ePathWay
THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

SEPTEMBER 2017 | PUBLISHED BY RCPA

ISSUE #073

IN THIS ISSUE

INTERESTING FACTS

151,301

The total number of laboratory confirmed notifications of Influenza in Australia for 2017 up to September 11.

90,861

The total number of laboratory confirmed notifications of Influenza in Australia for the 2016 calendar year.

Welcome to the September 2017 edition of ePathWay

Australia's flu season is almost over, but it's certainly been a big year. It's too simplistic to point to one main reason because a range of factors shape each flu season – and a new variable has been tossed into the mix this year.

Our other articles cover:

- The main uses of a D-dimer blood test.
- A submission to Australia's bone marrow transplant sector review about achieving a more ethnically diverse bone marrow donor registry
- New Zealand's 'model' blood service

As always, check in to our Facebook page, or review the latest tweets from our CEO Dr Debra Graves (@DebraJGraves) or the College (@PathologyRCPA), to keep up to date with the RCPA and new about pathology.

Influenza season is a product of many factors

3 to 5 million

The estimated number of cases of severe illness caused by Influenza each year worldwide, including between **250,000 and 500,000** deaths.

Source: Immunisation Coalition, World Health Organization

IMPORTANT MESSAGE

RCPA has an important message for you. Click to see the message!

SUGGEST TO A FRIEND

Know someone who might be interested in this website? Why not suggest the website to them.

PREVIOUS EDITIONS

Did you miss something from last month? You can view our previous editions at any time.

SUBSCRIBE NOW!

Subscription is easy! Simply fill in our subscription form.

This year's influenza season is making headlines for being a particularly bad one. Some are calling it one of the worst on record. Professor William Rawlinson, Senior Medical Virologist at NSW Health Pathology Randwick, said there are many factors to take into account when it comes to assessing the flu season, and there's a new variable in the mix this year.

read more »

A D-dimer blood test can be useful to exclude a DVT diagnosis

A D-dimer blood test can assist in the diagnostic workup of a patient presenting with clinical features of a possible deep vein thrombosis (DVT). However, it must be used appropriately, together with adequate clinical assessment and imaging investigations where necessary, to be clinically useful.

read more »

Cancer survivor now pitching for a more

LINKS

RCPA Manual

Lab Tests Online

Know Pathology Know Healthcare

ethnically diverse bone marrow donor registry to help others find their perfect match

UR the UR the Cure founder Pamela Bousejean knows first hand that finding a perfect stem cell match is harder than it needs to be. This is why she submitted six key recommendations to the Australian bone marrow transplant sector review focused on achieving a more ethnically diverse bone marrow donor registry.

read more »

NZ Blood Service gets hearts racing with its model service

Timing is everything, and the relatively young New Zealand Blood Service (NZBS) harnessed the power of the information age to set up a model service that is admired around the world.

read more »

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

ePathWay
THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

PUBLISHED BY RCPA

RCPA Message

« Back to Latest Issue

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

ePathWay

THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

PUBLISHED BY RCPA

Previous Editions

2017

066 - February 2017 | 067 - March 2017 | 068 - April 2017

069 - May 2017 | 070 - June 2017 | 071 - July 2017

072 - August 2017

2016

055 - February 2016 | 056 - March 2016 | 057 - April 2016

058 - May 2016 | 059 - June 2016 | 060 - July 2016

061 - August 2016 | 062 - September 2016 | 063 - October 2016

064 - November 2016 | 065 - Dec 2016/Jan 2017

2015

044 - February 2015 | 045 - March 2015 | 046 - April 2015

047 - May 2015 | 048 - June 2015 | 049 - July 2015

050 - August 2015 | 051 - September 2015 | 052 - October 2015

053 - November 2015 | 054 - Dec 2015/Jan 2016

2014

033 - February 2014 | 034 - March 2014 | 035 - April 2014

036 - May 2014 | 037 - June 2014 | 038 - July 2014

039 - August 2014 | 040 - September 2014 | 041 - October 2014

042 - November 2014 | 043 - Dec 2014/Jan 2015

2013

022 - February 2013 | 023 - March 2013 | 024 - April 2013

025 - May 2013 | 026 - June 2013 | 027 - July 2013

028 - August 2013 | 029 - September 2013 | 030 - October 2013

031 - November 2013 | 032 - Dec 2013/Jan 2014

2012

010 - Dec 2011/Jan 2012 | 011 - February 2012 | 012 - March 2012

013 - April 2012 | 014 - May 2012 | 015 - June 2012

016 - July 2012 | 017 - August 2012 | 018 - September 2012

019 - October 2012 | 020 - November 2012 | 021 - December 2012

2011

001 - March 2011 | 002 - April 2011 | 003 - May 2011

004 - June 2011 | 005 - July 2011 | 006 - August 2011

007 - September 2011 | 008 - October 2011 | 009 - November 2011

« Back to Home Page

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

PUBLISHED BY RCPA

Subscription Form

Full Name:

Email address:

Subscribe

Unsubscription Form

Email address:

Unsubscribe

« Back to Home Page

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

ePathWay
THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

SEPTEMBER 2017 | PUBLISHED BY RCPA ISSUE #073

Influenza season is a product of many factors

This year's influenza season is making headlines for being a particularly bad one. Some are calling it one of the worst on record. Professor William Rawlinson, Senior Medical Virologist at NSW Health Pathology Randwick, said there are many factors to take into account when it comes to assessing the flu season, and there's a new variable in the mix this year.

"There isn't a single cause for a bad flu season because it's often the result of a number of causes that contribute to the overall picture," he explained.

Prof Rawlinson said while 2017 is shaping up to be worse than normal for influenza, a new testing method will be impacting the data.

"We are certainly diagnosing more cases of influenza, and the introduction of rapid testing across a number of sites in Australia including NSW Health Pathology has probably contributed to this."

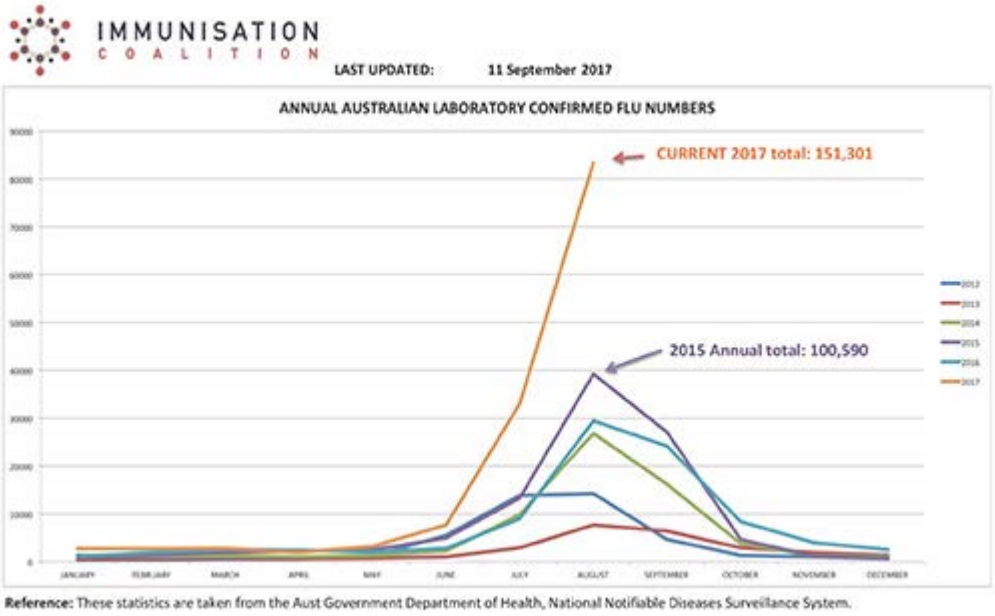
He said rapid testing returns a result in just one to two hours, as opposed to one to two days for the routine laboratory test. It is especially useful in emergency departments and intensive care units where a faster diagnosis is useful for very sick patients or when there are time pressures.

"The rapid test doesn't replace routine laboratory testing. It is specific for influenza A and B, whereas the routine laboratory assay tests for about 15 other viruses as well. But rapid testing means we can pick up the cases that in the past may have been reported as 'probably influenza' or 'influenza-like illness' but were not definitively diagnosed."

The Australian Government Department of Health's Australian Influenza Surveillance

Report and Activity Updates also gives a nod to the potential effect of rapid testing this year. It reported an almost two and a half times increase in the number of laboratory confirmed notifications, and lists an early season onset and the introduction of rapid testing as contributing factors.

“There are also potentially cyclical reasons for the increase in cases this year. Influenza A, which accounts for up to 90% of infections, mutates each year and in current years has included two subtypes (H3 and H1), both represented in the yearly vaccines. Influenza B viruses account for about 10% of cases and two subtypes are also in the vaccine, hence the name quadrivalent influenza vaccine. We often see cyclical increases in the number of people affected by Flu B every second or third year, and this is probably the year this is happening as the last Flu B increase was in 2015,” explained Prof Rawlinson.



Reference: These statistics are taken from the Aust Government Department of Health, National Notifiable Diseases Surveillance System.

The peak flu winter season (June to October) has one month to go, although statistics are kept for the whole calendar year. There isn’t a peak season in tropical and sub-tropical areas because the more stable temperatures don't cause a seasonal change in habits such as people bunching together inside as in the colder climes.

The full impact of this year’s flu season won’t be known until the whole year’s numbers are crunched. They will also only reflect confirmed laboratory-diagnosed cases. Also, a number of people who are infected with an influenza virus don't seek medical attention because their symptoms are mild and managed at home. The statistics, as Prof Rawlinson said, reflect more than one factor at play, especially when it comes to the flu.

Influenza was covered in the June 2012 and May 2011 editions of ePathWay.

« Back to Home Page

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

ePathWay
THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

SEPTEMBER 2017 | PUBLISHED BY RCPA ISSUE #073

A D-dimer blood test can be useful to exclude a DVT diagnosis

A D-dimer blood test can assist in the diagnostic workup of a patient presenting with clinical features of a possible deep vein thrombosis (DVT). However, it must be used appropriately, together with adequate clinical assessment and imaging investigations where necessary, to be clinically useful.

Associate Professor Merrole Cole-Sinclair, Head of Laboratory Haematology at St Vincent's Hospital in Melbourne, said one of the main uses of the D-dimer test is to exclude a DVT.

"This is particularly the case where the D-dimer test is negative in a patient who presents in the outpatient or emergency setting with leg symptoms, and where a standardised clinical assessment by the doctor indicates that they are at low to moderate risk of actually having a DVT," she explained.

"The negative D-dimer result may mean that the patient does not need further investigations such as leg ultrasounds. If the D-dimer test is positive or the pre-test DVT risk is high, the patient will proceed to more definitive testing such as leg ultrasounds because it is important to make an accurate diagnosis given that blood-thinning medication may be needed."

The clinical assessment includes a series of questions that help to determine a patient's pre-test DVT risk (e.g. the Wells Criteria for DVT requires 'yes' or 'no' answers adding up to a final overall score). These include questions such as whether the entire leg is swollen, if there is localised tenderness along the deep venous system, whether the patient has been bedridden or undergone major surgery recently, or if they have active

cancer.

“Other uses of the D-dimer test are to help exclude a pulmonary embolism (PE), to guide decisions about the duration of anti-coagulation for DVT/PE, and to aid in the diagnosis of a blood abnormality usually seen in very sick patients, called disseminated intravascular coagulation (DIC),” explained Prof Cole-Sinclair.

She said trauma, recent surgery, infection, heart attack, cancer, liver disease, kidney dysfunction and pregnancy can elevate D-dimer levels as well.

“This means that it is very important that the D-dimer test is used and interpreted in the right setting to provide a clinically useful result.”

What are D-dimers?

A dimer is a molecule or molecular complex consisting of two identical molecules linked together. D-dimers are small fragments produced when a blood clot starts to dissolve in the body. They are made up of two ‘D’ fragments (cross-linked by an ‘E’ protein] from the breakdown of fibrin which is one of the main components of a clot. The ‘D’ stands for ‘domain’.

What is a deep vein thrombosis (DVT)?

- DVT is a medical condition that occurs when a blood clot (thrombus) forms in a deep vein, usually in the lower leg, thigh or pelvis, sometimes in the arm or rarely in other sites.
- It can happen to anyone (although there are recognised groups in whom it is more likely to occur), and can cause serious illness, disability and sometimes death.
- A very serious complication of a DVT is a PE. This occurs when a part of the DVT clot breaks off and travels through the bloodstream to the lungs causing a blockage, resulting in symptoms such as shortness of breath, chest pain, collapse or cardiac arrest.
- A patient can have a DVT but display no or minimal symptoms.

« Back to Home Page

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

ePathWay
THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

SEPTEMBER 2017 | PUBLISHED BY RCPA ISSUE #073

Cancer survivor now pitching for a more ethnically diverse bone marrow donor registry to help others find their perfect match

UR the Cure founder Pamela Bousejean knows first hand that finding a perfect stem cell match is harder than it needs to be. This is why she submitted six key recommendations to the Australian bone marrow transplant sector review focused on achieving a more ethnically diverse bone marrow donor registry.

“Our blood services do an amazing job, but I can see ways we can improve how donors from diverse backgrounds are recruited for the Australian Bone Marrow Donor Registry (ABMDR),” she explained.

Ms Bousejean had a lot of skin in the game. After her diagnosis of Hodgkin’s lymphoma she struggled to find a stem cell match in Australia because of her Lebanese background. An exhausting family-initiated public campaign finally led to a lifesaving cord blood transplant, and although she is now cancer free, Ms Bousejean is still fighting for the cause.

“Individuals put their own case out through the media, but we need a more strategic long-term solution. At present the only way bone marrow donors are screened and recruited is through the screening program for donating blood. That blanket approach works for blood donors, but not for bone marrow donors,” she said.

Ms Bousejean’s six key recommendations to achieve an ethnically diverse bone marrow donor registry are:

1. Establish a structure focused on and responsible for diverse donor recruitment that also has the ability to fundraise.
2. Implement cheek swab Human Leukocyte Antigen (HLA) testing as a matter of urgency (as another way people can join the ABMDR).
3. Maximise opportunities to recruit ethnically diverse bone marrow donors through blood donors at the Red Cross Blood Service.
4. Support and maximise patient drives as opportunities to drive diversification of the ABMDR.
5. Design and implement awareness and education programs targeted at ethnic and indigenous communities to proactively promote people joining the ABMDR.
6. Improve transparency and accountability of ABMDR diversification and performance.

Forensic Pathologist Dr Melissa Baker said these points all resonated with her because of her battle with Hodgkin's lymphoma.

"Pamela's submission is great, and all of the points she raises make complete sense. I am now in remission after joining a trial for a new drug, but I might still need a bone marrow transplant at some stage in the future."

Dr Baker describes her ethnicity as a bit of Italian mixed with some English heritage, and this is the ethnic mix she may need from a bone marrow donor in the future. Finding it may be a different story.

"A bone marrow transplant is the only potentially curative treatment option that I have because the drug that put me in remission is experimental. I don't know what will happen in the future, but I hope the registry will reflect greater ethnic diversity to make it easier to find my perfect match if I need to go down that path," she said.

Ms Bousejean said it's time to explore all the options available to achieve this outcome.

"There is so much we can do with the new screening tools available and the information sharing capacity of the digital age. For example, a HLA cheek swab is non invasive because there is no need to take blood. This means teams could visit large ethnic gatherings such as the Croatian Festival or an Italian or Greek festival where there are a lot of young people, and recruit donors at these types of events," she said.

"We can leverage what our incredible blood centres already do to start building an ethnically diverse bone marrow registry that reflects Australia's diverse population in the 21st century."

Dr Melissa Baker's story and UR the Cure are covered in the July 2015 and April 2014 editions of ePathWay.

« Back to Home Page

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au

ePathWay
THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA

SEPTEMBER 2017 | PUBLISHED BY RCPA ISSUE #073

NZ Blood Service gets hearts racing with its model service

Timing is everything, and the relatively young New Zealand Blood Service (NZBS) harnessed the power of the information age to set up a model service that is admired around the world.

Dr Richard Charlewood, Transfusion Medicine Specialist at NZBS, said the current service was set up in 1998 when inefficient hospital-based blood services were rolled into a single national organisation.

“The new service was set up to be efficient, and a key point is how integrated it is. We now have a single national blood service that is responsible for all blood components. It is also a vein-to-vein service. This means we have oversight of all blood components from the time they are taken from donors to the time they are delivered to recipients,” he explained.

Dr Charlewood said NZBS directly runs six of the country’s biggest blood banks, oversees all of the other blood banks in New Zealand, and offers a transfusion medicine advice service.

“This is a very efficient way to operate. For example, if a person has a certain red cell antibody, that information is entered into our system and can be found again easily, even if their blood was tested five years ago.

“Then, if we have a patient who needs a specific type of blood, we can find out if a donor with the matching type has a current donation anywhere in the country. This saves a lot of time because we don’t have to test multiple blood products to find the matching

blood."

The streamlined system also makes 'paper trails' a distant memory.

"For example, we culture platelets for bacteria, and as soon as the sample for this test is taken we deposit the platelets into the blood bank so they are available for use. The culture takes a few days, and if it is positive then the central computer shuts those platelets down from being issued no matter where they ended up around the country."

He said doctors also make full use of their integrated service. Any particular request from a doctor, such as for irradiated blood components, is immediately transmitted to every blood bank in New Zealand so patients needing special products are given the right ones every time.

"NZBS is actively involved in other types of donations as well. We run the Skin Bank and Bone Banks, Immunohaematology Reference Laboratory, National Tissue Typing Laboratory and participate in the International Rare Donor Panel. Because New Zealand has one of the largest populations in the world of Pacific Islanders, we find rare blood groups related to their ethnicity and freeze the red cells to supply our own country and the world. We also provide Stem Cell collection services and support the New Zealand Bone Marrow Donor Registry (NZBMDR)."

Dr Charlewood said the NZBMDR specifically targets donors with unusual tissue types in an international context, especially people of Maori ethnicity and unusual ethnic blends such as German and Pacific Islander.

Despite the utopian set up, Dr Charlewood said NZBS faces the same problems all blood banks face; matching demand and supply and keeping abreast of the changes in demand for particular blood products. However, this is a simpler equation when you are the only provider of blood, blood products and tissue typing services in the country, and have the opportunity to set up a model service during the information age.

« Back to Home Page

RCPA - Durham Hall - 207 Albion St Surry Hills NSW 2010 AUSTRALIA | (+61) 2 8356 5858 | www.rcpa.edu.au