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The Official Journal of the National Association of Medical Device Educators & Trainers

Volume 1
Issue 3
August 2017

MDET

The Journal of Medical Device Education & Training

Airing views on oxygen

Preparing for obesity

Lord Carter Awards

Theatre visitors

Voices:

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Testing one, two, three...

» Welcome to this, the third edition of our MDET journal. Having researched and looked at the actual numbers one and two in the primary and secondary editions. I reviewed my MDET leaders and, in line with the last two attempts at editorials, it would appear to be prudent to now look at the number three and then link it to my tertiary thought process. (Clever that - Tertiary means three). That is unless you suffer from Triskaphobia (the Fear of the number 3) or the even more deadly Triskaidekaphobia. (The Fear of the number 13). I could go on about why three and thirteen are often seen as nunberphobic (see O'Reilly Media 2014). Now at this point some of you may be thinking 'Educational and interesting Mike, please keep going' others, 'Mike this is boring, please get on with it!' So to keep everybody happy I will 'get on with it' and if you want education and interesting, turn over the page and keep reading the rest of this issue.

The past months have been very busy for NAMDET, particularly with the progress of the Annual 2017 conference which I hope you have put into you diaries for **2nd November at Birmingham Conference & Exhibition Centre** (Holiday Inn), which is across the road from Birmingham New Street Station.

The conference has now been titled **Improve Safety through a Competency Approach.** The programme and title has been developed through consultation with members at the last conference and also through our website and regional meetings. We are still looking at the pricing to ensure that you receive value for your money and that NAMDET are able to cover our costs. We will let you know very soon through the NAMDET website when registration will open and the full programme will be released. We were close to capacity last year, so 'book early to avoid disappointment', as they say. Our next edition of MDET will also include a special conference insert for both the NAMDET conference and for our participation at Patient First which is held at the Excel, London on 21st and 22nd November. As a MDET reader you will find an advert later in this issue outlining how to register for Patient First for free. We look forward to seeing you at these events.

NAMDET also welcomes a number of enthusiastic members onto our new NAMDET Working Group. You will recall that we asked for applications and letters of interest to join and help move NAMDET forward. The Board read them all at our Liverpool meeting, made their decision and then appointed. Thank you to all of you that showed an interest. I am very pleased to report that Rob Matthews, Tammy Marsh, Marie Law and Dr Michelle Dawson have been invited to join this group. Many of you will know these people at least by name as they have been around NAMDET for many years working in the regions and as regional chairs. Rob is based in Wales and is now taking the lead for NAMDET on pulling together a meeting with manufacturers to work on a DERS solution. Marie and Tammy are both from our NW Region and are looking to work on pulling a central solution to NAMDETs Competency solution and making commitments to supporting our regions with central paperwork and information packs. Michelle is a Consultant Anaesthetist & Clinical Lead in Procurement at Derby Teaching Hospital and has been leading on the National Credentialing system. Michelle will be working on this for NAMDET as well as other projects. You can get to know more about Michelle and Rob in this issue's Selfie pages and you can read about Tammy's 'Two Hats' in the Insights section. All of them will, of course, be at our conference in November.

MDET is about sharing information, experiences and best practice. And it does not always have to be about success. As we all know, sometimes things don't work out as we had hoped or planned, and sometimes mistakes are made. MDET provides a great forum to share these, good and bad, so that your colleagues can hopefully take away your learnings and benefit from them. So, if you have something in our field you are particularly passionate about, if you have been doing some interesting research, if you have developed a methodology that has worked well, maybe something has gone wrong and you can share your experiences or perhaps you do something amazing in your life outside work that benefits from your working life – whichever it is, please contact the editorial team and share it with us, so we can share it with the thousands of readers of MDET. editorial@mdetjournal.com

Until next time, happy reading…

Mike Peel
NAMDET Editor

Mandatory Training for Prescribing, Monitoring and Handling of OXYGEN IN HEALTHCARE?

Emma Dent looks at the risks associated with the hospital use of oxygen and why many are arguing that staff training should be made mandatory

Imagine any TV show or film depicting a patient receiving medical treatment and chances are they will be wearing an oxygen mask. Having been used in medicine since the early 20th century, oxygen is now thought to be the most commonly used hospital treatment in the world. Yet its ubiquitous use means that the damage it can do is easily forgotten, warns medical equipment professionals and respiratory clinicians.

The Medical Devices Trainer at Cwm Taf University Health Board and chair of NAMDET Wales, Robert Matthews wants to see mandatory training for all clinicians and healthcare staff involved in the use of oxygen; including porters who are involved in the transportation of oxygen cylinders.

The issue is threefold. Firstly, the fire risks around the use of compressed oxygen, secondly around poor prescribing and monitoring of what is actually considered to be a drug and finally the poor management of cylinders as a whole. The fire risk arises because, although oxygen is not in itself combustible, it facilitates burning. Especially when used in a highly compressed form such as in an oxygen cylinder and incidents in hospital settings and ambulances (see box 1) have highlighted the damage fires fuelled by compressed oxygen can cause.

Mr Matthews, referring to a 2011 fire in which an oxygen cylinder ignited during a hospital transfer (see box 1), says this highlights the need for staff to receive formal training on the safe use and management, including storage of medical gas cylinders, on an annual basis in compliance with the Health and Technical Memorandum (HTM02-01.2006) recommendations.

Although the storage of oxygen within hospitals is now much safer than it used to be, consideration still needs to be given to the design of the storage areas itself, such that the area is; secure, not part of the evacuation route, ventilated to an outside wall and has limited space to allow for the maximum number of cylinders required for just 24hrs use. Ventilation is key to storage as oxygen enrichment resulting from cylinders or wall flow meters being left on, is a serious problem as it could result in an explosion if subjected to an ignition source.

The risk of fire in hospital settings has been reduced as oxygen and other medical gases are piped to bed side, notes Royal College of Nursing head of nursing practice and chair of the Association of Respiratory Nurse Specialists Wendy Preston.

"The storage of oxygen is much better managed than ever before. There used to be massive great cylinders getting dragged about by porters but now they have very little need to transfer oxygen," she says, adding that some wards even have oxygen plumbed into bathrooms for oxygen dependent patients.

"I remember when you used to have cylinders in people's homes in the community, whereas now they must have been assessed by a home oxygen assessment service and the patient will be really educated as to its safe use. Lightweight, easily portable ones of compressed oxygen, which are safer and more cost effective, are made available for being out and about," adds Ms Preston.

"Where patients are oxygen dependent to the point where they do need it for transfer, (such as from a ward to go for a scan or an x-ray), is a particular issue," agrees Mr Matthews, However he is still concerned *"a porter will be asked to arrive with the correct gas and ensure there is enough content in the cylinder to make the journey and to ensure the correct flow rate has been set. It is also possible that the porter is the only person to monitor the flow rate of oxygen during transfer".*

Mr Matthews and Ms Preston alike are concerned about the risks to health that unconsidered under or over use of oxygen can bring. Despite the commonness of its use, oxygen is actually considered to be a drug and should be treated as such.

Mr Matthews would like to see the 2009 Rapid Response Alert NPSA/2009/RRR006 (released after nine patients died as a direct result of poor oxygen management and a further 35 deaths may have been attributed to it) revisited, using current statistics and incidents, so that it can reinforce these often forgotten and overlooked dangers.

The alert said a *"named senior lead, nominated by the [trust] chief executive, should ensure: use of oxygen cylinders is minimised and where their use is unavoidable, robust systems should be in place to ensure reliable and adequate supplies, including checking and stocktaking of cylinders [and]oxygen is prescribed in all situations in accordance with BTS guidelines."* Deadline for compliance was March 2010.

The British Thoracic Society (BTS) has also warned that *"due to poor prescribing practice…the pace of change needs to increase. Without a valid prescription which includes a target range, there is a danger that patients [will] be placed at risk of increased mortality."*

"As the latest BTS audit (see box 2) showed it is still far too often given as a standard therapy. It is not seen as a drug, as something that can cause issues, but all patients who have it should be assessed," says Ms Preston. She believes that its misuse with too much or too little being given is rarely recorded as a drug error, though it should be.

As the BTS 2015 audit authors said: *"This situation would not be tolerated for any other drug, even for over the counter medicines like paracetamol. The problem remains that many doctors and nurses do not realise that medical oxygen is a drug that, like all other drugs can bring about benefits if used properly but may cause harm if used improperly."*

Yet, too much oxygen can be dangerous for some patients. Breathlessness in COPD patients, says the Lung Foundation, is rarely due to low oxygen levels alone and it is important that oxygen therapy is used to maintain blood levels and not to reduce perceived breathlessness alone.

Yet hypercapnia (abnormally elevated rates of carbon dioxide in the blood), for example, can be caused by too much oxygen in patients with some conditions, including chronic obstructive pulmonary disease, as they retain the CO2 as they cannot breathe it out.

A BTS guideline published earlier this year (subs May) urged health professionals to adopt the latest version of its evidence based guidelines on the use of emergency oxygen. Its 2015 audit found that although practice had improved since the audit was established in 2008, a threat to patient safety remained (see box 2).

Advising health practitioners to always specify a safe 'target range' of oxygen in the blood, the updated guideline now includes emergency and non-emergency oxygen use in healthcare settings, short term use by healthcare workers outside of healthcare settings, new settings such as palliative care, use of oxygen by healthcare professionals in patients' homes and by non NHS first responders.
Mr Matthews would like training in oxygen use to become a yearly, mandatory requirement.

Throughout the UK, many Health Boards and Trusts are still not offering training to their staff. Even with those who do

offer the training, due to the fact the training is not mandated attendance and compliance is very low.

"I have been arguing for years that this needs to be mandatory, starting with nursing training upwards. My view is the initial training needs to be face to face. Annual training after that can be done through e-learning," says Mr Matthews. *"But it is still 1.5 hours a year where a nurse is taken out of the nursing environment and getting cover for that is hard. The financial considerations are considerable, so getting it mandated is not a simple process."*

According to the HTM02 guidelines, there are 3 grades of training required;

- **Nurse - Annual Training**
- **Designated nurses, who oversee fire safety on a ward. Refresher every three years**
- **Designated Porters - Annual Training.**

After a recent incident at Northern General Hospital, where a patient with multiple health problems died after his portable oxygen cylinder was not switched on during a transfer to intensive care, the coroner's report raised concerns around training. It stated: *"The secretary of state for health is asked to consider whether it is appropriate for training to be provided and documented regarding the use of portable oxygen cylinders for patients."*

Ms Preston believes it will take a culture change for clinicians to understand that oxygen therapy training should be mandatory.

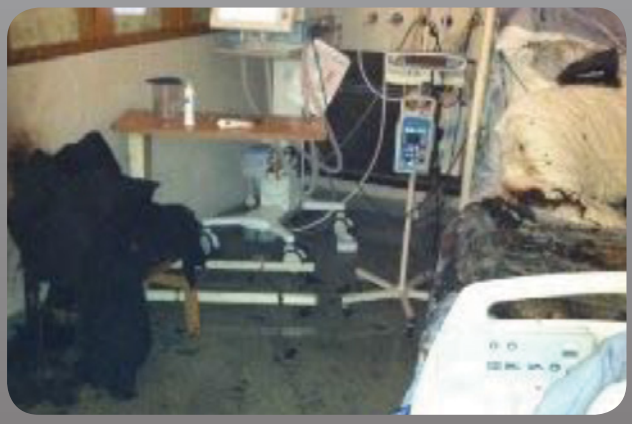
"It would be great to have mandatory training, that would be the gold standard," she says. *"I think the way to get it made mandatory would be to get it included in medicines management training."*

She points out that the awareness around hypercapnia is something clinicians became increasingly aware of, and COPD 'retainer' patients now wear a warning bracelet or carry an alert card to alert paramedics and other clinicians to the fact that they must not have 'high flow' oxygen.

Mr Matthews hopes that the issue may be taken up at national level however, this does not seem to be happening yet. NHS Improvement still suggests the responsibility for the training levels still resides with the local health organisation commenting: *"Health organisations across the country have responsibilities to ensure that all staff who prescribe or administer oxygen are supported to do so safely and effectively. NHS Improvement will continue to review reported patient safety incidents and alert providers to risks where necessary."*

Box 1 – Oxygen therapy fire risks.

Compressed oxygen has been involved in a number of fires in hospital and ambulance settings in recent years. In 2011, a fire occurred in the intensive care unit of the Royal United Hospital, Bath after an oxygen cylinder laid on a patient's bed to provide oxygen during a transfer to another hospital was turned on and then caught fire, with four foot flames coming from the valve end of the cylinder. The mattress and bed immediately caught fire, followed by the bed curtain, flooring and ceiling tiles. The ICU filled with thick black smoke within seconds and though the fire was put out by two doctors using fire extinguishers, the damage to the unit, which had to be evacuated of patients, was extensive.



Following this fire; Safe Anaesthesia Liason Group (SALG) have provided guidance on promoting fire safety in intensive care and in theatres, with some key suggestions emerging: "staff should be given basic training in the use and handling of medical oxygen cylinders, ensuring that they are aware of correct handling procedures."

"Avoid placing the cylinder on the bed next to the patient if at all possible; use extra care when there is no option but to place the cylinder on the bed" and "set up the cylinder for patient use before placing it close to the patient".

Though incidents of such a nature are thankfully very rare, in 2016 the Irish National Ambulance Service ordered a safety check on all oxygen containers in vehicles after an explosion in the back of an ambulance in Co Kildaire. A patient died and two paramedics were injured during the explosion, which happened at the emergency department of Naas General Hospital.
In 2008 a fire at Great Ormond Street Hospital, caused by a faulty television in a day room, led to a small cylinder of oxygen also in the day room exploding. The day room was destroyed and flying debris caused extensive internal and external damage to other areas.

Box 2 – Oxygen therapy not being prescribed correctly.

The 2015 British Thoracic Society emergency oxygen audit, which took in 180 hospitals, found that while one in seven patients in UK hospitals were receiving oxygen therapy on any given day, more than four in ten of those were receiving oxygen with no prescription or other written order on its safe and effective use. The audit found 42.5 per cent of patients receiving supplemental oxygen had no valid prescription, despite 70 per cent of hospitals having in place a policy of setting a target saturation range for all patients at the time of admission to hospital.

A small but significant number, 5.9 per cent, of the patients using oxygen had no written order around doing so.

Only 69 per cent of patients with a prescribed target range had an oxygen saturation rate within the intended range. Almost 10 per cent – 9.5 per cent – of patients were below the target range and 21.5 per cent were above the target range.

Though oxygen saturation was reliably documented during observation rounds, on a 100 per cent of rounds – and has found to be so since 2011 – oxygen was signed for on only 28 per cent of drug rounds.

The audits also show what the BTS classes as "a very gradual" migration from paper drug charts to electronic prescribing for oxygen. In 2015 paper drug charts were being used in 68 per cent of cases, fully electronic prescribing for 15 per cent and 17 per cent a mixture of paper and electronic prescribing.

The BTS recommended national improvement objectives should include –

90 per cent of patients using oxygen to have oxygen signed for at the most recent drug round.

95 per cent of patients using oxygen to have a valid prescription with target saturation range.

100 per cent of nursing and medical staff to be trained in the safe use of oxygen according to local trust or health board oxygen policy.

Equipping the NHS for obesity

With obesity in the UK population on the increase, Emma Dent talks with Harrogate and District NHS Foundation Trust's Medical Devices Safety Officer and NAMDET Yorkshire Chairperson, Bev Curtis about the impact on the required equipment and training needs

Where there is an increase in obesity there is an increase in health problems. According to the NHS Atlas of Risk, obesity is the fourth largest risk factor contributing to deaths in England and obesity is also associated with cancer, disability and reduced quality of life. In middle aged and older adults, obesity is also associated with a higher prevalence of falls. The increasing rise in obesity in the UK population is an undisputed fact. The most recent figures, from the Health Survey for England 2015 (published at the end of 2016), found that 27 per cent of UK adults were obese.

It is not just the clinical challenges that the NHS faces with obese patients. For staff there are special risk factors and challenges around the safe and dignified moving and handling of obese patients, known as bariatric care. Consequently, there is a need for hospital services and equipment tailored to this particular group of patients. With the average hospital bed similar in size and shape to an average single bed, they are clearly not going to be suitable for a patient who is particularly heavy or has a particularly wide waist measurement (see box 1).

Obese patients are at particular high risk of developing pressure ulcers, due to decreased mobility, increased pressure between body tissues and surfaces and poor blood supply to fatty tissues. This is only potentiated if standard equipment such as commodes, chairs and beds are used, as their use can cause tissue compression.

"If you pardon the pun, it's a growing issue," says Harrogate and District NHS Foundation Trust Medical Devices Safety Officer and Chair of NAMDET Yorkshire, Bev Curtis.

"How to use the equipment is not an issue, the issue is around deciding whether or not you need specialist equipment. Thorough risk assessments on patients as individuals is really important."

Ms Curtis points out that it is not always an issue of a patient's weight.
"Sometimes it is about shape. You can have a patient who is as wide as they are tall. So a patient could be 17 stone but could be four feet wide. In those circumstances there is no space in a standard hospital bed to give personal care. Or you could have a six foot seven inch rugby player; with their muscle mass it does not take much to push them over a weight that can be handled with standard equipment and care."
Ms Curtis says her trust has become increasingly aware of the issue over the last four years and has consequently made provision for the admission of bariatric patients.

"This is something we had to learn about on the job. After our first bariatric patient came in we had no facilities at all. We ended up having staff going off sick with back problems," she says. *"That could not be allowed to happen again. We could not assume it was a one off and so started to have to get some bariatric equipment in stock."*

At Harrogate and District NHS Foundation Trust, bariatric patients are generally considered to be 35 stone or over. Other trusts policies vary; some have put in place policies regarding patients over 25 stone or a BMI of over 30, others have policies for patients weighing up to and over 50 stone. Ms Curtis explains that most training on bariatric equipment is around moving and handling, but as there is no generic training available, her trust, having recognised the importance of the issue, now includes it in annual mandatory moving and handling training.

> *"The equipment, especially the beds and specialist mattresses, are very simple to use and not unlike standard equipment,"* she adds.

Ms Curtis would like to see national guidance on how to assess bariatric patients and accessibility to more varied equipment to suit individual needs.

"Moving and handling training across trusts is mandatory, but there is no guidance on whether it should include an element on bariatric patients specifically. By nature nurses will just 'have a go'. A lot of nursing staff, when faced with a bariatric patient, will still try to make do, they don't think about themselves when it comes to patient handling," she says.

"But our aim as a trust is that the staff are kept safe and the patients, as much as possible, keep their dignity. This is an expensive issue – bariatric beds cost £8,000 – but cost is the last considered issue."

For Trusts **there are also flexible financial packages available including purchase and rental options.**

Ms Curtis believes the health service may not be fully prepared for the challenges bariatric patients face.
"In Scotland they have been more prepared as the population there has been getting bigger for longer, generally I think the health service is playing catch up in this area. I would say the UK is about twenty years behind the US in terms of being prepared for this issue." says Mr Curtis.

In common with other trusts, when Ms Curtis's knows a bariatric patient is going to be admitted, a bariatric bed must be requested for the ward. Contoura® beds are manufactured out of more substantial materials than the standard hospital bed, with sides that can be pulled outwards to accommodate wider patients.

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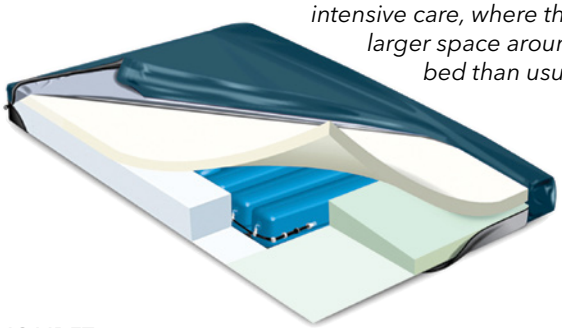
Upon admission, the patient is weighed and if found to be below 35 stone, they are generally transferred to a standard bed as this is usually considered suitable. If a patient is over 35 stone, whether or not they are comfortable on a bariatric bed dictates if one will be used. If the patient needs a wider bed, their weight (over 58 stone or not) dictates whether they need a bed with an air mattress that can be requested from the equipment library to use on a ward. Otherwise a different bed must be sourced through the equipment library.

"With the sides opened up they are around the size of a queen sized bed. They also have better hydraulics. However, they take up the space of two bed sizes, so obviously that means closing a bed space, with all the implications that entails on cost and operational impact on the hospital. The exception to this is in intensive care, where there is a larger space around each bed than usual.



"These [bariatric] beds cannot fit through a standard sized door if extended, so if a patient is to be transferred from one ward or department to another, a standard bed must be used as a trolley and the bariatric bed moved where needed. All this involves taking staff out of routine duties," says Ms Curtis. *How ill and mobile the patient is also has implications,* adds Ms Curtis.

"If a patient is very ill and does need a chair it is an issue of providing dignified personal care while they are in a suitable bed. But if they are getting more mobile you need additional equipment; you need a strong enough hoist and a strong and wide enough chair - and enough staff to help them get out of bed . Then as the patient becomes increasingly mobile they need a reinforced mobility aid or wheelchair to get about." There is therefore a considerable impact not only equipment needs, but also staff time.

"Even with specialist equipment, moving an especially obese patient can take up to seven staff. It could potentially mean the entire nursing and HCA contingent of ward staff, plus portering staff. It's a vast problem, both in monetary and staffing terms," says Ms Curtis.

Equipment needs for bariatric patients cover the spectrum of what may be needed for a hospital stay, including beds, bedside armchairs, commodes, walking slings, wheelchairs, wheelchair ramps, turning beds, moving systems or lifting cushions (used to lift fallen patients), walking frames, gowns and linen grab packs.

In addition, outpatient departments need wider and stronger chairs for waiting rooms and stronger examination couches. Before a bariatric patient can come into hospital they must be transported in a specially commissioned and modified bariatric ambulance, with bariatric stretchers. And accident and emergency must be informed so as to have a bariatric trolley in readiness and a bariatric bed available on an appropriate ward.

"It is difficult to install necessary equipment, such as extra reinforced hoists, as a one off," explains Ms Curtis. *"We need to be prepared."*

X-ray and scanning equipment must also be capable of being used with a bariatric patient.

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And if a trust carries out surgery on bariatric patients, or carries out bariatric (weight loss procedure) surgery it must also have in place theatre tables able to take extra weights, as standard theatre tables have a weight limit of 133 kg (20 stone). Modified theatres can have tables with a 450 kg weight limit and a 600mm width.

At the other end of a possible patient journey, morgues have also had to be adapted. Regular morgue storage is up to 58 cm wide and bariatric up to 74 cm wide. This is now standard in many trusts and at Harrogate and District for example, took place when the morgue was redesigned.

As a trust serving a relatively small and affluent population area, bariatric patient care has become an issue in Harrogate later than in other areas with especially large numbers of obese patients and is still an issue around very small numbers of patients.

In one year, for example, the trust has had three or four bariatric patients. (Though as Ms Curtis points out, *"There may be other patients out there in need of such equipment, we just have not met them yet.")*

Compare this with statistics from the Health and Social Care Information Centre which show in Sunderland there were 375 admissions (the highest in England) with a primary diagnosis of obesity, 152 admissions in South Tyneside and 138 in Gateshead. These include tertiary trusts which are also more likely to have bariatric patients as they have the facilities in place to carry out bariatric surgery.

So, as obesity increases in the population, so must the level of provision within the NHS to care for these patients with dignity, whilst protecting the health and safety of staff. The issue is only going to get more pronounced.

How obesity is calculated

In adults, the diagnosis of obesity is most commonly made using BMI levels, recommended by the National Institute for Clinical Excellence. BMI is calculated as weight in kilograms (kg) divided by height in metres squared (m^2). Being obese is classed as a patient having a body mass index (BMI) of 30kg/m^2 or higher. A BMI of over 40 kg/m^2 is obese (Grade III) or morbidly obese, meaning that weight is a real and imminent threat to health.

There are a few exceptions that are worthy of note; for example a person who is very muscular may have a high BMI without an excess of fat.

Along the same lines, as BMI does not distinguish between mass due to body fat and mass due to muscular physique and does not take account of the distribution of fat. Clinicians also look particularly to waist circumference, waist to hip ratio or waist to height ratio as useful supplements to BMI to identify obesity.

In men a waist circumference of over 102 cm is considered high risk and in women one of over 88 cm.

Spotlight on the

Lord Carter Innovation Award

ON THE RIGHT TRACK

Knowing how to safely use a medical device isn't much use if you can't actually find the device when it's needed. Yet at many hospitals, a lack of formal tracking systems means staff struggle to find what they need, when they need it. Technology is helping to address that problem and, as Claire Read reports, projects to implement such solutions took centre stage for the inaugural Lord Carter Innovation Award.

As the education session you've been running draws to a close, you allow yourself a brief moment of satisfaction: you're confident that your colleagues are fully prepared to use the medical device you've been talking about. They know how to operate it safely and efficiently, and you know that patients will receive the best possible care as a result. But can you be confident your colleagues will always be able to easily find the device when they need it?

In many organisations, the answer to that question will be no. As the quantity of medical devices has proliferated – and the size of hospitals and trusts swelled as well – being able to reliably locate equipment at all times has become a more significant challenge. That, in turn, can mean poor stock control. Wards or departments with overflowing stock cupboards are a common sight in many organisations.

In this context, it's perhaps unsurprising that all the projects honoured by the 2017 Lord Carter Innovation Award related to the tracking of medical equipment. The award, presented for the first time this year, sought to recognise the NHS bodies which had best used innovation to improve healthcare estates and infrastructure.

Four organisations were ultimately recognised. The top honours were taken by Royal Wolverhampton NHS Trust, for its implementation of an electronic system which can track staff, patients and equipment.

Cambridge University Hospitals NHS Foundation Trust was named as runner up, for its use of barcoding and radio frequency identification (RFID) technology.

Two trusts were highly commended: East Kent Hospitals University NHS Foundation Trust, also for a project involving the use of RFID, and Lancashire Teaching Hospitals NHS Foundation Trust for its inventory management solution.

All winners received certificates at Hospital Innovations 2017, an exhibition and conference supported by the Institute of Healthcare Engineering & Estate Management (IHEEM). The judging panel, which consisted of past presidents of the institute, chose the winners from a field of around 30 entries.

As honorary patron of IHEEM, Patrick Carter was perhaps a natural choice to present the prizes. But, of course in the past few years his attention has been firmly centred on bolstering efficiency in healthcare. His review of productivity in acute hospitals in the English NHS, published last year, concluded there was huge potential for financial savings across the board. The trusts recognised in the Lord Carter Innovation Award suggest medical equipment tracking could play a significant role in realising them.

KEEP ON TRACKIN' –
THE ROYAL WOLVERHAMPTON NHS TRUST

Whether patient, personnel or inanimate object, if you're within the walls of New Cross Hospital then you will have an electronic badge or bracelet attached to you.

Since 2014, the West Midlands hospital – which is run by The Royal Wolverhampton NHS Trust – has been using an electronic system to identify exactly where staff, patients and devices are in real time.

The system uses a combination of infra-red and radio frequency technology to pinpoint the location of anything or anyone with an electronic tag. Sensors placed around the hospital read from the tags, and staff can then see location information in real time on large touch screens and computers.

That means they have precise information on the specific location of certain medical devices and, by putting tags on soap and hand gel dispensers, it's even possible to check whether staff are washing their hands when they enter and exit a patient care area.

The system also enables a real time understanding of which beds are free, and which patients are waiting for admission to one. According to the trust, patients at New Cross Hospital are now three times more likely to get a bed on a ward which matches their need than they were before the system was introduced.

It's a figure which caught the attention of the judges for the first ever Lord Carter Innovation Award, who ultimately decided to give top honours to the trust. David Loughton, chief executive of The Royal Wolverhampton NHS Trust, said he was "delighted" the organisation had been been selected.

"To have been recognised by Lord Carter and to have been chosen as the recipients of this award in its inaugural year is fantastic," he commented.

"As a trust we are committed to providing safe and effective care, to be kind and caring, and to exceed expectation. We have a culture that embraces technology in the workplace and our work with the teletracking system has proved groundbreaking, with excellent results across the board."

He argued that if the NHS was to meet rising demand, *"it must continue to innovate and develop new technologies that enhance and improve patient care".*

Royal Wolverhampton was the first trust in the country to use TeleTracking Technologies' real time location system. Following its success, the technology is now being rolled out at The Countess of Chester NHS Foundation Trust, University College Hospitals London NHS Foundation Trust and three trusts in mid and South Essex.

AGGRESSIVE ABOUT PASSIVE – CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST

Take a close look at the medical devices at Cambridge University Hospitals NHS Foundation Trust, and you'll spot a small label with a barcode. It's all part of the organisation's efforts to track every piece of equipment it owns – a project which saw it secure the runner up spot in the Lord Carter Innovation Award.

On 7,500 high value pieces of kit you'll find an active radio frequency identification tag (RFID). The 'active' means the tag contains a small battery which constantly transmits its location. Look at lower value items, and you'll see a passive tag. These don't contain a battery, but can be read by an RFID scanner. Trust staff use two types of scanner – one is mounted on a specially designed trolley which can be wheeled round the hospital. Its three antenna can automatically detect a passive RFID tag from up to 11 metres away, and record the date, time and location at which the tag was detected.

Staff also use a small handheld reader to audit wards or locate specific equipment. Every barcode used is compliant with GS1 standards, which means the code is unique to that piece of kit.

Professor Paul White, the trust's head of clinical engineering, explained the introduction of RFID and GS1 has made it easier to understand exactly what equipment the organisation has.

"When we previously carried out a test audit on six wards, it took us two weeks to complete and 35 per cent of devices were unaccounted for.

"Now all our medical devices are fitted with a passive tag, the same process takes just 10-15 minutes and we can account for more than 90 per cent of our inventory. By auditing our equipment more regularly, we can make sure our assets are where we think they are."

The trust uses the RFiD Discovery system, provided by Harland Simon, and Professor White characterises it as the "backbone" of the organisation's medical equipment library.

"It gives us data which provides vital information for decision makers at the trust. Over the years, using RFID technology has improved our care and [saved] us hundreds of thousands of pounds."

He said he was thrilled the trust had been chosen as runner up for the Lord Carter Innovation Award.

"Using RFID technology and GS1 standards has enabled us to improve our patient care while making cost savings. We hope other trusts will be inspired to follow."

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PUMPED UP -
EAST KENT HOSPITALS UNIVERSITY NHS FOUNDATION TRUST

At £1,500 a go, infusion pumps don't come cheap. Yet staff at East Kent Hospitals University NHS Foundation Trust used to frequently request new ones were purchased, simply because they always seemed to be in short supply.

In 2014, when the Care Quality Commission inspected the trust, the resulting report said lack of equipment was frequently raised as a concern by staff.

When the trust began to fit active radio-frequency identity tags to its most valuable medical equipment, the true picture became clear. The tags transmit a unique ID at regular intervals, which are read by devices placed across the hospital site.

Data generated by this setup showed there was far from a shortage of infusion pumps at the trust. In fact, there were 98 more pumps than needed. The problem was that no-one had previously known with any reliability where devices were located in the trust.

Those excess devices have now been taken out of routine circulation. They will be used as needed, and it is clear the organisation will have no immediate need to purchase new pumps.

In November 2015, the CQC issued its latest inspection report on the trust. It noted that *"the introduction of an equipment library (including the use of radio frequency identification tags) has been of benefit".*

It is a success story which led to the trust being highly commended in the first Lord Carter Innovation Award. The award recognises the NHS bodies which have best used innovation to improve healthcare estates and infrastructure.

According to Tony Beaumont, consultant anaesthetist and head of the medical devices group at East Kent, there is little doubt the tracking via Harland Simon's RFiD Discovery system has made a big difference. *"The introduction of RFID tagging to our inventory of medical devices has allowed us to improve many aspects of equipment management. Ward staff now spend less time finding equipment and more time actually using it for patient care.*

"Without RFID tracking the medical equipment libraries would not have been so effective."

Andy Barrow, electronics and medical engineering manager at the trust, said the tracking project was now being expanded. *"RFID tracking has given us an unprecedented level of confidence surrounding our device management and we are already well on our way to extending our use to passive RFID for all our devices."*

OPERATION INVENTORY MANAGEMENT -
LANCASHIRE TEACHING HOSPITALS NHS FOUNDATION TRUST

When staff at Lancashire Teaching Hospitals NHS Foundation Trust began looking at how they could improve the organisation's inventory management, the operating theatres were an obvious place to start.

The department had the highest spend on stock, but also had real issues with managing it. It was difficult to get a clear picture of which products were available, meaning they were either under- or over-ordered. Wastage was common, because goods were not used within an appropriate timeframe. It really wasn't conducive to meeting the NHS-wide challenge of improving care at the same time as increasing financial efficiency.

To address the situation, the trust embarked on a project to implement an electronic inventory management system – work which saw it highly commended in this year's Lord Carter Innovation Award.

Since 2014, the theatres department has been using Ingenica Systems' Atticus software to keep accurate records of exactly what is being used. Staff scan each item when it comes into the department – from £10,000 implants to 20p needles – and again when it is used, with the information automatically stored in the system. In this way, it's possible to understand which products have been used, when and on which patient.

Significant financial efficiencies have been the result. The trust reports £3m of balance sheet savings as a result of its new inventory management system, with more than 7,000 clinical hours saved by freeing up healthcare professionals from procurement tasks such as ordering and chasing stock.

The success of the initial project is such that the Atticus solution is now being rolled out to more than 130 other parts of the organisation.

Commenting on the Lord Carter Innovation Award recognition, the trust's head of supply chain Ian Britcliffe said: *"We are now beginning to reap the rewards for the time and commitment ourselves and Ingenica Solutions have put into the project. We are ahead of the curve in terms of inventory management within the NHS nationally, and this project will help pave the way towards the adoption of global standards."*

Added Ingenica Solutions managing director Nicola Hall: *"Lancashire Teaching Hospitals NHS Foundation Trust is a showcase example in the NHS of how innovative technologies can lead to enormous efficiency gains. It's a great future focused project that presents ever-greater potential for further efficiency savings."*

Early Identification of Occlusions in Intravenous Therapy with **In-Line Pressure Monitoring**

Scott M. Gouveia
Scientific Director, Solaris Health, Richmond, Surrey, UK

Introduction

Intravenously-administered medication is standard practice, and ubiquitous in the hospital setting.[1] With so many intravenous (IV) infusions being carried out, IV-associated incidents and errors are inevitable.[2] Some errors may be preventable,[3] but for other sources of error such as in-line occlusions, early identification is essential to prevent or limit harm to the patient. In such cases, in-line pressure monitoring (ILPM) – a feature available on many modern infusion pumps – can play a vital role in patient safety.[4] Here we discuss the frequency of IV medication errors, methods that may be employed to prevent them, and how ILPM can help with the early identification of occlusions and the consequent benefits this can have for patients and the healthcare system.

Data is lacking on the frequency of extravasation in the UK

The actual frequency of medication errors is unknown because many likely go undetected, and of those that are detected, a proportion are probably not reported.[2] One particular type of infusion-related complication, occlusion (blockage) of the peripheral cannula, has been reported in a UK study to occur in more than 1 in 4 peripheral IV catheters in adults,[5] and can lead to potentially serious adverse events such as infiltration and extravasation.[6] These both involve the unintentional leaking of medicinal fluid into the tissue outside the vein, but the vesicant or blister-forming properties of extravasated fluid make the consequences generally more serious for the patient compared with non-vesicant infiltrated fluid.[6,7]

One of the main problems in addressing extravasation in the UK is the scarcity of data and the consequent lack of consensus on the frequency of incidents. In a recent telephone survey of ten UK hospitals investigating paediatric extravasation management, extravasation injuries were not audited regularly in any of the hospitals. Furthermore, 76% of healthcare professionals had received no formal training in extravasation management.[8] Overall frequency has been reported to be from 0.1% to 6.5%,[9] while a study of adult patients in the UK found an extravasation rate of 39%.[10]

Reports from outside the UK suggest that actual incidence rates may be even higher in specific populations. In a neonatal intensive care unit (NICU) in Brazil, peripheral IV medication had a complication rate of 63%, with 70% of these adverse events being infiltration or extravasation.[11] However, this says nothing of the severity of the incidents. In a 2-year study of a NICU in Greece, the incidence of 'severe extravasation' (stage III or IV extravasation injuries) among 1409 neonates was found to be 2.4%.[12]

Clearly, more observational studies and greater reporting transparency are needed in order to appreciate the extent of the problem in the UK.

Protocols and procedures can prevent some, but not all, peripheral IV complications

Not all peripheral IV complications can be prevented, such as kinks in tubing or the development of thrombophlebitis, for example. However, studies from other countries have shown that implementing specific tools and protocols can prevent some IV complications and reduce the frequency of adverse events. One observational study of a Spanish NICU found that random safety audits identified widespread inappropriate pump use, which provided the motivation for implementing safety software (Guardrails CQI Event Reporter®, BD) on their smart pumps. Following the design of protocols and staff training sessions, a second round of audits found the rate of 'appropriate pump use' (i.e., *all* parameters correctly entered on the smart pump) increased from 0% to 73%.[3]

Implementing a protocol, with appropriate nurse training that promoted good communication between nursing and medical staff and rapid identification of extravasation, has also been shown to keep harm due to extravasation to a low level in an American ICU. In this trial of peripheral IV access of vasoactive medications, only 2% of patients experienced extravasation,

and none of them had tissue injury following treatment.[13] Other simple practices should be followed to reduce the risk of extravasation, such as flushing the catheter with saline to confirm correct placement, and securing the catheter with a dressing adequate enough to prevent it moving, but not so large that it conceals early local signs of extravasation.[14] In the absence of ILPM, monitoring frequency should be increased for patients who are at high risk of extravasation such as those with poor peripheral circulation or peripheral neuropathy, those who cannot easily communicate pain or discomfort, and the elderly.[14]

ILPM has the potential to reduce harm associated with IV complications

ILPM continuously monitors the in-line fluid pressure, so any occlusion can be detected early by the user and measures can be taken to prevent or minimise harm to the patient.4 Occlusions may be 'hard' or 'soft' depending on their cause. Hard occlusions are complete blockages of the infusion line and are caused by occurrences such as kinked IV tubing or catheter, a closed stopcock, or an air-lock in an in-line filter.15 Hard occlusions are quickly identified by ILPM because the in-line pressure rises rapidly and an alarm is sounded to alert the user, who can then stop the infusion and address the problem before re-starting it.

Soft occlusions do not completely block the IV line but cause a partial obstruction. This results in a slow but steady increase in in-line pressure, which may or may not trigger the ILPM alarm, depending on the pressure threshold at which it is set (the pressure alarm threshold is set to a level appropriate to the patient, the infusion site, and the flow rate).[4] Soft occlusions may be caused, for example, by extravasation or infiltration, precipitate build-up in the catheter, narrowing of the vessel lining due to phlebitis, and thrombophlebitis.[15]

Consequences of IV occlusions

Extravasation is one of the most serious consequences of in-line occlusion because it involves vesicant fluid seeping into the tissue outside the vein. Serious cases may need surgery or even amputation, resulting in long-term or permanent damage.[6,7] Many substances come under this classification, including calcium-containing infusates, parenteral nutrition, lipid solutions, and chemotherapy drugs. The damage to the tissue may be related to the toxic nature of the fluid, vasoconstricting properties (this can lead to local ischaemia and necrosis[16]), or its high osmolarity (if greater than that of plasma: 290 mosmol/litre) which can lead to compartment syndrome.[15] However, even the high fluid pressure resulting from large volumes of non-vesicant infiltration can lead to tissue damage.[17]

It is therefore very important that soft occlusions, which may indicate extravasation or infiltration, are identified as early as possible to prevent injury to the patient. With the appropriate alarm threshold set for each individual circumstance, ILPM can give early warning of these problems so corrective measures can be taken. There are other consequent benefits of this such as limiting the volume of drug lost into the tissues, so minimising the dosing uncertainty, and possibly preventing a break in care. Also, timely intervention can reduce the potential stress and anxiety a patient may experience when suffering an IV complication and undergoing treatment.[18,19]

Benefits of modern pump technology

Some modern infusion pumps can monitor in-line pressure in real time with a continuous graphical display of pressure over a given time, so that even if the alarm threshold has not been reached, any progressive rises in pressure can be seen. This has obvious advantages for the timely identification of soft in-line occlusions. While some infusion pumps use a mathematical algorithm to estimate in-line pressure, others such as the Alaris VP® *plus* volumetric pump by BD *(see Figure 1)* measure actual pressure changes as they happen, which can be viewed graphically.

Figure 1. The Alaris VP® *plus* volumetric pump, which measures actual in-line pressure in real time which can be displayed graphically during infusion.

Economic impact of extravasation and other IV medication errors

Due to the current lack of data from the UK on IV complications, it is unclear at present what the economic costs associated with these events are. It is certain that breaks in patient care, prolonged stays in hospital, and treatment for complications such as extravasation which may require a multidisciplinary team, have costs to the healthcare system.20

If human error is involved in an incident of extravasation, for example, which leads to harm to the patient, there is a chance that a litigation claim will be made against the NHS, which can have huge financial consequences.[21-23] Between 2005 and 2010, ten lawsuits were successfully brought against the NHS as a result of infusion errors in children, including seven cases of extravasation. The exact cost to the NHS from these cases is unknown, but overall the NHS pays out about £400 million annually as a result of adverse incidents.[21] Preventing IV complications and identifying early those that are not preventable is therefore imperative, both for the health of the patient and for the healthcare system.

Conclusions

At present there is a lack of data on the frequency of IV-associated complications in the UK, including extravasation and infiltration which can have serious sequelae. While it is acknowledged that some IV errors are preventable with the use of specific tools, protocols, and staff training, other complications such as extravasation/infiltration are not always foreseeable. In these cases, ILPM can play a very important role in identifying the problem early, allowing appropriate intervention, and so helping to prevent or minimise potential harm to the patient. As well as also limiting stress and anxiety to the patient and preventing breaks in care, there are also economic benefits. If more data were collected on the frequency and outcomes of IV complications, we would be able to make better estimates and predictions of the cost savings associated with prevention.

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When it comes to Your Theatre – WHO IS IN THERE AND WHY?

Diane Irvine, CEO at Healthcare Skills International, considers accountability – Should Nurses/RODP's be expected to extend their accountability to all "visitors" in clinical areas?

Nursing and Registered Operating Department Practitioners (RODPs) careers have become dynamic, yet complex professions. As practitioners develop their roles to incorporate aspects of care that used to be the domain of the medical staff, their autonomy has vastly increased.

This autonomy has been welcomed by most nurses/ RODP's but it comes with a heavy price - that of increased accountability. Appropriate education and management processes should be in place to minimise risk, but there remains a lot of confusion as conflicting guidance on the delegation of medical procedures remains unresolved.

An issue that keeps raising its head is how the medical industry can help support nurses/RODP's through this transition? It is important that the Healthcare company representative understands the extent of the nurses/RODP's roles, responsibilities and accountability as this would help reduce the risk of any nurse/RODP's putting their job on the line. This understanding will enhance working relationships and facilitate access to the appropriate person when consulting on their products.

The team approach within the peri-operative field is the fundamental way to ensure that the service is effective and efficient. Medical device company representatives are considered to be an essential part of that team. But with that privilege, respect and understanding of each other's roles should be the norm.

Nurses/RODP's work to a set of standards and codes of conduct set by the Nursing and Midwifery Council (NMC) and the Health and Care Professions Council (HCPC) when working in a collaborative partnership with other healthcare professionals in this case, medical device company representatives.

This in turn raises questions around medical device company representative's roles, responsibilities and accountability when in the operating theatre.

Are nurses/RODP's fully aware of the level of competence of the medical device company representative?

Did you know that when you delegate a task to a non-hospital employee it is your accountability that is on the line?

Is it acceptable for the nurses/RODP's to assume that a medical device company representative is competent because they say they are or because they can show them a Medical Industry Association (MIA) badge or is it reasonable to expect substance behind these?

In this era of clinical governance it is no longer acceptable to allow anyone in to clinical areas based on trust.

Predominately over the years, hospitals have taken healthcare company representatives on trust. This was based on confidence in the company/product and service provided by the company representative, and also that many nurses/RODP's had transitioned in to medical device representatives when they left the NHS. With this background, they understood theatre etiquette and roles, responsibilities and accountability of the theatre team. Many of these healthcare company representatives now come from graduate backgrounds and may never have set foot across a hospital setting before. The competence of company representatives is assumed and not assured.

Hospital management have assumed that these healthcare companies conformed to employers liability and carried out pre-employment checks and had robust appropriate training before deploying their employees to work in highly sensitive and risk managed areas within hospitals/clinical areas.

So - Are medical device companies confident that they have kept up to date with the reality of the nurse's/RODP's roles, responsibilities and accountability?

Let's see…

to whom are Nurses/RODP's accountable?

The public
Through criminal law

The employer
Through contract law

The patients
Through duty of care and common law

The profession
Through their Code of Professional Practice

By inviting medical device company representatives to be an "essential part" of the team delivering "safe patient care", have hospital staff opened the door to breaching their accountability as stated above? How can the hospital be assured and confident that the medical device company representative that is present in the operating theatre is competent and is compliant? Does the use of credentialing companies mitigate the risk for Hospitals? For those that do not use this facility how you know the difference?

When it comes to the theatre access training that the medical device company representatives says they have completed, there are questions still unanswered - is it a National Occupational Standard level course, is it an online course with a certificate? Is it externally validated, is it competence based - How are the nurse's/RODP's supposed to know which is the benchmarked standard of training? After all, we all know that theatre is the most highly risk managed environment in the hospital - hard to believe that we have so many unknowns!

The accountability and advocacy of nurse's/RODP's to their patients is extensive as described.

Nurse's/RODP's are accountable for ensuring that the patient has given consent for the treatment they are receiving. It is worth remembering that under civil and criminal law, participating in patient care without consent can lead to a charge of assault. The information a Nurse's/RODP's must give before obtaining consent should be the following:

- **Conform with that which a responsible body of similar professionals in the same speciality would give to a patient;**
- **Inform the patient of the material risks of the procedure;**
- **Be dictated to by circumstances;**
- **Be given without undue influence or duress;**

Consent, even implied consent, should be obtained only after the nurse's/RODP's has given the patient sufficient information so that the patient can make a meaningful decision.
Should the nurse inform the patient if a healthcare company representative is going to be present during a procedure? If they do, who is accountable? If they don't who is accountable? Make sure you are clear of your own responsibility here.

Finally, let us consider confidentiality. Confidentiality is a fundamental part of the nurse's/RODP's and patient relationship and any information given to the nurse/RODP should not be passed onto a third party outside the healthcare team unless consent is given by the patient. A breach of confidentiality could lead to civil action which if successful will result in a payment of compensation. If a medical device company representative obtains confidential information from a nurse/RODP and chooses to share that within your company who is accountable? Who is more at risk here, the company representative, or the nurse? Probably both, but the key point is the breaking of trust between the medical device company representative and the nurse/RODP often due to ignorance, that leads to a disastrous outcome.

This assessment of the current issues associated with accountability, nurse's/RODP's roles and responsibilities, and healthcare company representatives has been highlighted by the introduction of credentialing schemes throughout hospitals in the UK.

The pace of change is fast and we all know that some of the critical points already require firm action. At this stage in time it is unclear of the full impact these changing roles will have on the delivery of patient care, but remember all medical device companies will be under the legal microscope, this means that nurses and RODP's will be too.

So we all need to remember……

"Anyone who is invited into hospitals or areas of clinical care in an advisory capacity is bound by the same legal and ethical obligations as those employed within the hospital"
(ref. DOH: Confidentiality: NHS Code of Practice July 2003)

Companies need to make sure they have taken the necessary steps to reduce any risks.

Education and Networking to enhance your CPD

Dawn Stott
CEO

AfPP's charitable objectives reinforce the need for all practitioners to be safety aware and to ensure they keep the patient at the forefront of everything they do. We believe in providing the best possible support we can to our members and support a zero harm approach to patient care.

We do this through setting standards and promoting best practice, providing advice to practitioners, acting as a consultative body, supporting research opportunities, facilitating education and practice development, fostering and promoting contacts and exchanging information and ideas.

It is the last two elements of our charitable objectives that I would like to discuss in this article. Education and networking are paramount for any practitioner whatever their roles and responsibilities. Continuing professional development (CPD) is the process of tracking and documenting any skills, knowledge and experience that you gain either formally or informally within your work environment; anything that is extra to your initial professional training. Keeping a record of your experiences, learning and how you have applied those skills is essential for practitioners as part of their revalidation process.

Education can come in many guises, for example:

- **Classroom learning**
- **Online learning**
- **Webinars**
- **On the job training**
- **Reading**

Maintaining a record and evidence of any professional CPD is a great idea and there are many tools out there to support this. AfPP has an online tool together with a hard copy Personal and Professional Develop tool. Both methods provide a simple and effective framework to help shape your professional development and store your achievements.

Both approaches are designed to support requirements to meet statutory obligations in respect of your professional registration. Whatever method you use for maintaining your CPD records they can be changed/developed to help you for appraisal or to support career mapping or identify gaps in knowledge.

It is not always possible for practitioners to get time out of their environment to attend study events and there is a lot of contention around the support provided to clinical practitioners versus the medical professionals. However, if there is a chance to attend events this does provide the opportunity for practitioners to network with likeminded individuals to know you are 'not alone' out there.

Networking is a process that supports the exchange of information and ideas among individuals or groups that share a common interest. AfPP (formerly the National Association for Theatre Nurses – NATN) was founded by Daisy Ayris MBE, a passionate ambassador for excellence in patient care and forward thinking theatre nurse, who even back then knew the significance of networking. She had the foresight to see how important networking is for any professional and how important it is just to check things out sometimes.

Ask yourself how many people you have in your professional network, how many people trust you and seek your professional advice? All connections are powerful and building a professional network can enhance your career. It is Important for every practitioner to be one step ahead of the game, develop themselves to make them stand out in the crowd and to ensure that they deliver improvements to the quality of care they are providing.

A momentous occasion for medical devices

Graeme Tunbridge
Group Manager for Devices at MHRA

The new EU Medical Device and In Vitro Diagnostic Medical Device Regulations have been published.

Key timelines

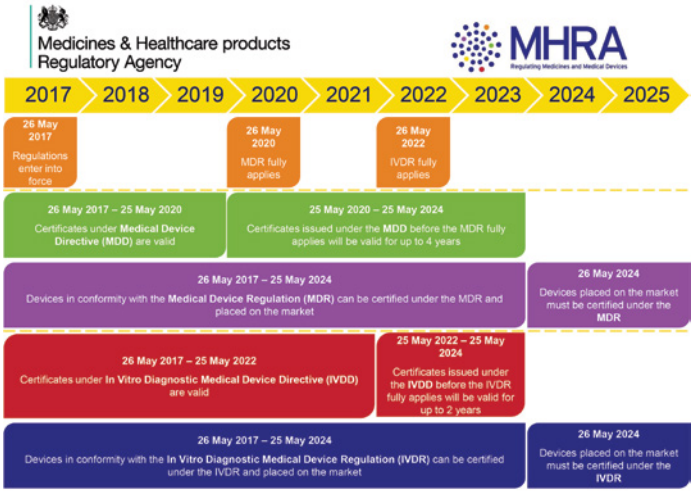
After years of negotiations, the final EU Medical Device Regulation (MDR) and EU In Vitro Diagnostic Device Regulation (IVDR) were published in the Official Journal of the European Union (http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2017:117:TOC) on 5 May 2017.

The Regulations entered into force on 25 May 2017, marking the start of a three- and five-year transition period.

Certificate validity

During the transition period, new devices can be placed on the market under the current EU Directives, or the new Regulations (if they fully comply with the new Regulations). However, devices placed on the market after the transition period will need to fully comply with the MDR, unless they wish to make use of the extended period of CE certificate validity (see timeline below).

This allows for CE certificates issued under the current Directives and within the transition period referred to above to remain valid for a maximum period of four years (MDR) and two years (IVDR) after the date it was issued. Importantly however, a number of MDR and IVDR provisions will 'switch on' at the date of full application – such as the new vigilance reporting requirements – and the original certifying notified body must also be designated under the new Regulations to qualify.



The new Regulations have introduced a number of key changes...

Increased scrutiny

- Continue to strengthen the notified body system, enabling joint inspections, unannounced factory inspections and the physical or laboratory testing of devices;
- Introducing pre-market clinical scrutiny of selected high risk, novel devices. These will be performed by 'Expert Panels' to be administered by the European Commission;
- Enhancing market surveillance by Competent Authorities, including clearer obligations for Competent Authority inspections on manufacturing and clinical investigation sites.

Increased scope and changes to risk classifications

- Regulation of certain groups of products without an intended medical purpose, listed under Annex XVI of the MDR, as medical devices (for example, non-corrective contact lenses, dermal fillers, and brain stimulation devices);
- Introducing new classification rules means that certain devices will be reclassified into high risk categories, and thus will require a more stringent assessment;
- Devices that are manufactured and used within health institutions will need to meet certain requirements set out in the Regulations.

Changes to obligations for economic operators

- Introducing clearer obligations for those involved in manufacturing and supplying devices;
- Manufacturers and authorised representatives will now be required to have at least one person responsible for regulatory compliance;
- Setting out more rigorous vigilance reporting requirements, including new reporting timescales, as well as clearer requirements on what a manufacturer's post-market surveillance (PMS) system should comprise of.

Increased traceability of devices and incidents

- Placing a greater emphasis on traceability throughout the whole supply chain through the introduction of a unique device identification (UDI) system, which manufacturers must fit on their devices, enabling greater control over safety alerts, potential recalls and surveillance tasks;
- The Eudamed database will be expanded to capture more complex data on devices. This includes information regarding economic operators, notified bodies, certificates, clinical investigations, vigilance and market surveillance. It will also enable more accurate trend reporting analyses. Much of this information will be made available to the public.

NHS Improvement

The role of Medical Device Safety Officers in incident reporting and learning

Paul Lee
Patient Safety Lead (Medical Devices)
NHS Improvement

Where a patient is harmed or could have been harmed due to an incident involving a medical device it is vital it is reported to help improve patient safety.

Incidents reported locally at NHS trusts, and some other healthcare providers, are fed into the National Reporting and Learning System (NRLS), which is used by the NHS Improvement patient safety team to spot patterns and trends in patient safety incidents. If any new or under-recognised incidents are identified, the patient safety team work to alert providers across the country so action can be taken to protect patients from harm.

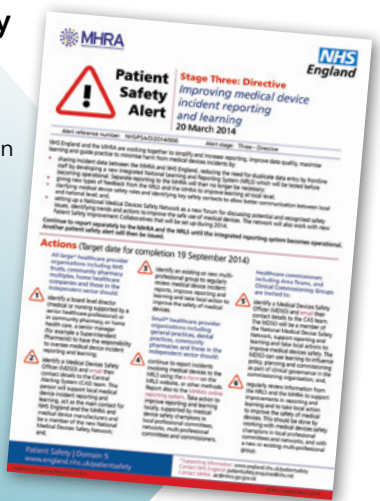
The Medical Device Safety Officer (MDSO) Network

To improve medical device incident reporting and learning, NHS England and MHRA issued a joint Patient Safety Alert in March 2014 asking providers to identify a named Medical Device Safety Officer (MDSO).

All NHS trusts and an increasing proportion of CCGs and private providers now have at least one MDSO in place, creating a national network of device experts with a focus on patient safety. Within their organisations these MDSOs promote the safe use of medical devices, encourage incident reporting and provide expert advice. They also serve as the essential link for the identification of risks and concerns surrounding devices and the implementation of local and national safety initiatives.

Building a community for MDSOs

Key to the success of the MDSOs has been the creation of a national community to keep them up-to-date with national initiatives; provide opportunities to seek advice from peers; to share information and successes; and to learn from one another. They are also able to participate in discussions at an early stage around newly identified risks, providing valuable insight from their own experiences.


MHRA

NHS England

Patient Safety Alert

Stage Three: Directive

Improving medical device incident reporting and learning

20 March 2014

Actions (Target date for completion 19 September 2014)

This includes engaging with the national patient safety team around the early exploration of patient safety issues, to help it decide on the best way to act.

Through monthly WebEx meetings, jointly hosted by MHRA and NHS Improvement, the MDSO network has been invaluable in raising issues that may need national action. Each month presentations on areas of patient safety relevant to devices are selected and shared across the network, with viewers able to ask questions and provide feedback.

Subjects have included:

- update on GS1 bar coding
- medical device user manuals
- the Central Alerting System (CAS)
- point of care and self-test blood glucose monitors
- NHS master indemnity process
- medical device time clock settings
- non-automatic weighing instruments and patient weighing
- company reps credentialing review
- ISO 80369 small bore connectors
- good practice for patient safety investigation
- analysis for medical device-related incidents
- supply disruption alerts
- medical device training
- new medical device regulations
- value of multiple reporting sources for in-vitro diagnostic devices

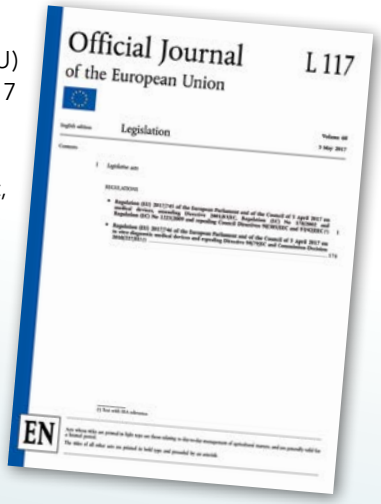
We also routinely include updates on all recent Patient Safety Alerts, focusing on how MDSOs can support effective implementation. The WebEx meetings are supported by a national online discussion forum where members can develop new themes and raise concerns at an early stage.

Further to this, an annual conference provides an opportunity for MDSOs to meet face-to-face, to learn from one another, and hear from national leaders in patient safety.

NHS improvement also provides valuable resources and a website for MDSOs which includes patient safety response reports and patient safety alerts which are developed with input, advice and guidance from the National Patient Safety Response Advisory Panel. This brings together frontline healthcare staff, patients and their families, safety experts, royal colleges and other professional and national bodies. https://improvement.nhs.uk/improvement-hub/patient-safety/

Supporting an ever changing role

The MDSO network also provides support around the impact on patient safety of changes in national and international legislation, the introduction of new devices, or changes in the way devices are used.


Official Journal of the European Union
L 117
Legislation
EN

For example, the new 2017 Medical Device Directive (EU) 2017/745 issued in May 2017 defines a medical device as 'any instrument, apparatus, appliance, software, implant, reagent, material or other article intended by the manufacturer to be used, alone or in combination, for human beings……'

The directive goes on to refer to 'diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease, or compensation for, an injury or disability.' It also includes a reference to replacement or modification of the anatomy or of a physiological or pathological process or state http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R0745

All of this broadens the remit of the MDSO's role as additional areas such as software are now listed within the directive and the role of the MDSO is becoming wider reaching.

How to become an MDSO?

To date there are 350 MDSOs on the network and over 40 forum discussion threads online. The role of the MDSO varies from organisation to organisation and may be allocated to more than one person.

MDSOs are nominated by their organisation and are registered via safetyalerts@dh.gsi.gov.uk. Once registered a login for the forum and WebExes will be provided, and the individual will be added to our MDSO email list to provide news and updates.

If you are unsure who the MDSO in your organisation is, your risk manager or clinical governance team may be able to help you.

Training Insights with Diane Irvine, CEO, HealthCare Skills

Old world New world

It is not what you say, it is how you are!

We all have a preferred style of communication.
How you learn something will be how you teach. If you learn by doing something yourself (hands-on /kinaesthetic) then when you teach that's how you will do it and you will want the learner to watch you.

Problem- if the learner is like you (hands-on) and learns by doing and not by watching, then your training is not going to go anywhere fast.

Last month we looked at the 4 steps of teaching a skill. Using this approach makes sure that the message/ knowledge/skill you are teaching is effective for your learner, as the 4 step approach works for all learning styles- visual, audio and kinaesthetic.

When you know your preferred learning style you understand the type of learning that best suits you. However, it also highlights if you have to change your teaching style to match your learners.

There is no right or wrong learning style. The point here is that to be a good teacher and engage your learners you need to deliberately deliver your training across the 3 styles, ensuring that our message is understood by all, regardless of their preferred style.

Which learning style are you?
What is your preferred style?

Take the quick quiz- there are no right or wrong answers just score your first, second and third choice then add up the points out of 50 at the end. Whichever style has the highest score is your preferred style of communication. Some people have a very strong preference, other people have a more even mixture of two or less commonly, three styles.

What's your learning style?

Please score yourself and total at bottom of page. Score: **10** for first choice **5** for second choice **0** third choice

Task	Visual	Auditory	Kinaesthetic/physical/tactile
Operate new equipment	read instructions 0 5 10	listen to explanation 0 5 10	have a go 0 5 10
Travel directions	look at a map 0 5 10	ask for spoken directions 0 5 10	follow your nose and maybe use a compass 0 5 10
In conversation you say...	I see what you mean 0 5 10	I hear what you are saying 0 5 10	I know how you feel 0 5 10
In conversation you say...	show me 0 5 10	tell me 0 5 10	let me try 0 5 10
In conversation you say...	watch how I do it 0 5 10	listen to me explain 0 5 10	you have a go 0 5 10
When you buy faulty goods do you	write a letter 0 5 10	phone 0 5 10	send or take it back to the store 0 5 10
For leisure you prefer	museums and galleries 0 5 10	music and conversation 0 5 10	playing sport or DIY 0 5 10
When buying gifts you choose	books 0 5 10	music 0 5 10	tools and gadgets 0 5 10
When choosing a holiday you	read the brochures 0 5 10	listen to recommendations 0 5 10	imagine the experience 0 5 10
When choosing a new car you	read the reviews 0 5 10	discuss with friends 0 5 10	test-drive what you fancy 0 5 10
Total	/50 Visual	/50 Auditory	/50 Kinaesthetic/physical/tactile

Learning styles - Spot yourself!

Visual- seeing and reading, high visual people like how something looks.
Their Visual learning style involves the use of seen or observed things, including pictures, diagrams, demonstrations, displays, handouts, films, flip-chart, etc.
Visual communicators learn by seeing and memorise by looking at pictures. They tend to be distracted by long verbal instructions. Appearance is important to them. They are interested in how your message LOOKS. No phrase captures Visual communicators better than "a picture paints a 1000 words". If you are communicating with Visuals you might send those pictures, videos, pictorial slides with images rather than written reports. You should also look at the words you are using and use "visual" words like: see, look, view, focus, appear or phrases like: beyond a shadow of a doubt, bird's eye view.

Auditory- listening and speaking, listening, very literal, so be careful with your words….
Manner of speaking rings a bell, sounds good, Auditory learning style involves the transfer of information through listening: to the spoken word, of self or others, of sounds and noises. Auditory communicators learn by listening and by what they hear. They will likely be literal listeners so choose your words carefully when speaking to an auditory communicator. Auditorys can be easily distracted by noise because they are listening so intently. They like music, audio books and talking on the phone. They will be interested in tele-seminars or conference call meetings. Auditory listeners will memorise by steps, procedures and sequences so structure in your communication will be important. They respond to tone of voice and words and like to be told how they are doing. They will be most interested that your message SOUNDS right. With Auditory communicators use some of the following words: hear, listen, sounds, resonate or some of the following phrases: rings a bell, manner of speaking, lend me your ear, hold your tongue.

Kinaesthetic communicators learn by doing, moving, acting out, and hands on experience.
They will often move and talk more slowly and breathily. Often it will take a kinaesthetic communicator more words to articulate what they are trying to say. They memorise by doing or by walking through something. Their interest is in how a message FEELS, i.e. does it FEEL right or does it give them a good GUT FEELING. Kinaesthetics will respond favourably to the following words and phrases: feel, touch, grasp, get a hold of, catch on, concrete, tap into, boils down to, hand in hand.

SO, now you all have a process- the 4 steps of teaching a skill, a communication style - and you can adapt to accommodate all of your learners.

What's next – *a plan!*
For any learning to take place there has to be a plan….
till next time……

Selfie

Name: Dr Michelle Dawson BSc, MB, BS, FRCA
Age: 51
NHS role and where: Consultant anaesthetist and clinical lead in Procurement at Royal Derby Hospital
NAMDET role: (not sure of exact title? New member of management group)
Family (names and ages any children): Darling husband and rescue dog.
Hobbies / interests: Dressage and breeding sports horses, fell walking.

What do you find most challenging in your NHS role?
*Where do I start? Too much work, not enough time, relentless pressure, not enough funding. I could go on!

What has been your most significant accomplishment in your NHS work?
*Developing a clinical role in procurement and being able to deliver savings (£1.4 million last year) without affecting quality of care.

What thing about your work frustrates you the most?
*The way we are told to run the NHS like a business while being held to rules that make this impossible. What business gets financial penalties for exceeding their contract?

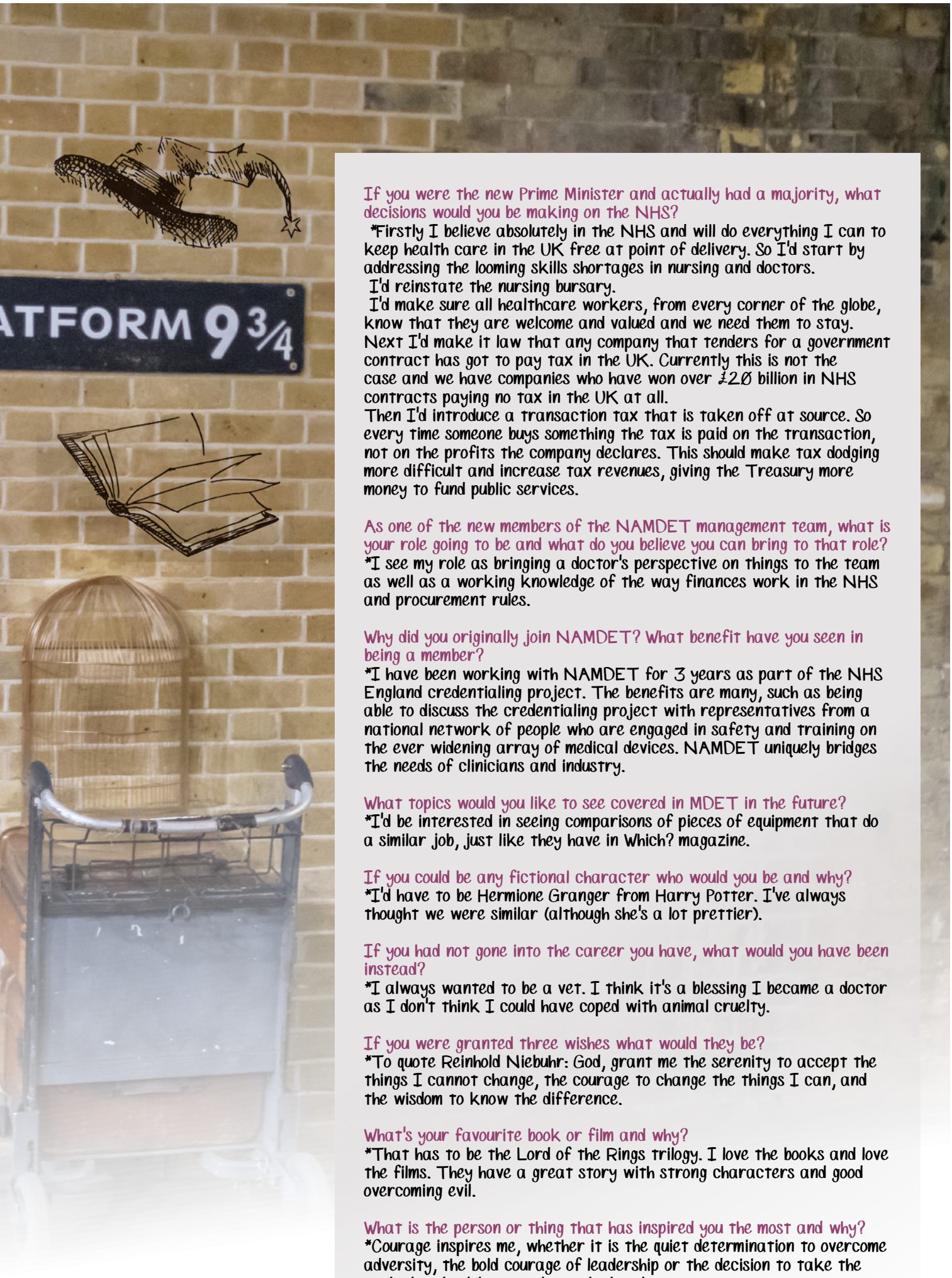
What changes would you like to see as an anaesthetist relating to medical devices?
*Wireless monitoring would be top of my list (that costs no more than current monitoring, of course). Cables all seem to come with built in auto-tangle facility, you start with them neat and tidy, move 10 feet from anaesthetic room into theatre and they've magically coiled round each other into a granny knot.

What do you wish your UK NAMDET colleagues understood better about the anaesthetist's role / needs ?
*I wish the pressures we are under were more widely understood. 10 hour days with no breaks is the norm. Even trying to make a phone call is challenging and getting to meetings can be close to impossible.

What is your favourite anaesthetics funny anecdote or joke?
*Like most medics, we have a rather black sense of humour so none I can commit to print. Sorry!

What one piece of advice have you received that you feel has been significant to you and worth sharing with readers?
*If you want to get things done and have a solid team and good communication, it's better to seek forgiveness than permission.

If you could give one message to the Brexit negotiators, what would it be?
*Forget about party politics and get together the best negotiating talent the country has to offer.



If you were the new Prime Minister and actually had a majority, what decisions would you be making on the NHS?

*Firstly I believe absolutely in the NHS and will do everything I can to keep health care in the UK free at point of delivery. So I'd start by addressing the looming skills shortages in nursing and doctors.

I'd reinstate the nursing bursary.

I'd make sure all healthcare workers, from every corner of the globe, know that they are welcome and valued and we need them to stay.

Next I'd make it law that any company that tenders for a government contract has got to pay tax in the UK. Currently this is not the case and we have companies who have won over £20 billion in NHS contracts paying no tax in the UK at all.

Then I'd introduce a transaction tax that is taken off at source. So every time someone buys something the tax is paid on the transaction, not on the profits the company declares. This should make tax dodging more difficult and increase tax revenues, giving the Treasury more money to fund public services.

As one of the new members of the NAMDET management team, what is your role going to be and what do you believe you can bring to that role?

*I see my role as bringing a doctor's perspective on things to the team as well as a working knowledge of the way finances work in the NHS and procurement rules.

Why did you originally join NAMDET? What benefit have you seen in being a member?

*I have been working with NAMDET for 3 years as part of the NHS England credentialing project. The benefits are many, such as being able to discuss the credentialing project with representatives from a national network of people who are engaged in safety and training on the ever widening array of medical devices. NAMDET uniquely bridges the needs of clinicians and industry.

What topics would you like to see covered in MDET in the future?

*I'd be interested in seeing comparisons of pieces of equipment that do a similar job, just like they have in Which? magazine.

If you could be any fictional character who would you be and why?

*I'd have to be Hermione Granger from Harry Potter. I've always thought we were similar (although she's a lot prettier).

If you had not gone into the career you have, what would you have been instead?

*I always wanted to be a vet. I think it's a blessing I became a doctor as I don't think I could have coped with animal cruelty.

If you were granted three wishes what would they be?

*To quote Reinhold Niebuhr: God, grant me the serenity to accept the things I cannot change, the courage to change the things I can, and the wisdom to know the difference.

What's your favourite book or film and why?

*That has to be the Lord of the Rings trilogy. I love the books and love the films. They have a great story with strong characters and good overcoming evil.

What is the person or thing that has inspired you the most and why?

*Courage inspires me, whether it is the quiet determination to overcome adversity, the bold courage of leadership or the decision to take the path that is right, not the path that is easy.

DUAL EDUCATION

BY DAY, TAMMY MARSH WORKS AS A MEDICAL DEVICE TRAINING COORDINATOR AT A LARGE NORTHERN NHS TRUST. COME THE EVENING, SHE SERVES AS A GOVERNOR AT HER SON'S PRIMARY SCHOOL, PART OF A TEAM WHICH HELPED TURN AROUND ITS PERFORMANCE IN OFSTED INSPECTIONS. TWO ROLES, SHE TELLS CLAIRE READ, WHICH HAVE MORE IN COMMON THAN MIGHT FIRST MEET THE EYE.

Tammy Marsh has a philosophy: if you don't get involved in trying to improve something, then you don't have the right to complain about it. It's why, for the past four years, she's juggled her role as medical device training coordinator at Pennine Acute Hospitals NHS Trust with a position as a governor at her son's school.

"The school underwent some quite difficult times, and had a very poor Ofsted report," explains Tammy, who worked as a registered nurse for several years before making the transition to clinical education posts.

"In the last two years we've turned the school around from a 'requires improvement' school to a 'good with outstanding qualities' school. We've had a very recent Ofsted report that was phenomenal."

The process of inspection was, of course, familiar from her two-decade long career in the NHS. It's one of the many areas in which Tammy says there is considerable overlap between her paid job and her voluntary one.

"I have to produce reports for the trust's senior leaders, we have to produce evidence for the Care Quality Commission (CQC), and we have to do the same within schools for Ofsted.

"And it's over time, because we can't look at these inspections as a standalone thing. It may be two years before we're inspected again, but over those two years we have to continuously prove that the systems are robust, the policies are being followed, and that we've got the evidence to prove that."

"Also, that we've got no evidence to disprove what we're saying. So within the NHS, we're continually looking at clinical incidents, about how we can learn from those, what numbers of those sort of things are happening and what are the patient outcomes – we're doing the same thing within schools for learner outcomes and pupil outcomes."

Understanding the progress of learners is another of those skills familiar from her career. Tammy moved into training after a long stint as a theatre practitioner, primarily working as a scrub nurse.

"Within my role in theatre, one of the things I truly enjoyed was seeing students come through the department, learn and develop. I was a mentor for students within the department and enjoyed supporting them to become enthusiastic about something."

When the opportunity to move into the education department within Pennine Acute came up, it therefore seemed like a natural progression. *"I taught clinical skills, primarily focusing on theatre skills – training support workers to undertake what would have been a registered nurse's role."*

Interestingly, it was through that work that she gained her postgraduate diploma in education (PGCE). *"It was a requirement at this trust that anybody who was teaching, particularly on a full time basis, had to have a recognised qualification. And I was lucky enough that our education department supported us to do the PGCE."*

Her course was focused on lifelong learning – namely, students who are past the age of 16. *"It was very much focused on the teaching skills, the strategies for teaching, the theory behind learning and assessment,"* recalls Tammy.

"Within the PGCE, you learn all the educational terminology – so you know what impact is, you know what attainment is, and you know what progress is. So that's helped at work, but then the school is looking at exactly the same thing for their pupils.

"So I go in and I'll sit with the senior leadership team within the school and say: 'What is this pupil's progress, what is this pupil's attainment, and what interventions are you putting in place to support them to improve?'"

The PGCE also embedded an understanding of the importance of different learning levels. It's something Tammy says is particularly useful in her day job, which involves arranging training for device users and ensuring the high quality of teaching provided by others.

"One of the key things that strikes me [that I learnt during the PGCE] is about different learning levels. Not everybody would use something or undertake a skill to exactly the same level or same degree that another colleague would. So, for example, healthcare support workers will do something at a lower level than a doctor will.

"It's about targeting, and using the educational language to structure the teaching appropriately to the learning group. It's very easy to say that one shoe fits all when it comes to training, and it really doesn't."

Since Pennine Acute uses thousands of medical devices across the trust – the organisation includes five hospitals and two community centres, all spread over a large geographic area – it's also a case of ensuring that corporately-provided education fits the bill.

"IT'S LIAISING WITH CORPORATE COLLEAGUES, ENSURING THAT THE DOCUMENTATION AND THE TRAINING THEY PROVIDE FOR OUR CLINICAL STAFF IS SOLID QUALITY TEACHING AND ASSESSMENT," explains Tammy.

"Because very few of our corporate colleagues actually have teaching qualifications. So it's ensuring that what we're receiving is of a sound quality, to ensure patient safety."

She adds: *"It's working with all members of the team – corporate colleagues, clinicians, nursing staff, support workers, the engineering department, the supplies department, so that everything is done in as timely a way as possible so that the patients' needs are met."*

It's an approach which is also applicable in Tammy's school governor work. The NHS may use the term 'multidisciplinary' more than most sectors, but it definitely doesn't have exclusive rights to it.

"It's a huge team approach [at the school] and I think one of the key things [in the turnaround] was the team coming together with a focused journey in mind. We were all working on the same thing.

"And it was supporting the other governors – and they're not as fortunate as me in that I've got the teaching experience, and the governance experience because of work – and encouraging them to ask questions. And if they didn't know the answer, then it was a justified question."

Because another of Tammy's philosophies is that there's no such thing as a daft question. *"If they're asking the question, it means Ofsted and CQC are likely to come in and ask about the evidence around it, so why not ask the question?"*

As well as encouraging questions from her fellow governors, Tammy is keen to encourage questions from pupils. Once a year, she teaches a class in basic life support to Year 6 pupils – those about to leave primary school and move on to secondary.

"I take the resus mannequins in, and the defibrillator and everything, and they literally get on their hands and knees and save the life of a plastic mannequin. I did it a few weeks ago – they were so enthusiastic; they were absolutely brilliant."

This year she also got involved in the school's Aspirations Day. *"They bring in different people from different trades and ask them to go round different classes and talk to the pupils, or let the pupils ask questions about their job.*

"So I went in dressed as a theatre nurse – I had my cap, my gown, my mask, all of that when I spoke to them, right from the 4-year-olds and 5-year-olds up to the 11-year-olds where I could talk about bowels and blood and guts!

"It's introducing them to different possibilities for the future," she explains.

As for Tammy's own future, her experience as a school governor is rapidly progressing. On the back of the work at her son's school, the local authority approached her and the headteacher to support another challenged school.

"So I've been co-opted on to their governing body to support them, and just last week was elected chair of the governors at that school. I'm hoping to work with their newly-appointed head in getting that school up to good as well."

The local authority has also suggested Tammy apply for the national leaders of governance programme. *"That is where I would work alongside the local authority to go into other challenged schools to support them.*

"I'm on a learning curve now in order to be able to apply for that, which will again support my day work – my actual paid job! – because the broader I take the school governance, it will broaden my thinking when it comes to NHS governance."

Indeed, she frequently emphasises how her two roles have influenced one another. "Work has supported me with the school, but it truly has worked vice versa," says Tammy. "I analyse information and data that school gives me, and I now produce reports on a similar basis at work. So I think working in both areas has upskilled me in both.

"I'M ALWAYS SAYING: ' WHAT WOULD I DO AT SCHOOL IN THIS SITUATION?' IT TRULY IS A CROSSOVER."

Selfie

Name: Robert Matthews

Age: 40 and a bit

NHS role and where: Medical Device Trainer; Cwm Taf University Health Board, South Wales

NAMDET Role: Regional Chair (Wales) and recently appointed to a new management group leading on new work streams and NAMDET projects such as Drug Safety on infusion pumps, risks management and training initiatives.
Family: Married the girl next door 22 years ago and we have 2 wonderful and beautiful girls Emily and Jessica that we are both very proud of.

Hobbies: Mountain biking, mountain walking and any form of socialising involving food and drink. Odd job man for friends and family. I recently bought a tent so that I can tick festivals off my bucket list, so hoping to combine all 3, but mostly socialising.

What do you find most challenging in your NHS role
Getting staff to turn up for training courses when there are such competing demands on their time. I can totally appreciate that patient care should always come first and that staffing the ward is the highest priority, but I would argue that having staff on the ward formally trained to use the device is also a high priority. I believe that all clinical staff should have protected time to attend the training courses required.

What has been the most significant accomplishment of your NHS work
Being able to ensure over 85% of all staff using infusion devices have received formal training on their use. Having that proud feeling when you walk down the wards and corridors that everyone recognises me as the Medical Devices Trainer and they are able to approach me in confidence to relay any problems they may be experiencing.

What changes would you like to see in the NHS relating to medical devices
Simple. No medical device is to be used without some sort of formal recordable training being carried out.

What do you see as the most important challenges for NAMDET going forward
Being able to cope with rate of expansion whilst providing a quality service and one that our members feel part of and their thoughts and ideas count. I first joined NAMDET as a rookie trainer hoping to share knowledge and experience from both industry and NHS trainers. Having gained vast experience from conferences and regional meetings, I hope to give something back to NAMDET and its members, by sharing my experience and knowledge with others.

What would you like NAMDET do or become in the future
A regulatory body for medical devices trainers and educators, setting educational standards in teaching/training in a healthcare environment. Working along the same lines as Credentialing for industry, all medical devices trainers should be regulated and audited to ensure not only the teaching is up to standard but the record keeping, resources and delivery techniques also match national standards.

What NAMDET achievement so far are you most proud of and why
The links that they have forged between the NHS and manufacturers. Also being able to grow the membership to over 600 in a short space of time with the limited resources that they have through dedication and the massive commitment from their directors and regional chairs.

What one thing would you like potential new members to know about NAMDET
You will get out of NAMDET what you put in. You have the potential to make a difference and to get involved with projects that may benefit your professional and personal life.

If you could be any fictional character who would you be and why
Bob the Builder, as I am constantly building something or knocking something down. Having recently built a log cabin from scratch, which obviously had to incorporate a bar, is one of my crowning glories. Being a builder describes my role within the NHS, building peoples skills and knowledge in order for them to carry out their job with confidence and competence when using medical devices.

If you had not gone into the career you have, what would you have done instead
I probably would have become a supermodel or a racing car driver, but considering I don't have the looks nor can I drive properly, I probably made the correct career choice.

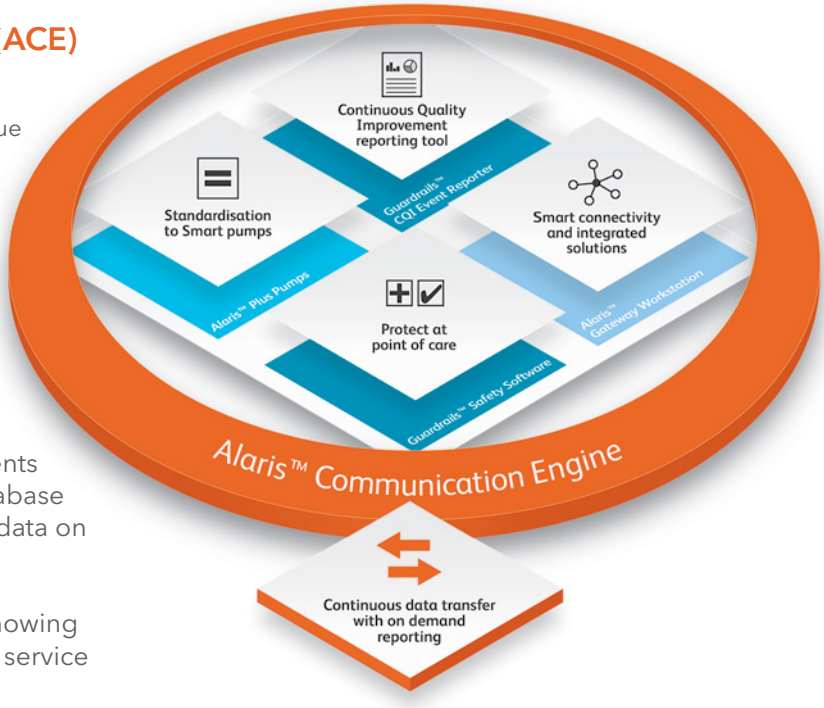
If you were granted 3 wishes what would they be
Solve global warming, reduce 3rd world poverty and stop all religious related crime. Or win the lottery, live on a desert island where there is a constant uninterruptable supply of Stella Artois lager on tap and to be able to help my daughters to lead a successful, prosperous and happy life (as they will be choosing my care home)

What's your favourite film and book and why
My favourite film from the past would have to be Top Gun as I love action films and the intrigue that goes with it, plus Kelly McGillis was pretty hot too. My favourite book is Dan Brown – Da Vinci code not for the same reasons.

What is the person or thing that has inspired you most and why
I would have to say my Dad. My father has undergone so much pain and anguish as a result of an agonising kidney disease, first on dialysis 3 times a week for 5 years, then finally received a new kidney. As a bi-product of the anti-rejection medication prescribed, he then went on to contract Lymphdema following a bout of breast cancer, resulting in him loosing his arm. For most this would stop you in your tracks but not my father, he went out and bought a new chop saw as he wanted to go back to carpentry as a hobby. My father throughout this period has had nothing but praise for the staff that have cared for him and the innovations they have suggested. This is where I get my motivation and determination to be a part of the NHS team.

Alaris™ Communication Engine (ACE)

If you have Alaris™ Plus infusion pumps with Guardrails™ you already understand the value of Dose Error Reduction Software. Alaris™ Communication Engine (ACE) now allows networked data transfers for more timely decision making.



• Remote real time deployment of data sets to pumps
- Which improves clinical workflow efficiency

• Continuously collects Guardrails™ events from pumps and populates the CQI database
- Enables you to view and evaluate CQI data on demand to help improve patient safety

• Locates pumps connected to AGWs showing infusion status, dataset deployment and service requirements
- Improves device management and maintenance

To find out more about Alaris™ Communication Engine visit bd.com, speak with your local representative or contact customer services: **0800 9178776**

BD

Patient safety review and response: April to September 2016

A summary of how NHS Improvement reviewed and responded to the patient safety issues you have reported. NHS Improvement has made available their report on patient safety issues. Year-on-year reporting to the NRLS continues to grow and they now receive over two million incident reports each year. The report:

• explains how they review and respond to new or under-recognised risks

• provides an outline of the clinical review and response process

• gives examples of the action they took between April and September 2016 as a direct result of reviews of incidents

• highlights where they have helped partners to take action to improve safety across the NHS

• gives recognition to staff, patients and members of the public who have taken time to report incidents

https://improvement.nhs.uk/resources/patient-safety-review-and-response-april-september-2016/

NHS Improvement

Changing practice to improve safety

B. Braun Medical Ltd has a long heritage in the delivery of intravenous pharmaceuticals and associated products to markets in the UK and Europe. As part of their continued commitment to 'Sharing Expertise' they invite you to the 11th pharmacy workshop, dedicated to providing insight, information and guidance in relation to improving patient safety with injectable medicines.

This workshop will take place on Tuesday 17th October at The International Convention Centre, Birmingham. The workshop has been developed to provide a platform for the sharing of information and the stimulation of discussion on the best ways that trusts can act in order to improve patient safety.

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B|BRAUN SHARING EXPERTISE

Entrepreneur scheme for innovative doctors extended to healthcare scientists

A unique training scheme for clinicians whose innovative ideas could lead to big patient benefits has been opened up to healthcare scientists and dentists.

Over the last year 103 junior doctors have developed their ideas and their business skills through the Clinical Entrepreneur programme. Now applications are opening up to healthcare scientists and dentists.

The programme offers a range of support and education, including mentoring by leading medical technology innovators, to give the budding entrepreneurs the business skills and industry knowhow they need to make their ideas a reality.

NHS England's National Clinical Lead for Innovation, Professor Tony Young, has spearheaded the programme's development. He said: *"When NHS England and Health Education England designed this programme back in 2016, there was no avenue for entrepreneurial doctors to get the training they needed without leaving the NHS for the private sector. The Clinical Entrepreneur programme is reversing this brain drain for physicians and surgeons, but we have great innovative people throughout the NHS, and need to offer the same kinds of opportunities across all our clinical professions. Opening the programme to healthcare scientists and dentists is the first step of this rollout."*

The training programme for healthcare scientists and dentists will begin in autumn 2017.

NHS England

Getinge Group acquires UK leading bariatric rental and equipment supplier

Getinge Group has acquired 1st Call Mobility, the UK's leading supplier of rental equipment for bariatric patients and plus size individuals. Bariatric care is an important patient and treatment segment in the UK and there is an increasing need to ensure there is adequate equipment to aid the patients stay in hospital and in care facilities.

Getinge Group and 1st Call Mobility coming together will expand its UK coverage and will be perfectly positioned to serve the increasing demand of this fastest growing care sector. In addition, it cements the ArjoHuntleigh brand and Getinge Group as a key provider to the NHS.

"As the number one rental provider of Patient & Post-Acute Care products to the NHS, the acquisition of 1st Call Mobility is perfectly aligned with Getinge Group's growth strategy. As we work together and with the focus on patient care, our customers will benefit from an enhanced product and solutions portfolio, knowledge and expertise." says Avril Forde, President North Europe, Getinge Group

www.arjohuntleigh.com

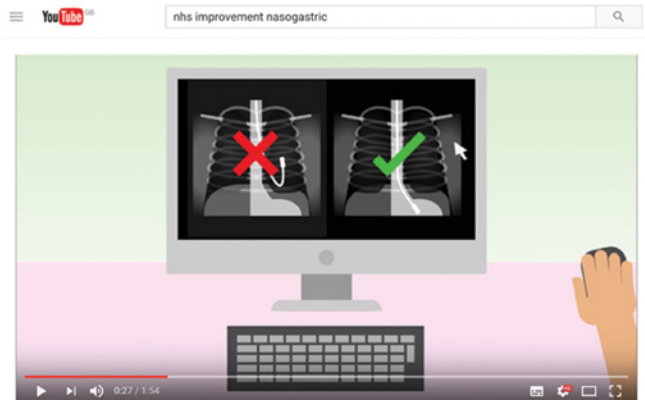
ARJOHUNTLEIGH
GETINGE GROUP

Nasogastric tube misplacement: YouTube video

NHS Improvement has just published a new animated video to support the 'Nasogastric tube misplacement: continuing risk of death and severe harm' Patient Safety Alert issued last year. The two minute video is designed to raise awareness amongst staff that it must only ever be someone with the right training that confirms the correct placement of a nasogastric tube.

You will find the video on YouTube by searching 'NHS Improvement Nasogastric'

NHS Improvement



Alaris™ Communication Engine

Helps improve safety, workflow and cost-efficiency

IV medication errors are a serious healthcare issue[1] and those occurring at the administration stage are the hardest to intercept.[2]

In today's healthcare environment your priorities include:

- Ensuring safe and efficient IV medications management
- Standardisation of infusion protocols
- Minimising costs related to preventable adverse drug events

If you have Alaris™ Plus infusion pumps with Guardrails™ you already understand the value of Dose Error Reduction Software. Alaris™ Communication Engine (ACE) is the next step.

- Provides continuous data transfer and on-demand reporting
- Allows central visualisation of infusions and asset management

References
1. Valentin A, *et al. BMJ* 2009; **338:** b814.
2. Pepper GA. *Am J Health Syst Pharm* 1995; **52:** 390-5.

CareFusion is now part of BD.

To find out how BD is committed to making infusion solutions simple, seamless and connected visit: **bd.com/uk**
Customer Services: **0800 917 8776**

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