

HIGHLIGHTS FROM

RETRIEVAL 2016



UK's National Prehospital & Critical Care Transfer Conference



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Introduction



Ever heard your colleagues talking about fantastic conferences they've been to, and wished you could have gone too? So have we!

These conference reports originated from Bangor ED, where we encourage our staff to make notes at conferences and to share them on their return. From there it has been a short step to deciding we'd like to share our notes with others: you can find the full collection at www.scribd.com/BangorED.

For this report - Retrieval 2016 - our own band of reporters have clubbed together to bring you a selection of the conference highlights.

We must make an important disclaimer. Whilst our reporters make their notes as accurate as possible, this whole publication is based upon *notes made during the lectures* with all the attendant distractions and possibility of mis-recording the words of individual speakers.

Whilst we have cross-checked data where possible, and included links to some studies mentioned during lecture, we can accept no responsibility for any errors or omissions we have made (or that the speakers made and we may have inadvertently propagated).

You should never change your clinical practice based solely on a report like this, but, we hope it will provide you with a springboard for learning.

Linda Dykes
(Designer & Editor-in-Chief of the Bangor ED Conference Reports)

Hannah Browne, Julie Hunt, Mo Dingle, Kimarnie Ky-Kidd & Victoria Thwaites (Reporters)

Running a conference? Want a report like this?

Talk to us... depending on how it fits with our study leave quota, we may be able to attend your EM/EMS/PHEM/Critical Care event & produce a report for you.

Unless we were planning to attend anyway in funded Study Leave, we'd need to have a free pass to the event and our costs covered, but even these *unofficial* conference reports get 1000-3000 hits: imagine what a bespoke *official* report could do to spread your message further.

Please contact Linda.Dykes@wales.nhs.uk to discuss.

Reflection
for your CPD

Some of the topics we report here are ripe for your CPD folder.

We've flagged up those that are particularly juicy with these snazzy green boxes, and included links to relevant papers, abstracts and websites.

Twitter performance for #Retrieval2016

Top 10 by Mentions

	@_retrieval 2,143
	@jamestooley 635
	@medibrat 562
	@emrtswales 472
	@silv24 469
	@emrscotland 446
	@drsgrier 324
	@mmbangor 281
	@ross71521 273
	@uncgiggaz 232

Top 10 by Tweets

	@_retrieval 1,152
	@ketaminh 899
	@medibrat 423
	@gasdoc2857 372
	@jamestooley 303
	@mmbangor 276
	@drsgrier 237
	@silv24 212
	@ross71521 191
	@keatingteam1 169

Top 10 by Impressions

	@ketaminh 10,805,352
	@silv24 1,719,694
	@_retrieval 1,225,470
	@mmbangor 875,051
	@drsgrier 788,422
	@jamestooley 631,406
	@gasdoc2857 482,063
	@medibrat 414,531
	@cheekypromo 359,583
	@emrtswales 230,275

The Numbers

21,820,113	Impressions
8,402	Tweets
816	Participants
3	Avg Tweets/Hour
10	Avg Tweets/Participant

Tweet

Cover photo courtesy of
Dr Jon McCormack



Reporting by Dr Hannah Browne, Dr Julie Hunt, Dr Mo Dingle, Dr Kimarnie Ky-Kidd, Miss Victoria Thwaites & Dr Linda Dykes

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16	SP99 Memorial Lecture - Richard Burnett
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Please help us support Tusk Trust!

We created this report because we're passionate about FOAMed, and wanted to share what we'd learned. If you enjoy it and find it useful, could you consider making a donation to the Tusk Trust? This wonderful charity is dedicated to protecting rhino and elephant populations endangered by the greed for rhino horn and ivory - but also education and supporting communities in Africa, and other sustainable conservation projects.

If readers of the 2014 & 2015 reports had given just £1/\$1 each, we would have raised over \$6000 (they didn't, by the way, you stingy lot!)

[Please visit our Just Giving page by clicking HERE to donate](#)



Paediatric Drowning & post-ROSC management - Paddy Morgan

Dr Paddy Morgan, Consultant Anaesthetist, is a regular at Retrieval and opened his talk with saying how glad he is to be back and invited to speak. Dr Patricia Weir (who gave the talk before him) is a former boss of his when he was a registrar: he thanked her for her talk but commented, “I still can’t call her Pat!”

Paddy opened his presentation with the old chestnut of “Air goes in and out, blood goes round and round... if these things aren’t happening it is our job to make it happen – remember, hypoxia kills.”

Ever wondered what ‘drowning’ actually means? The old terms of “drowning” (for fatalities) and “near drowning” (for survivors) are obsolete. Drowning is currently defined as “the process of experiencing respiratory impairment from submersion/immersion in liquid”, and drowning may result in injury, no injury, or death.

Note that “immersion” and “submersion” are *not the same*. 1-2ml/kg water in the lungs is all that is needed to drown.... it’s not much!

Why do children drown?

Remember kids are inquisitive - paediatric drownings often occur in weird places – silos, muddy areas and ponds. The spectrum of child development across ages can have an effect on the mechanisms and places that they get into trouble.

ECMO in drowning: which cases?

- No obviously lethal injury
- pH > 6.5
- Core Temperature > 15°C
- K < 12 mmol/L (or possibly 8, though some say 14 mmol/L... this is currently matter for debate, Paddy feels 12 is the appropriate maximum)

NB: UK centres that have Paediatric ECMO capability and have a helicopter landing site and have an ED = 2. Logistically tricky!

Top Tip #1: Treat drowning like an RTC

- 1) Take a history: what happened? What made the patient get into trouble?
- 2) Why has patient drowned? Think about ion channelopathies or long QT syndromes which can be triggered by water immersion!
- 3) Who did what leading up to and after the drowning event?

Top Tip #2: Treat a post-drowning arrest “like a head injury” post-ROSC:

- Normoxia
- Normocapnia
- Cautious fluids
- Normothermia

Top Tip #3: Have you considered NAI?

Don’t forget that lack of supervision in a near-fatal drowning event counts too!

Top Tip #4: OG/ NG tubes are your friend

- Children swallow water. A stomach full of cold water impairs respiration, cools the patient significantly and makes them prone to electrolytes disturbances.
- Therefore encourage vomiting or insert an OG/NG to drain the water away from the stomach.
- *However* be cautious with ET suction in the first 30-60 minutes post drowning event. The child will already have atelectasis – don’t make things worse!

Reflection
for your CPD

There’s an excellent review article on drowning and a very useful treatment flowchart in this [2012 New England Journal of Medicine paper](#) that is well worth a read. The [Lifeguards Without Borders presentation given at the 2013 EMS Expo](#) is also well worth a look.

Paediatric Drowning & post-ROSC management - Paddy Morgan

Top Tip #5: Do they need antibiotics?

- There's no evidence for prophylactic antibiotics in freshwater drowning
- Non-freshwater drowning? Needs review and may consider need for antibiotics
- Drowned in a slurry pit? Most certainly needs antibiotics!

Top Tip #6: Don't drown in the first place!

- The 'Drowning Chain of Survival' – Szpilman 2015 (see below) emphasises prevention of drowning and being safe in and around water.
- Teach children to swim
- Take them swimming in open water and the sea as well as swimming pools... it's better they learn how to do this under parental supervision than showing off with their mates!

How to triage a drowning patient

Patient coughing, but no foam at the mouth

- Often a delayed self-presentation
- If patient is now well and you're thinking about discharge, safety-net carefully: they need a sensible adult at home, a phone, and mustn't be miles away from hospital, because occasionally patients can develop delayed respiratory problems.

Foam at the mouth

- PEEP likely to be required
- If foam at the mouth + respiratory compromise + hypotension, there's a high risk of (cardio)respiratory arrest. These patients need high flow oxygen and consideration of RSI.

DROWNING

Chain of Survival - A call for action



And from Twitter...



“The stats from “drowning” are skewed, because cause of death is often listed as “pneumonia” etc down the road. #retrieval2016” - @Medibrat

“Paediatric drowning resuscitation events are stressful, upsetting and challenging – look after your team #retrieval2016” - @_retrieval

“Drain the stomach asap in the paediatric drowning patient...they swallow gallons of water which splints their diaphragm! #retrieval2016” - @EMRSscotland

“Warm water drowning will cause brain swelling, If they go into arrest, treat as a head injury as well. #retrieval2016” - @Medibrat

“#retrieval2016 water >6deg C = 100% fatality if >30 min submersion” - @Malcolm_999

“Q&A – association between drowning + C-spine injuries rare. <1% actually have an injury. #retrieval2016” - @_retrieval

Neonatal Airway Management outside the Neonatal Unit - Patricia Weir

Dr Weir is originally from Scotland and graduated from Glasgow University in 1980. She has spent more than 25 years working on PICU and gave her talk today about managing neonatal airways outside of the NICU setting. She emphasised that attention to detail is key in all aspects of paediatric intensive care and anaesthesia, but particularly when managing the neonatal airway.

A quick 'hands up' survey of the audience revealed approximately 10 people had dealt with a neonatal airway in the last week. About half the audience had done so in the last month and three-quarters of the audience in the last six months.

Dr Weir highlighted that outside of NICU, the neonatal airway is rarely abnormal and *most* patients are either term or only slightly pre-term infants. As a result, difficult neonatal airways are rarely a problem with the patient – what makes them difficult are things about us (that woman not think about).

1) Team related

In a neonatal emergency outside of NICU, you often have a team that is thrown together having not worked together before. There will be inexperienced team members for whom a paediatric or neonatal airway is not their usual 'bread and butter'.

2) Environment

Difficult airways are rare in the safety of PICU, yet step into an unfamiliar environment; another hospital; the back of an ambulance; a helicopter; beside a road and tricky airways suddenly become more common.

Suboptimal conditions with little space and a large amount of noise can be very stressful, and unfamiliarity with equipment in a new environment can heighten these stress levels still further.

*Remember
the basics:
position,
position,
position!*

The PeDi registry (a prospectively collected data set regarding tracheal intubation in children) found that in 3 years between 2012 and 2015, 1018

difficult paediatric intubations were carried out at children's hospitals in the USA. 20% of difficult airways will have a complication ranging from cardiac arrest to significant hypoxia – and this is much more likely if we take more than 2 attempts at direct laryngoscopy.

Dr Wier's Top Tips

- Line up the airway - if the baby isn't lying straight, the airway won't be straight.
- Optimise airway position (remember neonates have big heads so may need a towel under their shoulders)
- Remember the trachea is a midline structure therefore putting the patient in a position to get the airway central is crucial.
- Always use a paediatric airway checklist – it prompts you to check your team, resources and prepare a 'Plan B'. [Here is an example from Severn.](#)
- Have a difficult airway kit – it is important, but essentially useless unless you know how to use it. Make sure you know how.
- And most of all? Practice.
 - o Practice the skills
 - o Practice working with your team and undertake human factors training

The PeDI registry data was published in the Lancet in December 2015, but sadly it isn't #FOAMed for the full article.

The abstract [link is here.](#)

CPD
activity



And from Twitter...

“One of the issues we face is that we rarely (like once a year!) have to deal with a paed airway. #retrieval2016” - @Medibrat

“An airway problem in a neonate can destroy the quality of life for many: brain damaged baby & their family. Weir at #retrieval2016” - @mmbangor

“Challenge is not to make a straightforward airway a difficult airway by the situation you find yourself in – Weir #retrieval2016” - @_retrieval

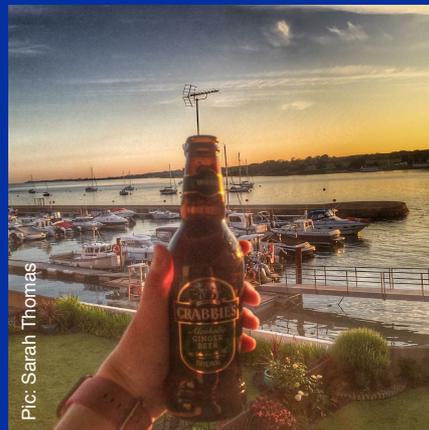
“Pat discussing EXIT procedure where baby’s head delivered and intubated whilst baby still inside uterus #retrieval2016” - @jamestooley

“Position position position – the key to successful intubation of the neonate (and all I would say) #retrieval” - @johnboy237

Where are you 15 minutes after leaving work?



A. Fighting your way through city crowds



B. Chillin' by the Menai Straits



C. Eyeing up lakes & slate in Llanberis

Sick of it being Option A? Try B or C... Join us in Bangor ED... Snowdonia's ER

- Thanks to extra posts and some colleagues opting for LTFT options & deferred starts, we can squeeze in another post-ACCS Clinical Fellow, ideally from Aug 2016-July 2017.
- Hugely popular middle-grade EM posts in our friendly rural ED... fab full case mix!
- Includes 20% PHEM (includes Helimed), MedEd or Mgt/QI (or a bespoke mixture)
- Come after CT/ST3 on OOPE (although we're looking into it being an OOPT option)
- Post-ACCS Emergency Physicians, anaesthetists or AM welcome (or contact us if you have equivalent experience).
- No #MindTheRotaGap here... we've got loads of doctors!
- See page 15 for full advert & visit www.mountainmedicine.co.uk
- Contact Dr Linda Dykes for more info: Linda.Dykes@wales.nhs.uk or @mmbangor

Inspiration is not what you are looking for

- Ross Fisher

It is customary when one starts a talk at a conference to declare any conflicts of interests or to disclose anything that may be considered relevant. It therefore seems reasonable to start with a declaration of my own – I saw Ross Fisher speak at the Emergency Medicine Educators Conference just a few days prior to Retrieval 2016 and I was absolutely blown away by his talk.

Having seen that he was to present at Retrieval, and knowing that reports were to be written, I was first in line for a seat in the auditorium. It was worth it and this talk, titled “Inspiration is not what you are looking for”, was frankly inspirational (sorry...couldn't resist).

What was even more inspirational was that Ross stood up and spoke without the benefit of any supporting material after PowerPoint had a technical glitch. To talk and keep your audience enthralled is one thing, to do it without any slides is another and it was great to see.

Ross asked several questions of the audience – Why were we at Retrieval 2016? What had we come here for? Was it one thing in particular? Why was Ross there speaking? And, most importantly, what does inspiration have to do with our lives?

To inspire is to animate with purpose, or to breathe in. Inspiration is a breath in as well as the process of being stimulated to do or feel something. But inspiration is only effective with expression. Inspiration is very fragile, and very personal.

We can reflect on our inspiration but we rarely share it because it is so fragile and personal. Inspiration animates our lives with purpose.

At this moment the talk involved balloons (note to future speakers – balloons or bubbles improves a talk regardless of topic, potentially even regardless of relevance!).

Balloons were blown up if we had ever been inspired, and there weren't many people who didn't have a filled balloon but there were some – did they have no inspiration? Or were they too driven to need inspiration?

But there has to be more to life than inspiration; motivation is also needed; and there needs to be a motivation/inspiration balance.

None of us are inspired to do things we cannot do.

Inspiration doesn't make us superhuman; it allows us to see our inner, better, selves. This is our true selves and we already have this inside ourselves – inspiration alone is not what we are looking for.



CPD
activity

More from Ross - who's a paediatric surgeon and presentation guru - can be found at his blog (presentationsskills.blogspot.com), on his TED talk (which was very similar to this talk at Retrieval) or by following him on Twitter (@ffoliet).

More information on the EMEC (Emergency Medicine Educators Conference) can be found at <http://www.the-emec.com/>

Pre-hospital neonatal retrieval - John Glen

Dr John Glen works for EMRTS Wales and started his talk with a story about how he became the neonatal lead for the new Wales' Emergency Medicine Transfer & Retrieval Service ("basically I was a few milliseconds behind everyone else in checking Googledrive where the SOPs were allocated on a first come, first served basis – when I accessed it, I found out I'd be taking over the neonates SOP for EMRTS").

Whilst emphasizing that he is an anaesthetist, not a neonatologist, Dr Glen has evidently embraced the subject and had several pearls of wisdom to share with the audience. His presentation was both hilarious and highly engaging – as well as being a race against the clock to get through his slides before his laptop went into automatic shutdown (15 minutes and counting...!)

EMRTS is a Wales-wide service that utilises the Welsh Air Ambulance assets in Welshpool and Swansea (charity funded) as a platform for Welsh Government-funded consultant sessions in Retrieval and PHEM.

The service is not – as John was careful to point out – a dedicated neonatal transfer service, but given the sparsely-populated geography of many parts of Wales, it would be ludicrous for EMRTS to refuse to respond to unwell neonates (be they in geographically-isolated midwifery-led units or at home) for whom the only alternative emergency provision would be a normal paramedic ambulance.

There are only six sites in Wales that have doctor-led units for neonates and they line the north and south coasts.

Anywhere in the between, through Mid- and West Wales, is predominantly midwife led care with units delivering 400-500 births per year.

John compared setting up a neonatal SOP (a patient group that isn't usually handled by most UK air ambulances) to shaving a dog ... yup. You read that right. Shaving a dog. Once you've started to [shave a dog](#), there's no logical place to stop, right?

The initial plan for a single, simple neonatal SOP transformed into several: neonatal emergencies, neonatal procedures, and neonatal intubation, all of which had to be rigorously checked and approved. As a non-neonataologist, Dr Glen emphasised the need to keep things simple – “something that gives you more than NLS but is simpler than ARNI”. He created an algorithm that could they be trained and rehearsed. And so the ‘EMRTS Neonatal Emergencies Algorithm’ was born (see p9).

EMRTS do occasionally transfer stable babies or are a “taxi service” at the specific request of CHANTS (Cymru Inter-Hospital Acute Neonatal Transfer Service) but are not the first point of call for a neonatal retrieval or transfer.

Aids to your algorithm

- Create an app
- Make cheat sheets (including “Top Tips to remember” and things we don't routinely have to ask in adult patients, such as gestation born and maternal health issues)
- Have picture guides to everything
- Train, train, train

EMRTS training in neonatal medicine

- 2 days bespoke teaching with input from CHANTS
- Desensitisation days in a neonatal unit
- Personnel sign-off
- Training in specific equipment (umbilical vein catheters, CPAP, ventilator circuits, BabyPods)

Visit the Bangor ED Conference Report Collection at www.scribd.com/BangorED for a range of EM/EMS Conference Reports from 2013 onwards or click [here](#).



And from Twitter...

“Tricky geography in Wales. Best way to transfer sick neonate from Llandudno to Cardiff via England @EmrtsWales #retrieval2016” - @ChrisShaw

“Crying with laughter as John Glen’s description of Wales road links North to South. #retrieval2016 “Google A470 & it’ll be 4 dead on...” - @mmbangor

“Limiting levels of care available is challenging – UVCs, IO, NG tubes, RSI, NIV, drugs, POC testing... #retrieval2016” - @_retrieval

“One of my key issues is that I don’t believe there is such a thing as 2.8ml. It’s 3. Hence cheat sheets.” John Glen #retrieval2016” - @Medibrat

EMRTS Neonatal Emergencies Algorithm

The EMRTS Neonatal Algorithm v2.0 (Sep 2015)

Ensure NLS procedure has been followed, then move to blue boxes

Newborn Life Support

Dry the Baby

Remove any wet towels and cover
Note time of birth

Assess Breathing and Heart Rate

If Gasping or Not Breathing:

Open airway; remove meconium
Give 5 Inflation Breaths
Attach SpO₂ monitor (R wrist)

If chest not moving:

Check head position
Other airway manoeuvres
Insert size 1 igel^a
Repeat inflation breaths
Consider immediate intubation

When the chest is moving:

If HR undetectable or <60
Start chest compressions (3:1)
Adrenaline if no HR response^c

Acceptable productal SpO₂

2 min	60%
3 min	70%
4 min	80%
5 min	85%
10 min	90%

Need for immediate intubation? (Consider Size 1 iGel at any stage)^a

No

Yes

Indication for CPAP?^d

No

Yes

CPAP^b

Intubate^b

Insert gastric tube

Insert UVC (or IO if UVC failed)^b

10% Dextrose 3ml/kg (or Buccal)^d
Cefotaxime 50 mg/kg

Reassess

- Clinical
- Heelprick/UVC Gas^b

Discuss with CHANTS on Call^d

Discussion to Include:

- Need for intubation before transfer^{a,b}
- Need for therapeutic hypothermia^b
- Disposition

Courtesy Dr John Glen

a Only if >2kg and >34 weeks.

b See separate Neonatal Intubation/Neonatal Procedures SOPs.

c If HR <60 after 1 minute of adequate CPR.

- Dose: 1 ml/kg of 1/100,000 predraw iV/IO.

d See main text

The Great Debate:

Critical Care Practitioners will replace doctors in Pre-Hospital & Retrieval Medicine

Speaking for the motion was Mr John Pritchard (Paramedic Team Leader, pre-Hospital Care Instructor, and BASICS Scotland responder) and speaking against was Dr John Ferris (Consultant in Emergency, Pre-hospital & Retrieval medicine, Director & Instructor BASICS Scotland)

FOR

John Pritchard

The main drift of John's argument was the fact that pre-hospital care and transfer is already being done without doctors, has been for years and is very successful... and "if it ain't broke..."

Even close to home, the first retrieval in Scotland was carried out by a nurse at the behest of a doctor in 1933, the same year that the Scottish Air Ambulance service was established. It is a service that has been delivered without the presence of doctors until recent years.

John presented a well researched history of pre-hospital and retrieval medicine highlighting that not only where these systems not run by doctors, but places huge strides in reducing mortality have been achieved and provide 24/7 access to care without doctors.

World class services he highlighted that are still lead by paramedics e.g. MICA (mobile intensive care ambulance) in Australia and nurses e.g. CalSTAR (California shock trauma air rescue) in the USA. He informed us that these services have decreased mortality by up to 25%. They also have strict recruitment criteria, such as a Bachelors or Masters degree in critical care and minimum experience requirements

His closing statement was telling: "Doctors save lives, but paramedics save doctors"

AGAINST

John Ferris

Dr Ferris pointed out that perhaps the question posed was the wrong one - that replacing the doctors providing pre-hospital care was not the issue, but the focus should be more on the changing scope of practice of the critical care practitioners.

He agreed that a good hospital doctor does not necessarily equate to a good pre-hospital doctor but given the national acknowledgment of the requirement for consultant delivered pre-hospital care to support the trauma network, doctors were now involved in pre-hospital care for the foreseeable future. He also suggested that it would be difficult to "bring the hospital to the roadside" if none of the team worked in hospital.

He agreed that the pre-hospital environment is high stakes and this can stretch even experienced consultants but this burden could be shared by discussion with in-hospital colleagues helping to plan for transfer, complications and future considerations of that patient's care. The role of the doctor, as he sees it, is not to replace the critical care practitioners, but to compliment and expand the skills mix, providing the ability to work outwith the restrictions of JRCALC and introducing new techniques to optimise patient care.

He further suggested that sharing training between the critical care practitioners and the doctors would make for stronger teams, ensuring that "everyone carries the bag".



What they said on Twitter

The Great Debate: Critical Care Practitioners will replace doctors in Pre-Hospital & Retrieval Medicine

“From audience: 'Does it matter what the professional background is if the clinician is trained to a set standard?' “ - @_retrieval

“CCP's delivering PHEM? It's already there!! That means we win, right?” - @Medibrat

“FOR: CCPs delivering PHEM? ‘It’s already out there happening now’ - MICA Paramedics, ScottSTAR, CALSTAR Flight Nurses” - @_retrieval

“CCP's eliminate the need to remove hospital staff from ED/ICU” - @Medibrat

“Big challenges to CCPs - skill fade; ambulance services focused on response times not clinical outcomes” - @_retrieval

“In the FOR count, benefits: work in multidisciplinary team, reduced cost (compared with doctors), reduced hospital staff need” - @_retrieval

“Everyone carries the bags, work as a team, flat hierarchy” - @jamestooley

“We each have our own skills to bring to a team, this is why different professional groups should work together” - @silv24

“Services need to expand their thinking/ systems to allow CCP's autonomy and off-SOPs” - @Medibrat

“The US could learn a thing or two” - @MedFlightDoc

“The patient gets the "full bundle from the team" - everyone working together for that patient” - @silv24

“Re-emphasising the fact that #teamwork is what makes the system safe in prehospital care!” @Curlytoes12

“Great debate. CCP/physician team Bringing different skills for optimum gain. Unanimous across the room.” - @C_hawkins999

Curious about previous years' Retrieval conferences?

Our reports of Retrieval from 2014 (single report) and 2015 (one for each day) can be downloaded from www.scribd.com/BangorED in the “Conference Report” collection (along with many other EM & EMS conferences!)



Retrieval Medicine in South Africa

- Shaheen De Vries

This was delivered by Dr Shaheen De Vries, the head of Emergency Medical Services in the Western Cape - a job that requires a dedicated and insightful leadership and has many challenges. His talk brought us through where the service has come from, how it developed and into what he sees for the future.

The Cape area of South Africa itself is a beautiful, with large open spaces and high levels of biodiversity... not only in the wildlife. Service users may ask for help in one of 11 different languages, which covers an area of 130 square kilometres of city, rural environment, mountains and seascapes. There are huge challenges to the system!

In the 1960's the Land Act displaced people and demolished towns with the aim of producing "designed cities", with considered purpose and infrastructure. As with all other civic projects, the end result was not the hoped-for ideal, leaving many places as mazes of "temporary" buildings, without street names or maps. Added into this is the mixture of different ethnicities, religions and the memory of Apartheid, for which reconciliation only occurred 20 years ago.

Working in and around all of this are the minibus taxis, transporting 14 million people a year and providing 65% of the public transport at present, but also contributing more than 100 deaths per month. At the other end of the spectrum are the tourists; from day-trippers to hikers and climbers, cyclists to motorsports enthusiasts. This is truly a nation that reflects extremes of service requirements.

The health system has its own challenges; some only limited by imagination, other constrained by much more down to earth concerns. Dr De Vries has helped to implement an up to date world class IT service, to optimise the efficiency of services, joining up the communication from the ambulance service to the hospital and hopefully integrating GP records in the near future.

Not only does the service include road and land ambulances, but also search and rescue vehicles, off-road and in-air transport, both fixed wing and helicopter.



"Trying to make care affordable & accessible to patients in South Africa. We are so lucky in the UK to have the NHS" - @Silv24

"1/2 EMS in South Africa not physician delivered, have only 4 Drs in the country's service yet >2000 'advanced practitioners" - @alg_1972

"Staff retention is a challenge in SA - poached by oil industry, event / expedition medicine" - @_retrieval

"Tourists are a natural wonder of South Africa and have a tendency of getting stuck - rescuing them takes up resource" - @Silv24

"In South Africa when they call for an ambulance they call for wheels not care... need to know what user wants to develop service" - @alg_1972

"I thought my area of Ontario Canada was the only one with dual stretcher ambulances...SA used to carry FOUR!" - @Medibrat

"Western Cape region - 6m people, 50k sq miles, 270 miles, 8.5m miles travelled by ambulance each year" - @_retrieval

"Minibus taxi industry is one of the most successful in SA...also responsible for >100 deaths a month" - @Medibrat

"The challenge in Africa is a lack of health advocates" - @Medibrat

"Ambulance in Cape Town - informal housing places don't have street names - how do you identify correct place?" - @_retrieval

Retrieval Medicine in South Africa - Shaheen De Vries

A very pragmatic approach had to be used when setting up the service: the easiest way to work out what vehicles to use was to look at that minibus taxi service... if the cabbies can get parts and services, then surely so can the ambulances. The air service is provided by the Red Cross and piloted by volunteers, but the governance structure is that of the rest of the emergency services.

Dr De Vries also raised some very interesting issues about attitude, both from the public and from the service providers. What is it that we expect from the emergency services? Apparently the expectation from the public of South Africa is mainly about transport – they are hoping for the provision of a set of wheels to get them to a hospital, not the more

complicated and “exciting” things we (and tourists?) consider such as critical care at the roadside. The other side of this is what the providers feel is appropriate use of the services – he highlighted a recent court case, in which a palliative cancer patient suffered in pain for days at home as the service providers would not dispatch to something they did not think was appropriate. Attitude is one of the hardest things to change and this was not the only presentation to raise this issue.

In a time of change in the provision of health and pre-hospital care in the UK, it is truly remarkable and humbling to see the rate of change that is happening in other “less advantaged” countries.

Linda Dykes

We need to talk about Jasmine...

We would like to thank Mr & Mrs Lapsley, Jasmine's parents, for supporting our CPD day (which they attended and spoke at) and allowing us to use this photo of their beautiful little girl.



Alun Owens¹
Victoria Thwaites¹
Nicola Boyer²
Linda Dykes³

¹ Final-year Medical Students, Swansea University
² Clinical Fellow in EM/PHEM, Ysbyty Gwynedd, Bangor
³ Consultant in EM, Ysbyty Gwynedd, Bangor

We need to talk about JASMINE

Open learning from a high-profile death: what do EMS staff think?

Introduction

In January 2016, a high-profile local inquest examined the death of Jasmine Lapsley, a six-year-old child who sadly died after choking on a grape. One of our post-ACCSS Clinical Fellows (not involved with the case) attended the inquest with the intention of sharing any learning points at a CPD Day for Emergency Medical Services (EMS) colleagues we were due to hold six weeks later.

Upon releasing the CPD Day programme, we realised some EMS colleagues were profoundly uncomfortable about this talk, stating concerns such as “talking publicly about lessons learned might upset the bereaved family”.

We decided to ask all delegates at the CPD day what they thought of the inclusion of this item on the conference programme.

Discussion

Although one-quarter of EMS delegates were initially uncomfortable about this presentation, only one individual remained so afterwards; the vast majority of respondents found the presentation very valuable.

We suspect that many, if not most, UK paramedics and technicians are unaccustomed to shared learning from identifiable cases. This is possibly due to a fear of apportioning blame to colleagues or the opportunities of discussing material heard at inquest, or, well-meaning sensitivities towards bereaved families.

Method

The delegate feedback form included two additional questions for this talk (one to be filled in before and one after) using a five-point scale (very pleased, somewhat pleased, neutral, somewhat uncomfortable and very uncomfortable). We also asked delegates to identify themselves as EMS or non-EMS personnel (i.e. doctors, nurses, medical students).

Results

* From 96 responses (about 90% of attendees), 79 were “EMS” (i.e. paramedic/tech, SAR).

The “Before” question (EMS personnel): What did you think when you saw that this presentation was on today's programme?

Response	Percentage
Somewhat pleased	23%
Very pleased	4%
Neutral	19%
Somewhat uncomfortable	13%
Very uncomfortable	42%

The “After” question (EMS personnel): How do you feel now about the inclusion of this presentation on today's programme?

Response	Percentage
Somewhat pleased	1%
Very pleased	4%
Neutral	10%
Somewhat uncomfortable	10%
Very uncomfortable	85%

Change in EMS delegates reporting feeling “somewhat” or “very uncomfortable”: p=0.0001

* The 17 non-EMS personnel appeared comfortable with the case material. Only one person (6%) started off “somewhat uncomfortable” and after the talk, all 17 non-EMS delegates (100%) stated they were “somewhat” or “very” pleased.

However, it is common for bereaved families, when part/all of the NHS response has been (or perceived to be) suboptimal, to plead that “lessons be learned”.

EMS colleagues and organisations may need support to embrace opportunities from case-based learning, but research is also needed to explore the wishes and opinions of bereaved families regarding the dissemination of any case-based lessons that need to be learned.

The team from Bangor ED (i.e. the team who are bringing you this report!) presented a bit of an unusual poster at Retrieval: an analysis of the feedback from EMS delegates who attended a talk at a CPD about learning points from a then-recent high-profile inquest of Jasmine Lapsley who sadly died after choking on a grape.

Prior to the talk, nearly one-quarter indicated they were “somewhat” or “very” uncomfortable with the inclusion of the item on the programme. After the talk, the vast majority were “very” or “somewhat” pleased (p=0.0001).

Please click on <https://www.scribd.com/doc/310376344/We-Need-To-Talk-About-Jasmine-poster> to view and download a full-resolution version of the poster.

Jasmine's parents supported (and spoke at) the CPD day in question, supplied this photo of their beautiful little girl, and are fully supportive of our efforts to support EMS personnel learn from named patient stories.

Watch out on NHS Jobs mid-June 2016 or visit our website: we've one Clinical Fellow (post-ACCS) space available Aug 2016 - July 2017 (ideally starting in August or soon after), and we might possibly have a second post Aug-Feb. Visit our [Clinical Fellow Information Centre](#) for detailed information.

★ MENU ★

A La carte menu for the perfect year out after ACCS ST/CT3 (any specialty)

STARTER

Included in all packages

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Emergency Medicine the way it should be

- Rural EM in a friendly, small ED
- Well staffed with loads of middle grades: no #midtherotagap here
- Enthusiastic Educational Supervisors who have time to look after you
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- Full range of cases (very little bypasses) including STEMIs, strokes, and major trauma



DESSERT

A day a week of playtime!

The icing on the cake of your year out: combining fantastic opportunities and burnout prevention

Pre-Hospital Emergency Medicine

- Shifts with Welsh Ambulance (ambulances and RRVs) plus Helimed
- Gain a unique appreciation of SAR: we are the mountain medicine experts!



Medical Education

- Teaching practice with medical students, paramedic students, MSc students and junior colleagues
- Help develop our simulation programme
- PGCertMedEd fully funded for 12-month posts



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- Dreading trying to populate your management portfolio whilst battling with FRCM & the demands of ST4-6?
- Enjoy the luxury of 2 sessions a week (plus your SPA session) of tailor-made, supported activities and projects



SP99 Memorial Lecture - Richard Burnett

The SP99 Travelling Fellowship came about following the tragedy of the police helicopter crash in Glasgow, and sponsors fellows to experience aeromedicine in other areas of the world, promoting exchange of experience, ideas and how to work safely. The presenting fellow visited Finland.

Provision of Care: Similarities & Differences

Finland is a similar size and geography to the UK, with mountains of comparable size and swathes of less hilly, lake covered areas. The population density is low, more in keeping with Scotland, as only 6 million people live there. Quality of life is high and the country is regularly in the top three in the world for education, fairness and equality. The main language spoken is Finnish, with a collection of words that provided endless entertainment due to an altogether different meaning in English... or Scots.

The Service

Helimed in Finland is a state-owned and funded organisation, therefore politically complex. The services are split into six regions associated with a named hospital excepting advanced neurosurgery, neonates and cardiothoracics. The hospitals themselves do not have emergency physicians or trauma team leaders - should something happen, everyone on call comes to help. Recruitment to a crew not only includes competency requirements but also psychometric testing to ensure a cohesive team. The pilots navigate when out on the road and the advanced paramedic practitioners not only

help with clinical, operations and strategy roles, but receive extra training in how to fly the helicopter! The governance structure is based on the London HEMS standard operating procedures and all missions are entered into a central database via an integrated IT system, from dispatch to delivery. Unfortunately, there is no-one medical in control therefore they are dispatched on crew request or on discussion with the medic with a stand down rate of approximately 50%.

The take home messages

- As with all medical services, the patients come first (not empires) and specific cases stay with you for a lifetime.
- The government funding had both pros and cons, just like charity funded organisations, but the best teams are highly trained and motivated with great team dynamics and a mixture of skills.
- Great IT is worth the investment to support the clinical journey and tasking is everything.
- The Finnish service would not have happened had one man not had a vision; these visionaries are the people that need to be cherished, supported and challenged to achieve the changes that improve existing services and produce new ones.



"Support, challenge but cherish your visionaries, otherwise tragedies may occur. Burnett at #Retrieval2016" - @mmbangor

"Patients come first, not empires" - Richard Burnett @richieutah" - @Curlytoes12

"Lessons learned: International cooperation helps. This isn't about empires. It's about the patient" - @Medibrat

"You can't be nervous going into a sauna naked! Rules of life " - @C_hawkins999

"An organisation needs all personality types" - @mmbangor

"FinnHEMS dispatch to lift 3 mins... KPI never missed!" - @C_hawkins999

"Richard Burnett was awarded secondment to FinnHEMS and is giving a talk about his experiences - @Medibrat

The interface between medicine and SAR in the UK - Linda Dykes

Following on from Ross Fisher's Keynote Address on the morning of Day Two came two talks on Search and Rescue (SAR) Medicine and the first of these came from Bangor's very own consultant in Emergency Medicine, Dr Linda Dykes. Linda worked closely with RAF SAR till the recent disbandment of UK military SAR, supporting the paramedic training of SAR rear crew. She is Director of the Bangor Mountain Medicine Project, a multi-agency collaboration that maintains an extensive database of mountain casualties from Snowdonia.

Search and Rescue in the UK is defined as, "... the activity of locating and recovering persons either in distress, potential distress or missing and delivering them to a place of safety".

Note that there is no mention of medical capability in the UK definition of SAR, although SAR helicopters in the UK do all have a paramedic winchman on crew. But it is crucial to understand that SAR is *not* HEMS with a winch!

Another key point is that the responsibility for civil aeronautical and maritime SAR policy & provision rests with the Department for Transport (DfT) - it's nothing to do with the Department of Health or the NHS. The Maritime and Coastguard Agency (MCA) which is part of DfT, provides a response and co-ordination service for maritime SAR via it's civilian contractors, having recently taken over the areas previously covered by RAF/Royal Navy SAR bases.

SAR was founded by the RAF in the Second World War in response to the loss of lives of downed aircrews: the initial motto was "*The sea shall not have them*". The areas that SAR services cover, and the original location of SAR bases, was therefore determined by the need for air-sea rescue of downed aircraft and ejected military pilots.

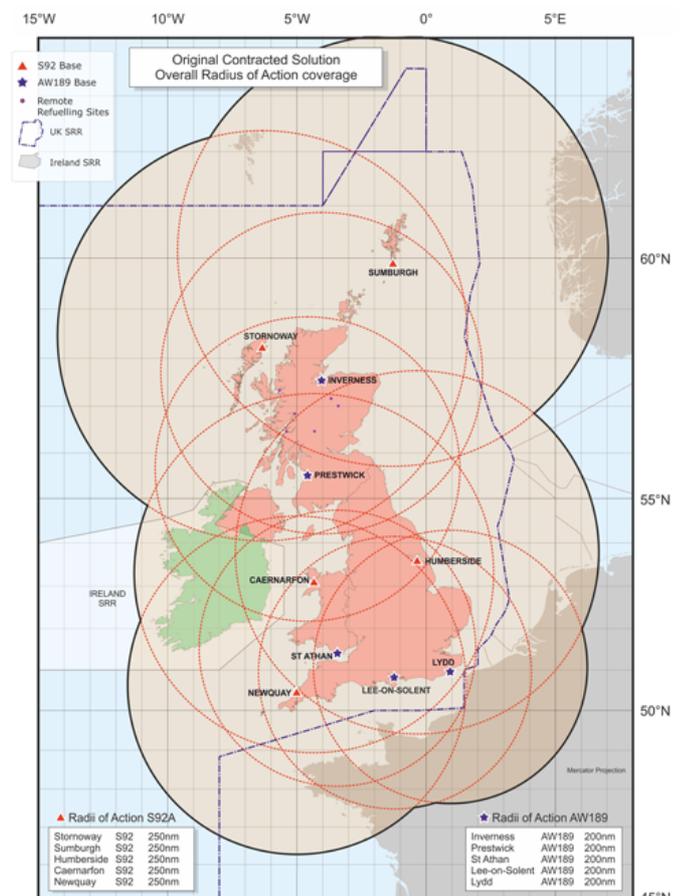
This history, in conjunction with the UK's International Treaty Organisations (the UK is responsible for maritime rescue in the Atlantic halfway to Canada!) has resulted in the current location of the SAR services throughout the UK.

Linda wryly commented that those who ask "why can't UK SAR be like NSW Australia?" (where

SAR is not HEMS with a winch

SAR is run by the ambulance service, with platform/personnel allocated according to the tasking) need to remember that:

"...if we were planning UK aeromedical services from scratch, we probably wouldn't choose to start here, with SAR services whose legacy dates back to WW2 plus a plethora of charity-funded air ambulances... but I do believe streamlining the interface between SAR and the NHS needs to be mandated in the SAR contract..." "



UK SAR bases, 2016.

The interface between medicine and SAR in the UK - Linda Dykes

So what does SAR actually do?

Two-thirds of UK SAR taskings have absolutely nothing to do with medicine: they are either rescues with no medical component (e.g. people stuck on cliffs or requiring assistance from sinking boats), searches, or assisting with civil emergencies such as major flooding.

Only one third of SAR taskings have any medical/trauma component at all, and only a very small minority of this one third are significantly ill or injured.

The overwhelming majority - just over 90% - of “Med Rescues” (ill/injured) are “little sick” and only 4% are “big sick”, with approximately the same number again requiring CPR (which carries a dreadful prognosis if you are unlucky enough to suffer a cardiac arrest in a location requiring a SAR helicopter to extract you, as there’s almost always a delay for help to arrive).

With such a tiny proportion of UK SAR work involving seriously ill or injured casualties, medicine isn’t “core business” for SAR: suggesting that SAR aircraft should carry full HEMS-capability 24/7 is clearly ludicrous, and Linda also warned that anyone wishing that SAR belonged to the NHS should stop right there - *“do we really want to land the NHS a £1.7 billion pound bill for just a handful of patients that would benefit from higher-level medical capability?”*

But how can SAR ramp up its medical capability quickly for those tiny number of SAR casualties who really would benefit from a higher level of clinical capability than a paramedic? Linda outlined several options (box, right).



Photo: Liz Forsyth

Adding HEMS to UK SAR: Options

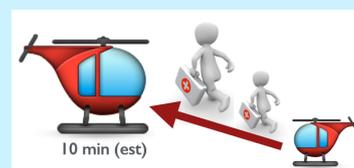
1. Don't bother: just fly faster

The new S92s are 30% faster than the old Sea Kings and can fly at 165 kts/190mph, compared to many air ambulances EC 134/145's 155 kts/178 mph. This probably makes the idea of a “hot handover” (i.e. using SAR asset to extract the casualty and then transfer the patient to a HEMS platform) obsolete. It would take about 25 minutes to transfer a patient from the S92 to a HEMS aircraft (including all faff time from landing site recce onwards) and the S92 can cover 80 miles in that time, which gets you to a MTC from just about anywhere in England and Wales. It might not in Scotland, mind... and there's still problems that at least two UK MTC helipads cannot currently be used by the S92 and have to use a secondary landing site with additional road transfer.

2. Borrow a HEMS crew for the tasking

Some SAR bases are now located in the same airfields as air ambulances, and indeed, military SAR occasionally used to collect a HEMS crew to attend particular taskings. Many people assumed such co-locations would be ideal for SAR crews to invite HEMS clinicians to join them if higher-level medical input were likely to be required. However, at the present time, it seems unlikely that Bristow Helicopters wish to follow this model. There currently is no provision for training flights for NHS staff.

3. Pick up a HEMS crew once patient extracted



Probably the most likely solution, just as it always was with military SAR. From landing site recce to getting the HEMS personnel on board may take about 10 minutes (so you'd need to be at least 40 miles out of suitable hospital to make this worthwhile, unless the HEMS crew are on-scene too). Relatively simple, the main drawbacks being that there's limited access to training with the SAR crews/on the aircraft, and of course, this approach uses two helicopter assets for one patient, which is expensive and resource-intensive.

To see an extensive collection of conference posters from the Bangor Mountain Medicine project do visit www.scribd.com/BangorED from where they can be downloaded as PDFs free of charge.

The Bangor ED website www.mountainmedicine.co.uk and Linda is on Twitter - @mmbangor as is Bangor ED - @YGEDBangor

CPD
activity

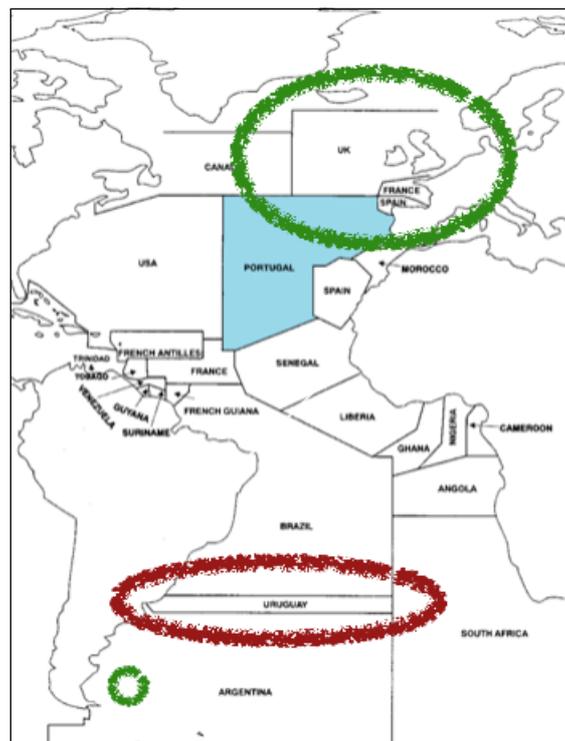
The interface between medicine and SAR in the UK - Linda Dykes

Linda finished her talk with a quick mention of the reality of SAR medicine as illustrated by the Bangor Mountain Medicine database: the most common SAR injury in North Wales is lower limb sprains or fractures, and the mountains do a great job of triaging those with major trauma... those who are still alive when help arrives (on average, about an hour after the call for help) almost always survive.



She also reminded delegates to remember “sometimes, it’s easier to go up than down” - spiral staircases in castles were designed to stop men with swords fighting their

way up, and are just as good at stopping pre-hospital personnel from carrying patients down on a stretcher... it may be easier to ask for SAR assistance to winch your casualty off the top of a tall historic building (or one with no lift!) than carry the patient down!



SAR responsibility by nation, highlighting the UK's huge area of the North Atlantic (and the path around the Falklands) in green, and Uruguay's bizarre strip out in the South Atlantic (red)!



And from Twitter...

Sometimes it's a lot easier to go up than down! - @Medibrat

Snowdonia Triage Tool "You're either f%*ked or fine". Mountains are a Darwinian sieve. Great talk by Linda Dykes - @Wokko72

The current private contact is multi-billion £. 'We should be striving for greater integration/interfaces with NHS' - @_Retrieval

SAR isn't HEMS with a winch. There are a few patients who do need critical interventions, but these are few - @_Retrieval

Gather data, analyse it & use it to change your service! It might not be what you imagine/think! - Curlytoes12

In Snowdonia, the average time injury to helicopter on scene is 1 hour. If the helicopter gets to you, you're probably okay. - @Ross71521

If you need rescuing by a SAR helicopter, you are having a very bad day. - @Medibrat

What happens when you are beyond helicopter range? Use: another boat, ask the Americans (PJs), use Fisheries Protection - @_Retrieval

One of the drivers for SAR in the UK is international treaty obligations. UK SAR responsibility covers 1 million sq. miles - @ross71521

If the UK wanted to end up with something like the Aus* model, it likely shouldn't have started the way it did. - @Medibrat [*corrected]

Search and rescue does exactly what it says on the tin: they search for you, they rescue you. Medical is an add on - @doctorwibble

In the UK, we do not have a SAR-HEMS model. SAR is not a primarily medical service, unlike Australia - @ross71521

The Poster Report

Retrieval always features a strong selection of posters, and 2016 was no exception. Posters from throughout the UK were presented on a wide variety of topics, falling broadly into retrieval research; air ambulance logistics and clinical evaluation; training, and ventilation and perfusion research.

Retrieval

Several posters dealt with the difficulties and limitations of retrieval from remote environments; posters from Ysbyty Gwynedd in North Wales noted that the mountains of Snowdonia act as a brutally effective triage sieve, a large proportion (44%) of significant abdominal trauma cases and 42% of significant chest injury cases occurring on the mountain do not survive to the emergency department.

For patients with head injuries in Scotland, “Secondary transfer of head injured patients in Scotland” examined the prevalence of a dedicated transport consultant in referring emergency departments for head injuries. Their research found that 9 out of 23 responding hospitals did not have a dedicated transport consultant. Another poster “Patient Retrieval Optimisation Project: improving Patient Retrieval in the Outer Hebrides of Scotland” also identified the need to clarify the retrieval process by establishing a retrieval coordinator, and piloting a retrieval run-sheet for remote and rural hospitals.

Two posters examined the risks and benefits time-critical on-scene interventions versus rapid extraction from scene to hospital. “Extended Level Intervention Rates in Pre-hospital Primary Missions” from the perspective of the contribution of extended-level practitioners. They found that most frequent contribution of extended-level practitioners in the pre-hospital setting was “medical senior decision making” (48%), followed by “extended level drug intervention” (36%).

“Critical care HEMS teams reduce on scene times in trauma” cross-checked TARN cases against South Western Ambulance Service and Great Western Air Ambulance, and found that critical care HEMS teams spent less time on scene than

road paramedic crews ($p < 0.001$), despite attending patients with higher Injury severity score (ISS) and higher shock index. Interestingly, they found there was no statistical difference in overall mortality at 30 days between cases tasked to critical care HEMS teams and road paramedic crews.

Air Ambulance logistics

The University of Aberdeen’s “Acuity of helicopter search and rescue casualties in Scotland: report from a newly developed clinical database” found that only one of the 20 patients with a reported ISS scored over 15, representing only one case in the period that classified as “major trauma”. However they noted that this may represent appropriate over-triage, or the inaccessible nature of Scottish retrieval.

“Planning for the worst: testing a post accident plan” looked at how high-profile helicopter accidents in recent years have increased the need for a simulated post accident incident plan. Four communication scenarios were suggested; an overdue aircraft, an unconfirmed accident, a confirmed accident, and the aftermath of an accident.

Predicted future mission numbers are mapped in “Growth curve modelling in pre-hospital care services” suggesting that the ScotSTAR EMRS system to be approaching a poisson average of 43 primary pre-hospital care missions per month.

Finally, the Great North Air Ambulance “Introducing Quality performance Indicators to improve clinical performance in prehospital emergency medicine” noted that clinical performance can be measured in the pre-hospital setting.

The Poster Report

Training

The University of Aberdeen presented a poster on how pre-hospital care can be integrated into medical education, focusing on cardiac arrests, breathing problems, fractures and haemorrhages, analgesia and extrication, and mass casualties and triage (“Pre-hospital learning: “the development and implementation of undergraduate pre-hospital care education”).

One poster from KIDS “Driving towards excellence” detailed the positive feedback from extending the roles of driving technicians.

“Advanced paramedics: what is the current UK picture” found that of the 11 services to complete the questionnaire, eight had advanced paramedic practitioner programs. The majority of services required post-graduate education as a pre-requisite to advanced practice, and task their APs to acute/emergency calls only.

Ventilation & Perfusion

“Kids Intensive Care and Decision Support” transport service provided several posters on different aspects of paediatric transport. Two posters examined cases relating to oxygenation: Two case studies in which high flow nasal cannula was used as the means of delivering CPAP in-flight were examined, and three of using high-flow oxygen via nasal cannula without the need for later intubation.

Continuing the theme of oxygenation, “apnoeic oxygenation during pre-hospital emergency anaesthesia: a survey of current UK practice”, suggested that apnoeic oxygenation prior to induction of anaesthesia is popular amongst pre-hospital emergency anaesthesia-capable services, with 12 out of 22 services employing it currently, and 7 organisations drafting SOPs to include it.

“Duration of mechanical ventilation following pre-hospital drug assisted intubation” examined the possible benefits of inserting a subglottic secretion drainage endotracheal tubes in a pre-hospital setting decreased duration of ventilation. They suggested that 43% of patients could benefit from a reduced risk of ventilator-associated pneumonia with subglottic secretion drainage.

“Bleeding together? Experience of implementing a national code red protocol” found that the Code Red policy for activating blood prior to a patient with major haemorrhage arriving in ED was sensitive for predicting transfusion requirements: 88% of patients received blood products in hospital, with 70% receiving concentrated red cells in the emergency department.

In “Traumatic Cardiac arrest Management: are we doing the right thing?” Magpas Air Ambulance service undertook a clinical audit of traumatic cardiac arrests (N = 33). They found that on the whole national guidelines were followed successfully, although they were able to identify pelvic binder stabilisation and fluid replacement practice as areas where documentation and practice could be improved.

Mountain Medicine posters from Team Bangor ED

Abdominal injuries
in Snowdonia mountain casualties

Introduction
Snowdonia mountain casualties (SMCs) are a significant cause of morbidity and mortality in the UK. This study aimed to describe the characteristics of abdominal injuries in SMCs and to identify risk factors for these injuries.

Results
A total of 100 SMCs were identified over a 12-month period. Of these, 35% (35/100) had abdominal injuries. The most common sites of injury were the right upper quadrant (RUQ) (15/35, 43%), followed by the left upper quadrant (LUQ) (12/35, 34%), the right lower quadrant (RLQ) (8/35, 23%), and the left lower quadrant (LLQ) (0/35, 0%).

Conclusion
Abdominal injuries are a significant cause of morbidity and mortality in SMCs. The most common sites of injury are the RUQ and LUQ. Further research is needed to identify risk factors for these injuries and to develop strategies to prevent them.

www.mountainmedicine.co.uk

Thoracic injuries
in Snowdonia Mountain Casualties

Introduction
Snowdonia mountain casualties (SMCs) are a significant cause of morbidity and mortality in the UK. This study aimed to describe the characteristics of thoracic injuries in SMCs and to identify risk factors for these injuries.

Results
A total of 100 SMCs were identified over a 12-month period. Of these, 25% (25/100) had thoracic injuries. The most common sites of injury were the left hemithorax (15/25, 60%), followed by the right hemithorax (10/25, 40%).

Conclusion
Thoracic injuries are a significant cause of morbidity and mortality in SMCs. The most common sites of injury are the left and right hemithorax. Further research is needed to identify risk factors for these injuries and to develop strategies to prevent them.

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Mountain Trauma
& the Major Trauma Centre

Background
Snowdonia mountain casualties (SMCs) are a significant cause of morbidity and mortality in the UK. This study aimed to describe the characteristics of SMCs and to identify risk factors for these injuries.

Results
A total of 100 SMCs were identified over a 12-month period. Of these, 35% (35/100) had abdominal injuries, 25% (25/100) had thoracic injuries, and 10% (10/100) had pelvic injuries.

Conclusion
SMCs are a significant cause of morbidity and mortality in the UK. The most common sites of injury are the abdomen, thorax, and pelvis. Further research is needed to identify risk factors for these injuries and to develop strategies to prevent them.

Destination of Snowdonia mountain trauma cases
Oct 2012 - Jan 2014

Staged at DCC	93%
Stage 1 or 2	6%
MTC	1%

Dr Linda Owen
Dr Ben Hall
Dr Ewan Jones
Dr Simon Jones
Dr Mark Jones
Dr Mark Jones

www.mountainmedicine.co.uk

We unfortunately don't have images for any of the posters other than our own, but we hope you will forgive us for indulging ourselves and featuring them here, having prepared this report for you!

Simulation in Pre-Hospital Care

- Gareth Grier

Dr Gareth Grier – Consultant with London Air Ambulance, Consultant in Emergency Medicine and Pre-hospital Care at the Royal London Hospital and Clinical Director and Education Lead at The Institute of Pre-Hospital Care - gave a Keynote presentation about simulation in the pre-hospital setting.

After introducing quaint and often amusing history of medical simulation training from Madame De Coudray's "Machine" (1712) - see photo (right) - to the present, Dr Grier posed *the* big evidenced-based questions in Simulation training:

- Is Sim effective?
- What type of Sim is effective?
- Is it cost effective?
- Which is better: High vs low fidelity sim?



Photo: Ali Maddock

Considering how widespread simulation teaching is in medicine, today, there is surprisingly little evidence. However, simulation has been shown to be effective at teaching clinical and procedural skills in a lab setting (e.g. Cardiac Life support, in both a [randomised trial](#) and [this meta-analysis](#)).

More importantly, simulation has been shown to translate to everyday practice and improved patient care, such as in [neonatal outcomes](#) and [central line related sepsis](#). There's a good [review article](#) on this too.



Photo: F Bisson

The history of medical mannequins dates back 300 years to these obstetric trainers by midwife Madame De Coudray

Evidence regarding simulation in PHEM training

There is still very little in the literature, but [Bredmose et al](#) (a group from London HEMS including Dr Grier) showed good results with outdoor low fidelity simulation with immediate structured debriefing.

Dr Grier closed with some powerful observations from simulation training: human factors on scene have a major impact on ability to deliver the medicine. These may be [distraction](#), discomfort (e.g. rain, cold), bystander/patient distress as examples. We need to train for the human factors which are stopping us achieve the timely assessment and treatment that our patients need.

There are links throughout this page to the relevant papers which should work if you are viewing this as a PDF.

For those particularly interested and/or active in medical simulation, the Society for Simulation in Healthcare may be of interest - take a look at <http://www.ssih.org/>

CPD activity

Developing the Scottish National Cardiac Arrest Strategy - Dr Gareth Clegg

Dr Gareth Clegg – Consultant in Emergency Medicine NHS Lothian - leads the Resuscitation Research Group collaboration between Edinburgh University, the Scottish Ambulance Service and NHS Lothian. Dr Clegg’s talk was VERY popular with the YGED reporters and wins this year’s “Best Reference to Popular Culture award” for an inspiring master class in creating change on a national level while drawing parallels to Star Wars. Cue theme tune...

There are 8000 cardiac arrests in the community (OOHCA) each year in Scotland, of which 3500 receive attempted community CPR. Only 5% survive.

The challenges of geography, rural locations, training, culture, education, resources are real, but can be recognised and confronted. “If only...” can be a powerful tool for change. Dr Clegg then mapped out the strategy he used for this change based on John Kotter’s “Leading Change” (see table).

The Big Opportunity: to save 300 hundred lives in Scotland.

Various interventions have been introduced such as the 3RU (resuscitation rapid response unit) with extended role paramedics, “Save a Life in Scotland” training campaign (www.savealife.scot), government support (www.gov.scot/Publications/2015/03/7484) and research such as the TOPCAT2 trial.

Dr Clegg did sound a note of caution though: the awkward truism that “culture eats strategy for breakfast”.

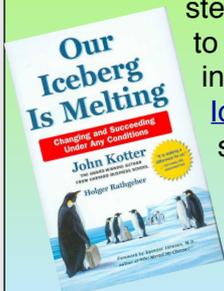
Change Management

An 8-step model based on Kotter’s “Leading Change” (1996):

- Create a sense of urgency
- Build a guiding coalition
- Form strategic vision
- Enlist a volunteer army
- Enable action - remove barriers
- Generate short-term wins
- Sustain acceleration
- Institute change

CPD activity

Amidst a raft of change management philosophies and resources, if you like the look of Kotter’s 8 step model, but haven’t time to read a dull, worthy instruction book, try “Our Iceberg Is Melting” by the same author - the 8-steps condensed into a fairy tale-cum-fable that’s very quick to read!



Thought you’d missed your chance to come to our famous post-ACCS Clinical Fellow posts in August? Fantastic jobs with Snowdonia & Anglesey on the doorstep? You’re in luck!

We can squeeze another one, ideally for a year from August 2016 (or as soon as possible thereafter) plus possibly another Aug-Feb, despite us having more doctors than ever before.

Bangor ED 

Clinical Fellows 2016/17

20% PHEM, MedEd or Mgt/QI

With enthusiastic supervisors, a very friendly department, civilised rota (annualised & LTFT options), playtime of your choice and all the Bangor extras (from pub quiz team to the Mountain Medicine database) then if you’re finishing ACCS CT/ST3 (any speciality) why not come to us this August? We can’t guarantee having many spare places in Aug 2017 - it’s half full already from deferred starts.

We’d particularly welcome applicants wanting to do MedEd (we’ll fund your PGCertMedEd) but could accept another PHEM person!

Contact Linda.Dykes@wales.nhs.uk or @mmbangor on Twitter

Another chance to catch the boat!



NHS Wales is a #HuntFreeZone

www.mountainmedicine.co.uk

Photo: Phiamon Whittaker

The last page...

Please help us support Tusk Trust!

We created this report in our free time because we're passionate about FOAMed, and wanted to share what we'd learned. If you enjoy it and find it useful, could you consider making a donation to the Tusk Trust? This wonderful charity is best known for its work protecting rhino and elephant populations endangered by the greed for rhino horn and ivory - but also education and supporting communities in Africa and many other conservation projects.

If readers of the 2014 & 2015 reports had given just £1/\$1 each, we would have raised over \$6000 by now (they didn't, by the way). We gave up hours and hours of precious free time to bring you this report: can you give up less than the price of a cup of coffee?

Please visit our [Just Giving page](#) by clicking [HERE](#) to donate

Please help us raise money for the Tusk Trust: [click here to donate!](#)



Reporting Team

Dr Julie Hunt, Dr Kimarnie Ky-Kidd and Dr Mohyudin Dingle are all Clinical Fellows in Bangor ED. Julie is undertaking a MedEd Fellowship, and Kimarnie & Mo, Pre-Hospital Emergency Medicine. Julie commences GP training in August in the latest phase of a fabulously varied portfolio career, Kimarnie has (since coming to Bangor ED) abandoned anaesthetics for EM and starts her EM training in August, and Mo (post-ACCS EM) remains in Bangor till early 2017, where he'll be adding MedEd to his portfolio.

Dr Hannah Browne is currently working in EM in the Glasgow region before returning to training. Hannah was a Mountain Medicine student with us as a final-year medical student, and did her Foundation Programme in Bangor... she's very much part of Team Bangor ED (hands off, Scotland!) and was the first reporter to submit her material!

Victoria Thwaites is just about to qualify from Swansea Medical School and commences as an F1 in August. Victoria undertook a final-year placement with us in Bangor ED earlier this year.

Dr Linda Dykes (@mmbangor)



came up with the idea of reporting conferences like this, and compiles, edits, & designs the Bangor ED Conference reports.

Linda graduated from Newcastle Medical School in 1996. Trained in both EM & General Practice, she has been a Consultant in Bangor ED since 2005 and also works with the Welsh Ambulance Service at the Health Board/EMS interface one day a week, and as the EM Clinical Lead for NHS 111 Wales, bringing her a small step closer to her ideal portfolio career combining EM plus EMS/primary care interface, and teaching. She is currently embarking on a one-year secondment to Community Care of the Elderly.

Linda's research interest is Mountain Medicine (she maintains a database of all mountain casualties from Snowdonia brought to her hospital) and she particularly enjoys teaching medical students & paramedics.

... and finally

Please tell us what you thought of this report: we are always trying to improve our conference reports and we also need to know if we have any corrections to make!

Please send any feedback/suggestions to Linda.Dykes@wales.nhs.uk or via Twitter (@mmbangor).

Please feel free to share this document widely, in the spirit of #FOAMed, but it may not be used for commercial purposes without our express consent. Many thanks to the organisers of Retrieval 2016 for permission to use the conference logo. Our entire Conference Report collection is accessible at www.scribd.com/BangorED.

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PS - Please, please make a donation to Tusk Trust!