THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

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#### Issue #042

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- Pathology Day celebrated internationally to acknowledge pathology's contribution to healthcare worldwide
- Ned Kelly Under the Microscope
- Preventative approach offers
  hope for ovarian cancer
- Health researchers embrace social media to recruit the 'wired' generation

#### **Interesting Facts**

## 8

The number of countries outside Australasia that celebrated Pathology Day on November 5.

# 10,998

The number of people who signed up on the <u>Know Pathology Know</u> <u>Healthcare</u> website to show they value pathology.

# Welcome to the November edition of ePathWay

Pathology Day is an initiative of our College and was celebrated for the first time in May last year. The date changed to November 5 this year as pathology organisations from around the globe embraced this initiative making it a truly international event.

Ned Kelly has also been put under the microscope by a range of experts, including pathologists, to find out what happened to him before and after his death. We also look at a preventive approach for ovarian cancer, and the brave new world of using social media to recruit young adults for heath studies.

Don't forget to check our <u>Facebook</u> page regularly and keep up-to-date with what's happening in pathology by following our CEO Dr Debra Graves (@DebraJGraves) or the College (@PathologyRCPA) on Twitter.

While you're online, check out the *Know Pathology Know Healthcare* <u>Facebook</u> page as well.

## Pathology Day celebrated internationally to acknowledge pathology's contribution to healthcare worldwide

## 70%

The proportion of medical decisions that rely on pathology.

Sources: RCPA, Know Pathology Know Healthcare website

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**RCPA Manual** 

LabTest Online

Know Pathology Know Healthcare



Pathology Day is an initiative of the Royal College of Pathologists of Australasia (RCPA) to acknowledge the critical role of pathology in healthcare. Last year's inaugural event was celebrated around Australasia on May 28. The date changed this year to November 5 as pathology organisations in the UK, Ireland, USA, Canada, South Africa, Hong Kong, Singapore and Malaysia took part for the first time making it a truly international event.

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## Ned Kelly Under the Microscope

When 21 coffins were exhumed from the site of Victoria's Pentridge Prison in 2009, it was hoped one of them contained the skeleton of infamous bushranger Edward 'Ned' Kelly. All of the remains were admitted to the Victorian Institute of Forensic Medicine (VIFM) and a scientific process to solve the forensic mystery of Ned Kelly's remains began. This process is documented in the recently published book *Ned Kelly Under the Microscope*.



# Preventative approach offers hope for ovarian cancer

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"We now know there is a high-grade type of serous ovarian cancer that accounts for about 90% of these cancers and a low-grade type that accounts for the rest," explains Dr Lyndal Anderson, Gynaecological Pathologist at the Royal Prince Alfred Hospital in Sydney.

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# Health researchers embrace social media to recruit the 'wired' generation

Recruiting young people for health research has always been challenging, and it's becoming even more so. Traditional strategies are no longer working as well as they used to so it seemed logical to embrace social media to reach the 'wired' generation. A group of researchers dipped their toe in the water a few years ago and used Facebook to recruit girls in the elusive 16 to 25 years age group for a health study. The results were surprising.



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## **Previous Editions**



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#### IN THIS ISSUE

- Poliovirus takes advantage of gaps in immunisation campaigns
- New guidelines for gestational diabetes mellitus not universally accepted
- Court ruling lets the gen(i)e out of the bag

Hydatid disease can be

# Welcome to the October edition of ePathway

The World Health Organization declared the international spread of wild poliovirus since the start of this year a public health emergency of international concern. We asked the head of Australia's Polio Reference Laboratory about this situation.

The Federal Court of Australia also recently upheld the right of a company to patent a gene linked to breast cancer, so we asked an expert about the issue of patenting genes. New guidelines for gestational diabetes mellitus are also ruffling a few feathers, and we looked at hydatid disease and why it's linked to man's best friend. ePathWay - Previous Editions

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# Pathology Day celebrated internationally to acknowledge pathology's contribution to healthcare worldwide



Pathology Day is an initiative of the Royal College of Pathologists of Australasia (RCPA) to acknowledge the critical role of pathology in healthcare. Last year's inaugural event was celebrated around Australasia on May 28. The date changed this year to November 5 as pathology organisations in the UK, Ireland, USA, Canada, South Africa, Hong Kong, Singapore and Malaysia took part for the first time making it a truly international event.

"The international focus of Pathology Day came out of an international liaison with the presidents of key pathology organisations in a number of countries because pathology is not understood by the general public worldwide," explains Dr Debra Graves, CEO of the RCPA.

Dr Graves says the RCPA hosted an event that focused on the future of healthcare in the genomics era, and how pathologists can better diagnose and treat patients in the years ahead.

Former Queensland Premier and current CEO of YWCA, Ms Anna Bligh, spoke at the College's event. Ms Bligh shared her experience of being diagnosed with Hodgkin's lymphoma and the critical role of pathology for her diagnosis and treatment.

The College also released two position statements on Pathology Day: '<u>Mapping the Frontier: Pathology</u> <u>is Central to Medical Practice in the Genomic Era</u>' and '<u>Inappropriate Pathology Requesting</u>'. A video titled '<u>The Future of Pathology</u>' was also launched at the event.

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## Ned Kelly Under the Microscope



When 21 coffins were exhumed from the site of Victoria's Pentridge Prison in 2009, it was hoped one of them contained the skeleton of infamous bushranger Edward 'Ned' Kelly. All of the remains were admitted to the Victorian Institute of Forensic Medicine (VIFM) and a scientific process to solve the forensic mystery of Ned Kelly's remains began. This process is documented in the recently published book *Ned Kelly Under the Microscope*.

"A range of pathologists and scientists associated with the Royal College of Pathologists of Australasia (RCPA) were involved in finding out what happened to Ned Kelly and contributed to the book," says Associate Professor David Ranson, Forensic Pathologist and Deputy Director of the VIFM.

"For example, I investigated how the body was treated after his death including looking for evidence of an autopsy after he was hanged."

Ned Kelly was hanged at the Old Melbourne Gaol in 1880 and his body buried in the gaol's graveyard. The remains of prisoners buried in this graveyard, including Kelly's, were dug up in 1929 and moved to an unmarked mass grave at Pentridge Prison. They then lay undisturbed for almost a century before their recent discovery.

Pathologists and scientists at the VIFM set out to identify the executed prisoners who were buried in this grave, and hoped one was Ned Kelly. They were in luck. One skeleton was positively identified as Ned Kelly's remains through a range of forensic investigations including DNA analysis and matching injuries to historical records. But his skull was missing.

A possible breakthrough occurred when a farmer handed a skull with the name "E. KELLY" written in ink on its side to the VIFM in November 2009. The skull, believed to be Kelly's, had been stolen in

1978 from a display cabinet in the Old Melbourne Gaol. However, the VIFM put the skull through a range of forensic tests and concluded it wasn't Ned's head after all.

Despite the absence of the skull, A/Prof Ranson examined Kelly's skeleton and found evidence of sawing at the base of his skull (a fragment of his skull was recovered with his bones) consistent with an attempt to examine his spinal cord after death.

"That finding meant Kelly had at the very least a limited post mortem dissection of the back of his neck to probably check how successful the hanging had been in terms of damage to the spinal cord," explains A/Prof Ranson.

"I also found and extracted from Kelly's lower right leg bone two of the original pellets fired at him at Glenrowan. These pellets are now in State Library Museum in Melbourne."

The Ned Kelly investigation was complex. Many of the historical records around the time of Kelly's arrest and execution are missing so the latest investigation added valuable evidence-based knowledge about his injuries and his death.

While Ned's head is still missing, there is another important outcome from the VIFM positively identifying his remains. Ned Kelly's family have now buried him for the final time with the knowledge they were saying goodbye to their true (and infamous) ancestor.

*Ned Kelly Under the Microscope* (published by CSIRO Publishing) is available for sale at bookstores or online at the <u>CSIRO website</u>.

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"We now know there is a high-grade type of serous ovarian cancer that accounts for about 90% of these cancers and a low-grade type that accounts for the rest," explains Dr Lyndal Anderson, Gynaecological Pathologist at the Royal Prince Alfred Hospital in Sydney.

"We also know that high-grade serous ovarian cancer is linked to the BRCA mutations and abnormalities in the fallopian tubes."

A woman's risk of developing breast cancer and/or ovarian cancer is greatly increased if she inherits a harmful mutation in the BRCA1 or BRCA2 gene. Dr Anderson says the presence of this mutation, if detected, can act as an early warning sign for high-grade serous ovarian cancer.

"We are now looking for red flags that a woman may be prone to developing serous ovarian cancer such as a family history of breast or ovarian cancer or the presence of the BRCA gene mutation. These women may then choose to have their ovaries and fallopian tubes removed as a risk reducing measure."

Dr Anderson says removing the ovaries and fallopian tubes in high-risk women can reduce the risk of developing serous ovarian cancer by up to 80%. Once these organs are removed, pathologists examine them to find and identify early signs of cancer. This approach helps doctors manage a

woman's future risk and provide a more personalised approach to treatment.

"We see small tumours in the ovaries and fallopian tubes in women who had no symptoms at all. We are hoping that by removing these earliest signs of malignancy we can intercept their disease before it reaches an advanced stage," explains Dr Anderson.

"We also hope people will think 'mum and grandma both died of either breast or ovarian cancer so perhaps I should be tested'. If they are also positive for the BRCA gene mutation, then their results also provide valuable information for other family members in terms of risk and preventative management."

Dr Anderson presented a talk on the *Molecular Pathogenesis of Serous Ovarian Carcinoma* at the recent NZ Society of Pathologists Annual Scientific Meeting in Hamilton, New Zealand.

Ovarian cancer is also covered in the <u>April 2014</u> edition of ePathWay.

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# Health researchers embrace social media to recruit the 'wired' generation



Recruiting young people for health research has always been challenging, and it's becoming even more so. Traditional strategies are no longer working as well as they used to so it seemed logical to embrace social media to reach the 'wired' generation. A group of researchers dipped their toe in the water a few years ago and used Facebook to recruit girls in the elusive 16 to 25 years age group for a health study. The results were surprising.

"We placed an advertisement on Facebook for five months in 2010 inviting 16-25-year-old females from Victoria to participate in a health study," explains Professor Suzanne Garland, Head of Clinical Microbiology and Infectious Diseases at the Royal Women's Hospital in Melbourne. "A total of 551 young women responded to the advertisement, and that translated into 426 young women who agreed to participate."

Prof Garland says Facebook is an ideal recruiting tool for this age group since 95% use social networking on a regular basis, and of these users, 95% use Facebook. There was also a surprising twist to recruiting this way.

"We are currently recruiting young females to a study called VACCINE to measure the effectiveness of the human papillomavirus (HPV) cervical cancer vaccine<sup>[1]</sup>. Based on the initial responses we received we were able to change the advertisement on Facebook to be even more targeted to our desired cohort of girls not vaccinated with the HPV vaccine," explains Prof Garland."

"That kind of immediate and responsive change isn't easy with posted letters or printed advertisements. We can also turn the ads on Facebook on or off at any time."

Prof Garland says Facebook also gives researchers the opportunity to intervene and measure outcomes as they progress.

"It allows us to engage in preventative medicine and cover different health domains."

Once people respond to a Facebook advertisement, Prof Garland says they are directed to a safe website to ensure their privacy and data are protected.

Following the success of the first study, Prof Garland is using Facebook to recruit for further studies. These include investigating safe vitamin D levels and safe UV exposure for a study called SAFE-D (being led by Prof John Wark, University of Melbourne, Dept of Medicine, Royal Melbourne Hospital), and another study assessing the effectiveness of the HPV vaccine in young men.

"We don't know if recruiting young men between 16 and 25 years of age using Facebook will be as successful as it was for young women, but we'll soon find out!"

[1] HPV was covered in the April 2011 edition of ePathWay

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