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The journal for members of ACAP

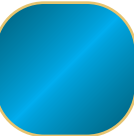
Scotland Leading the way for Acute Care Practitioners



ACAP Scotland is a new and exciting network that will enable all acute care practitioners to register as members allowing provision for bi annual forum events. These events will host guest speakers, work shops, master classes and the opportunity for discussion on topical subjects. Most importantly the forum will facilitate educational and professional development.

Members will also be entitled to quarterly newsletters and unlimited ACAP web site access

Acute care practitioners in Scotland have never had until now:



- ⇒ The privilege of having an arena to showcase areas of good practice,
- ⇒ The opportunity to bench mark other practices throughout Scotland,
- ⇒ A national opportunity for education
- ⇒ And most importantly have their voice heard.

Now with the onset of ACAP forum Scotland all this will be possible.

Mission Statement

The purpose of the forum is to promote and develop the professional role of the acute care advanced nurse practitioner in partnership with stakeholders, in order to advance the quality of care delivered to patients and clients.

ACAP Scotland Leading the way

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• www.acapscotland.org •

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NEWS....NEWS... ACAP

To receive a copy of future ACAP publications please email elaine.headley@gmail.com or jsmith53@nhs.net

News in brief

A big thanks to all the speakers who took part in ACAP's first conference. All of the contributions made sure the day was a great success. Additionally a big thanks to all of the members who took the time to attend. We know many of you who travelled quite some distance to be there and your support is very much appreciated.

Comments from Nicola Sturgeons' office:

'I am delighted with the progress and commitment you and your colleagues have shown towards your profession and those you provide care for. We have taken note of the ACAP website and will be happy to work with ACAP as a reference group for future Scottish Government consultations. I hope the ACAP continues to prosper and that we have the opportunity to work with you in the future'. Yours sincerely John Petrie

WoS advanced practice group

ACAP now has formal representation on the West of Scotland advanced practice group. This group meets 3 times a year. Each of the Health Boards in the West of Scotland is represented as well as the four universities and NES. The group reports directly to the WOS Nurse Directors and Academic Heads Professional Network. The aim of the group is to influence the direction, homogenisation and development of advanced practice across the West of Scotland.

What's next?

The ACAP committee are currently working on the program for the next conference. We have listened to all of your comments from the last conference and there are now more practitioners involved in speaking & presenting at the next event. ACAP can now confirm that the next forum conference will be on March 2nd 2012 Venue: Murrayfield Rugby Stadium, Edinburgh. Further details will be available on the web site. The programme is currently being compiled, but it is certainly set to be a packed day and even better than the June event.

Get involved:

ACAP will be looking for posters for all forum events, so why not take this opportunity to showcase your work. Additionally we continue to welcome journal articles, case studies and educational pieces for the web site. If anyone would like the opportunity to showcase their work at any of the forums by way of a lecture, we would be delighted to accommodate. ACAP is a forum for advanced practitioners by advanced practitioners. We hope to see more practitioners sharing best practice and becoming empowered to lecture/write articles/design posters.

Online payment

ACAP are having some technical difficulties with online payment methods, so in the meantime forum events will continue to be paid by cheque, please bear with us, we hope to have this rectified as soon as possible.



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High Fidelity Simulation in Advanced Nurse Practice Education

Dr Graham R. Nimmo Consultant Physician in Intensive Care Medicine and Deputy Director, Scottish Clinical Simulation Centre

Introduction

Much of advanced practice involves clinical reasoning, critical thinking and clinical decision making. These are often practiced in busy clinical environments which abound with handovers, interruptions, uncertainties and pressures of time and task. In order to replicate some of these environmental factors in real time clinical scenarios, but incorporating the opportunity of detailed debriefing supported by a video recording of the action, high fidelity patient simulation has been used. This article describes how these elements have been synthesised into a variety of courses for advanced practitioners delivered at the Scottish Clinical Simulation Centre.

Background

A sophisticated, life-size mannikin which breathes, blinks, moves and talks is the centrepiece of the Scottish Clinical Simulation Centre (SCSC). It is a state-of the-art multi-professional training facility and the sole high fidelity simulation centre in Scotland. The centre provides training for over 1000 healthcare professionals each year through a variety of courses. The centre utilises both METI and Laerdal simulators including adults, children and babies and the simulation suite can be transformed into a ward area, maternity unit, emergency department, intensive care unit, operating theatre, dental surgery or general practice environment to allow great flexibility in the scope of simulation provided. The simulator provides the closest situation to the real thing without any risk to patients or learners, so that healthcare professionals can rehearse management of both routine and less common, life-threatening, events.

Using advanced technology and a one-way mirrored control room, as well as a radio link with the instructor, the simulators can be utilised to mimic different clinical conditions. The appropriate physiological response to particular interventions and drugs can be reproduced. Real monitors display the 'patient's' vital signs so that participants can assess the patient's progress and response to support and treatment - as they would in a real-life situation. Audiovisual equipment allows all training scenarios to be recorded with the ability to

playback the recordings to help reflection during debriefing by a faculty of experienced centre staff.

Simulation and advanced practice in Scotland

Nearly 600 nurses in a variety of advanced roles have attended training at SCSC over the last 7 years. The majority of these days have been embedded into courses which the individuals are undertaking or are aligned with annual training and CPD in the workplace. Information on the learner's background, knowledge, experience, situation and environment, as well as detailed knowledge of the syllabus or curriculum, is key to the development and integration of the simulation component. Learning objectives are defined by the simulation expert and clinical subject matter experts. These can be classified as core pre-determined goals and related to syllabus and opportunistic objectives which surface 'on the day' requiring on the hoof in course modifications. All of these objectives can then inform the construction of the individual learner's post-course personal development plan.

The simulation component therefore requires faculty and students to be involved in pre-course preparation. On the day individual learners will then engage in real time simulated clinical scenarios whilst the rest of the group observe live by video link. Once the scenario has concluded all learners and faculty gather in the classroom where debriefing utilising the scenario recording takes place. Most attendees rate this the most useful element of the learning experience. The debriefing allows immediate reflection and is intended to stimulate critical thinking. Here are several examples of how it works.

Recognition, Assessment, Management of the Acutely Ill Adult

This six month, masters level module based in Glasgow Caledonian University and co-ordinated by Mark Cooper at Glasgow Royal Infirmary is designed to prepare the learner working in the acute care setting to manage the acutely unwell patient through processes of assessment, diagnosis, care management and evaluation. Many of the participants are Advanced Nurse Practitioners within Hospital at Night teams and other in- patient acute care areas. The syllabus includes initial management of common conditions such as respiratory and cardiac problems, the hypotensive patient and the patient with a deteriorating level of consciousness; clinical skills including Advanced Life Support, chest drain insertion and non-invasive ventilation; autonomy and initiative; decision making and clinical judgement; delegation and communication. The simulation component comprises one day near the beginning of the module and a return visit towards the end.

The learning objectives listed below show how the simulation learning aligns to the rest of the module: The recognition and initial assessment of the critically ill medical patient: simulation day 1

A. Generic

Encouraging reflection on practice through focused debriefing on performance.

Identification, on an individual basis, of areas of learning need and specifics of personal & professional strengths

B. Specific

Exploration and enhancement of the recognition, assessment and management (RAM) of the acutely ill adult.

Broadening thinking about, and experience of, clinical diagnostics.

Surfacing the complex nature of clinical decision making including the factors which influence it.

The elements of the debriefing include technical skills, context, affect and non-technical skills. This latter includes clinical decision making, team working, critical thinking, communication, task management and diagnosis. Discussion on physiology, pathophysiology, pharmacology, therapeutics and the natural history of diseases is interleaved with teaching on cognition and behaviours.

Advanced Critical Care Practitioner Training (Lothian)

This novel advanced practice development combines a robust academic approach with a rigorous clinical programme which is targeted to both the service requirements and the participants' learning needs. The curriculum, learning objectives and assessment processes have all been aligned to the Advanced Practice Toolkit (NHS Education for Scotland www.advancedpractice.scot.nhs.uk) and to the Department of Health Framework for Advanced Critical Care Practitioners March 2008. The identified learners follow an apprenticeship model with a designated clinical supervisor. They undertake a planned, systematic, modular teaching programme including all core subjects aligned to intensive care. In conjunction with this programme a number of themes will be interwoven through the programme. These overarching themes will be integrated into each of a series of master classes. Two of the masterclasses are delivered in the SCSC and the content aligned to.

- Patient Safety
- Clinical Leadership
- Clinical Governance
- Communication
- Radiology
- Pharmacology and prescribing
- Relevant surgical procedures
- Clinical reasoning, cognition, decision making
- Legal and ethical issues
- Learning and teaching
- Professionalism

Extracorporeal membrane oxygenation

Extracorporeal membrane oxygenation (ECMO) is a form of life support used when conventional management with

mechanical lung ventilation is failing. Depending on the type of ECMO support utilised, it can provide temporary lung support in neonates and children with respiratory failure (usually veno-venous access) and cardiac support (veno-arterial access) particularly around the time of corrective cardiac surgery. Unlike cardio-pulmonary bypass during cardiac surgery, ECMO support is usually provided for a number of days or even weeks. It is essential that this intense and relatively complex form of life support is free from potentially avoidable adverse incidents. We developed a course for multiprofessional training in critical incident management during an ECMO 'run' using clinical event scenarios and based on the high fidelity patient simulator. The Glasgow ECMO educational programme for ECMO nurse special-ists consists of:

1. A five-day foundation course.
2. A period of supervised practice and competency package
3. Practical 'water drills' with the circuit, including basic and emergency sessions
4. Up-date training days
5. Annual examination

The simulation component was developed to run annually as part of this cpd package.

Conclusion

High fidelity simulation in the national Scottish Clinical Simulation Centre has supported and enhanced learning for advanced practitioner university based modules and courses as well as integrating into annual clinically located teaching programmes (and there are many more examples from around the country). The melange of practical hands on patient management with the supported debriefing on multifaceted aspects of the secenario from metacognition to patient safety appears to ideally suit learning for advanced practice, particularly when it is team based.

Reading

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Nimmo GR, Shippey B. Practice Teaching in Anaesthesia and Intensive Care. In: Practice Teaching Eds Smith A, Mckaskill H, Jack K. 179-184. palgrave macmillan 2008.

Nimmo GR, Fox-Robichaud A. Education and Simulation Techniques for Improving Reliability of Care. Current Opinion in Critical Care 2007; 13:737-741.

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Photography - David Stirling - toomanycolours.co.uk

INTRODUCTION OF TRACHEOSTOMY INTEGRATED CARE PATHWAYS ACROSS NHS LANARKSHIRE

Joyce Cairney CNS NHS Lanarkshire

Acknowledgement: For their help and cooperation in achieving the success of this ICP I would like to thank Patricia Kent, the ICP manager, Suzanne Burns staff nurse from the intensive care unit Wishaw General Hospital and the staff from ward 9 Monklands hospital, NHS Lanarkshire

INTRODUCTION

This article will demonstrate how a clinical nurse specialist influenced an organisational change shortly after taking up post within NHS Lanarkshire. This change, although still undergoing audit, has to date identified improvements in patients with tracheostomies both in primary and secondary care.

Background:

Accepting the position of clinical nurse specialist in tracheostomy care in early 2009 seemed like a natural progression from my years of experience working in ENT and maxillary facial.

In recent years there has been a significant increase in the number of patients requiring tracheostomies; therefore the organisational infrastructure within NHS Lanarkshire recognised that it was impractical for all of these patients to be cared for in the ENT ward.

Heathfield et al (1999) found a knowledge deficit in tracheostomy care amongst nurses in general wards. Additionally Russell (2005) identified that the inability to care for a tracheostomy is a significant factor in readmission of a patient to the intensive care unit.

As a result of a fatal accident inquiry in 2003, from which the demise of a patient resulted from a blocked tracheostomy tube, NHS Lanarkshire established a steering group to examine the need to formalise an integrated care pathway (ICP). This would ensure safety for patients with tracheostomies and facilitate good governance by means of ensuring quality of care. The decision from these meetings resulted in the introduction of the initial document design. Subsequently this document was rolled out in draft form and a pilot study was undertaken within the wards where patients with tracheostomies were being cared for.

This pilot identified a range of issues essentially regarding the emergency algorithms. Evaluation identified this as ambiguous and confusing in its

meaning to the staff. Unfortunately, at this time the tracheostomy steering group held several meetings before it dissolved and the ICP was never formally implemented.

As a result of my new position I inherited the abandoned attempts at instigating the ICP. It was still recognised as an important and essential change to patient care, but I needed to examine ways of ensuring the success of a second attempt at this change.

Organisational change can be described as numerous individuals undergoing a similar change process at the same time (Writh 2004). However for the essence of how I achieved the changes that were necessary to ensure the success of implementing the new integrated care pathways, I considered the benefits of Kotter's 8 step process for leading change (Kotter 2009).

Implementation of the ICP success was essential on this occasion; therefore I was confident using Kotter's approach would help me facilitate this. Change goes through a variety of processes or steps. Whether this is Lewin's change theory cited by Schein (1995) or Schein's theory (1999), or Kotter (2009), it can be safe to stipulate that change just doesn't happen. To use Kotter's 8 step approach I could utilise this ideology.

Step 1—allowed me to identify with the need, and from history of the previous group understand the problems, but also the benefits.

Step 2—I was able to form a coalition and entered into discussions with staff from the 3 intensive care units across NHS Lanarkshire

Step 3—I was able to share the vision of the benefits of implementing the ICP and discuss the changes that had to be made with the original algorithm.

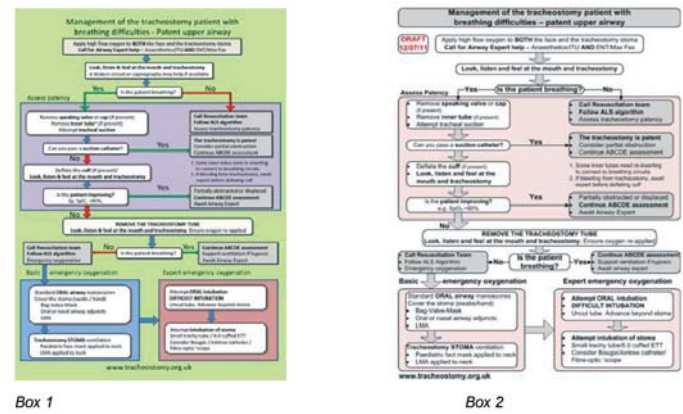
Step 4—The information collated at the 'new' steering group meeting was cascaded to all those that had input in the care of tracheostomy patients. This was achieved by various methods, for example, emails, ward meetings, education at continued professional development meetings (CPD), and drop in sessions. All of these efforts brought about success in cascading developments to all the right members of staff.

Step 5—through all of this collaboration the original problems with the algorithm was redesigned and then redistributed.
Step 6—Positive feedback was given to all involved in their input to this change, which resulted in staff feeling involved and appreciated for their efforts.

Step 7—As a result of the success of the new implementation of the ICP, new operational policies had to be activated, to ensure that this was now an integral part of the care of patients with tracheostomies.

Step 8-- Linking the organisational change with a change in behaviour of the staff involved is the acceptance of the ICP across NHS Lanarkshire.

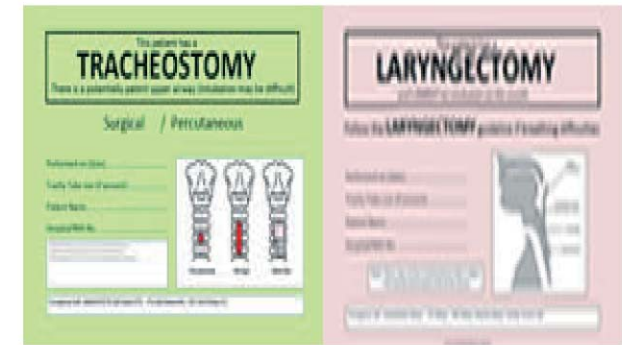
The changes that were implemented in the new documents and algorithm are now operational. Fundamentally the use of 'The North West Tracheostomy Safety Project' (2009) (box 1). This promotes the use of one algorithm as opposed to three different algorithms. Much of the new NHSL algorithm was mirrored on this framework (Box 2).



Box 1

Box 2

Additionally the new steering group prompted the use bed head signs which enabled staff know if the patient has a tracheostomy or laryngectomy (box 3). This is currently under being piloted at Monklands hospital and if successful should then be expanded across the three sites within NHS Lanarkshire. Again in keeping with good governance this is a pilot study and will also be audited and the outcomes measured to identify an improvement in tracheostomy care.



Box 3

Conclusion.
Revisiting a crucial development for the improvement in tracheostomy care of patients was a daunting undertaking. This was made more difficult as I was new to the post and had to come to terms with my new roles and responsibilities. However recognising the need was as equally important to me, therefore I felt it was not something that could be left unfulfilled. Appreciating that change has to go through a certain process definitely facilitate me in preparation to ensure the success of this change in its second attempt. Measuring the outcome of success has to be more than anecdotal; therefore further evaluations of the new algorithms will still be undertaken. This will comply with governance and meet the Scottish Patient Safety Programme (SPSP 2007) needs by gathering evidence of quality in care.

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Heathfield, S. et al (1999) Tracheostomy management in ordinary wards British Journal of Medical Medicine 60:4,261-262

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Schein, E. H. (1999). The corporate culture survival guide: Sense and nonsense about culture change. San Francisco: Jossey-Bass Publishers. Scottish Patient Safety Programme (2007) [online] available [accessed] August 2011 <http://www.patientsafetyalliance.scot.nhs.uk/programme>

Wirth, R A. (2004) Organizational Change through Influencing Individual Change: A behaviour centric approach to change [online] available [accessed] August 2011 <http://www.entarga.com/orgchange>

ACAP Scotland has just celebrated its first year and has recently enjoyed its first forum event, at Kirkland’s Medical Centre, Bothwell.

This event endorsed ACAP's objectives by means of lectures, master-classes and the opportunity for practitioners to network with colleagues.

OBJECTIVES: • To provide a platform for sharing evidenced based practice. To provide a link between Acute Care Advanced Practitioners (ACAPs) and major stakeholders. To provide an arena for networking. To provide ACAPs with a “voice”. To provide an opportunity for education Evaluations (full evaluation analysis will shortly be available on the web site at www.acapscotland.org and in the next edition of The Advanced Nurse Practitioner) have proven extremely positive. This has motivated and encouraged the ACAP committee to continue on in the same vein. It is evident that practitioners have found this forum beneficial for education, networking and

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Scotland Leading the way for Acute Care Practitioners



sharing of best practice. Some of the comments are shown below:

“Very enjoyable and useful day, Gives me encouragement to continue on this journey”

“Think you managed to deliver a very good mix of speeches/sessions and would like to see similar mix at future events”

“Excellent conference, definitely added value to any advanced practitioner”

The next forum event is March 2nd 2012 Venue: Murrayfield Rugby Stadium, Edinburgh. Poster presentations are welcomed.



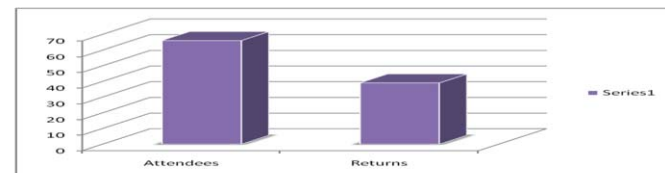
Suggestions :

- Political/Ethical/legal awareness : ACTION – FAI lecture planned for next forum event
- Clinical Updates : ACTION – Clinical updates will be present at all forum events
- Succession Planning : ACTION – Questionnaire to be sent to all ACAP members, feedback planned thereafter, updates from appropriate bodies as developments arise – via WEB and lectures at forum events
- Anti-Coagulation
- Non Medical Prescribing – any topics : ACTION – Inclusion of prescribing issues/updates to be included in future events. Masterclass on haematological/liver conditions – identifying their effect on the coagulation system
- Clinical Supervision : ACTION – This may be difficult to organise given the number of delegates that attend the events, however it is something we may look at for future
- ANP Presentation – Advanced Practice
- More ANP experiences / achievements/ sharing of good practice
- ANP and improvement in outcomes
- More ANP speakers
- How are we measuring outcomes : ACTION – Encourage more ANPs to deliver lectures, continued networking, sharing of best practice via web and journal. Discussions with major stakeholders re outcome measures with feedback to ACAP members. Provision of networking opportunities for ACAP members to express their experiences through forum conferences and online BLOGs.
- Masterclasses – Various subjects
- Interactive case study masterclasses
- Group discussions : ACTION – Masterclasses planned for each forum event, presenters encouraged to deliver in an interactive manner, allowing for discussion within the group
- Stands relevant to secondary care settings : ACTION – REPS relevant to secondary care approached for next forum event
- Shorter Lunch, could water/juice be available : ACTION - Times and catering taken into account by committee when planning next event
- Regulation : ACTION – regular updates via web and forum events as they become available
- Monitoring and treatment of ARF : ACTION – Masterclass on renal failure planned for next event
- Organ Donation : ACTION – Planned for a future further event
- Handouts or email presentations : ACTION – Presenters approached for presentations – will be made available on the WEB site

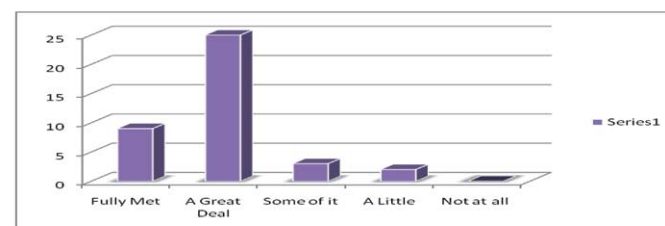


Forum Event Feedback – 24th June 2011

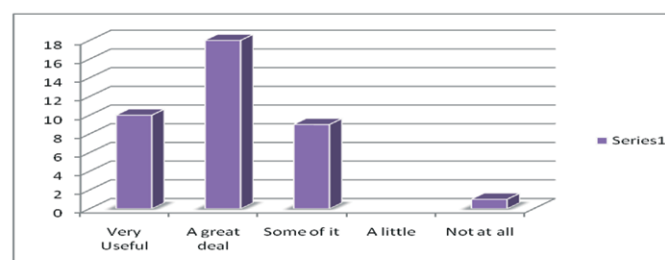
The ACAP Scotland first forum event at The Medical Education Centre, Kirklands Hospital, Bothwell attracted 69 attendees, 39 (59%) of these attendees were kind enough to leave feedback on the day by means of an evaluation form. All responses have been treated in strict confidence.



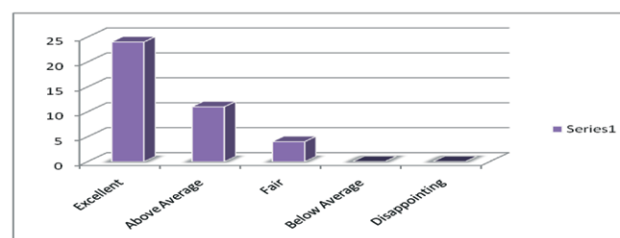
1. Has today raised your awareness and improved your understanding of the issues discussed and demonstrated?



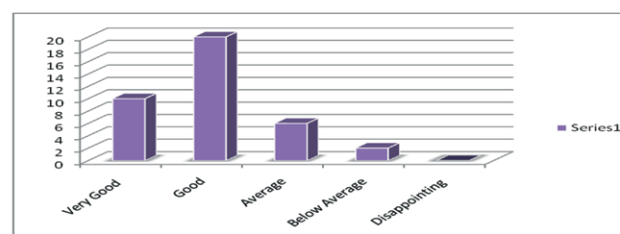
2. Did you find the poster presentation and stands useful and interesting



3. How did you find the venue



4. How was the catering



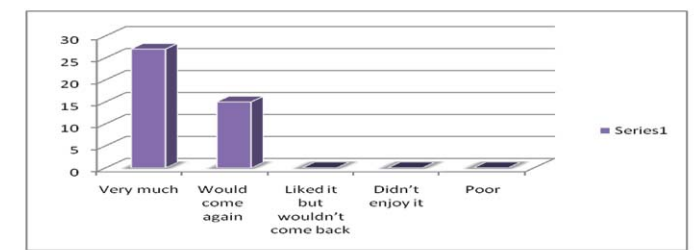
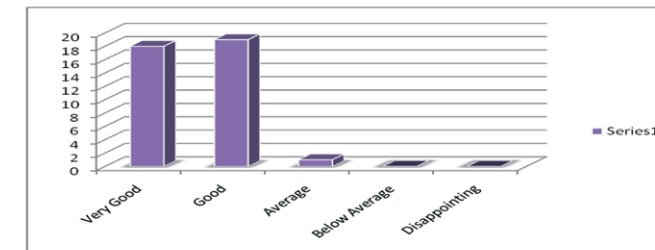
The ACAP committee are currently working on the program for the next conference. We have listened to all of your comments from the last conference and there are now more practitioners involved in speaking and presenting at the next event.

ACAP can now confirm that the next forum conference will be on **March 2nd 2012**
Venue: Murrayfield Rugby Stadium, Edinburgh.

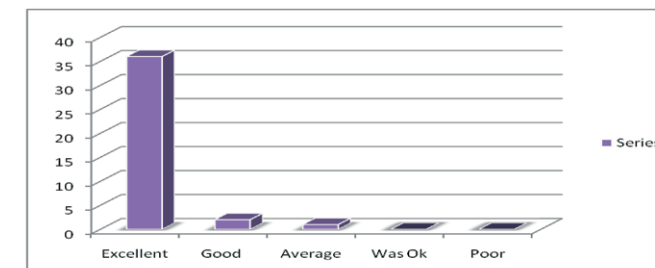
Further details will be available on the web site. The programme is currently being compiled, but it is certainly set to be a packed day and even better than the June event.

5. Feedback on Speakers

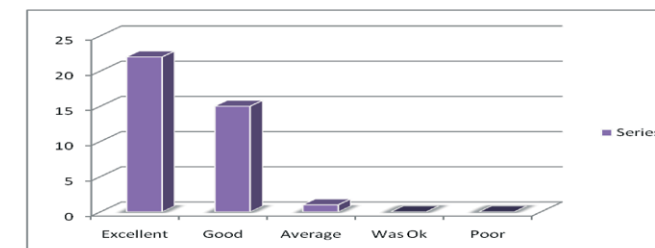
Maggie Grundy – Advanced Practice, Past Present and Future



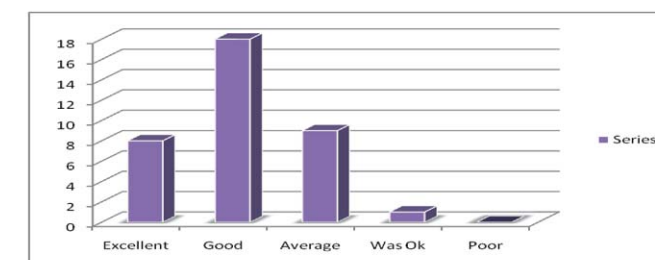
Penny Taylor – Leadership



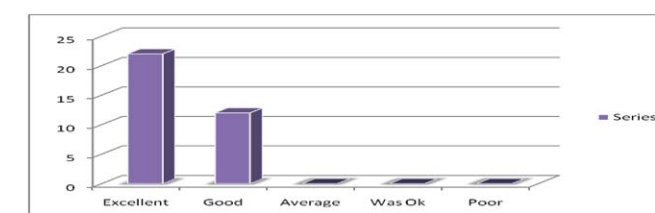
Douglas Allan – Politics of Advanced Practice



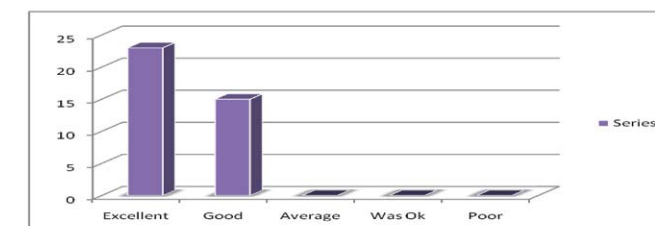
Michael McLaughlin – Management of Septic Shock – Masterclass



Steve McCormick - Antimicrobial Management – Transforming Policy into Practice. Masterclass



Gillian McNaughton – Head Injury Assessment



6. Overall did you find the forum conference worthwhile

Comments

- Excellent conference, definitely added value to any advanced practitioner
- Think you managed to deliver a very good mix of speeches/sessions and would like to see similar mix at future events
- Very enjoyable and useful day, Gives me encouragement to continue on this journey
- Huge amount of time and effort would have been put into the organisation/periodical and conference – so well done
- Good mix of policy and clinical. Penny Taylors presentation was fantastic
- Excellent Day – well done
- Good variety of subjects
- Thought provoking and inspiring day
- A bright engaging and professional day, thoroughly enjoyed it
- Look forward to future events
- Thoroughly enjoyed the day, continue with the same

Suggestions

- Political/Ethical/legal awareness
- Clinical Updates
- Succession Planning
- Anti-Coagulation
- Clinical Supervision
- ANP Presentation – Advanced Practice
- Masterclasses – Various subjects
- Stands relevant to secondary care settings
- More ANP speakers
- Shorter Lunch, could water/juice be available
- Regulation
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- Monitoring and treatment of ARF
- Organ Donation
- ANP and improvement in outcomes
- Interactive case study masterclasses
- Handouts or email presentations
- More ANP experiences / achievements/ sharing of good practice
- How are we measuring outcomes
- Group discussions

Case study : Transfusion Related Acute Lung Injury (TRALI)

David Hunter – Advanced Nurse Practitioner – Ayrshire & Arran Health Board

Situation

ATSP by nursing staff

Found to be: pyrexial, tachypnoeic, desaturating, post transfusion - 2 units.

MEWS score 4

Background

- Acute onset dyspnoea
- Pyrexia
- Tachypnoea
- Desaturated
- Increased anxiety/agitation
- Admitted 5/7 with chest sepsis and for treatment for CLL (Chronic Lymphocytic Leukaemia).

Being treated with itraconazole and ciprofloxacin for an established chest sepsis and isolated due to being neutropenic. Had a severe reaction two days previously to Retuximab (a targeted chimeric monoclonal antibody therapy)

(Monoclonal antibodies recognize and lock onto a specific protein on the surface of cancer cells. this protein CD20 is found on the surface of B-lymphocytes. As well as being found on the surface of normal B-cells, CD20 is also present on most of the abnormal B-cells which occur in many types of non-Hodgkins lymphoma and on some of the abnormal B-cells found in CLL.)(Keating 2010).

During this incident the patient required steroids, bronchodilator and antihistamines.

PMH

- CLL (stage IV)
this is the most common type of leukemia in the Western world, CLL increases with age; 75% of cases are diagnosed in patients > 60 yr. CLL is twice as common in men. CLL involves mature-appearing defective neoplastic lymphocytes (almost always B cells) with an abnormally long life span. The peripheral blood, bone marrow, spleen, and lymph nodes undergo leukemic infiltration. Symptoms may be absent or may include lymphadenopathy, splenomegaly, hepatomegaly.(Elphee 2007)

- Prostate Ca
- Thyroidectomy
- CKD stage 4

Assessment:

Airway

- patent,able to converse in short sentences
- Trachea central

Breathing

- RR 24
- Spo2 87% on 10 litres Fio2
- AE reduced to R base
- Auscultation:- Widespread, bilateral coarse crackles
- Expiratory wheeze
- Abdominal breathing and other accessory muscle use evident
- Very distressed and anxious

Circulation

- BP 128/54
- HR 106 reg
- Temp 37.9
- Diaphoretic
- Flushed
- No pedal / sacral oedema
- JVP not visualised
- Urinary output in keeping with patients normal
- Chronic AKI picture - no urinary catheter in-situ
- CRT normal
- ECG ST no acute ischaemic changes noted
- HS 1+11+0 , no added sounds detected
- IV access, no fluids at time of assessment

Disability

- AVPU
- GCS 15/15, cranial nerves II –XII intact
- Blood glucose 5.8

Exposure

- No obvious rash, generalised or specific to indicate allergic or anaphylactic response
- Swelling – observing for angioedema and urticaria which are similar in many ways and can co-exist and overlap
- No signs of haemorrhage , PR/PU/PV, gross bruising
- Abdo , soft , non peritonitic with;
- +ve BS
- No guarding
- No rebound tenderness
- Liver enlarged— in stage IV CCL - hepatomegaly is an expected sign
- No other liver signs e.g. spider naevi, caput medusae, ascites, jaundice, flap, observed
- Spleen, not felt on palpation, in the late stages of CLL, splenomegaly may or may not be present.
- Calf's soft , equal in size and non tender

Bloods

- Hb11.1(post transfusion)
- WCC 19.1(had been raised being treated for chest sepsis)
- Platelets 14

- Neutrophils 0.3
- Lymphocytes 5.5
- CA 1.87
- ADJ Ca 2.01
- PHOS 2.10
- Urea 26.3[Known CKD stage 4]
- Creat 258[a/a]
- Na+ 139
- K+ 4.7
- Chl107
- CRP 77
- ALP 83
- AST 35
- ALT 36

ABG

- H+ 38
- pO2 7.5
- pCO 2 2. 3
- Sa O2 88%
- Bic 15.
- BE - 8.2
- pO2 7.5 Type1- respiratory failure is the picture you would expect to see in a patient with ALI (Acute Lung Injury)

- PCO2 2. 3 - this patient had become acutely dyspnoeic and hyperventilat-ing, leading to hypocapnia

- Bicarbonate 15 Known CKD 4 (Hennessey ,2000)

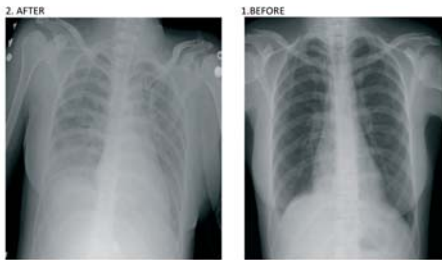
Impressions/Differential Diagnosis

SOB/Hypoxia secondary to:

- ?PTE
- ?Circulatory overload
- ?Worsening pneumonia
- ?Anaphylactic reaction to transfusion

Intervention

- ABG
- Bloods , including blood cultures
- CXR
- Nebulised with 2.5 mg of salbutamol
- Furosemide 40mgs IV
- Titrate O2 to maintain saturations >92%



- BEFORE; normal PA chest xray.
- AFTER;
 - Chest x-ray reveals diffuse bilateral patchy alveolar infiltrates, this is characteristic appearance of severe ALI.

- Classically normal cardiac silhouette although magnified over the mediastinum due to (AP view) and patient rotation. The clavicles are projected high into and above the apices. The ribs appear somewhat distorted.
- The patient is rotated making interpretation difficult. It may be difficult to know if the trachea is deviated. It is difficult to comment accurately on the heart size as the left sided projection can make the heart appear larger.
- No effusions are detected.
- X-ray consistent with ARDS (Corne et al 2002)

Transfusion – related acute lung Injury Definition:-

- An acute lung injury that is temporarily related to a blood transfusion, occurring within a few minutes to 6 hours post transfusion (Toy et al 2005).
- Virtually all blood products implicated :- Most commonly platelets, packed red cell, fresh frozen plasma, but have been reported with cryoprecipitate, granulocyte, and immunoglobulin.

The incidence is not well established estimations generalize the incidence of TRALI at approximately 1:5,000 transfusions of blood products (Shander 2005); although these statistics are affected by:

- Ambiguity re definition
- Under recognition
- Failure to identify milder cases (Joyce 2007)

Risk factors

- Equally in both sexes
- Age range 9 days to 73 years
- Presence of underlying condition
- Recent surgery
- Sepsis
- Massive blood transfusion/ thrombocytopenia (Kleinman 2007)

Etiology/Pathogenesis

- Not fully understood
- It's hypothesized into 3 leading theories
- 1. Anti-granulocyte antibodies present in donors' plasma :- initiating an inflammatory response in pulmonary microvasculature
- 2. Granulocyte priming:- contends that bio active substances (lipids , cytokines) within transfusion = prime the granulocytes in pulmonary vasculature, leading to increased permeability
- 3. Two –event: - combination of the first two. (Sheppard 2007)

Signs and symptoms

- Sudden onset of respiratory distress
- Fever
- Tachycardia
- Tachypnoea

- Hypotension can be present
- Pink frothy airway secretions indicative of pulmonary oedema (Popovsky 1983, Toy 2005)

ARDS	TRALI
● ONSET - Insidious /may be acute	● ONSET - Acute,
● PRESENTATION - Hypoxic /resp failure	● PRESENTATION - Can mimic ARDS
● Diffuse infiltrates on CXR	
Management	Management
● Adequate oxygenation	● As for ARDS
● Ventilation/prone	● MORTALITY 5%
● MORTALITY 30-60%	

ARDS vs. TRALI ARDS

Focus on Diagnosis and Treatment

- There is no diagnostic sign to confirm TRALI. See figure 1 for diagnostic clues.
- Clinically indistinguishable from acute respiratory distress syndrome (ARDS)
- Unlike ARDS, TRALI is self-limiting, and there is usually clinical improvement within 48-96 hours provided prompt respiratory support is provided
- In 30% of the cases mask oxygen is sufficient and in 70% some form of ventilatory support is necessary.
- Treating TRALI like cardiogenic pulmonary oedema or as fluid overload can lead to hypotension (Webert 2005,Toy et al 2005)

Patient outcome

- Continued with high flow o2.
- Continued to desaturate
- Developed a metabolic acidosis, tachypnoeic, tiring
- Anaesthetic review , not for escalation to ITU , NIV recommended
- Transferred to MHC – CPAP attempted – not tolerated by patient
- Palliation
- R I P

Conclusion

The ability of blood and blood-product transfusions in saving life is irrefutable. The safety afforded to the use and screening of these products is rigorous, transfusions are still hazardous, having potentially life-threatening outcomes. Rapid identification is essential to the commencement of appropriate treatment measures to reduce the risk of TRALI.

1. Flow chart for the diagnosis of possible TRALI

Adapted from Gopal 2004 (cited by Griffiths 2007)

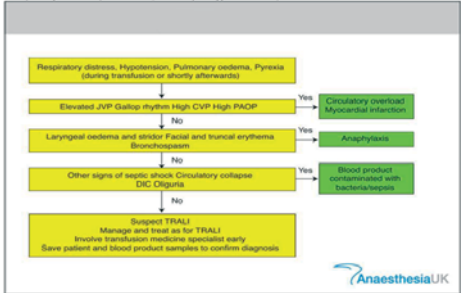


Fig 1

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...Date For Your Diary...

Friday 2nd March 2012
Murrayfield Stadium : Edinburgh

*ACAP Scotland is hosting the second forum event,
programme to follow.*

