material respects, the performance indicators are relevant and appropriate having regard to their purpose and fairly represent the indicated performance.

The audit opinion expressed below has been formed on the above basis.

Audit Opinion

In my opinion, the key effectiveness and efficiency performance indicators of The Western Australian Centre for Pathology and Medical Research are relevant and appropriate for assisting users to assess the Centre's performance and fairly represent the indicated performance for the year ended June 30, 2002.

D.D.R. PEARSON
AUDITOR GENERAL
November 28, 2002

20 Floor Darwin House | Macleay Street | West Perth 6005 | Western Australia | Tel: 08 9227 7500 | Fax: 08 9422 3884



Certification of Performance Indicators

PERFORMANCE INDICATORS

We hereby certify that the Performance Indicators presented in the following pages are based on proper records, are relevant and appropriate for assisting users to assess PathCentre's performance and fairly represent the performance of The Western Australian Centre for Pathology and Medical Research (PathCentre) for the year ended 30 June 2002.

Signed at Nedlands this 29th day of August 2002



Ms J Pickworth
Chairman



Dr KB Shilkin
Chief Executive Officer

Performance Indicators

PERFORMANCE INDICATORS

2002

ANNUAL REPORT

PathCentre is required by the *Financial Administration and Audit Act 1985* to disclose performance indicators. These are intended to assist interested parties with their assessment of the agency's performance in the production of its outputs and the achievement of its government desired outcomes.

PathCentre's principal government desired outcome is the provision of pathology and laboratory testing services to meet the needs and expectations of the Western Australian community.

The indicators set out below have been developed to meet the requirements of the Act and therefore to provide information as to the quantity, quality, timeliness and cost of PathCentre's outputs. Audited key performance indicators of efficiency and of effectiveness are presented separately.

Quantity

Laboratory testing accounts for approximately 95% of PathCentre's operations. Outputs from laboratory testing for clinical diagnostic purposes are measured in Commonwealth Medical Benefits Schedule (CMBS) items and from other testing in test numbers. On this basis of measurement outputs showed an increase of 3.0% over the previous year (2000/01 5.7% over 1999/2000). It should be noted that these calculations are based on counts of items, which vary considerably in complexity and value.

Quality

The most appropriate indicator of quality is provided by NATA (National Association of Testing Authorities) accreditation, which involves periodic independent assessment of a laboratory's procedures and operations to determine whether they meet highest quality standards. All PathCentre's laboratories are NATA accredited.

Timeliness

In order to provide an indication of timeliness in laboratory processing, a sample of common pathology tests performed in the central laboratories was selected and a target turn-around time of 90 minutes for delivery of results was set. 96% of the tests selected were completed in less than 90 minutes. The same exercise recorded a 93% rate the previous year.

Cost

Total operating costs rose from \$50,697,588 to \$56,403,177.



1975

From around this time, private pathology laboratories systems, although they had been in existence for around 40 years, become more business-like and expanded their services and their reach mainly in the metropolitan area to provide pathology support to private medical practitioners and their patients. The Commonwealth Medibank health system guaranteed payment for private pathology laboratory testing.



Microbiology media laboratory for the production of culture plates

Audited Performance Indicators

PERFORMANCE INDICATORS

PathCentre is required by the *Financial Administration and Audit Act 1985* to develop and present key performance indicators of efficiency and of effectiveness to be submitted to and audited by the Auditor General. These are intended to assist interested parties with their assessment of the agency's performance in the production of its outputs and the achievement of its government desired outcomes.

PathCentre's principal government desired outcome is the provision of pathology and laboratory testing services to meet the needs and expectations of the Western Australian community. Outputs from such testing account for approximately 95% of the agency's operations. The indicators set out below have been developed to meet the requirements of the Act and to inform the reader as to PathCentre's efficiency and effectiveness. They relate only to pathology and other laboratory testing. PathCentre is continuing to develop the indicators further, particularly those relating to effectiveness of service delivery.

Efficiency Indicators

Efficiency indicators have shown continuous improvements over the six years since PathCentre's formation. The rate of improvement has flattened considerably in the last two years as the more obvious efficiencies have been instituted and opportunities for further efficiency become harder to identify.

An overall indicator of efficiency is provided by relating outputs, measured in Commonwealth Medical Benefit Schedule (CMBS) items or equivalents, to total operating costs. Operating cost per item in 2001/02 was \$31.47, an increase of 7.5% over the equivalent figure of \$29.28 in 2000/01. This percentage increase compares favourably with the overall increase in operating costs of 10.7% shown in the financial statements and demonstrates a continuing improvement in relative cost efficiency (*2000/01 2.2% and 8.0% increase respectively over 1999/2000*).

Since staff costs account for most of PathCentre's total operating costs it is also relevant to measure staff cost efficiency by relating outputs, in CMBS items, to total staff costs. Staff cost per item in 2001/02 was \$20.86, an increase of only 5.2% over the equivalent of \$19.83 in 1999/2000. The percentage increase compares to an overall increase in staff costs of 8.3% shown in the financial statements, thereby demonstrating a continuing improvement in staff cost efficiency (*2000/01 3.2% and 9.1% increase respectively over 1999/2000*).

It is also relevant to measure staff productivity. This is best expressed in terms of outputs, measured in items, per average staff numbers during the year, measured in full-time equivalents (FTE). In 2001/02 outputs per FTE improved by 1.9% to 2,772 from 2,722 in 2000/01, (*0.7% decline in that year from 2,741 in 1999/2000*). This demonstrates an improvement in staff productivity and therefore efficiency.

It should be noted that these calculations are based on counts of items which vary considerably in complexity and value.

Effectiveness Indicators

A measure of effectiveness is provided by the increase in the volume (in CMBS items) of pathology tests ordered by medical practitioners for non-public hospital patients, i.e. in cases where the patient and/or the ordering doctor has a choice of using either PathCentre or a competing pathology provider. Such tests are mostly bulk billed to Medicare or to the Commonwealth. They showed an increase over the previous year of 5.8% (*2.7% in 2000/01*). In comparison the pathology market in Western Australia as reported by Medicare increased by 8.1% in volume (3.7%). Our market share therefore declined fractionally.

Summary of Research, Teaching and Reference Centre Activity

PERFORMANCE INDICATORS

2002

ANNUAL REPORT

	2001/2002 Clinical Pathology	2001/2002 Micro-biology	2001/2002 Tissue Pathology	2001/2002 TOTALS	2000/2001 TOTALS
Research					
Post-graduate students	9	14	4	27	27
Original/Scientific publications	58	32	22	112	80
Conference presentations	28	6	13	47	71
Teaching					
Undergraduate lectures	90	80	330	500	495
Other lectures	11	18	55	84	72
Reference centre					
Specialist lectures	10	3	6	19	17
Advisory bodies	4	46	50	100	104
Invited papers	19	40	5	64	39
Awards	2	0	3	5	8



1984

Dr Robin Warren, a pathologist at Royal Perth Hospital, co-authors with Dr Barry Marshall the first reports linking Helicobacter pylori to gastritis and peptic ulceration.



Helicobacter pylori on the gastric mucosa

Financial Statements



PATH CENTRE

Auditor General's Report

FINANCIAL STATEMENTS



AUDITOR GENERAL

To the Parliament of Western Australia

**THE WESTERN AUSTRALIAN CENTRE FOR PATHOLOGY AND MEDICAL RESEARCH
FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2002**

Scope

I have audited the accounts and financial statements of The Western Australian Centre for Pathology and Medical Research for the year ended June 30, 2002 under the provisions of the Financial Administration and Audit Act 1985.

The Board is responsible for keeping proper accounts and maintaining adequate systems of internal control, preparing and presenting the financial statements, and complying with the Act and other relevant written law. The primary responsibility for the detection, investigation and prevention of irregularities rests with the Board.

My audit was performed in accordance with section 79 of the Act to form an opinion based on a reasonable level of assurance. The audit procedures included examining, on a test basis, the controls exercised by the Centre to ensure financial regularity in accordance with legislative provisions, evidence to provide reasonable assurance that the amounts and other disclosures in the financial statements are free of material misstatement and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly in accordance with Accounting Standards and other mandatory professional reporting requirements in Australia and the Treasurer's Instructions so as to present a view which is consistent with my understanding of the Centre's financial position, its financial performance and its cash flows.

The audit opinion expressed below has been formed on the above basis.

Audit Opinion

In my opinion,

- (i) the controls exercised by The Western Australian Centre for Pathology and Medical Research provide reasonable assurance that the receipt, expenditure and investment of moneys and the acquisition and disposal of property and the incurring of liabilities have been in accordance with legislative provisions; and
- (ii) the Statement of Financial Performance, Statement of Financial Position and Statement of Cash Flows and the Notes to and forming part of the financial statements are based on proper accounts and present fairly in accordance with applicable Accounting Standards and other mandatory professional reporting requirements in Australia and the Treasurer's Instructions, the financial position of the Centre at June 30, 2002 and its financial performance and its cash flows for the year then ended.

D. D. R. PEARSON
AUDITOR GENERAL
November 28, 2002

45 First Census House, 2 Haycock Street, West Perth 6005, Western Australia. Tel: 08 9222 7500 Fax: 08 9122 1644



Certification of Financial Statements

FINANCIAL STATEMENTS

CERTIFICATION OF FINANCIAL STATEMENTS

The accompanying financial statements of The Western Australian Centre for Pathology and Medical Research (PathCentre) have been prepared in compliance with the *Financial Administration and Audit Act 1985* from proper accounts and records to present fairly the financial transactions for the year ended 30 June 2002 and the financial position as at 30 June 2002.

At the date of signing we are not aware of any circumstances which would render the particulars included in the financial statements misleading or inaccurate.

Signed at Nedlands this 29th day of August 2002


Ms JJ Pickworth
CHAIRMAN
Dr KB Shilkin
CHIEF EXECUTIVE OFFICER
Mr JS Fryer
PRINCIPAL ACCOUNTING OFFICER

Statement of Financial Performance

for the year ended 30 June 2002

FINANCIAL STATEMENTS

2002

ANNUAL REPORT

	Note	2001/2002 \$	2000/2001 \$
Cost of Services			
Expenses from Ordinary Activities			
Employee expenses	2	37,067,509	34,221,263
Consumables		13,367,838	12,069,384
Depreciation		1,787,526	1,311,133
External services		1,504,736	1,367,567
Maintenance		1,067,073	595,393
Communications		1,010,320	914,113
Capital user charge	3	389,144	–
Net loss on disposal of assets	4	146,436	28,112
Borrowing costs		32,545	12,783
Bad debts written off		30,050	177,840
Total Cost of Services		56,403,177	50,697,588
Revenues from Ordinary Activities			
<i>Revenues from operating activities</i>			
Charges for pathology testing			
Public hospitals		16,778,178	16,115,653
Commonwealth grant		5,014,181	9,838,037
Other		21,561,256	17,204,792
		43,353,615	43,158,482
Community service obligation revenue		4,920,443	2,323,821
Research and education donations		867,271	915,445
<i>Revenue from non-operating activities</i>			
Interest		91,345	154,276
Total Revenue from Ordinary Activities		49,232,674	46,552,024
NET COST OF SERVICES		7,170,503	4,145,564
Revenues from Government			
Appropriations		3,006,341	3,155,870
Resources received free of charge	3	409,144	19,500
Asset values recognised	5	8,928,969	–
Total Revenue from Government		12,344,454	3,175,370
CHANGE IN NET ASSETS		5,173,951	(970,194)
TOTAL CHANGES IN EQUITY OTHER THAN THOSE RESULTING FROM TRANSACTIONS WITH WA GOVERNMENT AS OWNER			
		5,173,951	(970,194)

The accompanying notes form part of this Financial Statement

Statement of Financial Position

as at 30 June 2002

FINANCIAL STATEMENTS

	Note	2001/2002 \$	2000/2001 \$
Current Assets			
Cash Assets	6	2,182,984	2,488,817
Receivables	7	5,644,300	5,830,036
Inventories	8	1,737,263	1,604,805
Prepayments		17,000	33,629
Total Current Assets		9,581,547	9,957,287
Non-Current Assets			
Property, plant and equipment	9	15,203,859	6,687,392
Total Non-Current Assets		15,203,859	6,687,392
TOTAL ASSETS		24,785,406	16,644,679
Current Liabilities			
Accrued Salaries		2,379,464	1,436,409
Payables		4,178,753	2,843,089
Provisions	10	5,272,553	4,946,472
Interest-Bearing Liabilities	11	153,100	92,849
Total Current Liabilities		11,983,870	9,318,819
Non-Current Liabilities			
Provisions	10	3,311,174	3,184,627
Interest-Bearing Liabilities	11	284,419	109,241
Total Non-Current Liabilities		3,595,593	3,293,868
TOTAL LIABILITIES		15,579,463	12,612,687
NET ASSETS		9,205,943	4,031,992
EQUITY			
Accumulated surplus	12	9,205,943	4,031,992
TOTAL EQUITY		9,205,943	4,031,992

The accompanying notes form part of this Financial Statement

1999

PathCentre awarded "High Commendation" in the 1999 Premier's Award in Public Sector Management in the Category of "Change Management". The Minister for Health commissions an independent review of public sector pathology by Freehills Project Solutions which recommends to him (the Bolto Report) a preference for a single amalgamated independent public pathology service provider incorporating under one umbrella the various teaching hospital pathology components and the State's major pathology laboratory complex, PathCentre. This solution is seen as avoiding duplication, reducing costs and creating efficiency, while maintaining high standards.

Statement of Cash Flows

for the year ended 30 June 2002

FINANCIAL STATEMENTS

2002

ANNUAL REPORT

	Note	2001/2002 \$	2000/2001 \$
Cash flows from Government			
Recurrent Appropriations		3,006,341	3,155,870
Net cash provided by Government		3,006,341	3,155,870
Utilised as follows:			
Cash flows from operating activities			
Payments			
Payments to or on behalf of staff		(34,491,352)	(32,401,343)
Payments to suppliers		(18,780,416)	(15,798,547)
GST payments on purchases		(1,847,135)	(1,441,578)
Interest and finance charges paid		(33,920)	(12,783)
Receipts			
Receipts from clients and patients		39,752,113	33,573,196
Commonwealth grants		5,195,166	8,935,339
Community service obligation revenue received		4,920,443	2,323,821
GST receipts on sales		2,369,764	2,135,074
Research and education receipts		797,849	1,029,857
Interest received		91,345	154,276
Net cash used in operating activities	19	(2,026,143)	(1,502,688)
Cash flows from investing activities			
Payments for property, plant and equipment		(1,134,707)	(1,266,220)
Net cash used in investing activities		(1,134,707)	(1,266,220)
Cash flows from financing activities			
Finance leasing for acquisition of assets		(151,324)	(132,889)
Net cash used in financing activities		(151,324)	(132,889)
NET INCREASE/(DECREASE) IN FUNDS HELD		(305,833)	254,073
CASH BALANCE AT THE BEGINNING OF THE YEAR		2,488,817	2,234,744
CASH BALANCE AT THE END OF THE YEAR	6	2,182,984	2,488,817

The accompanying notes form part of this Financial Statement

Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

1. Statement of Accounting Policies

The following accounting policies have been adopted in the preparation of these financial statements. Unless otherwise stated these policies are consistent with those adopted in the preceding year.

(a) General Statement

The financial statements constitute a general purpose financial report which has been prepared in accordance with Australian Accounting Standards, Statements of Accounting Concepts and other authoritative pronouncements of the Australian Accounting Standards Board, and Urgent Issues Group (UIG) consensus views as applied by the Treasurer's Instructions. Several of these are modified by the Treasurer's Instructions to vary application, disclosure, format and wording. The Financial Administration and Audit Act and the Treasurer's Instructions are legislative provisions governing the preparation of financial statements and take precedence over Australian Accounting Standards, Statements of Accounting Concepts and other authoritative pronouncements of the Australian Accounting Standards Board, and over UIG consensus views. The modifications are intended to fulfil the requirements of general application to the public sector, together with the need for greater disclosure and to satisfy accountability requirements.

If any such modification has a material or significant financial effect on the reported results, details of that modification and where practicable, the resulting financial effect, are disclosed in individual notes to these financial statements.

The financial statements have been prepared on the accrual basis of accounting using the historical cost convention.

(b) Valuation of non-current assets

Items have been included as non-current assets if:

- the purchase cost or valuation on acquisition is \$1,000 or more and the useful economic life is expected to be two years or more;
- the purchase cost is less than \$1,000 but collectively the assets represent a material investment, eg. furniture or computer equipment.

All non-current assets acquired from predecessor entities, other than buildings, were revalued on the formation of PathCentre. The revalued amounts were not materially different from the carrying values in the accounts of the predecessor entities. The value of buildings was not recognised as PathCentre had only the right to occupy them and did not have legal ownership.

In accordance with Treasurer's Instruction 1103 PathCentre has now recognised the value of the buildings it controls. The carrying value has been determined by reference to the replacement capital value as determined in 2002 by the Valuer General, less depreciation for the years since the buildings were constructed.

Assets purchased since incorporation have been valued at cost.

1. Statement of Accounting Policies (continued)

(c) Leased assets

PathCentre's rights and obligations under finance leases, which are leases that effectively transfer to the agency substantially all the risks and benefits incident to ownership of the leased assets, are initially recognised as assets and liabilities equal in amount to the present value of the minimum lease payments. The assets are disclosed as leased equipment and are depreciated over the period during which the agency expects to benefit from use of the assets. Minimum lease payments are allocated between interest expense and reduction of the lease liability, according to the interest rate implicit in the lease.

Finance lease liabilities are allocated between current and non-current components. The principal component of lease payments due on or before the end of the succeeding financial year is disclosed as a current liability, and the remainder of the lease liability is disclosed as a non-current liability.

PathCentre has entered into operating lease arrangements for buildings and vehicles where the lessors effectively retain all of the risks and benefits incident to ownership of the items held under the operating leases. Equal instalments of the lease payments are charged to the Statement of Financial Performance over the lease term as this is representative of the pattern of benefits derived from the leased property.

(d) Depreciation and amortisation of fixed assets

Plant and equipment is depreciated over its estimated remaining useful life. Depreciation is calculated either on the reducing balance or straight line basis reflecting its future economics benefits. The following classes of asset are depreciated using the reducing balance method:

Buildings	5%
Laboratory equipment	15%
Computer hardware and software	30%
Office furniture and equipment	10%

The following classes of asset are depreciated using straight line method:

Leased laboratory equipment	25%
Facilities	10%

If any assets included in the fixed asset management system are sold, the surplus or deficit on disposal is taken into account in determining the results for the period.

(e) Inventories

Stocks are valued at the lower of cost and net realisable value, cost being assigned on a first in first out basis. Provision is made for obsolescence where considered necessary.

(f) Funds held under administration

Special purpose funds, administered by PathCentre and held for educational and research purposes, are included in cash resources. Receipts and payments of these monies during the period are included in PathCentre's operating income and expenditure, as the funds are received by staff members as agents for PathCentre and expended on activities effectively under the control of PathCentre's Board. It should be noted, however that these funds are not used in the normal operations of PathCentre. They are specifically allocated to research and educational activities.

Details of fund balances are shown in Note 19.

References to Historical Items

1. Anonymous (attributed to A R Fergie). *A History of the State Health Laboratory Services, 1903-1978*, Public Health Department, Western Australia.
2. Bolton, G C and Joske P. *History of Royal Perth Hospital*. Royal Perth Hospital, 1982.

1. Statement of Accounting Policies (continued)

(g) Employee entitlements

(i) Provision for annual leave and Long Service Leave

These entitlements are calculated at current remuneration rates. A liability for long service leave is recognised, and is measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service.

The methods of measurement of the liabilities are consistent with the requirements of Australian Accounting Standard AAS 30 "Accounting for Employee Entitlements".

(ii) Superannuation

Staff contribute to the Superannuation and Family Benefits Act Scheme, a pension scheme now closed to new members, or to the Gold State Superannuation Scheme, a lump sum benefit scheme now also closed to new members, both defined benefit schemes. A few staff members who were formerly members of the Superannuation Scheme for Australian Universities have elected to continue to contribute to that scheme. Staff who do not contribute to any of these schemes are required to be non-contributory members of the West State Superannuation Scheme, an accumulation fund complying with the Commonwealth Government's Superannuation Guarantee (Administration) Act 1992.

The liability for superannuation charges incurred under the Superannuation and Family Benefits Act pension scheme, together with the pre-transfer service liability for employees who transferred to the Gold State Superannuation Scheme, are provided for at reporting date. The superannuation liability has been established from information supplied by the Government Employees Superannuation Board as at 31 March 2002.

The liabilities for superannuation charges under the Gold State Superannuation Scheme and the West State Superannuation Scheme are extinguished by quarterly payment of employer contributions to the Government Employees Superannuation Board.

The disclosure required by paragraph 51 (e) of AAS 30 (being the employer's share of the difference between employees' accrued superannuation benefits and the attributable net market value of plan assets) has not been provided. State scheme deficiencies are recognised by the State in its whole of government reporting. The Government Employees Superannuation Board's records are unable to provide the information for PathCentre. Accordingly, deriving the information for the agency is impractical under current arrangements and any benefits thereof would be exceeded by the cost of obtaining the information.

(iii) Accrued salaries

Amounts due to staff but unpaid at the end of the financial year as the end of the last pay period for that year does not coincide with the end of the financial year. The carrying amount is equal to fair value.

(h) Revenue recognition

Revenue from testing is recognised as income when the services are performed. This includes the Commonwealth grant for pathology services which is based on the value of the services provided and is therefore also recognised as income when the services are performed.

Community service obligation revenue does not relate to the value of the services provided and is recognised as income when received.

Appropriations are recognised as income when received.

3. Cohen, B C. *A History of Medicine in Western Australia. Biographical and Historical Account to 1900, 1975*, University of Western Australia Press.
4. *PathCentre Annual Reports 1995-2001*.

1. Statement of Accounting Policies (continued)

(i) Statutory contribution

PathCentre is not required to make statutory contributions in lieu of any form of taxation.

(j) Comparative figures

Figures for the previous year have, where appropriate, been reclassified so as to be comparable with the figures in the current year.

(k) Cash

For the purposes of the statement of cash flows, cash includes cash on hand and at call deposits with banks or financial institutions, investments in money market instruments maturing within less than three months and net of bank overdrafts.

(l) Receivables and payables

Receivables are recognised at the amounts receivable and are due for settlement no more than 30 days from the date of recognition.

Collectibility of receivables is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off. A provision for doubtful debts is raised where some doubts as to collection exists.

Payables, including accruals not yet billed, are recognised when the economic entity becomes obliged to make future payments as a result of a purchase of assets or services. Payables are generally settled within 30 days.

(m) Interest-Bearing liabilities

Borrowing costs expense is recognised on an accrual basis.



5. Polizzotto C. *A Fair Sized Town – Sir Charles Gairdner Hospital and its History 1958-1988*. 1988. Sir Charles Gairdner Hospital and The University of Western Australia.

6. Snow, D. *The Progress of Public Health in Western Australia 1929-1977*. 1981, Public Health Department.

Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

	2001/2002 \$	2000/2001 \$
2. Employee Expenses		
Salaries and wages	31,502,043	29,381,398
Superannuation	3,296,706	2,535,009
Charges to leave provisions	2,268,760	2,304,856
	37,067,509	34,221,263
3. Resources received free of charge		
Department of Health		
– capital user charge	389,144	n/a
Office of the Auditor-General		
– audit services	20,000	19,500
	409,144	19,500
Treasury imposed a capital user charge on the Department of Health for 2001/02 based on the consolidated total net asset value for the 2000/01 financial year. The Department allocated a portion of the new charge to PathCentre. The Department will not require payment of the charge.		
Some PathCentre laboratory premises are provided at no cost by other government agencies. No estimate has been made of the value of these resources.		
4. Net Loss on Disposal of Non-Current Assets		
Laboratory Equipment		
At Cost	113,101	397,495
Accumulated depreciation	51,364	369,407
Book Value	61,737	22,198
Computer hardware and software		
At Cost	110,035	–
Accumulated depreciation	78,261	–
Book Value	31,774	–
Book value of assets disposed of	93,511	28,088
Book value of stock disposed of	52,925	24
Consideration on disposal of assets	–	–
Loss on disposal of assets	146,436	28,112

7. Various authors. Faculty of Medicine, The University of Western Australia – The First Quarter Century (1957-1982). Ed: N Stanley, 1982. Faculty of Medicine, The University of Western Australia.

	2001/2002 \$	2000/2001 \$
5. Asset values recognised		
Buildings, at valuation	8,928,969	-
In accordance with Treasurer's Instruction 1103 PathCentre has recognised as at 1 July 2001 the value of the laboratory buildings it controls. The value recognised was determined by reference to the replacement capital value of the buildings as determined in 2002 by the Valuer General, less depreciation for the years from their construction up to the date of recognition.		
6. Cash Assets		
Cash on hand	1,500	1,500
Bank balances:		
– Operating account	14,919	8,571
– Research trust fund	734,411	895,392
– Education fund	1,432,154	1,583,354
	2,182,984	2,488,817
Bank balances include a total of \$2,166,565 held in special purpose accounts administered for educational and research purposes. Details of these fund balances are shown in Note 20. PathCentre has discretion to use these funds for purposes other than those specified. Cash as shown in the Statement of Cash Flows is equivalent to cash assets.		
7. Receivables		
Trade debtors	5,406,248	5,459,779
Provision for doubtful debts	(140,000)	(120,000)
Other debtors	378,052	490,257
	5,644,300	5,830,036
8. Inventories		
Laboratory supplies	1,464,503	1,342,403
Maintenance goods	272,760	262,402
	1,737,263	1,604,805

Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

	2001/2002 \$	2000/2001 \$
9. Non-Current Assets		
Buildings, at valuation	8,928,969	–
Accumulated depreciation	446,449	
	8,482,520	–
Laboratory equipment, at cost	8,233,546	7,855,301
Accumulated depreciation	3,890,426	3,280,849
	4,343,120	4,574,452
Leased laboratory equipment, at cost	1,139,086	752,336
Accumulated depreciation	729,738	525,008
	409,348	227,328
Computer hardware and software, at cost	2,996,114	2,645,129
Accumulated depreciation	1,806,187	1,522,922
	1,189,927	1,122,207
Office furniture and equipment, at cost	140,645	140,645
Accumulated depreciation	67,346	59,940
	73,299	80,705
Facilities, at cost	1,123,963	994,819
Accumulated depreciation	418,318	312,119
	705,645	682,700
Total net book value	15,203,859	6,687,392

Reconciliations of the carrying amounts of non-current assets at the beginning and end of the current and previous financial year are set out in Note 23.

	2001/2002 \$	2000/2001 \$
10. Provisions		
Current liabilities		
– liability for superannuation	157,126	562,086
– liability for annual leave	2,707,059	2,283,983
– liability for long service leave	2,408,368	2,100,403
	5,272,553	4,946,472
Non-current liabilities		
– liability for long service leave	2,008,594	2,495,646
– liability for superannuation	1,302,580	688,981
	3,311,174	3,184,627
<p>AAS30 has been applied to the determination of leave entitlements. The superannuation liability has been established from information supplied by the Government Employees Superannuation Board.</p>		
11. Interest-Bearing Liabilities		
Representing finance lease liabilities		
Current	153,100	92,849
Non-current	284,419	109,241
	437,519	202,090
<p>Lease liabilities are effectively secured as the rights to the leased assets revert to the lessor in the event of default.</p> <p>The carrying amounts of assets pledged as security are:</p>		
Finance lease		
Leased Laboratory Equipment	409,348	227,328
Analysis of finance lease commitments:		
Payable no later than one year	172,380	105,153
Payable later than one, not later than two years	113,654	86,892
Payable later than two, not later than five years	192,349	28,166
	478,383	220,211
Deduct: future finance charges	40,864	18,121
Provided as a liability	437,519	202,090
12. Accumulated Surplus		
Opening balance	4,031,992	5,002,186
Change in net assets	5,173,951	(970,194)
Closing balance	9,205,943	4,031,992

Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

	2001/2002 \$	2000/2001 \$
13. Commitments for Expenditure		
Commitments to capital expenditure payable within 1 year	331,027	50,063
Commitments in relation to leases contracted for as at 30 June 2002 but not recognised as liabilities.		
Payable within 1 year:		
Motor vehicles lease	168,398	75,229
Building and accommodation lease	433,437	416,595
Lab and medical equipment lease	191,313	250,808
Non-Medical equipment lease	2,884	8,030
	796,032	750,662
Payable later than 1 year and no later than 5 years:		
Motor vehicles lease	61,739	-
14. Contingent Liabilities		
There were no other contingent liabilities at 30 June other than guarantees given to financiers of finance leases in respect of sums which are or become payable under the lease agreements. These finance lease commitments, less future finance charges, have been provided for as detailed in Note 11.		
15. Remuneration of Board and Senior Officers		
The number of Board (the Accountable Authority) members whose total of fees, salaries, superannuation and other benefits for the financial year falls within the following bands are:		
\$ Nil	2	3
\$10,001 - \$20,000	2	1
\$20,001 - \$30,000	-	1
\$30,001 - \$40,000	1	-
\$40,001 - \$50,000	-	1
\$280,001 - \$290,000	-	1
\$330,000 - \$340,000	1	-
The total remuneration of Board members is:	414,540	377,700
No Board members are members of the Pension Scheme.		

	2001/2002 \$	2000/2001 \$
15. Remuneration of Board and Senior Officers (continued)		
The number of senior officers other than Board members whose total of fees, salaries, superannuation and other benefits for the financial year falls within the following bands are:		
\$70,001 - \$80,000	1	–
\$80,001 - \$90,000	1	3
\$90,001 - \$100,000	2	1
\$100,001 - \$110,000	1	1
\$110,001 - \$120,001	1	1
The total remuneration of senior officers is:	584,771	574,375
No Senior officers are members of the Pension Scheme.		
16. Remuneration of auditor		
The total fee applicable to services provided by the Office of the Auditor General for the financial year is as follows:		
– for external audit	20,000	19,500
	20,000	19,500

The service is provided free of charge to PathCentre.

17. Segment information

In accordance with Treasurer's Instructions 1101 (2) (ix) (a) and 904 (2) (iii) (b) PathCentre has only one industry segment, the provision of pathology and related services under the Hospitals and Health Services Act 1927.

The agency operates in one geographical segment, the state of Western Australia.

18. Events occurring after reporting date

No events have occurred after 30 June which would have materially affected these financial statements.



Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

	2001/2002 \$	2000/2001 \$
19. Reconciliation of net cash used in operating activities to net cost of services		
Net cash used in operating activities	(2,026,143)	(1,502,688)
Non cash expenses:		
– depreciation	(1,787,526)	(1,311,133)
– loss on disposal of assets	(146,436)	(28,112)
– resources received free of charge	(409,144)	(19,500)
Increase/(decrease) in receivables	(185,736)	1,894,208
Increase/(decrease) in inventories	132,458	108,424
Increase/(decrease) in prepayments	(16,629)	(132,259)
Decrease/(increase) in payables	(1,335,664)	(1,827,890)
Decrease/(increase) in provisions	(1,395,683)	(1,326,614)
Net cost of services	(7,170,503)	(4,145,564)
20. Special Purposes Funds		
Funds administered for educational and research purposes:		
PathCentre Education Fund	1,432,154	1,583,354
PathCentre Research Funds:		
PathCentre Donation Research Fund	828	546
Research Account – Biochemistry	71,762	77,375
NHMRC Research Account	3,730	–
Food borne Surveillance Research	594	84,647
Leukaemia Research Fund	6,933	8,681
Haematology Departmental Fund	22,797	30,518
Biochemistry Special Purpose Fund	104	277
Haematology Special Purpose Fund	22,560	12,711
Histopathology Special Purpose Fund	26,437	14,478
Clinical Microbiology Special Purpose Fund	675	964
Pharmacology Special Purpose Fund	24,051	27,594
Clinical Immunology Special Purpose Fund	4,162	3,156
Heart Search Cardiovascular Genomic Fellow	21,420	–
Sheen Biotechnology	5,278	4,658

	2001/2002 \$	2000/2001 \$
20. Special Purposes Funds (continued)		
Forensic Special Purpose Fund	5,576	3,350
F 93/4 G. Kent	36	1
Clinical Biochemistry Dept. Fund	45,721	65,626
Forensic Research & Education Fund	39,155	40,777
Angiogenesis in breast cancer	5,388	5,218
Clinical Drug Trials Research Fund	94,498	67,599
Branch Laboratories Special Purpose Fund	9,869	8,541
Office of CEO's Special Purpose Fund	3,723	5,616
PathCentre Staff Incentive Fund	15,172	16,343
Thalassaemia Workshop Account	7,822	-
Water Quality – Cooperative Research Centre	113	482
Biochemistry PhD Scholarship Fund	66	61,126
Drug Excretion in Breast Milk Fund	28,572	34,870
Population patterns of exposure to asbestos and future risks	13,669	9,642
WA Quality Plan Submissions	13,148	31,606
Cancer Foundation Grant	8,146	7,889
Infectious Disease Epidemiology	4,328	30,969
Community Based Screen for Genetic Haemochromatosis	3,406	5,132
Antioxidant Status	15,117	5,000
Clinical Best Practice in Blood Transfusion	209,153	230,000
Microarray Research	402	-
	734,411	895,392
The special purposes funds include the following received during the year for specific purposes:-		
Education Trust funds	47,227	163,307
At 30 June PathCentre held monies received as donations revenue that had not been expended. These form part of the special purpose funds administered by the agency. These unexpended contributions were held for the following purposes:		
Education of Medical Staff	1,432,154	1,583,354
	1,432,154	1,583,354

Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

	2001/2002 \$000	2000/2001 \$000
21. Comparison of Results		
(a) Significant variations between actual results and those for the preceding year		
Operating expenses		
Employee expenses	37,068	34,221
Goods and services	17,547	15,165
Depreciation	1,788	1,311
	56,403	50,697
Revenue		
Public hospitals	16,778	16,116
Other testing	21,561	17,205
Commonwealth grant	5,014	9,838
Community service obligations	4,920	2,324
Sundry	960	1,069
Appropriations	3,415	3,175
Asset values recognised	8,929	–
	61,577	49,727
Change in net assets	5,174	(970)

Reasons for significant variations:

- (i) Employee expenses rose by a little over 8%. The major contributing factor to the rise was an overall salary increase of approximately 7% imposed by Government policy. Other factors included: increased staff levels in rural branch laboratories caused by the requirements of NATA accreditation; and, the full year effect of the imposition of Fringe Benefits Tax.
- (ii) Costs of goods and services rose by 14% overall. Contributing factors included: the effect of the decline in the value of the Australian dollar against the US dollar, in which many chemical reagents are priced; considerably higher maintenance costs as equipment ages; and the imposition of the capital user charge by Government.
- (iii) The charge for depreciation increased because of the inclusion of depreciation on buildings. Buildings were not carried in the accounts for 2000/01 and therefore were not depreciated.
- (iv) Revenue from other testing increased mainly because of the phasing out of the Commonwealth Health Programme Grant during the year and the consequent increase in tests billed to Medicare and to patients. Revenue from the Grant shows a reduction for the same reason. Taken together, overall revenue in these two categories fell by almost 2%, representing the effects of two price reductions during the year in the Commonwealth Medical Benefits Schedule (CMBS), which sets most charges for pathology testing.
- (v) The Department of Health finally agreed to pay a more realistic amount in CSO for the year. However, the total was still inadequate when compared with the costs incurred in fulfilling the Department's requirement to perform tests in rural and remote branch laboratories.
- (vi) Appropriations increased because of the Department's subsidy of the capital user charge. There was no equivalent item in 2000/01.
- (vii) There was no equivalent item in 2000/01 to the asset values recognised.

	Actual \$000	Estimates \$000
(b) Significant variations between estimates (section 42) and actual results		
Operating expenses		
Staff costs	37,068	35,330
Goods and services	17,547	15,844
Depreciation	1,788	1,325
	56,403	52,499
Revenue		
Public hospitals	16,778	16,650
Other testing	21,561	22,115
Commonwealth grant	5,014	4,500
Community service obligations	4,920	5,045
Sundry	960	650
Appropriations	3,415	3,058
Asset values recognised	8,929	–
	61,577	52,018
Change in net assets	5,174	(481)

Reasons for significant variations:

- (i) Staff costs were higher than estimated because of the effect of salary increases imposed by Government policy.
- (ii) The adverse variance in costs of goods and services arose because: reagent costs were higher than anticipated owing to currency factors; and the imposition of the capital user charge was not included in the estimates.
- (iii) Depreciation was higher than anticipated because of the inclusion of buildings in the accounts.
- (iv) Other testing revenue was lower because of price reductions in the CMBS during the year.
- (v) Appropriations were higher than anticipated because of the Department's subsidy of the capital user charge.
- (vi) The recognition of asset values was not anticipated in the Estimates.

Notes to and forming part of the Financial Statements

for the year ended 30 June 2002

FINANCIAL STATEMENTS

22. Financial instruments

(a) Interest rate risk

PathCentre's exposure to interest rate risk, which is the risk that a financial instrument's value will fluctuate as a result of changes in market interest rates and the effective weighted average interest rates on those financial assets, is as follows:

	weighted average effective interest rate		floating interest rate		fixed interest rate maturing:						non-interest bearing		Total	Total	
	2002	2001	2002	2001	within 1 year		1 to 5 years		over five years		2002	2001	2002	2001	
	%	%	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Financial assets															
Cash resources	4.7	6.1	2,183	2,489	-	-	-	-	-	-	-	-	-	2,183	2,489
Accounts receivable	-	-	-	-	-	-	-	-	-	-	5,644	5,830	5,644	5,830	
			2,183	2,489	-	-	-	-	-	-	5,644	5,830	7,827	8,319	
Financial liabilities															
Accounts payable	-	-	-	-	-	-	-	-	-	-	4,179	2,843	4,179	2,843	
Finance lease liabilities	5.8	5.0	-	-	153	93	284	109	-	-	-	-	437	202	
Employee entitlements	-	-	-	-	-	-	-	-	-	-	10,963	9,568	10,963	9,568	
			-	-	153	93	284	109	-	-	15,142	12,411	15,579	12,613	

(b) Credit risk

The maximum exposure to credit risk, excluding the value of any collateral or other security, at reporting date to recognised financial assets is the carrying amount, net of any provisions for doubtful debts, as disclosed in the statement of financial position and notes to and forming part of the financial statements.

PathCentre does not have any material credit risk exposure to any single debtor or group of debtors under financial instruments.

(c) Net fair values

Methods and assumptions used in determining net fair value are as follows:

For assets and liabilities the net fair value approximates the carrying value. No financial assets and financial liabilities are readily traded on organised markets in standardised form, other than listed investments. PathCentre has no financial assets where the carrying value exceeds net fair value at reporting date.

The aggregate net fair values and carrying amounts of financial assets and financial liabilities are disclosed in the statement of financial position and in the notes to and forming part of the financial statements.

23. Reconciliations of the carrying amounts of non-current assets

	Buildings \$	Laboratory Equipment \$	Leased Laboratory Equipment \$	Computer Hardware & Software \$	Office Equipment \$	Facilities \$	Total \$
2002							
Carrying amount at start of year	–	4,574,452	227,328	1,122,207	80,705	682,700	6,687,392
Values recognised	8,928,969	–	–	–	–	–	8,928,969
Additions	–	491,346	386,750	461,020	–	129,419	1,468,535
Disposals	–	(61,737)	–	(31,774)	–	–	(93,511)
Depreciation	(446,449)	(660,941)	(204,730)	(361,526)	(7,406)	(106,474)	(1,787,526)
Carrying amount at end of year	8,482,520	4,343,120	409,348	1,189,927	73,299	705,645	15,203,859
2001							
Carrying amount at start of year	–	4,449,325	357,694	1,100,586	88,949	683,589	6,680,143
Additions	–	812,681	100,773	362,559	–	90,956	1,366,969
Disposals	–	(47,495)	–	–	–	–	(47,495)
Depreciation	–	(640,059)	(231,139)	(340,938)	(8,244)	(91,845)	(1,312,225)
Carrying amount at end of year	–	4,574,452	227,328	1,122,207	80,705	682,700	6,687,392

	2001/2002 \$000	2000/2001 \$000
24. Supplementary Financial Information		
Write-Offs by the Accountable Authority:		
Assets	146,436	28,112
Bad debts	30,050	177,840
	176,486	205,952

Annual Estimates

FINANCIAL STATEMENTS

PathCentre's annual estimates for 2002/2003 have been submitted to the Minister for approval under Section 42 of the *Financial Administration and Audit Act*.

The draft budgets show a prospective loss for the year of \$99,000 as follows.

SUMMARY BUDGETED INCOME AND EXPENDITURE ACCOUNT YEAR ENDING 30 JUNE 2003

	\$000
Operating income	57,673
Operating costs	57,772
Loss for the year	99

The estimates are based on the following assumptions:

that the Department of Health will pay a realistic subsidy to cover losses incurred in providing uneconomic services at branch laboratories, particularly those in rural areas. If adequate subsidy for these services is not forthcoming, either the loss for the year will be considerably higher or services in rural areas will have to be curtailed; and

that prices charged to public hospitals will be allowed to rise in order to cover cost increases, particularly Government imposed salary increases, and reductions in the Commonwealth Medical Benefits Schedule. The assumed price increases would bring average charges back to a similar level to that in use in 1998.

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Appendices



National and International Scientific Lectures and Scientific Presentations by Staff

APPENDICES

2002

ANNUAL REPORT

In addition to the following list, PathCentre staff have attended and participated in other State, National and International meetings and conferences. Only formal presentations are listed here.

Mr M Aravena-Roman:

January 2002

Presentation: "Meliodosis: a rapidly emerging infectious disease." Department of Microbiology, Faculty of Medicine, University of Chile, Chile.

Dr B Augustson:

March 2002

Oral Presentation: "Internal quality assurance new technology for remote sites." RCPA Pathology Update, Sydney, NSW.

Dr JP Beilby:

October 2001

Invited speaker: "Complex diseases." 39th AACB Annual Scientific Meeting, Auckland, New Zealand.

October 2001

Poster Presentation: "SNPS in the scavenger receptor class B type one (SRB1) and cholesterol ester transfer protein (CETP) gene and the risk of atherosclerosis." Beilby JP, Burley J, Chapman CML, Thompson PL, Hunt C, McQuillan BM, Hung J. 39th AACB Annual Scientific Meeting, Auckland, New Zealand.

February 2002

Invited Speaker: "Cardiac markers." RCPA/AACB Chemical Pathology Course, Perth, WA.

February 2002

Presentation: "High sensitivity C-reactive protein." RCPA/AACB Chemical Pathology Course, Perth, WA.

February 2002

Case studies: "Assay interferences." RCPA/AACB Chemical Pathology Course, Perth, WA.

Dr CI Bhagat:

December 2001

Presentation: "Cardiac markers for AMI". Midwest Division of General Practice, Geraldton, WA.

February 2002

Presentation: "Troponins." Acute Coronary Syndrome – MSD Workshop, Perth, WA.

February 2002

Invited Speaker: "Natriuretic peptides." RCPA/AACB Chemical Pathology Course, Perth, WA.

February 2002

Presentation: "RANKL, RANK, OPG." RCPA/AACB Chemical Pathology Course, Perth, WA.

February 2002

Case Presentation: "Cushing's syndrome." RCPA/AACB Chemical Pathology Course, Perth, WA.

Dr AM Buck:

September 2001

Invited speaker: "Forensic anthropology: uses of radiology and imaging." Western Australian CT-Users Group Meeting, Perth, WA.

Dr P Caterina:

July 2001

Invited speaker: "How ultrastructural techniques can enhance a biomedical investigation." Caterina P, Filion P. The Asthma and Allergy Research Institute 2001 Medical Research Seminar Series, Perth, WA.

Dr CML Chapman:

May 2002

Poster Presentation: "Interleukin-6 and high sensitive C-reactive protein as predictors of subclinical atherosclerosis." Chapman CML, Beilby JP, Thompson PL, Hung J. XIV World Congress of Cardiology, Sydney, NSW.

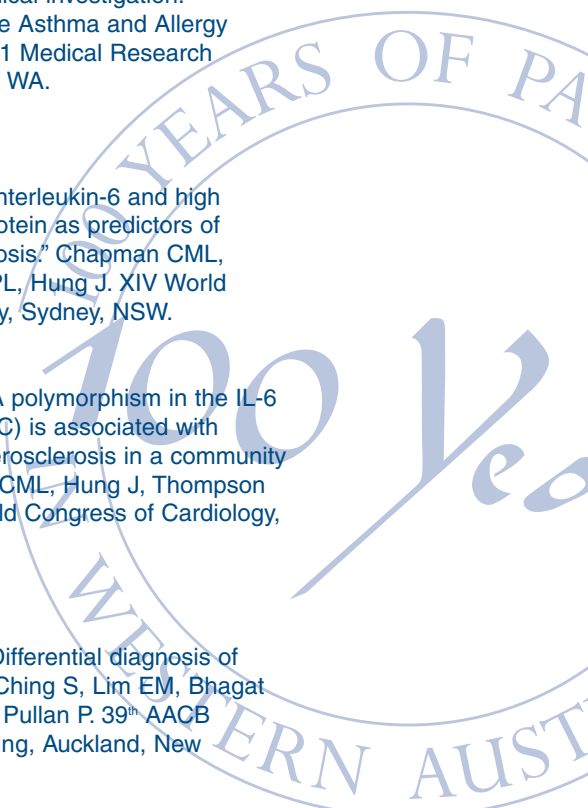
May 2002

Poster Presentation: "A polymorphism in the IL-6 gene promoter (G-174C) is associated with subclinical carotid atherosclerosis in a community population." Chapman CML, Hung J, Thompson PL, Beilby JP. XIV World Congress of Cardiology, Sydney, NSW.

Mr S Ching:

October 2001

Poster Presentation: "Differential diagnosis of Cushing's syndrome." Ching S, Lim EM, Bhagat CI, Beilby JP, Walsh J, Pullan P. 39th AACB Annual Scientific Meeting, Auckland, New Zealand.



October 2001

Poster Presentation: "A comparison of urinary free cortisol by HPLC and urinary free corticoids by immunoassay." Ching S, Beilby JP, Rossi E, Fletcher S, Joseph J, Bhagat CI. 39th AACB Annual Scientific Meeting, Auckland, New Zealand.

Dr CT Cooke:

September 2001

Delegate: Shaken Baby Syndrome Conference, Sydney, NSW.

Dr GM Cull:

May 2002

Poster Presentation: "Induction with oral chemotherapy (CID) and early autologous stem cell transplantation (ASCT) for de novo multiple myeloma." Spencer A, Seldon M, Deveridge SF, Marlton P, Kennedy G, Cull GM, Enno A, Cobcroft R, Schwarzer A, Gill D. Eighth International Myeloma Workshop, Banff, Canada.

Ms J Davies:

November 2001

Presentation: "Flow cytometric screening test for Hereditary Spherocytosis." Davies J, Jensen J, Cole C, Erber WN. AFCG Annual Scientific Meeting, Melbourne, VIC.

Ms A Downs:

February 2002

Poster Presentation: "A custom designed microarray for expression analysis in B-cell chronic lymphocytic leukaemia." Downs A, Myers GS, Morris LM, Erber WN, Barlow JW. Lorne Cancer Conference, Lorne, VIC.

Mr LJ Dusci:

September 2001

Invited speaker: "Drug testing in the workplace." Dampier Salt Pty Ltd, Carnarvon, WA.

Dr WN Erber:

February 2002

Invited Lecturer: "Massive transfusion". Australian Defence Force TriService Meeting, Fremantle, WA.

March 2002

Speaker: "Myelodysplasia." RCPA Pathology Update, Sydney, NSW.

Mr S Fletcher:

February 2002

Invited Speaker: "Immunoassay: interferences." RCPA/AACB Chemical Pathology Course, Perth, WA.

Dr FA Frost:

October 2001

Speaker and workshop: "Fine needle aspiration of lymph nodes: pitfalls and problems." Australian Society of Cytology, Adelaide, SA.

November 2001

Speaker: "Adenocarcinoma of the cervix; new technologies for screening." Multidisciplinary Symposium on Adenocarcinoma of the Cervix Cancer Foundation of WA and the WA Cervical Screening Program, Nedlands, WA.

May 2002

Speaker: "Bile duct brushings; a practical approach." Orell Club Companion Meeting at the Annual Scientific Meeting of the Australasian Division of the International Academy of Pathology, Sydney, NSW.

Dr CL Golledge:

July 2001

Invited Speaker: "Management of respiratory tract infections: are the guidelines adequate?" General Practitioners Meeting, Art Gallery, Perth, WA.

August 2001

Invited Speaker: "New antibiotics in clinical practice." Society of Hospital Pharmacists of Australia, Perth, WA.

August 2001

Invited Speaker: "Moxifloxacin: a novel fluoroquinolone." Medical Specialists Meeting, Hyatt, Perth, WA.

August 2001

Invited Speaker: "Linezolid: a new antibiotic with enhanced Gram positive activity." The Eighth Indonesian International Symposium on Shock and Critical Care, Bali, Indonesia.

September 2001

Invited Speaker: "Travel health hazards: medications for prophylaxis and treatment I."

Invited Speaker: "Travel medications and vaccinations."

Invited Speaker: "Fungal infections: external and internal."

Invited Speaker: "Travel medications and vaccinations II."

Adventure Education, Pharmaceutical Society of Australia National Meeting, Busselton, WA.

September 2001

Invited Speaker: "Vancomycin resistance." First Combined State Conference in Infection Control and Wound Care, Infection Control Association of WA and Western Australia Wound Care Association, Perth, WA.

October 2001

Invited Speaker: "The infectious diseases policy." Australian Conference of Science and Medicine in Sport, Perth, WA.

October 2001

Invited Speaker: "Clostridium difficile workshop." Australian Society for Microbiology Annual Scientific Meeting, Perth, WA.

November 2001

Invited Speaker: "Necrobacillosis: forgotten but not gone." Microbiology Around the Labs 2001. Australian Society for Microbiology, Perth, WA.

February 2002

Invited Speaker: "Community based treatment for infections." Osborne Park Division of General Practice, Perth, WA.

March 2002

Invited Speaker: "A view on bioterrorism." General Practitioners Meeting, Perth, WA.

March 2002

Invited Speaker: "Treatment of chronic infections." Seventh Annual Conference Otolaryngology, Head and Neck Nurses Group, Perth, WA.

April 2002

Invited Speaker: "Antibiotic treatment of specific wound infections." 2002 Australasian Plastic and Reconstructive Surgery Training Conference, Fremantle, WA.

June 2002

Invited Speaker: "Invasive group A streptococcal disease." National Congress in Intensive Care Medicine, Jakarta, Indonesia.

June 2002

Invited Speaker: "CJD: where to from here?"
Invited Speaker: "Outbreak management of Clostridium difficile."

Australian Infection Control Association Second Biennial Conference 2002, Brisbane, QLD.

Mr LP Hackett:

September 2001

Poster Presentation: "Disposition of enflurane in blood before and during cardiopulmonary bypass." Hackett LP, Ilett KF, Barrett HR, Goucke CR. Proceedings of the Seventh International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Washington DC, USA.

March 2002

Invited speaker: "Overview of the laboratory techniques in the analysis and interpretation of drugs of abuse." Western Australian Drug Court Staff, PathCentre, Nedlands, WA.

Dr JM Harvey:

June 2001

Poster Presentation: "Mechanism of action of androgens in breast cancer cells." Greeve MA, Allan RK, Harvey JM, Bentel JM. Australian Society for Medical Research, Inaugural Medical Research Symposium, Perth, WA.

June 2001

Poster presentation: "Indeterminate results in core biopsies of breast from mammographically detected lesions: outcomes of excision biopsy." Harvey JM, Sterrett GF, Frost FA. Australasian Division of the International Academy of Pathology, 27th Annual Scientific Meeting, Sydney, NSW.

August 2001

Poster Presentation: "Inhibition of MCF-7 breast cancer cell growth by the biologically active androgen, 5 α -dihydrotestosterone (DHT)." Greeve MA, Allan RK, Harvey JM, Bentel JM. Twelfth Annual Combined Biological Sciences Meeting, Perth, WA.

Mr F Haverkort:

September 2001

Invited Speaker: "Clinical isolates of atypical mycobacteria in Australia 2000."

Invited Speaker: "Demographic analysis of Mycobacterium haemophilum in Australia, 1977 to 2000."

Invited Speaker: "The role of the Mycobacterium Reference Laboratory workshop." Australian Society for Microbiology Annual Scientific Meeting, Perth, WA.

Dr PN Hollingsworth:

October 2001

Invited Speaker: "Systemic vasculitis." Australian Rheumatology Association South Australia Annual Scientific Meeting, Adelaide, SA.

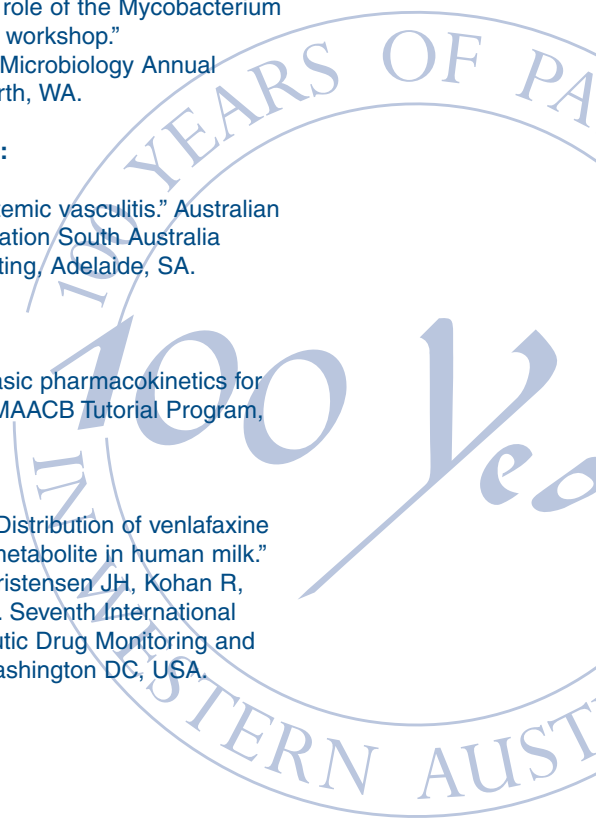
A/Prof KF Ilett:

August 2001

Oral Presentation: "Basic pharmacokinetics for clinical biochemists." MAACB Tutorial Program, Perth, WA.

September 2001

Poster presentation: "Distribution of venlafaxine and its O-desmethyl metabolite in human milk." Ilett KF, Hackett LP, Kristensen JH, Kohan R, Paech M, Rampono J. Seventh International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Washington DC, USA.



September 2001

Poster presentation: "CSA immunoassays in comparison to LC-MS/MS, is there a difference between trough (C0) and C2 levels?" Schutz E, Streit F, Dias DC, Lewer M, Ilett KF, Le Gatt DF, Pohanka E, Wagner O, Wong PY, Oellereich M. Seventh International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Washington DC, USA.

November 2001

Lecture: "Antidepressant plasma concentrations in newborns and their mothers at birth and at day five in the newborn: correlation with neonatal abstinence scores." Department of Clinical Pharmacology, Christchurch Hospital, Christchurch, New Zealand.

December 2001

Poster presentation: "Disposition of enflurane in blood before and during cardiopulmonary bypass." Ilett KF, Hackett LP, Barrett HR, Goucke CR. Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists, Dunedin, New Zealand.

February 2002

Oral Presentation: "Cyclosporine C2 absorption profile monitoring: a real clinical advantage?" RCPA/AACB Chemical Pathology Course, Perth, WA.

Dr TJJ Inglis:

September 2001

Invited Speaker: "Linezolid: a new antibiotic with enhanced Gram positive activity." Third International Meeting on Respiratory Care, Jakarta, Indonesia.

Invited Speaker: "Mechanism of antimicrobial resistance." Third International Meeting on Respiratory Care, Jakarta, Indonesia.

Invited Speaker: "The laboratory as an emerging infectious diseases toolbox." Emerging Infectious Diseases of the Indian Ocean Rim Inaugural Meeting, Perth, WA.

Invited Speaker: "Environmental aspects: biocomplexity; an ecological perspective on the origins of *Burkholderia pseudomallei* infection." World Melioidosis Congress 2001, Perth, WA.

January 2002

Invited Speaker: "WA response to white powder incidents."

Invited Speaker: "Melioidosis as a potential biological weapon."

Invited Speaker: "Cholera as a potential biological weapon." Emergency Management Australia, Training Institute, PHLN, Mt Macedon, VIC.

February 2002

Invited Speaker: "Anthrax Issues." Swan Districts Hospital Clinical Society, Swan Districts Hospital, Perth, WA.

March 2002

Invited Speaker: "Persistent septicaemic melioidosis." International Congress of Infectious Diseases, Singapore.

April 2002

Invited Speaker: "Real time molecular epidemiology." Emergency Management Australia, PHLN, Geelong, VIC.

April 2002

Invited Speaker: "Melioidosis as a potential biological weapon." Australian Defence Force, NBC Medical Officer's Course, Mt Dandenong, VIC.

Mr J Joseph:

March 2002

Poster Presentation and workshops: "Thyroid function tests on the Architect *i4000*." Joseph J, Fletcher S, Beilby JP. Asian and Pacific Congress of Clinical Biochemistry, New Delhi, India.

Dr DJL Joske:

October 2001

Oral Presentation: "BCR – ABL in RNA levels in peripheral blood may be predictive of response to ST1571 therapy in chronic myeloid leukaemia patients when measured at three months." Branford S, Moare S, Grigg A, Arthur C, Taylor K, Herrmann R, Bradstock K, Ma D, Durrant S, Seymour J, Schwarzer A, et al. HSNZ Annual Scientific Meeting, Brisbane, QLD.

May 2002

Oral Presentation: "Deletion of proximal ABL and distal BCR regions in a patient with chronic myeloid leukaemia and a complex Philadelphia translocation." De Kraa R, Joske DJL, Everett J, Dyverstyn J, Salamouris S, O'Reilly J. Australian Clinical Oncology Society, Sydney, NSW.

Assoc Prof DA Joyce:

August 2001

Oral Presentation: "Drug-induced respiratory disease: sources of information to aid clinical diagnosis." Perth Lung Club, Perth, WA.

Dr GN Kent:

September 2001

Invited Speaker: "Markers of bone turnover: biochemistry and biology." Australian Institute of Medical Scientists Annual Scientific Meeting, Melbourne, VIC.

October 2001

Invited Speaker: "The biochemistry of collagen breakdown products." 39th AACB Annual Scientific Meeting and Australian and New Zealand Bone Mineral Society Meeting, Auckland, New Zealand.

February 2002

Invited Speaker: "Investigations of bone disease." RCPA/AACB Chemical Pathology Course, Perth, WA.

March 2002

Invited Speaker: "Recent advances in laboratory testing for diabetes mellitus." Ninth Asian and Pacific Congress of Clinical Biochemistry, New Delhi, India.

Dr S Knott:

May 2002

Presenter: 16th ANZFSS Forensic Science Symposium, Perth, WA.

May 2002

Presenter: Sexual Assault Satellite Symposium Workshop, Perth, WA.

Ms C Kuek:

October 2001

Poster Presentation: "HFE heterozygotes in an elderly female community population." Kuek C, Beilby JP, Rossi E, Devine A, Prince RL, Jeffrey G. 39th AACB Annual Scientific Meeting, Auckland, New Zealand.

Ms M Lewer:

February 2002

Presentation: "Homogenous LDL Assays: Problems." RCPA/AACB Chemical Pathology Course, Perth, WA.

Dr EM Lim:

October 2001

Poster Presentation: "Plasma ACTH and urinary free corticoids in the aetiological diagnosis of Cushing's Syndrome." Lim EM, Ching S, Bhagat CI, Beilby JP, Walsh J, Pullan P. Endocrine Society of Australia Proceedings 2001, p.106. Endocrine Society of Australia, 44th Annual Scientific Meeting Gold Coast, QLD.

October 2001

Poster Presentation: "Iron overload in persons compound heterozygous for the HFE gene." Lim EM, Rossi E, Jeffrey GP. 39th AACB Annual Scientific Meeting, Auckland, New Zealand.

Mr M Linden:

July 2001

Poster Presentation: "Coagulation testing in the presence of high dose heparin." Linden MD. XVIII Congress of The International Society on Thrombosis and Haemostasis, Paris, France.

Poster Presentation: "Factor V Leiden and cardiopulmonary bypass: use of an ex vivo model to assess the effects of Aprotinin on haemostatic parameters." Michalopoulos N, Schneider M, Erber WN, Linden MD. XVIII Congress of The International Society on Thrombosis and Haemostasis, Paris, France.

Poster Presentation: "Specificity and sensitivity of the Mini-VIDAS System in the diagnosis of pulmonary embolism." Schneider M, Erber WN, Linden MD, Michalopoulos N, Mountain D, Haig A. XVIII Congress of The International Society on Thrombosis and Haemostasis, Paris, France.

April 2002

Invited Speaker: "Haemostasis in Cardiac Surgery." Department of Haematology, Royal North Shore Hospital, Sydney, NSW.

Dr KA Margolius:

November 2001

Speaker: "Shaken baby syndrome." Shaken Baby Conference, West Australian Child Protection, Perth, WA.

April 2002

Speaker: "Rape victims investigations." Australian College of Legal Medicine, Perth, WA.

May 2002

Presentation: "Sexual assault and homicide." Sexual Assault Satellite Symposium, Perth, WA.

Dr RJ Murray:

October 2001

Presentation: "The pros and cons of cryptococcal antigen testing." Australian Society for Microbiology Annual Scientific Meeting, Perth, WA.

Poster Presentation: "Community-acquired oxacillin-resistant *Staphylococcus aureus* in Northern Australia: an emerging infectious disease." Murray RJ, Arthur AD, Milne SM, Lum GL. International Congress on Infectious Diseases, Singapore.

April 2002:

Invited Speaker: "Melioidosis." Movable Feast Presentations, Department of Respiratory Medicine, Sir Charles Gairdner Hospital, Perth, WA.

Mr S O'Halloran:

September 2001

Invited speaker: "Drug testing in the workplace." Dampier Salt Pty Ltd, Carnarvon, WA.

March 2002

Invited speaker: "Drug testing in the workplace." Iluka Resources, Capel, WA.

May 2002

Invited speaker: "Drug testing in the workplace." Worsley Alumina Pty Ltd, Collie, WA.

Mr J Prior:

March 2002

Oral Presentation: "Haemoglobinopathies in Western Australia." Australasian Thalassaemia Workshop, Perth, WA.

June 2002

Oral Presentation: "Overview of DNA analysis of haemoglobinopathies." Genomics Branch of Department of Health, Perth, WA.

Mr A Randall:

February 2002

Presentation: "CSF spectroscopy." RCPA/AACB Chemical Pathology Course, Perth, WA.

Prof TV Riley:

July 2001

Invited Speaker: "Erysipelothrix infections: forgotten but not gone." Department of Medical Microbiology, University of Wales College of Medicine, Cardiff, Wales, UK.

September 2001

Invited Speaker: "Topical antimicrobial therapy with tea tree oil: fact or fantasy?" Infection Control Nurses Association Annual Infection Control Conference, Blackpool, UK.

September 2001

Invited Speaker: "Anaerobic bacteriology: whither or wither?"

Invited Speaker: "Twenty years of *Clostridium difficile*-associated diarrhoea: will it resolve?" Australian Institute of Medical Scientists National Scientific Meeting, Melbourne, VIC.

September 2001

Invited Speaker: "Alternative therapies for infectious diseases."

Invited Speaker: "Crayfish poisoning in Western Australia."

Invited Speaker: *Clostridium difficile* workshop. Australian Society for Microbiology Annual Scientific Meeting, Perth, WA.

October 2001

Invited Speaker: "Fighting infections with natural products: some actually work!" (Meet the Professor Session) 39th Annual Meeting of the Infectious Diseases Society of America, San Francisco, USA.

Dr PD Robbins:

May 2002

Speaker: "Wegener's granulomatosis of the central nervous system." 28th Annual Scientific Meeting, Australasian Division, International Academy of Pathology, Sydney, NSW.

Dr E Rossi:

August 2001

Poster presentation: "Serum ferritin and c282y mutation as predictors of asymptomatic carotid atherosclerosis in a community population." Rossi E, McQuillan BM, Hung J, Thompson PL, Kuek C, Beilby JP. Bio Iron Conference, Cairns, QLD.

August 2001

Poster presentation: "The effect of haemochromatosis genotype and life-style factors on iron and red cell indices in a community population." Rossi E, Bulsara MK, Olynyk JK, Cullen DJ, Summerville L, Powell LW. Bio Iron Conference, Cairns, QLD.

August 2001

Poster presentation: "Prevalence of c282y mutation of the haemochromatosis gene in an elderly female community population." Jeffrey GP, Rossi E, Beilby JP, Kuek C, Devine A, Prince RL. Bio Iron Conference, Cairns, QLD.

February 2002

Invited Speaker: "Porphyrias." RCPA/AACB Chemical Pathology Course, Perth, WA.

May 2002

Poster Presentation: "Use of fibrotest to predict liver fibrosis in hepatitis C: a replacement for liver biopsy?" Adams L, Rossi E, De Boer WB, Speers DJ, Macquillan GC, Garas G, Jeffrey G. Digestive Diseases Week, San Francisco, USA.

Dr A Segal:

November 2001

Presentation: "Predictive value of Pap smear diagnosis: *in situ* and invasive adenocarcinoma of the cervix." Cervical Cytology Workshop, Perth, WA.

Dr DW Smith:

September 2001

Invited Speaker: "Infection Control and wound care."

Invited Speaker: "Hepatitis B and C: defining the risks."

First Combined State Conference in Infection Control and Wound Care, Infection Control Association of WA and Western Australia Wound Care Association, Perth, WA.

September 2001

Invited Speaker: "Arboviruses and emerging infectious diseases." Emerging Infectious Diseases of the Indian Ocean Rim Inaugural Meeting, Perth, WA.

September 2001

Poster Presentation: "Monitoring the southerly spread of Murray Valley Encephalitis." Dodsley NA, Broom AK, Smith DW, Plant AJ, Lindsay MD. Third International Congress of the Society of Vector Ecology, Barcelona, Spain.

October 2001

Invited Speaker: "What prevents new arboviruses entering Australia?"

Invited Speaker: "Use of new technologies for the diagnosis of sexually transmitted infections in remote areas."

Invited Speaker: "Rapidly developing aciclovir resistant *Herpes simplex virus* type two following primary infection in renal transplant patients."

Poster Presentation: "Detection of malarial parasites: A comparison of two methods." Junckerstorff RCW, Harnett GB, Hall RA, Inglis TJJ, Erber WN, Smith DW.

Poster Presentation: "Human papillomavirus genotypes in Western Australia." Brestovac B, Harnett GB, Smith DW, Frost FA.

Australian Society of Microbiology Annual Scientific Meeting, Perth, WA.

November 2001

Invited Speaker: "What's the buzz: the next wave of arboviruses in Australia." Infectious Diseases Meeting, Fremantle Hospital, Fremantle, WA.

December 2001

Invited Speaker: "Bioterrorism." WA Histopathology Discussion Group, Perth, WA.

May 2002

Invited Speaker: "PCR advantages and disadvantages"

Invited Speaker: "Genital ulcer disease: improving the diagnosis."

Australasian Sexual Health Conference 2002, Perth, WA.

June 2002

Invited Speaker: "New technologies for sexually transmitted infections diagnosis in remote areas."

Invited Speaker: "Human epidemiology of Australian encephalitis in Central Australia."

Australian Society of Microbiology Tristate Meeting, Alice Springs, NT.

Dr DV Spagnolo:

June 2002

Presenter and participant: "EBV-positive angiocentric diffuse large B-cell lymphoma of skin and subcutis." XI Meeting European Association for Haematopathology, Siena, Italy.

Dr DJ Speers:

September 2001

Invited Speaker: "Role of PCR in the diagnosis of aspergillus infections."

Invited Speaker: "PCR in the diagnosis of meningococcal infections."

Australian Society for Microbiology Annual Scientific Meeting, Perth, WA.

Dr GF Sterrett:

October 2001

Speaker: "The 'inconclusive' category in Pap smear reporting." Australian Society of Cytology, Adelaide, SA.

Mr MM Swarbrick:

February 2001

Poster Presentation: "The Pro12Ala polymorphism of peroxisome proliferator-activated receptor gamma 2 is associated with combined hyperlipidaemia in obesity." Swarbrick MM, Chapman CML, McQuillan BM, Hung J, Thompson PL, Beilby JP. Keystone Symposia, Taos, New Mexico.

September 2001

Poster Presentation: (Awarded Best Presentation) "PPAR γ 2 Pro 12 Ala polymorphism and cardiovascular risk profile: The Perth Aboriginal Atherosclerosis Risk Study (PAARS)." Swarbrick MM, Chapman CML, Beilby JP, Hung J, Bradshaw P, Thompson PL. 10th Annual Scientific Meeting of the Australasian Society for the Study of Obesity, Gold Coast, QLD.

Dr GR Turbett:

March 2002

Invited speaker: "The changing role of forensic biology." Joondalup Branch, Royal Association of Justices of the Peace / North West Metro Safer WA, Perth, WA.

June 2002

Invited speaker: "The changing role of forensic biology." The Midland Branch of the Royal Association of the Justices of the Peace, Perth WA.

June 2002

Invited speaker: "The changing role of forensic biology." Annual General Meeting of The WA Branch of the AIMS, Perth WA.

Dr D Whitaker:

October 2001

Speaker: "Serous effusions." Australian Society of Cytology, Adelaide, SA.

Publications

APPENDICES

2001/02 articles endorsed as 'in press' have not been included.

Adams L, Jeffrey GP, **de Boer WB**, Garas G. Ticlopidine associated cholestatic hepatitis. *Intern Med J.* 2002;32:359-60

Aravena-Roman M, Van Gessel HJ, Jones JM, Fregedo D. Characterisation of a coagulase-negative *Staphylococcus aureus* by multiple microbiological methods. [Abstract] *Microbiol Aust.* 2001;22:A118.

Aulfrey SJ, **Carson KC**, Chang BJ, Mee BJ, **Riley TV.** Atypical responses to desferrioxamine in *Moraxella (Branhamella) catarrhalis*. [Abstract] *Microbiol Aust.* 2001; 22:A82.

Beaman J, **Hackett LP**, Luxton G, **Ilett KF.** Effect of haemodialysis on leflunomide plasma concentrations. *Ann Pharmacother.* 2002;36:75-7.

Bennett JA, Palmer LJ, Musk AW, **Erber WN.** Gene frequencies of human platelet antigens 1 – 5 in indigenous Australians in Western Australia. *Transfus Med.* 2002;12:199-203

Bennett JA, Palmer LJ, Musk AW, **Erber WN.** Prevalence of Factor V Leiden and prothrombin 20210A mutations in indigenous Australians. *Thromb Haemost.* 2001;86:1592-3.

Berend N, Kellett B, **Kent GN**, Sly PD. Improved safety with equivalent asthma control in adults with chronic severe asthma on high-dose fluticasone propionate. *Respirology.* 2001;6:237-46.

Blythe D, **Joyce DA.** Clearance of arsenic by haemodialysis after acute poisoning with arsenic trioxide. *Intensive Care Med.* 2001;27:334.

Bouzahzah B, Albanese C, Ahmed F, Pixley F, Lisanti MP, Segall JD, Condeelis J, **Joyce DA**, Minden A, Der CJ, Chan A, Symons M, Pestell RG. Rho family GTPases regulate mammary epithelium cell growth and metastasis through distinguishable pathways. *Mol Med.* 2001;7:816-30.

Bowman RA. Fee for service (FFS) and Health Insurance Commission (HIC) billing in public laboratories. *Microbiol Aust.* 2001;22:16-7

Bremner M, Gibbs N, **Linden MD, Erber WN**, Weightman W. Antithrombin III levels during cardiac surgery and their relationship to haemoglobin concentration. *Anaesth Intensive Care.* 2002;30:245.

Brooke CJ, **Clair AN, Riley TV**, Hampson DJ. Molecular epidemiology of *Brachyspira pilosicoli* in Western Australia. [Abstract] *Microbiol Aust.* 2001;22:A76.

Brooke CJ, **Clair AN**, Mikosza ASJ, **Riley TV**, Hampson DJ. Carriage of intestinal spirochaetes by humans: epidemiological data from Western Australia. *Epidemiol Infect.* 2001;127:369-74.

Brooke CJ, Hampson DJ, **Riley TV**, Lum G. Failure to detect *Brachyspira pilosicoli* in the bloodstream of Australian patients. *J Clin Microbiol.* 2001;39:4219.

Brown A, Bolisetty S, Whelan P, **Smith DW**, Wheaton GR. Reappearance of human cases due to Murray Valley encephalitis virus and Kunjin virus in Central Australia after an absence of 26 years. *Commun Dis Intell.* 2002;26:39-44.

Buck AM, Price RI, Sweetman IM, Oxnard CE. An investigation of thoracic and lumbar cancellous vertebral architecture using power-spectral analysis of plain radiographs. *J Anat.* 2002;200:445-56.

Cadwallader HL, Dyson A, **Riley TV.** A comparison of two methods of identifying surgical site infections following orthopaedic surgery. (A reply). *J Hosp Infect.* 2002;49:303-4.

Cadwallader HL, Toohey M, Linton S, Dyson A, **Riley TV.** A comparison of two methods of identifying surgical site infections following orthopaedic surgery. *J Hosp Infect.* 2001;48:261-6.

Cairns SM, Taylor JME, Gould PR, **Spagnolo DV.** Comparative evaluation of PCR-based methods for the assessment of T-cell clonality in the diagnosis of T-cell lymphoma. *Pathology.* 2002;34:320-25.

Carson CF, Ashton L, Dry L, **Smith DW, Riley TV.** *Melaleuca alternifolia* (tea tree) oil gel (6%) for the treatment of recurrent herpes labialis. *J Antimicrob Chemother.* 2001;48:450-1.

Carson CF, **Riley TV**. Safety, efficacy and provenance of tea tree (*Melaleuca alternifolia*) oil. *Contact Dermatitis*. 2001;45:65-7.

Chan CF, **Chiswell GM**, Bencini R, **Hackett LP**, **Dusci LJ**, **Ilett KF**. Quantification of naltrexone and 6,beta-naltrexol in plasma and milk using gas chromatography-mass spectrometry. Application to studies in the lactating sheep. *J Chromatogr B Biomed Sci Appl*. 2001;761:85-92.

Chan SSL, **Kent GN**, Will RK. A sensitive assay for the measurement of serum chondroitin sulphate 3B3(-) epitope levels in human rheumatic diseases. *Clin Exp Rheumatol*. 2001;19:533-40.

Chan V, Morris RG, **Ilett KF**, Tett S. Population pharmacokinetics of lamotrigine. *Ther Drug Monit*. 2001;23:630-5.

Chang BJ, Mee BJ, McGregor KF, **Riley TV**. *Moraxella (Branhamella) catarrhalis*. In: Sussman M, editor. *Molecular Medical Microbiology*. London: Academic Press; 2001.

Chapman C, Palmer LJ, McQuillan BM, Hung J, **Burley J**, **Hunt C**, Thompson PL, **Beilby JP**. Polymorphisms in the angiotensinogen gene are associated with carotid intimal-medial thickening in females from a community-based population. *Atherosclerosis*. 2001;159:209-17.

Ching S, Ingram D, Hähnel R, **Beilby JP**, **Rossi E**. Serum levels of micronutrients, antioxidants and total antioxidant status predict risk of breast cancer in a case control study. *J Nutr*. 2002;132:303-6.

Coles KA, Timms P, **Smith DW**. Koala biovar of *Chlamydia pneumoniae* infects human and koala monocytes and induces increased uptake of lipids *in vitro*. *Infect Immun*. 2001;69:7894-7.

Dale S, Breidahl WH, Baker D, **Robbins PD**, Sundaram M. Severe toxic osteoblastoma of the humerus associated with diffuse periostitis of multiple bones. *Skeletal Radiol*. 2001;30:464-8.

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Current Research Grants

APPENDICES

2002

ANNUAL REPORT

Abraham LJ, Spagnolo DV
Regulation of CD30 expression in Hodgkin's and non-Hodgkin's lymphoma.
WA Cancer Foundation (\$49,931)

Buck AM, Knott S, Sweetman I
A preliminary study for the development of a grading system for regions of muscle attachment in the human skull for facial reconstruction purposes.
PathCentre Research Grant (\$2000)

Carson CF, Riley TV
The antimicrobial activity of tea tree oil against oral microorganisms.
Rural Industries Research and Development Corporation (\$117,000)

Chapman C, Beilby JP
HeartSearch WA Cardiovascular Genomics Research Fellowship.
HeartSearch WA (\$300,000 over three years).

Cull GM, Erber WN, Joske DJL
Analysis of genomic and immunophenotypic markers as prognostic indicators in chronic lymphocytic leukaemia.
Sir Charles Gairdner Hospital Research Fund Grant (\$10,000)

Davis TME, Ilett KF
Studies on the pharmacokinetics and pharmacodynamics
piperazine/dihydroartemisinin combinations in the treatment of falciparum malaria.
Ramaciotti Foundation (\$10,000)

Downs A
Applications of cDNA in Malignant Haematology.
WA Cancer Foundation Travel Grant (\$3500)

Erber WN, Grey D
Clinical Best Practice in Blood Transfusion.
Department of Health WA (Approximately \$70,000 per annum)

Erber WN, Manners P
Infrastructure Grant.
The University of Western Australia (\$12,620)

Goh Y-W, Spagnolo DV, Platten MA, Sterrett GF, Segal A, Iacopetta B
Immunohistochemical and molecular screening for c-kit mutation in gastrointestinal stromal tumours (GISTs) and correlation with prognosis.
PathCentre Research Grant (\$4500)

Hung J, Chapman C, Beilby JP Thompson, P
Inflammation, genes and atherosclerosis.
National Health and Medical Research Council Grant (\$285,000 over three years).

Ilett KF, Davis TME
Pharmacokinetics of the antimalarial piperazine in Cambodia.
The University of Western Australia Small Grants Scheme (\$19,800)

Ilett KF, Fellows L, Castle D
Therapeutic drug monitoring for olanzapine in schizophrenia.
Eli Lilly Pty Ltd (Australia) (\$15,000)

Inglis TJJ, Currie BJ, Norton R
An investigation into the role of potable water as a source of melioidosis in northern Australia.
National Health and Medical Research Council Grant (\$360,000)

Jeffrey GP, Rossi E, Beilby JP, Ching S
Antioxidant status and free radical induced damage in hepatitis C.
Sir Charles Gairdner Hospital Research Fund Grants In Aid (\$15,000).

Jeffrey GP, Rossi E, Adams L
Correlation of serum biochemical markers with hepatic fibrosis in patients with hepatitis C.
Sir Charles Gairdner Hospital Research Fund Grants In Aid (\$10,000)

Joske DJL, Bell M, Cunningham L
The role of IL-6, IL-10 and other cytokines in lymphoma.
Sir Charles Gairdner Hospital Research Foundation Grant (\$10,000)

Joyce DA, Steer JH
Rac-ROS-NF- κ B pathways in survival and growth of fibroblasts and macrophages in chronic inflammatory synovial disease.
Sir Charles Gairdner Hospital Research Foundation Grant (\$10,000)

Lehmann D, Riley TV, Leach AJ
Otitis media in Indigenous and non-Indigenous children: microbiological and immunological risk factors.
National Health and Medical Research Council of Australia (\$548,500)



Linden MD, Schneider M, Baker S, **Erber WN**
The effect of heparin bonded circuitry on anticoagulation during cardiopulmonary bypass.
PathCentre Research Grant (\$2,740)

Linden MD
Student Travel Grant.
The University of Western Australia (\$1,350)

Linden MD
Travel Grant Supplement.
The University of Western Australia, Department of Pathology (\$1,000)

O'Reilly J, **Downs A**, M Sturm, **Erber WN**, Herrmann R
Gene expression of malignant plasma cells from multiple myeloma patients with monosomy 13q or 13q deletion, a marker of poor prognosis.
Royal Perth Hospital Medical Research Foundation Research Grant (\$43,000)

Platten MA, **Robbins PD**, Holthouse D
Pituitary adenomas: An investigation of factors associated with aggressive behaviour and clinical outcome.
PathCentre Research Grant (\$2,760)

Rangan GK, **Joyce DA**
Regulation of tubular epithelial cell proliferation and cyclin D1 by NF- κ B/Rel in proteinuric chronic renal diseases.
Medical Research Foundation of WA (\$35,000)

Rankine A, **Spagnolo DV**, **Platten MA**, **Cull GM**, **Joske DJL**
The prognostic significance of bcl-2, bcl-6, CD10, CD30 and p53 expression in diffuse large B-cell lymphomas.
PathCentre Research Grant (\$3,000)

Riley TV
Medical research infrastructure grant.
Department of Health WA (\$43,500)

Riley TV
Antimicrobial activity of copper silicate.
Conve Scientific Solutions (\$100,000)

Riley TV, Cadwallader H, **Inglis TJJ**, Plant, A
Reducing health-care related infections in Western Australia.
Department of Health WA, Interim Quality Council (\$120,000)

Riley TV, Carson CF
Assessing the efficacy of tea tree oil hand or body wash as a topical antiseptic.
Rural Industries Research and Development Corporation (\$138,765)

Riley TV, Carson CF
Multi-centre randomised clinical trials of tea tree oil products for vaginal infections.
Rural Industries Research and Development Corporation (\$300,000)

Riley TV, Carson CF, Hammer K
The antifungal activity of tea tree oil *in vitro*.
Rural Industries Research and Development Corporation (\$125,000)

Riley TV, Carson CF, **Smith DW**
Clinical efficacy of tea tree oil for treating coldsores.
Rural Industries Research and Development Corporation, 2000-2001 (\$61,000 plus a further \$25,000 in 2002)

Sinclair M, Day D, Dallow B, Walker R, **Inglis TJJ**
Drinking water and Melioidosis project.
Water Quality Collaborative Research Centre (\$60,000)

Williams V, Musk AW, **Shilkin KB**, De Klerk NH, **Whitaker D**
Population patterns of exposure to asbestos and future risks.
Sir Charles Gairdner Hospital Research Fund (\$10,000)

Wittorff J, **Kent GN**
What is the long-term risk of hypothyroidism following postpartum thyroid dysfunction?
PathCentre Research Grant (\$5,000)

Anatomical Pathology

Forensic investigations of Western Australian Museum ancient Egyptian mummies.

Buck AM

The main aim of the project is to develop a technique that can quantitatively classify skulls according to their robustness. Quantitation of skulls in this manner will ultimately benefit the area of facial reconstruction as soft tissue mass may also be correlated with degrees of surface roughness.

Characterisation of collagen-producing cells in human peritoneal adhesions.

Caterina P, Mutsaers SE

The aim of this study is to characterise cell types within human peritoneal adhesions and identify cells likely to be synthesising collagen, the scaffold for adhesions formation.

Pulmonary toxicity of aerosolised DETA/NO in rat lungs after prolonged exposure.

Lam C-F, Caterina P, Filion P, Ilett KF, van Heerden PV

This study evaluates the potential pulmonary toxicity of the novel inhaled aerosolised nitric oxide donor and selective vasodilator, DETA/NO in rat lung tissues after prolonged exposure using light and electron microscopic examination.

Intrahepatic localisation of MXA and PKR proteins in hepatitis C virus infection using immuno-electron microscopy.

Macquillan GC, Caterina P, de Boer WB

This study employs immuno-labelling techniques at the ultrastructural level to identify and localise two proteins with anti-viral activity, MxA and PKR, in the hepatocytes of normal patients and patients with chronic hepatitis C infection. This study will assist in identifying patient characteristics that may predict responsiveness to treatment with interferon-alpha, which has been shown to directly induce expression of the two proteins.

A time-course study of the morphological changes of apoptosis in fibroblasts from healthy human lung and from human lung affected by cryptogenic fibrosing alveolitis (CFA).

Moodley Y, Caterina P

The aim of this study is to identify at the ultrastructural level, the morphological changes of apoptosis, over a time course, in human healthy lung fibroblasts and with CFA lung fibroblasts.

An ultrastructural study of the potential ability of osteoblastic cells to form intercellular junctions.

Prele C, Horton MA, Caterina P, Stenbeck G

The aim of this study is to demonstrate through morphological analysis and molecular analysis, the potential ability of osteoblastic cells to differentially define their membranes through the formation of tight junction-like structures.

Non-invasive detection and imaging of liver fibrosis and cirrhosis by magnetic resonance imaging: Liver transplant volunteers.

De Boer WB

This study is collaboration between Biophysics Department of The University of Western Australia, Department of Gastroenterology Sir Charles Gairdner Hospital and Anatomical Pathology PathCentre. The aim of this study is to test the hypothesis that the presence of cirrhosis in iron loaded liver results in locally reduced hepatic iron concentrations which can be detected and imaged using a novel method of measuring and imaging proton transverse relaxation rates with magnetic resonance imaging. This would allow the assessment of hepatic fibrosis and iron content without performing a liver biopsy avoiding the risks of an invasive procedure.

Investigation of the effect of various immunosuppression regimes on tolerance and rejection of liver transplantation in a rat model.

Huang WH, De Boer WB

A rat model of liver transplantation was developed. Transplantation between naturally tolerant and intolerant strains of rats was performed. The effects of two immunosuppressive reagents; cyclosporine and mycophenolate, on the development of transplant tolerance and rejection were examined. Also the effect of varying the timing of the immunosuppression was studied. Histological, immunohistochemical and biochemical parameters were measured.

Structural changes in neonatal catheter for arterial blood gases after prolonged use.

French N, Filion P

Neotrend catheters are used to monitor arterial gases and arterial pressure in premature neonates held in intensive care. This study aimed to verify their integrity after long term use (six days), and the absence of any clotting or other changes to the surface of the catheter housing the fibre optic probes. Preliminary study, January to April 2002 (completed).

Characterisation of a biofilm in infants with chronic middle ear infection.Coates H, **Filion P**

The occupational therapy department of Princess Margaret Hospital sees a large number of intractable, chronic middle ear infections in young children, many of which present a 'biofilm' coating the mucosa. This preliminary study described the structure of the biofilm by scanning and transmission electron microscopy, and attempted to locate and identify the bacterial organisms housed within it.

Penetration of anti-fungal agent in an infected nail.Carson KC, Kildea J, **Filion P**

This preliminary study used the analytical (EDAX) scanning electron microscope to chart the penetration of an anti-fungal agent through the thickness of a fungus-infected nail, after topical application. A concentration gradient was documented along the depth of penetration toward the nail bed.

Morphological investigation of mummified hair.**Buck AM, Filion P**

This study describes the preservation of structure and the elemental composition of mummified hair (Egyptian, approx. 1500 BCE) with both scanning and transmission electron microscopy. EDAX analysis of their transected core aim at identifying the cause of the change in colour noted in all mummified hair.

Replication and facial reconstruction of skeletal material from the *Batavia* that was wrecked in 1629 on Houtman Abrolhos at the Maritime Museum, Fremantle, WA.**Knott S**

Replication with resin of five cranial skeletons was achieved by either traditional moulding techniques or stereolithography. Facial reconstruction is being completed on two of the replicas with the remainder hopefully next year. Eventually the reconstructions may be added to the museum's Batavia Gallery.

Facial reconstruction of Western Australian Museum ancient Egyptian mummies.**Knott S**

Facial reconstruction of ancient Egyptian mummies held at the WA Museum is currently in progress. This is an ongoing project between the WA Museum, Central TAFE and PathCentre Forensic Pathology.

The value of HPV DNA typing in the distinction between adenocarcinoma of endocervical and endometrial origin.**Plunkett M, Brestovac B, Thompson J, Sterrett GF, Smith DW, Frost FA**

This study has examined the prevalence of high risk HPV DNA in a series of 100 carcinomas seen at PathCentre and King Edward Memorial Hospital. In the results thus far, HPV DNA has been demonstrated by PCR techniques in about 80% of endocervical carcinomas and only 2% percent of endometrial carcinomas. This technique may therefore be useful in distinguishing between these tumours in routine diagnostic work.

Evaluation of PCR-based methods in the diagnosis of T-cell lymphoproliferative disorders.**Spagnolo DV, Taylor JME, Cairns SM, Gould PR**

The findings of this project showed that assessment of the T-cell receptor gamma (TCR-gamma) gene using two primer sets was a highly sensitive test of monoclonality. Sensitivity was further increased by assessing the TCR-beta gene in combination with TCR-gamma. These two assays are suitable for diagnostic application and will replace the Southern blot in the majority of cases.

Analysis of malignant mesothelioma samples using tissue arrays.Lake R, Robinson B, **Spagnolo DV, Bot J, Segal A, Creaney J**

This study aims to examine the differential expression of certain genes/proteins in malignant mesothelioma. This is a collaborative study with PathCentre and University Department of Medicine.

The function of PAX3 and PAX7 in the metastasis of Ewing sarcoma, embryonal rhabdomyosarcoma and cutaneous malignant melanoma.Ziman M, Blake J, Charles A, Yu L, **Spagnolo DV**

This study will examine the role of two genes critical in normal embryological cell migration, in the spread of three tumours, which have a high propensity for metastatic spread. The down regulation of these genes may be of potential benefit in the treatment of these neoplasms. This is a collaborative study with University Department of Pathology, Edith Cowan University School of Biomedical and Sports Science and PathCentre.

Asbestos in lung tissue and associated diseases.

Williams V, De Klerk NH, Musk AW, Whitaker D, Shilkin KB

Asbestos is recognised as a major risk factor in the development of malignant mesothelioma. This group is studying the association between measures of asbestos and other mineral fibres that are present in lung tissue, and the major asbestos related diseases including pleural and pulmonary fibrosis, malignant mesothelioma and bronchogenic carcinoma.

Clinical Biochemistry

Correlation of serum biochemical markers with hepatic fibrosis in patients with hepatitis C.

Rossi E, de Boer WB, Speers DJ, Adams L, Jeffrey GP

Liver biopsy is required for the management of patients infected by hepatitis C virus (HCV) and in Australia a minimum stage of fibrosis is required to qualify for standard combination antiviral therapy. We are investigating biochemical serum markers as possible substitutes for liver biopsy to stage fibrosis in Australian hepatitis C patients. Our Phase I study examining a recently described proprietary fibrosis index (FibroTest) has just been completed and submitted for publication. Phase II will investigate new biochemical markers in various combinations to achieve improvements in predicting liver fibrosis.

Markers of cartilage and bone destruction in arthritis.

Will R, Kent GN, Chan S, McNiven T, Randall A, F Lake

Osteoarthritis and rheumatoid arthritis both involve destruction of normal cartilage architecture and function in joints. A number of potential markers of the changes in cartilage turnover have been developed to monitor these diseases in their early stages or to monitor the response to therapy. In collaboration with Professor B Catterson in Cardiff we have been developing assays for the breakdown products of collagen in bone and cartilage and of the products of accelerated turnover of proteoglycans in cartilage. This study is being carried out jointly with Royal Perth Hospital (Drs Will and Lake) and PathCentre.

Structural and mechanical changes in intervertebral disks.

Singer K, Tan C, Kent GN, Randall A

This is a collaborative study with Royal Perth Hospital, The University of Western Australia (Assoc Prof K Singer) and PathCentre. Aging, disk disease and osteoporotic vertebral fractures all influence the structure and the mechanical forces acting on the disks between the vertebral bodies in the spine. This study is establishing the normal relationship between structural components of the disks (collagen and elastin) and the load bearing properties of these disks in spines from various age groups. In addition we are comparing these results with those from individuals who have osteoporosis or disk degeneration.

Clinical Pharmacology & Toxicology

Correlation of olanzapine plasma concentrations with anti-psychotic efficacy and side-effects.

Fellows L, Ilett KF, Castle D, Ahmad F, Dusci LJ

This trial is being carried out at Graylands, Bentley and Fremantle hospitals. Plasma olanzapine concentrations are measured by high performance liquid chromatography and correlated with both the improvements in the symptoms of schizophrenia and with side-effects of the drug. The study, which has been funded by Eli Lilly Ltd, was completed in May 2002, with a total of 53 patients with evaluable data. Essentially the work provides a basis for the interpretation of plasma olanzapine concentrations in the control of schizophrenia. A manuscript has been prepared for submission to the *Journal of Clinical Psychiatry*.

Distribution and excretion of metformin in milk.

Hale TW, Kristensen JH, Kohan R, Hackett LP, Ilett KF

This study on metformin excretion in human milk was successfully carried out in seven women taking the drug either for polycystic ovarian disease or for control of diabetes. The relative infant dose of metformin delivered via breastmilk was only 0.3% of the maternal dose and the drug is therefore suggested to be safe for use in lactation. A manuscript has been submitted to *Diabetologia*.



Use of the nicotine patch for smoking cessation in breastfeeding women.

Kristensen JH, Ilett KF, Roberts M, Hackett LP, Hale TW

Approximately 11% of new mothers continue to smoke whilst breastfeeding. This exposes the breastfed infant to nicotine, its metabolite cotinine and carcinogens from cigarette smoke. In this study we are assisting breastfeeding smokers to quit by use of the nicotine patch. The benefits are reduced exposure to nicotine and its metabolite and no exposure to the smoke. The study has received support and funding from GlaxoSmithKline and involves an international collaboration with Dr Hale from the Texas Tech University. Volunteer accrual to the study was completed in May 2002 and it is anticipated that analysis of samples will be complete by late 2002.

Distribution and excretion of olanzapine in milk.

Gardiner SJ, Hackett LP, Begg EJ, Kristensen JH, Ilett KF

This study on olanzapine excretion in human milk was successfully carried out in seven women taking the drug for the treatment of acute schizophrenia. The relative infant dose of olanzapine delivered via breastmilk was only 0.95% of the maternal dose and the drug is therefore suggested to be safe for use in lactation. A manuscript has been prepared for submission to the *American Journal of Psychiatry*.

Use of beta-glucuronidase to increase the sensitivity of the Cedia benzodiazepine urine immunoassay.

Dusci LJ, Lewer M, Hackett LP, Chiswell GM

This collaboration with Microgenics Ltd will identify less expensive sources of beta-glucuronidase that can be used to increase the sensitivity of the urine immunoassay for benzodiazepines. Several different sources of the enzyme are being tested to identify efficient and low cost alternatives.

Pharmacokinetics and pharmacodynamics of intraperitoneal ropivacaine alone and in combination with pethidine as an intra-operative treatment for pain.

Paech M, Oh TE, Ilett KF, Hackett LP

This collaboration which is drawing samples from both Royal Perth Hospital and King Edward Memorial Hospital builds on laboratory assay expertise developed during previous projects. Both drugs are administered intraperitoneally during abdominal surgery, and it is hoped that this novel route of administration will result in optimal peri-operative pain control.

Effects of pseudoephedrine on milk production in humans.

Ilett KF, Hackett LP, Aljazaf K, Hartmann PE, Hale TW

Pseudoephedrine has long been used as an effective vasoconstrictor for suppression of mucous membrane congestion. Anecdotally, it is reputed to decrease milk production and this project is examining the effects of a single 60 mg dose on blood flow in the breast, milk production and relating changes to the concentration of the drug in milk.

Haematology**Prevalence of Factor V Leiden and prothrombin 20210A mutation in Indigenous Australians.**

Bennett J, Palmer L, Musk AW, Erber WN

The prevalence of both genetic variants was examined in a group of Indigenous Australians from a remote coastal community in northern Western Australia. Neither mutation was detected in any of the Aboriginal people suggesting that Australians of Aboriginal descent are at a lower risk of venous thromboembolic disease.

Gene frequencies of Human Platelet Antigens (HPA) 1 – 5 in Indigenous Australians in Western Australia.

Bennett J, Palmer L, Musk AW, Erber WN

The distribution of the five clinically relevant platelet antigen systems was investigated in a group of Indigenous Australians from a remote coastal community in northern Western Australia. Differences in genotype frequencies of HPA systems of Indigenous Australians and Western Australian blood donors were identified. Results have potential practical implications for transfusion management and pregnancy risks for Australians of Aboriginal descent.

Alpha thalassaemia in Indigenous Australians.

Prior J

185 DNA samples from Indigenous Australians from a remote coastal community in Western Australia were studied for the -3.7kb and -4.2kb alpha Thalassaemia single gene deletions using PCR. 37 samples (20%) tested positive for the -3.7kb deletion. The -4.2kb deletion was not detected. The samples positive for the -3.7 deletions were subtyped with 15 (40.5%) typed as Type I / III and the remaining 22 (59.5%) as Type II. This study shows that alpha thalassaemia is more common than previously thought in Indigenous Australians.

Comparison of light microscopy and the polymerase chain reaction for the diagnosis of malaria.

Hall A, Erber WN, Harnett GB, Inglis TJJ

A prospective analysis of PCR versus standard light microscopy was performed to compare their sensitivity and specificity for the diagnosis of malaria. Excellent correlation was achieved. The major applications of PCR for malaria will be to detect mixed parasitaemias, speciation with low level of parasitaemia and for field studies. Light microscopy will continue to be used for routine malaria diagnosis at PathCentre.

EBV genes in lymphomagenesis.

Cunningham L, Bell M, Dunstan R, Joske DJL

An investigation into the role played by IL10 of human and viral origin in the causation of non-Hodgkin's lymphoma using animal models.

IL10 polymorphisms and lymphomagenesis.

Cunningham L, Dunstan R, Joske DJL

Individuals have different immune system 'pre-sets'. Polymorphisms of the IL10 gene result in varying levels of IL10 release to immune stimuli. We have found that low-secretor genotypes are associated with an increased risk of diffuse large cell lymphoma, using standard and SS-PCR to genotype a large population of individuals with lymphoma.

Flow cytometric detection of minimal residual disease in patients with acute leukaemia.

Davies J, Erber WN

Determine the correlation between minimal residual disease (MRD) detected by flow cytometric methods, with treatment outcome in patients with acute leukaemia. Flow cytometric analysis for detection of leukaemia associated phenotype in bone marrow and peripheral blood of patients with acute leukaemia at diagnosis will be performed. The leukaemia-associated phenotype will then be used to detect minimal residual disease (MRD) throughout the course of patient treatment. These results may then be used to assess early response to treatment and to predict relapse, thus assisting in clinical management of these patients.

Intensity of B cell antigen expression in B cell lymphoproliferative disorders of fine needle aspirations and biopsies of tissue and lymph node.

Davies J, Newbigin FM, Erber WN

Evaluation of the fluorescence intensity results of CD79b FITC, CD20 PE and CD19 PECY5 in 80 fine needle aspirate and biopsies of tissue and lymph node. This was then correlated with the histopathology diagnosis according to the REAL Classification.

Mechanisms and modulation of monocyte dysregulation in inflammatory autoimmune diseases.

Downs A, Erber WN

In vitro and *in vivo* studies of monocyte activation, exploring the involvement of cytokines and nitric oxide in the pathogenesis of autoimmune diseases such as graft-versus-host disease, rheumatoid arthritis and inflammatory bowel disease. Examination of methods of regulating monocyte activation by the use of intravenous immunoglobulins, cytokine antibodies and cytokine receptor antagonists.

Blood heparin and antithrombin concentrations in cardiac surgical patients: a laboratory investigation.

Linden MD, Gibbs N, Michalopoulos N, Erber WN

Cardiopulmonary bypass causes a significant reduction in antithrombin due to haemodilution. The National Health and Medical Research Council recommend autologous blood collections immediately prior to surgery. This study is assessing whether this method further depletes antithrombin such that heparin anticoagulation is inhibited. Preliminary data supports this hypothesis.

Microbiology & Infectious Diseases

Arbovirus research.

Smith DW, Shellam G, Lindsay M, Broom A

A variety of studies are underway in collaboration with the Arbovirus Surveillance and Research Group of the Department of Microbiology, The University of Western Australia. These include flavivirus and alphavirus epidemiology, mosquito ecology, pathogenesis of flavivirus infections and improved diagnostic methods.

Respiratory tract infections.

Harnett GB, Smith DW, Fegredo D

Improved methods for influenza detection and typing, and detection of parainfluenza viruses are being evaluated across the 1998 winter, including conventional cultures, rapid tests and nucleic acid amplification.

Respiratory viruses and otitis media.

Harnett GB, Smith DW, Riley TV, Lehmann D

Study on the role of respiratory viruses in the pathogenesis of acute and chronic otitis media.

Metapneumoviruses.

Harnett GB, Fegredo D, Smith DW

The detection and epidemiology of metapneumoviruses in Western Australia.

Sexually transmitted diseases.

Brestovac B, Harnett GB, Smith DW, Frost FA
Detection and typing of human papilloma viruses and their relationship to cervical carcinoma.

Meningococcal infection.

Speers DJ, Harnett GB
Use of sequencing for typing of meningococci.

Nosocomial infections in Western Australia.

Riley TV, Cadwallader H, Plant A, Inglis TJJ
This project continued to be funded by the Department of Health WA and looks at surveillance of healthcare related infections in the State.

Tea tree oil.

Riley TV, Carson CF, Hammer KA, Smith DW
Several projects currently funded by the Rural Industries Research Development Corporation continue to operate in the Division. These include two clinical trials. The first of these assesses the antiviral activity of the oil as a potential treatment for cold sores. The second is a trial of treatment of bacterial vaginosis with a tea tree oil vaginal gel with collaborative centres in the UK and Denmark. In addition, work on the *in vitro* antimicrobial activity of tea tree oil is progressing on two fronts. The antifungal activity of tea tree oil is continuing and a new project looks at activity against oral pathogens. The Rural Industries Research Development Corporation has funded a new project to investigate the efficacy of tea tree oil as a topical antiseptic.

***Brachyspira (Serpulina) pilosicola* as a cause of human disease.**

Hampson D, **Riley TV**, Brooke J
This is a collaborative study with Professor David Hampson at the School of Veterinary and Biomedical Sciences at Murdoch University. *B. pilosicola* is a gut organism that appears to cause diarrhoea and septicaemia in compromised individuals. Improved methods for detection are being developed and these will be used to determine the importance of the organism.

Investigation into the microbiology of occupationally related infections in lobster fishermen.

Riley TV, Adams T, Fidalgo S, Wang Q, Mee B
We have shown that these infections are probably caused by *Erysipelothrix rhusiopathiae*, an organism that is found on the exterior of lobsters. The susceptibility of *E. rhusiopathiae* to a range of antibiotics and disinfectants has been determined. We are also interested in virulence factors of *E. rhusiopathiae* with a view towards vaccine development.

***Clostridium difficile*.**

Riley TV, Thomas C, Goh S
Clostridium difficile has been an organism of interest to the Division for many years. Three projects are currently underway. In the first of these, methods for the laboratory diagnosis of *C. difficile* disease are being compared and assessed. Several new PCR based detection methods are being evaluated and hopefully these will improve the speed of diagnosis. We are also conducting a further study on the epidemiology of *C. difficile* diarrhoea and have shown a reduction in disease following a reduction in cephalosporin use. Finally, we have isolated and are characterising bacteriophages active against *C. difficile*. These may be useful for therapy.

Election to Office in Professional Organisations

APPENDICES

2002

ANNUAL REPORT

Dr B Augustson

Trainee Representative, Royal College of Pathologists of Australasia

Dr JP Beilby

Chairman, Board of Examiners, Australasian Association of Clinical Biochemists
Associate Member, Committee on Cardiac Markers in Clinical Chemistry, International Federation of Clinical Chemistry
Co-Chair, IFCC Working Group: Standardisation of total plasma homocysteine measurements
Chairman, Chemical Pathology Course Organising Committee 2002

Mr RA Bowman

Vice Chairman, Organising Committee, 2001 Australian Society for Microbiology Annual Scientific Meeting

Dr AM Buck

Honorary Research Associate with the WA Museum

Ms J Davies

Secretary, Australian Institute of Medical Scientists, WA Branch Committee

Dr WB De Boer

State Councillor, Australian Society of Cytology, WA Branch
Co-organiser, WA Anatomical Pathologists Study Group

Dr WN Erber

Chairman, Organising Committee Australasian Thalassaemia Workshop, Perth 2002
Chairman, Organising Committee, Royal College of Pathologists of Australasia, Haematology Update Course, Sydney 2002
Examiner, Royal College of Pathologists of Australasia (Haematology)
Chairman, Sir Charles Gairdner Hospital Transfusion Committee
Member, Royal College of Pathologists of Australasia, WA State Committee
Member, International Society of Haematology Committee on Terminology, Quantity and Units
Assessor, National Association of Testing Authorities / Royal College of Pathologists of Australasia
Member, WA Rhodes Scholarship Selection Committee

Dr FA Frost

Designated Pathologist, BreastScreen WA

Dr CL Golledge

Examiner, Part I Examinations, Royal College of Pathologists of Australasia
Member, Drug Committee, Sir Charles Gairdner Hospital
Member, WA State Antibiotic Guidelines Committee
Member, Creutzfeldt-Jacob Disease Reference Group of Australia
Member, Anti-Infectives Advisory Board, Bayer Australia
Member, Advisory Board, College of Health: School of Medicine, Notre Dame University
Assessor, National Association of Testing Authorities

Ms D Grey

Examiner, Fellowship Transfusion, Australian Institute of Medical Scientists

Dr JM Harvey

Councillor, Australian Council on Smoking and Health
Member, State Committee, Royal College of Pathologists of Australasia
Examiner, Anatomical Pathology, Fellowship Examinations, Royal College of Pathologists of Australasia
Chair, Western Australian Coronial Ethics Committee
Executive Committee, Australian Society for Breast Disease
Member, Board of Basic Surgical Training, Royal Australian College of Surgeons

Mr Frank Haverkort

Convenor, Australian Society for Microbiology Special Interest Group (Mycobacteria)

Dr PN Hollingsworth

Deputy Chairman and Ex-Chairman, Clinical Association Sir Charles Gairdner Hospital
Chairman, Inter Hospital Liaison Committee for Clinical Immunology
Member, WA Rhodes Scholarship Selection Committee
President, WA Association of Rhodes Scholars

A/Prof KF Ilett

Member, Psychotropic Drugs Subcommittee, WA Drugs and Therapeutics Committee of the Government of WA
Member, Poisons Advisory Committee, Government of WA



Dr TJJ Inglis

Convenor, Organising Committee, World Melioidosis Congress 2001 / Emerging Infectious Diseases of the Indian Ocean Rim Workshop (EIDOR)
 Member, WA State Food Advisory Committee
 Member, WA State Infection Control Advisory Committee
 WA Member, National Public Health Laboratory Network
 Board Member, Perth Bone and Tissue Bank
 Chair, Sir Charles Gairdner Hospital Infection Control Committee
 Councillor, Executive Committee of the Australasian College of Tropical Medicine

Dr DJL Joske

Board Member, Leukaemia Foundation of Australian National Scientific and Medical Advisory Board
 Board Member, Novartis National Medical Advisory Board (Glivec)
 Member, PathCentre Medical Scientific Research Advisory Committee
 Honorary Secretary and WA State Councillor, Haematology Society of Australia and New Zealand
 Assessor, National Association of Testing Authorities
 Member, Sir Charles Gairdner Hospital Drug and Therapeutics Committee
 Member, Appointed to Department Repatriation Affairs Specialist Medical Review Council (Myeloma and gastro-intestinal tumours)
 Board Member, Leukaemia Foundation of WA
 Member, Western Australia Clinical Oncology Group Executive

Assoc Prof DA Joyce

Deputy-Member, Poisons Advisory Committee, Government of WA

Dr GN Kent

President, Australasian Association of Clinical Biochemists
 Chairman, Organising Committee, 10th Asian and Pacific Congress of Clinical Biochemistry, Perth, September 2004

Dr S Knott

President, ANZFSS (WA Branch)
 President, Australian Society of Forensic Odontology

Dr KA Margolius

Counsellor, Australian College of Legal Medicine

Mr R Mogyorosy

Member, Committees of Standards Australia: Food (F/T 4) and Water Microbiology (F/T 20)
 Treasurer, Organising Committee, World Melioidosis Congress 2001 / Emerging Infectious Diseases of the Indian Ocean Rim Workshop (EIDOR)

Mr L Mulgrave

Member, Steering Committee-Elect, Australian Society for Antimicrobials
 Member, Australian Group on Antimicrobial Resistance Surveillance

Mr S Munyard

Member, Australian and New Zealand Food Authority Working Group on Microbiological Guidelines for Ready to Eat Foods
 Member, WA Food Monitoring Program Steering Group

Mr J Prior

Member, Human Biology Consultative Committee, Edith Cowan University

Prof TV Riley

Member, State Infection Control Advisory Committee
 Member, MRSA Working Party
 Member, WA Branch Committee, Australian Society for Microbiology
 Convenor, Australian Society for Microbiology International Visitor Program
 Member, Alexander Project Steering Committee
 Member, Australian Infection Control Association Expert Working Group on Nosocomial Infections
 Member, Australian Society for Microbiology National Scientific Advisory Committee
 Member, International Advisory Committee for the Fourth International Meeting on the Genetics and Pathogenesis of Clostridia
 Member, European Society for Clinical Microbiology and Infectious Diseases *Clostridium difficile* Study Group

Dr PD Robbins

WA State Representative, Australasian Division, International Academy of Pathology
 Honorary Secretary and Pathologist Panel Member, WA Bone Tumour Registry
 Examiner, Royal College of Pathologists of Australasia
 Committee Member, National HER2 Testing Advisory Board

Dr E Rossi

Chair, IFCC Working Group: Standardisation of total plasma homocysteine measurements

Dr KB Shilkin

Member, WA Liver Transplant Assessment Panel
 Member, Advisory Board, Forensic Science Program, The University of Western Australia
 Member, Mesothelioma Registry of WA
 Member, Executive Committee, Representing Australasia, International Council of Societies of Pathology
 Member, Familial Bowel Cancer Registry of the WA Genetics Advisory Council
 Member, Medical Training Review Panel (Commonwealth Government) – RCPA Representative
 Member, National Pathology Accreditation Advisory Council (Commonwealth Government) – WA Representative

Dr DW Smith

Co-Director, Arbovirus Research and Surveillance Group, The University of Western Australia
 Member, State Arbovirus Control Committee
 Member, National Arbovirus Advisory Committee
 Member, State Infection Control Advisory Committee
 Member, WA State Immunisation Committee
 Member, State Human Epidemic Emergency Committee
 Member, Vaccine Impact Support Network
 Member, Winter Strategy Group, Department of Health WA
 Chairperson, Public Health Laboratory Network of Australasia (PHLN)
 PHLN Representative, Australian Influenza Pandemic Planning Committee
 PHLN Representative, *In vitro* Diagnostic Devices to the Therapeutic Goods Administration
 Member, Advisory Group for the Serology Quality Assurance Program, National Association of Testing Authorities/Royal College of Pathologists of Australasia
 Member, Organising Committee Communicable Diseases Control Conference 2003
 Deputy Chair, Infection Control Taskforce, Department of Health WA
 Member, Advisory Committee on Influenza in Asia
 Member, Nucleic Acid Amplification Quality Assurance Program Committee
 Member, Security Advisory Group, Australian Animal Health Laboratories
 Assessor, National Association of Testing Authorities

Dr DV Spagnolo

Immediate Past President, International Academy of Pathology (Australasian Division)
 Member, Diagnosis Working Party of the Australian Cancer Network's group to draft "Guidelines for the Diagnosis and Management of Non-Hodgkin's Lymphoma"
 Board Member, International Academy of Pathology (Australasian Division)
 Examiner, Anatomical Pathology, The Royal College of Pathologists of Australasia

Dr DJ Speers

Examiner, Australian Medical Council
 Examiner, Part I Examinations, Fellow of the Royal College of Physicians
 Member, Drug and Pharmacy Committee, Joondalup Health Campus
 Member, Infection Control Committee, Joondalup Health Campus
 Member, Drug and Therapeutics Committee, Sir Charles Gairdner Hospital

Mrs P Swan

Secretary, Australian Society of Cytology, WA Branch

Dr V Williams

Chief, Board of Examiners, Australian Society of Cytology
 Examiner, Fellowship (Cytology) Australian Institute of Medical Scientists



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Journal of Antimicrobial Chemotherapy

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Dr DV Spagnolo

Human Pathology

Advances in Anatomic Pathology

Ultrastructural Pathology

Pathology

Teaching

APPENDICES

2002

ANNUAL REPORT

Mr I Arthur

Science M200, UWA
Medical Microbiology M213, UWA

Dr B Augustson

Medical Students Tutorials in aspects of general haematology, UWA
Oral Examination Candidates, Royal Australian College of Physicians

Dr JP Beilby

Pathology: Clinical Biochemistry Lectures, Fourth Year Medicine, UWA
MAACB/FAACB Tutorials, Australasian Association of Clinical Biochemists

Dr CI Bhagat

Pathology: Clinical Biochemistry Lectures, Fourth Year Medicine, UWA
Biochemistry Tutorials, Sixth Year Medicine, UWA
MAACB/FAACB Tutorials, Australasian Association of Clinical Biochemists
FRACP Lecture Series, Royal Australian College of Physicians

Mr RA Bowman

Medical Microbiology M213, UWA

Ms AM Buck

Autumn School Mysteries of Forensic Science. Extension Course, UWA
Biological Anthropology 310, UWA
Forensic Anthropology, Course coordinator and lecturer, UWA
Supervisor for PhD student J Creamer, Joint PathCentre and Dept Chemistry UWA

Dr GA Cadden

Integrated Paraclinical Sciences 301, UWA
Pathology 400, UWA

Dr P Caterina

Diagnostic Cytology 331, Curtin
Cytology 301, Curtin

Mr C Choo

Pathology 301, UWA
Cytology 301, Curtin
Bega Garbriingju Health Service, In service training

Dr CT Cooke

Integrated Paraclinical Sciences 301, UWA
Pathology 400, UWA

Dr GM Cull

Undergraduate medical students, UWA
Registrar teaching for physicians exam, Royal Australian College of Physicians

Ms J Davies

Pathology 301, UWA

Dr WB De Boer

Diagnostic Cytology 331, Curtin
Pathology 301, UWA
Integrated Paraclinical Sciences 401, UWA
Cytology 301, Curtin

Ms K Dixon

Pathology 300, UWA

Dr WN Erber

Third Year Medicine, UWA
Sixth Year Medicine, UWA
Third Year Dentistry, UWA
Candidates, Royal College of Pathologists of Australasia
Part I Candidates, Royal Australian College of Physicians

Mr P Filion

Pathology 300, UWA

Mr S Fletcher

MAACB/FAACB Tutorials, Australasian Association of Clinical Biochemists

Dr FA Frost

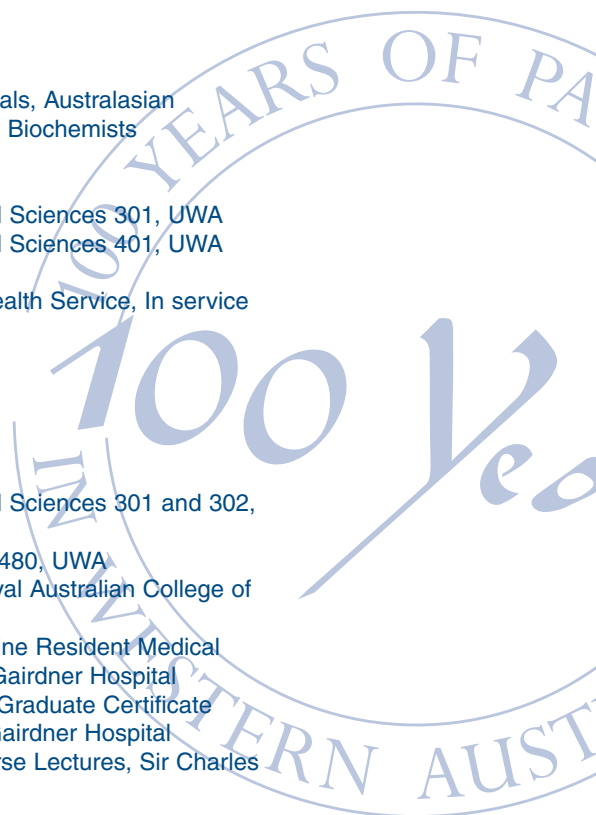
Integrated Paraclinical Sciences 301, UWA
Integrated Paraclinical Sciences 401, UWA
Cytology 301, Curtin
Bega Garbriingju Health Service, In service training

Ms H Gilich-Miller

Pathology 301, UWA

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Integrated Paraclinical Sciences 301 and 302, UWA
Medicine Specialities 480, UWA
Training Program, Royal Australian College of General Practitioners
Cardiovascular Medicine Resident Medical Officers, Sir Charles Gairdner Hospital
Critical Care Nursing Graduate Certificate Course, Sir Charles Gairdner Hospital
Intern Education Course Lectures, Sir Charles Gairdner Hospital



Dr JM Harvey

Integrated Paraclinical Sciences 301 and 302,
Co-ordination of unit and Lecturer, UWA
Legal Medicine 308, Joint Co-ordination of unit,
UWA
Pathology 301, UWA
Pathology 302, Joint Co-ordination of unit, UWA
Integrated Paraclinical Sciences 401, Co-
ordination of unit and Lecturer, UWA
Research Project 490, Co-ordination of unit,
UWA
Master of Laboratory Medicine, Course
Coordinator, UWA
Supervision of undergraduate and postgraduate
students undertaking research projects, UWA

Dr PN Hollingsworth

Clinical Immunology Lectures, Third Year
Medicine, UWA
Clinical Immunology Lectures, Fourth Year
Medicine, UWA
Lecture Series, Royal Australian College of
Physicians

Dr TJJ Inglis

Integrated Paraclinical Sciences 301 and 302,
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Microbial Epidemiology M215, UWA
Cardiovascular Medicine RMOs, Sir Charles
Gairdner Hospital
Wound Management Course Sir Charles
Gairdner Hospital
Perth Chest Clinic

Dr DJL Joske

Med V and IV term Placements, UWA
Med V Cancer Attachments, UWA
Med VI Tutorial, UWA
Med VI Problem – Based Learning Tutorials,
UWA
Med VI Lecture – “Anaemia”, UWA
Med V Clinico-Pathological Case Conference
“Bone Marrow Transplantation”, UWA
PhD Supervision, L Cunningham “The role of
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Practical Course in Immunological Methods,
Curtin

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Sixth Year Medicine, UWA

Mr P Sjollema

Practical Course in Immunological Methods,
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Cytology 301, Curtin

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Mr JME Taylor

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Pathology 302, UWA
Pathology 304, UWA
Diagnostic Cytology 331, Curtin

Mr D Topping

Pathology 300, UWA

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Masters / Graduate Diploma in Forensic Science,
Forensic Biology, UWA
University Extension Summer School January
2001, UWA
University Extension Spring School October
2001, UWA
University Extension Autumn School May 2002,
UWA
School of Biomedical Sciences Undergraduates,
Curtin
Safer WA Council
Police Prosecutors, WA Police
Sexual Assault Satellite Symposium, Sexual
Assault Referral Centre

Dr H Van Gessel

Integrated Paraclinical Sciences 301 and 302,
UWA
Medicine Specialities 480, UWA

Dr D Whitaker

Cytology 301, Curtin

Dr V Williams

Pathology 301, UWA
Cytology 301, Curtin
Gyn Cytology, Family Planning Association of WA
Bega Garbnbirringju Health Service, In service
training



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Bunbury
Busselton
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Exmouth
Geraldton
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Karratha
Katanning
Kununurra
Mandurah
Manjimup
Margaret River
Meekatharra
Merredin
Mount Barker

Narrogin
Newman
Northam
Paraburdoo
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Yarloop

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