July 2011
Issue No. 55

Quality Matters

The monthly newsletter of Hunter New England Health Clinical Governance

***Inside this Issue*:**

From the Director

Guest Editorial: Professor David Durrheim and Dr Carolyn Hullick

Clinical Unit in Ethics and Health Law Seminar

***Update is on ….*
Sepsis**

**In Profile….
Dr. Meredith Caelli
HNE Risk Manager (Clinical)**

Root Cause Analysis Review

Royal Newcastle Hospital Heritage Oration

Editorial Team
Dr Kim Hill, Professor Anne Duggan, Ms Barbara March, Ms Tracey Cambourn and Mrs Penny Plumridge

Comments and queries welcome:
clinicalgovernance@hnehealth.nsw.gov.au

From the Director…

Welcome to this month's *Quality Matters*.

The focus in this edition is on sepsis, its early recognition and management. At both state and national level, sepsis is emerging as a priority for improving patient safety and quality of care, and the work of HNE Health staff and of agencies such as the Clinical Excellence Commission are directed to important aspects of sepsis management.

There are also some great local professional development events happening in early August 2011, starting with the Royal Newcastle Hospital Heritage Oration on 3 August 2011 to be given by Professor Patrick McGorry – details of these events are included below.

Dr Kim Hill
Director Clinical Governance

Improving Sepsis Management through Reviewing Cases of Invasive Meningococcal Disease

<u>Guest Editorial</u> by Professor David Durrheim, Services Director, Hunter Population Health and Dr Carolyn Hullick, Director of Emergency Medicine, John Hunter Hospital

Invasive meningococcal disease (IMD) is the most common infectious cause of childhood deaths in developed countries. If IMD is not recognised early and optimally managed, a patient's condition may rapidly deteriorate with death or long-term severe disability. IMD occurs throughout the year but peak incidence is during winter and spring. The introduction of a vaccine against the C-serogroup has dramatically reduced the total number of IMD cases but Hunter New England still has approximately 14-20 IMD cases (mostly due to the B-serogroup) notified each year.

Since 2005 a multidisciplinary team from Emergency Medicine, Public Health, Paediatrics, Infectious Diseases and Microbiology, under the auspices of the Director Clinical Governance, meets regularly to review each notified IMD case. The purpose of this review is to identify opportunities for improving the management of severe sepsis cases in HNE Health. Following these review meetings, reports are provided to individual clinicians and services, and system improvements introduced as indicated.

Key recent findings include the:

- need to initiate appropriate antibiotic therapy as soon as the diagnosis of IMD is suspected;
- importance of alerting Public Health on clinical suspicion of IMD so that community clearance antibiotics can be initiated without delay;
- value of the most senior Emergency Department clinician reviewing a child who has presented more than once with the same febrile condition;
- role of meningococcal polymerase chain reaction (PCR) testing in defining the need for larger community Public Health responses.

More information on HNE Health review process and early findings can be found in the Journal of Public Health at: http://jpubhealth.oxfordjournals.org/content/32/1/38.full.pdf+html

Guidelines for the early clinical and public health management of meningococcal disease in Australia can be found at http://www.health.gov.au/internet/main/publishing.nsf/Content/BC329B583B663546CA25736D007674AA/$File/meningococcal-guidelines.pdf

QualityMatters

This Month's Update is on …. Sepsis

Delayed treatment of patients with severe infection and sepsis is associated with high mortality rates and high costs to the healthcare system. Effective antimicrobial administration within the first hour of documented hypotension is associated with the increased survival to hospital discharge in septic shock. It has been estimated that the mortality rate increases by 7.6% with every hour's delay in commencing antibiotic therapy in the first six hours after hypotension onset.

The Agency for Clinical Innovation (ACI) in partnership with the Clinical Excellence Commission (CEC) and the newly formed Emergency Care Institute have conducted a pilot project to improve the recognition of severe infection and sepsis and promote faster treatment for patients in the Emergency Department and the inpatient wards. HNE Health emergency clinicians were involved in the pilot program. Based on the evidence generated by the pilot study the CEC is now rolling out the statewide ***Sepsis Kills*** program, to train Emergency Department staff to recognise, resuscitate and refer for care where necessary.

In recent weeks Clinical Governance has started to work with the Clinical Excellence Commission to support clinicians and managers in smaller rural hospitals and multi-purpose services to ensure that a patient who presents with sepsis receives high standards of care. As with any patient deteriorating for any reason, recognition of sepsis is time-critical. However, a provisional diagnosis of sepsis can be notoriously difficult to make. For this reason the Clinical Excellence Commission Sepsis Pathway has been designed to lead the clinician in their decision making with the key message: *high risk or symptoms/signs of infection* **+** *two or more "yellow" criteria* **=** *sepsis until proven otherwise→ collect 2 sets of blood cultures, give immediate fluids and oxygen, and give antibiotics within one hour.*

For more information, including accessing the Clinical Excellence Commission Sepsis Pathway, see http://www.cec.health.nsw.gov.au/programs/sepsis or contact Associate Director Clinical Governance Associate Professor Rosemary Aldrich on 492 14935 or HNE Health Director of Immunology and Infectious Diseases Dr Mark Loewenthal on 492 23444 or Medical Director Primary and Community Network Dr Peter Finlayson on 67648047, or HNE Health Director Infection Prevention and Control Dr John Ferguson on 492 14473.

RECOGNISE · RESUSCITATE · REFER

Clinical Unit in Ethics and Health Law Seminar

The next CUEHL seminar will be held on Monday, 1 August 2011 in the Royal Newcastle Centre, Conference Room 1. Supper will be served at 6.00pm and the seminar will begin at 6.30pm.

The Theme of this month's seminar is *"Should major surgery be contacted in regional hospitals?". The seminar* will be presented by Professor David Morris, Chair of the Department of Surgery at St George Hospital Sydney.

The focus for this CUEHL session will be on issues relating to health resourcing. Whilst Dr Morris takes general surgery and trauma emergency admissions, his primary area of surgical practice is in hepatic surgery predominantly peritonectomy. Professor Morris will discuss 'Peritonectomy and other examples of volume/outcome relationships' to illustrate his case.

All are welcome to join us. There is no entry fee and no RSVP is necessary.

In Profile …..

Dr. Meredith Caelli
HNE Health Risk Manager (Clinical), Clinical Governance

Meredith has worked within Hunter New England Health since 1990, following her return from a two-year sojourn working in the United Kingdom and gaining post-graduate qualification as a Burn & Plastic Surgical Nurse. In 2010, Meredith completed her Doctoral studies at the University of Newcastle and was very pleased to graduate earlier this year.

During her time in HNE Health Meredith has worked in Infection Control, Public Health, Disaster Management (Biopreparedness). Since 2005 Meredith has been a member of the Clinical Governance team, in the role of one of the Patient Safety Officers.

Meredith has recently been appointed to the role of HNE Health Risk Manager (Clinical) and is looking forward to working with staff regarding the practical issues of risk management and the ongoing challenge of improving patient safety within HNE Health.

Should anyone require further information regarding Risk Management they can contact Meredith on 02 65719267, or view the HNE Health Intranet Risk Management site at: http://intranet.hne.health.nsw.gov.au/cg/risk_management

This Month's Root Cause Analysis Review

Do we consider Sepsis as a differential diagnosis early enough?

Following preoperative assessment a patient underwent planned liver surgery followed by an uneventful 24 hour post-operative period. On Day 2 post surgery, the patient's temperature rose to 38.1 degrees Celsius and a medical review was undertaken. On Day 4 post surgery, the patient had an elevated white blood cell count (15.8 where normal range is 4 – 11).

At 15:00 on Day 6 post surgery, the patient complained of central rib pain, dizziness, drowsiness and shortness of breath and a medical review was requested. On assessment the patient's observations were abnormal with an increased heart rate (146 beats per minute) respiratory rate (38 breaths per minute) and temperature (T 38.4 degrees Celsius) and a blood pressure of 150/90 mmHg. The patient's oxygen saturation had decreased to 92% on room air and a chest x-ray was taken.

At 01.15 on Day 7 post surgery, the patients temperature was further elevated (39.0degrees) and at 06:00, blood and urine cultures were taken and intravenous antibiotic therapy of gentamicin 320mg and benzylpenicillin 1.2grams were administered for the management of possible sepsis,. The chest X-ray taken on Day 6 post surgery had showed some consolidation in the lower section of the right lung (possible pneumonia) and a further chest x-ray showed consolidation in the base of both lungs. At 18:00 an infectious diseases specialist noted that the previously collected blood culture showed gram-positive bacteria. The addition of vancomycin was suggested if the result was considered to be clinically significant and this recommendation was communicated in the notes.

At 08:00 Day 8 post surgery, the antibiotics were changed to flucloxacillin in light of the first blood culture results which showed staphylococcus aureus. At 20:30 the patient further deteriorated and the Medical Emergency Team (MET) was called and the patient was transferred to the Intensive Care Unit for ongoing management. On arrival, the patient's heart rate slowed and he lost consciousness. Cardiopulmonary resuscitation was commenced however the patient was unable to be resuscitated and died.

The RCA team concluded that when the patient had an increased heart rate, raised temperature and decreased oxygen saturations on Day 6 post surgery, sepsis would have been an appropriate differential diagnosis. A fifteen hour delay in the commencement of intravenous antibiotic therapy adversely impacted on the patient's outcome. The RCA team recommended that clinicians be more aware of the importance of considering sepsis as a cause of deterioration and that the new Clinical Practice Guidelines for the management of Fever and Sepsis HNEH_CPG_10_07_Fever_and_Sepsis_in_Adults.pdf be implemented across HNE Health.

Newcastle Hospitals in the Spotlight – Professional Development Events from 3 – 5 August 2011

Three events celebrating past, present and future achievements in local healthcare will be held next month:

- Royal Newcastle Hospital Heritage Oration – Wednesday 3 August 2011, 6.30pm-8.00pm
  Leading international researcher, clinician and advocate for mental health reform, and Executive Director of Orygen Youth Health Professor Patrick McGorry will deliver the Royal Newcastle Hospital Heritage Oration on ***Mental Health in Australia – a 21st Century Approach.*** This public lecture recognises the legacy of the Royal Newcastle Hospital and honours its role in the improvement of healthcare for the Hunter Valley and beyond. There is no entry fee and RSVP is not necessary.
- John Irvine Hunter Memorial Lecture, Thursday 4 August 2011, 12:30-1:30 pm
  The John Irvine Hunter Memorial Lecture ***Disasters and Other Catastrophes*** will be presented by Professor Beverley Raphael, Professor of Psychological and Addiction Medicine Australian National University, Professor of Population Mental Health and Disasters University of Western Sydney, and Emeritus Professor of Psychiatry University of Queensland.
- Newcastle Hospitals Congress – Friday 5 August 2011
  The theme for the 2011 Newcastle Hospitals Congress is ***From Discoveries to Therapies in Neuroscience.*** The Congress and the following events held in conjunction with it are an opportunity to showcase the work of clinicians and researchers in the fields of mental health and neurology, and in particular to celebrate the achievements of the Priority Research Centre for Brain and Mental Health Research. The Congress will feature educational sessions from a range of HNE Health staff and visiting specialists. Registration is required for the Congress to ensure seating, but bookings are free.

For more information about these events, please go to
http://intranet.hne.health.nsw.gov.au/__data/assets/pdf_file/0010/85294/Newcastle_Hospital_Congress_Interactive.pdf

ROYAL NEWCASTLE HOSPITAL HERITAGE ORATION

THE UNIVERSITY FOUNDATION

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

You are invited to attend the **Royal Newcastle Hospital Heritage Oration** **Mental Health in Australia – a 21st century approach** presented by Professor Patrick McGorry, Executive Director of Orygen Youth Health (OYH). The oration is held in conjunction with the 2011 Newcastle Hospitals Congress.

WHERE Royal Newcastle Centre Lecture Theatre, John Hunter Hospital Campus

WHEN Wednesday 3 August 2011

TIME 6.30 pm* to 8.00 pm

Open to the Public - RSVP is not required
Members of the public can access visitor car parks 2 or 6

**Light refreshments will be served prior to the lecture at 6.00 pm in the Food Court located on Level 2*

INVITATION

About the Royal Newcastle Hospital Heritage Trust

From 1817 until 2006 the Royal Newcastle Hospital and its predecessors served the health care needs of the people of Newcastle and surrounding areas and trained and supported thousands of health care workers. This recognition led many to express the desire to commemorate the memory of “The Royal”. In view of these wishes, The Royal Newcastle Hospital Heritage Trust was formed. This non-profit organisation aims to perpetuate the memory, values, and achievements of the Royal Newcastle Hospital. These values were:

- The welfare of the patient is the first consideration
- A critical and questioning approach to healthcare delivery
- Cost effective delivery of service
- Services delivered in a safe and efficient environment
- A genuine concern of the wellbeing of health care staff

With the support of HNE Health and The University of Newcastle the goal of the ***Royal Newcastle Hospital Heritage Trust*** is to annually award, on the basis of innovative and outstanding performance in health scholarship, clinical achievement, and/or research relevant to at least one of the values for which the Royal Newcastle Hospital was known, a scholarship for an academic leader of any discipline to visit and impart their knowledge through a speaker’s tour.

The perpetual Trust will serve as a legacy to the values of Royal Newcastle Hospital and honour the role it played in the improvement of healthcare for the people of Newcastle, the Hunter Valley and beyond.

For more information on the Trust go to:
http://intranet.hne.health.nsw.gov.au/cg/royal_newcastle_hospital_heritage_trust