



Hazards forum



The Hazards Forum Newsletter

Issue No. 86
Spring 2015

Web version

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Views expressed are those of the authors, not necessarily of the Hazards Forum

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March 2015

Health Care Risk Management and Issues for the Future

Neil Carhart

On **Tuesday 25th November 2014** the Hazards Forum hosted an **evening event** at the Institution of Chemical Engineers, One Portland Place, London.

Health care continues to be an emotive subject, and attracts much publicity and debate.

Delivering health care is “safety critical”, but the demands upon the National Health Service continue to rise. The cost has to be balanced against providing a safe and high-quality service that is also safe to work in. At the same time we live in an increasingly “engineered” environment, with people having better access to information than ever before. Furthermore, changes in technology and the growing commercialisation of health and healthcare mean that this landscape will continue to change.

As well as health professionals, the national regulators and NHS managers have had a leading role in addressing the existing and emerging risks in healthcare. In the future, however, there will be more need for the expertise of others such as engineers, and this creates opportunities for innovation and collaboration. This event provided an opportunity to explore several fascinating viewpoints on the issues and lessons from this domain.

The event began with a welcome from **Andrew Furlong**, Directory of Policy and Communication at IChemE. He postulated that health care may appear to be an unusual choice of topic for a Hazards Forum event hosted by the IChemE, but it includes many very important aspects of safety and risk. It brings together many different disciplines. The role of the chemical profession in delivering health and well-being features quite prominently

in the ‘Chemical Engineering Matters’ Report¹. Chemical Engineering plays a fundamental role in enabling people to lead healthy and fulfilled lives. The report includes the ‘Sustainable Well-Being Vista’ which acknowledges the need for a paradigm shift in health care strategy. There are many challenges on the road ahead in terms of this strategy, particularly those relating to ageing populations in OECD countries such as the UK. There is an ever increasing demand for affordable therapies and treatments at a time and place of the patients choosing, and at an achievable cost. Chemical Engineers have an important role to play in confronting these challenges as indeed do other engineering disciplines. Working co-operatively within a well regulated framework and making good decisions informed by robust assessment of risk in an environment where the resources are not limitless is of interest to all members of the Hazards Forum. Sharing knowledge and good practice on risk management across the full range of engineering and scientific disciplines is not just beneficial but essential. It is for this reason IChemE supports the Hazards Forum.

Andrew then introduced the chair for the evening’s event, **Mark Eaton**, Head of Performance & Delivery for Brent, Harrow and Hillingdon Clinical Commissioning Groups. Mark is a Chartered Engineer and former chair of the IET’s Manufacturing Forum. For the last 10 years he has been applying his engineering expertise to the NHS in tackling patient safety, controls on medication and clinical pathways.

The chair set the scene for the event by reflecting on some of the challenges faced by the health care profession. Long term, life-limiting disorders and diseases are on

the increase. For example diagnoses of diabetes are increasing by around 8% per year. The number of vulnerable people of any age is increasing. There are significant increases in demands for unplanned care such as A&E. These changes and others are all taking place within the context of financial constraints. The response to this is: how do we empower patients to look after themselves more effectively, rather than relying on expensive health care services? How do we improve primary care treatment so that fewer people make otherwise unnecessary visits to hospital? How do we reduce the need for people to go to the emergency department of the hospital, and how do we reduce the number of those that need to be admitted to hospital when they are there? Some patients who arrive at the emergency department are admitted because they need social support and rehabilitation but there is none available. There are many barriers to tackling these kinds of issues. One of those is the fear of risk. This leads on to a whole series of behaviours where people do not see risk as an opportunity to learn. Incidents go unreported and incorrect actions are taken. Short-termism and siloed-thinking can further complicate this. Mark then introduced the speakers for the evening who would further discuss the issues within health care risk management.

The first talk of the evening, *'The quality and safety of services: Care Quality Commission's role'*, was delivered by **Paula Mansell** and **James Titcombe**. Paula has held a number of roles concerned with patient safety. A nurse by background, she developed a passion for patient safety during her time as an operating theatre manager in a large acute teaching trust. She became Head of Patient Safety in the same trust and at a Strategic Health Authority, was a Patient Safety Manager at the National Patient Safety Agency and then an Investigation Manager at the Healthcare Commission. At the Care Quality Commission she is currently working on a cross-sectoral programme on safety. **James Titcombe** is a former project manager in the nuclear

industry, and now an advisor in Patient Safety for the Care Quality Commission. He has campaigned for improvements in patient safety since the preventable death of his baby son in 2008, and is passionate about the need for an honest and open culture in the NHS.

The second speaker **Steve Scott** heads the Health & Safety Executive's Health and Social Care Services Unit. This unit is responsible for leading on policy issues in the health and social care sectors, producing relevant guidance and helping inspectors and others with advice and support, including providing expert evidence when needed. As well as being involved with strategy to protect the health and safety of employers' staff, he has been in liaison with other regulators relating to health care. His talk was entitled *'HSE's changing role in healthcare regulation'*.

The final speaker, **Neil McGuire** worked as a consultant in anaesthesia and intensive care medicine in the NHS and then for 28 years in the RAF and Defence Medical Service. He joined the Medicines and Healthcare Products Regulatory Agency at the beginning of 2014, but retains a clinical post with Oxford University Hospitals. He has a keen interest in safety, particularly in relation to medical devices. He has guided advances in health services in collaboration with colleagues in science and engineering, and is seeking to strengthen the MHRA's relationship with industry. Neil addressed the forum on *'Regulation: The challenge of safety vs. risk in innovation'*.

James Titcombe began the first talk by explaining the Care Quality Commission's (CQC) changing approach to safety. The CQC consulted and engaged widely to help establish a sense of purpose and the role it needs to fulfil. The CQC's purpose is to make sure health and social care services provide people with safe, effective, compassionate, high-quality care and to encourage care services to improve. It does this by monitoring, inspecting and regulating services to make sure they meet fundamental standards of

quality and safety. They publish their findings, including performance ratings, in order to help people to choose their care.

He described his time working for several years as a Project Manager at Sellafield during which he observed a culture of near-miss and incident reporting. Meetings started with a safety theme and staff that raised concerns and reported events were recognised and rewarded for their action. Staff appraisal included discussions of the near-misses and concerns that had been raised; it was felt to be an important part of the role. Unwanted events were then thoroughly investigated. The hierarchy was flattened so that all members of staff were empowered to raise concerns and stop the process if in doubt over the safety.

James then told the very moving personal story which motivated his transition from the nuclear industry to advising on Patient Safety for the Care Quality Commission.

In 2008 James's new-born son Joshua sadly and tragically died of a preventable infection. While his world was shaken, James was also shocked by the way the Morecambe Bay Trust responded. The local investigation failed to interview staff, left questions unanswered and did not address discrepancies between the accounts of what happened. The coroner then refused to open an inquest, concluding that Joshua had died of natural causes. James and his wife pursued their concerns through all available processes, leading them to the Parliamentary and Health Service Ombudsman who took almost a year to consider the case before then refusing to investigate citing an uncertainty over whether they could establish what happened and why. Eventually they returned to the coroner and persuaded him to open an inquest, which finally occurred three years after Joshua had died.

This experience, James came to find through his subsequent work with the

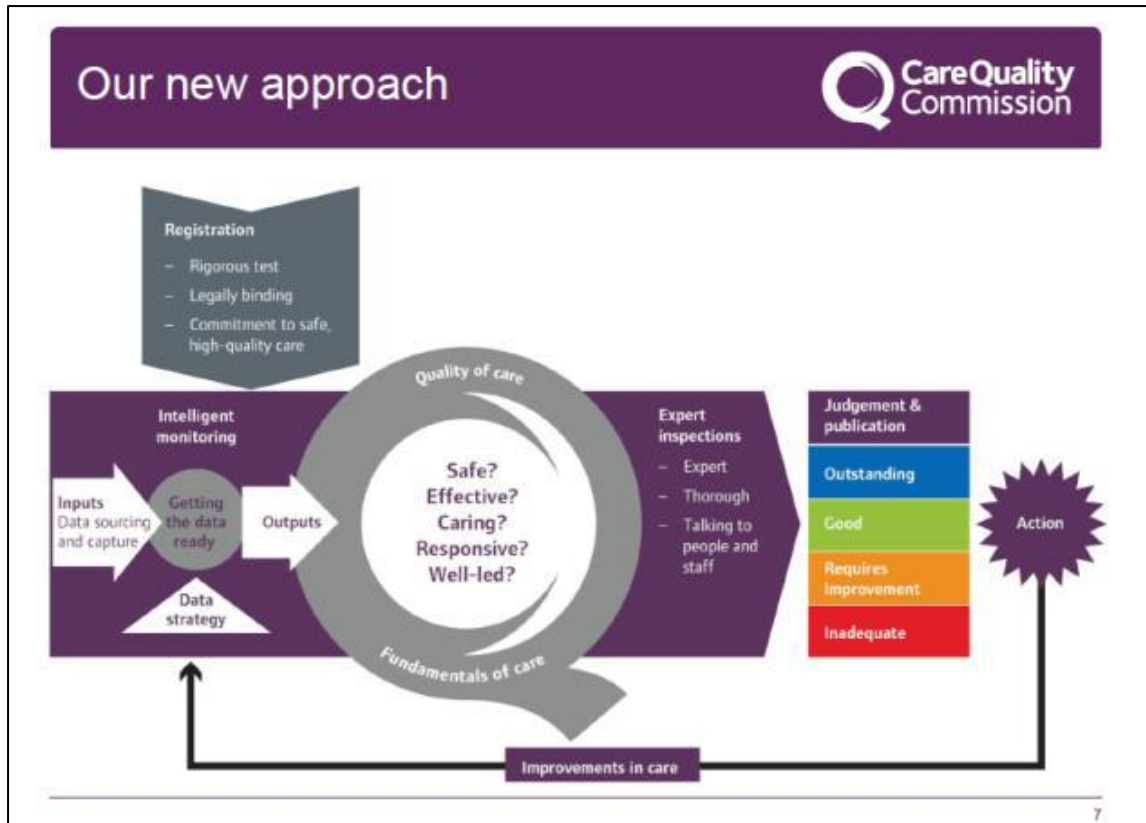
CQC, was not an isolated event. There are many case histories of people receiving unsatisfactory investigations.

A confidential inquiry in Cumbria in 2013 looked at sixty perinatal deaths. Twenty of these were found to have had one or more major avoidable factors that had led to the death. Of these twenty, only one was the subject of a serious incident investigation. This gives a sense of the scale of unsatisfactory investigation and the missed opportunities for learning and improvement. On top of this, the quality of investigations can be extremely variable.

The events at Morecambe Bay were compounded by the failures of multiple organisations, including the CQC in its role as a regulator. Failings were highlighted in the report prepared by the management consultants Grant Thornton published in June 2013. This looked at the CQC's response to what had happened at the hospital where Joshua was born, and found that there had been serious failures. Over the past 18 months to 2 years the CQC have been making some significant changes in response to those findings. James then handed over to **Paula Mansell** who went on to describe those changes.

Having recognised the need to improve and do things differently, CQC began developing and implementing a new approach. This was done over a period of time with lots of engagement with a wide selection of stakeholders.

The process begins with a much more rigorous registration process for all services and providers that are required to register. There is a greater use of intelligent monitoring from a wide range of data sources, in hospitals there are 150 different indicators. These help CQC to target inspection activity. Inspections are now performed with much bigger teams, including clinical experts and experts by experience.



The inspections are much more thorough than they were, looking at a number of core services, and asking 5 key questions about the quality of care; is it:

- Safe;
- Effective;
- Caring;
- Responsive, and;
- Well-led.

A judgement is made from the inspection and a report published, giving the organisation a rating. The characteristics of these ratings from outstanding to inadequate are set out in the new approach.

As part of its new approach CQC has built on previous experience and on the process of the Keogh Mortality Review² which looked at 14 acute hospitals with high mortality rates. The CQC brought together the best aspects of these approaches with the aim to be robust, fair, and transparent.

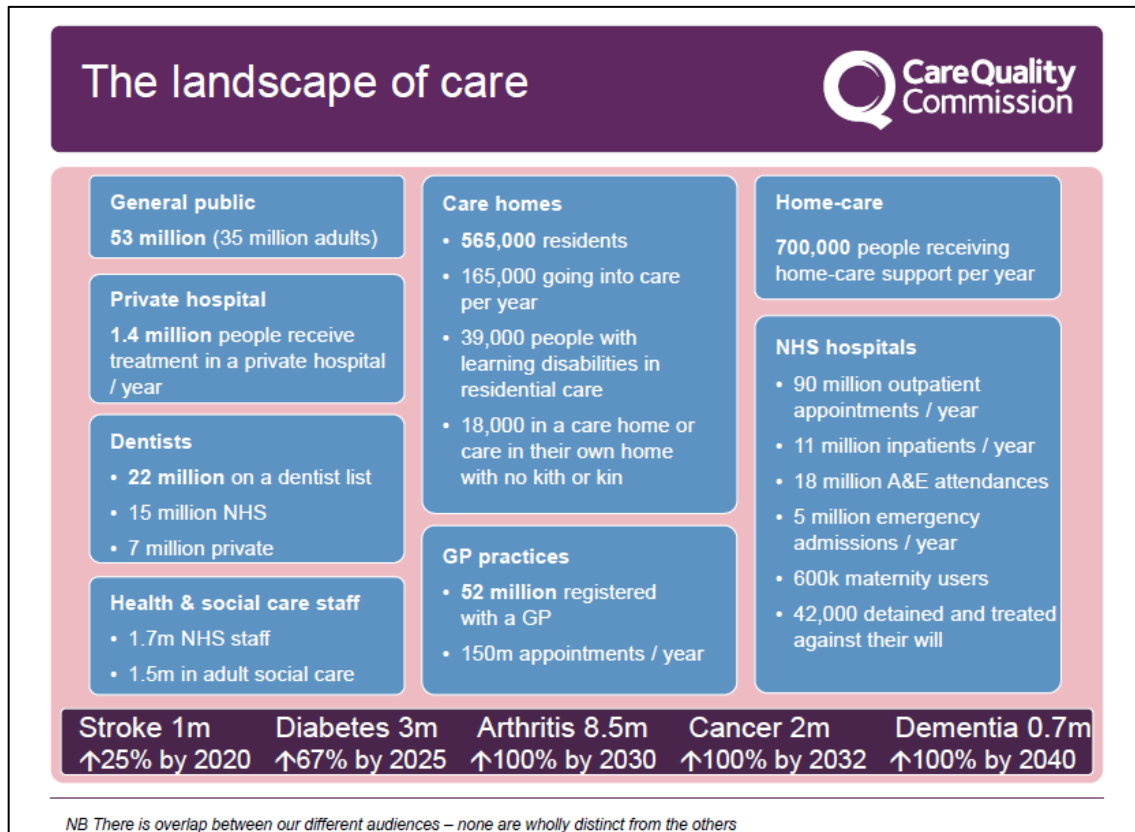
Paula then provided some further context for the CQC process by looking at the large and diverse landscape within which

the CQC work. She echoed the statements made during the introduction and by the chair of the increasing challenges faced by the care professions such as the ageing population and increased prevalence of long-term conditions. There is an awful lot that needs to be regulated.

The CQC is independent of politics, covers all sectors and, through the new approach, is much more clinically driven than it was previously. It is based on evidence-based judgement rather than tick-box compliance. The CQC seeks to expose poor care with transparent ratings, but it is also looking for excellence, so that it can share these processes and behaviours in order to lead improvement. Fundamentally, it is always on the side of the people who use the services in a consistent and fair way. The new approach emphasises the importance of listening, both to patients, service users, and staff.

In the year 2013/14 the CQC conducted over 30,000 inspections.

Following the Keogh Review 11 hospitals were placed into 'special measures'.



Since then, through CQC inspections, 7 more have been placed into 'special measures'. In the early part of 2014 the CQC revisited the 11 hospitals initially identified as having inadequate levels of care. A report was produced in August 2014 describing the progress those trusts had made over the intervening period. The reports found successes within the trusts that had been placed into special methods, in particular relating to improvements in the strength of leadership, acceptance by the trusts of the scale of challenges faced, alignment between managers and clinicians, and willingness to accept external support.

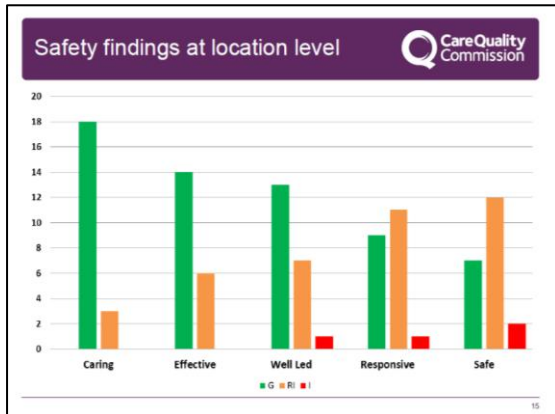
When the CQC assesses safety in healthcare they use five key lines of enquiry (KLOE) based on a five point evidence based framework developed by the Health Foundation. These look at the organisation's safety track record, their approach to learning, their current process and their reliability, and the approach to future risks.

- S1 What is the provider's **track record** on safety?
- S2 Has the provider **learned** when things go wrong and improved safety standards as a result?
- S3 Are there reliable **systems, processes and practices** in place, to keep people safe and safeguarded from abuse?
- S4 How does the provider assess and **monitor safety in real time** and react to changes in risk level, including for individuals?
- S5 How well are potential risks to the service **anticipated** and **planned** for in advance?

Underneath each of these five KLOE are a set of prompts used by inspectors to really get to grips with how the organisation is approaching safety.

The CQC's State of Care Report concluded that too many providers have not got to grips with the basics of safety. CQC has safety as one of the key areas to consider as part of any inspection and whilst the new approach provides a better assessment of safety there is still the potential for more improvement. The overall ratings for acute hospitals published by the CQC in August 2014 identified that 8 out of 82 safety ratings

were inadequate and 57 required improvement. An example based on a sample of 21 locations shows that out of the five key areas, safety is the category under which the most problems are being identified.



Paula concluded the talk by looking at the next steps for CQC. The organisation has committed to lead patient safety improvement through regulation. Every organisation registered with CQC will have to meet a new 'Duty of Candour' and Board level appointments will have to meet a set of 'Fit and Proper Persons' requirements. In addition to this the Health and Safety Executive, the Department of Health and the CQC are considering a set of proposals which take account of the CQC's new role leading on cases where people who use services have been harmed by care. A consultation has just been completed on the enforcement process for this.

For the first time, the CQC has initiated a Safety Programme which looks at how safety can be driven forward within CQC such that it can also be improved within the organisations which it assesses. As part of this they are continually looking to evaluate and improve how CQC assess safety in provider services across all sectors. Whilst providers have the primary duty to improve safety and quality, CQC has a role to play in encouraging improvements through a whole variety of different ways. CQC are also reviewing the way in which serious incident investigations and learning processes are conducted within hospitals.

The second talk of the evening was delivered by **Steve Scott**, head of the Health & Safety Executive's Health and Social Care Services Unit, who gave some personal views on the way in which things are done and are changing within the Social Care Services Unit.

The Department for Work and Pensions Report 'Good Health and Safety, Good for Everyone'³ looked at, among other things, how effective health and safety inspections are with a view to reduce unnecessary inspections. This might be where risks were actually very low, or where inspection might not be effective. The report suggests that proactive inspection in Health and Social Care is not effective and that other approaches might be better suited to make a difference. Inspections are however still necessary when there is evidence of poor performance, which might come from complaints, incidents, co-regulators such as the CQC etc. These could all provide warning signals of poor performance within an establishment, and a need for inspection. HSE also continues to investigate complaints and incidents in accordance with its incident selection criteria. Pro-active inspection may also be conducted on the back of these investigations, which can provide early signs of poor overall management. Consequently, the Unit still has a significant role to play in Health and Social Care investigations.

The causes of harm within Health and Social Care are not that dissimilar to those in any engineering industry. They are often rooted in either uncertainty or ignorance over standards where the organisation isn't clear enough about what should be done to prevent harm, or a failure to implement standards and follow guidance due to poor leadership or management.

Steve discussed the POPMAR management model (Policy, Organising, Planning, Measuring, Auditing, Reviewing) and the simpler Plan, Do, Check, Act cycle. Of those, he suggested, that

monitoring or checking to see if things are actually happening is one of the most important activities. Designing the system and writing procedures is not sufficient if nobody is aware of them or follows them. There shouldn't be a presumption that health care professionals will follow procedures, just because they should.

Standards for reducing risk and preventing harm in health care are well known. There are many publications which offer simple guidance such as 'The Sepsis Six' which outlines six interventions to help reduce the large number of deaths due to sepsis. However, in some establishments these might not be implemented.

Steve then turned to look at some of the alternative approaches to inspections. One of the main methods involves radically revamping guidance and the way in which it is delivered. The Health and Social Care Microsite has been redeveloped to include a lot more guidance; and documents such as 'HSG220 Health and Safety in Care Homes' have been completely rewritten. This gives Care Home providers an A-Z for preventing harm. Bed-rail entrapments, falls from windows, scalding and other hazards are common but avoidable, and HSG220 aims to give additional guidance on reducing these risks. There are some areas which this publication does not tackle such as hydration, nutrition and general care, which are seen to fall under the remit of other regulators. However, it might be beneficial to see all the guidance within the one document.

The Unit has performed a lot of research into new standards and the approaches that could reduce accidents. A lot of stakeholder engagement has been undertaken. Inspection can have an impact, but making a real difference requires collaboration with others. The unit has been a catalyst in setting up the Social Care Partners' Forum which brings together all of the relevant regulators and key stakeholders, including user representatives. The aim of the Forum is to produce authoritative and clear guidance on a range of difficult topics in

social care. One of its working groups is looking at the quality of guidance, its clarity and ease of access.

Sensible risk is a big issue in Health and Social Care, just as it is in all other walks of life. There can be a disproportionate fear of risk that stops people from living fulfilled lives. The Social Care Services Unit is very keen to see this addressed and the Social Care Partners' Forum has a key role to play in achieving this. The Social Care Partners' Forum may also be able to bring together all of the relevant guidance into one document, as discussed earlier.

The Health and Social Care Services Unit also sits on groups which look into issues such as: wider stakeholder engagement; leadership; patient safety; and dealing with challenging behaviours.

Investigation is still central to the effectiveness of the regulator. It provides an opportunity to identify the causes and lessons arising from events, and promote this learning widely. Learning culture is particularly important. An independent regulator's investigation can tell a lot about this culture from an organisation's own internal investigation. For example, by looking at whether they have looked to find someone to blame rather than identifying the underlying lessons. It can be very difficult for organisations to hide its culture when the regulator interviews the current or previous staff. Investigation provides the opportunity for the regulator to ask penetrating questions, and it is useful as a diagnostic tool into wider management and leadership competencies.

Steve referred to a specific case, linked to the Francis Inquiry into failures at Mid. Staffs where a person with Type 1 Diabetes, who went into hospital with a fractured leg, died as result of effectively not receiving the insulin injections they required. The subsequent investigation revealed a series of failings and ultimately resulted in prosecution. Francis concluded that if this event had been investigated sooner it would have highlighted wider

failings. These sorts of investigations can raise questions about other behaviours within the organisation.

Clearly resources are not unlimited and must be directed to the areas which need it most. It is not possible to investigate everything that Section 3 of the Health and Safety at Work Act allows the regulator access to in Health and Social Care. There have to be strict criteria as to what is important and what needs to be investigated. Deaths arising from not meeting well-recognised standards due to systemic management failure may be investigated, where 'well-recognised standards' and 'systemic management failures' are defined and published on the Health and Social Care microsite.. This doesn't include clinical judgement, and generally doesn't include clinical standards and quality of care standards such as hydration and nutrition. Things such as Sepsis and Venous Thromboembolism are therefore not generally investigated. However this does leave an acknowledged unsatisfactory gap which was raised by the HSE in a memorandum to the Health Select Committee and at the time of the Mid Staffordshire NHS Foundation Trust Public Inquiry.

Steve then described the tragic event where a mother, who had just given birth, was killed as a result of an epidural drug intravenously administered into her arm rather than a prescribed saline solution. The subsequent investigation found that the saline and anaesthetic were in virtually identical packs and stored in the same drawer. Indeed, the trust had had a previous similar incident. In this case the NHS Trust was prosecuted.

Prosecutions pursued by the Health & Safety Executive's Health and Social Care Services Unit do not usually concern failures in the treatment for which the patient has been admitted to hospital, but rather situations where failings in the hospitals or care home's treatment have made things worse. In other words, situations where the patient is adversely impacted in a way they would not have

had they not been under the organisation's care. Such a prosecution occurred in November 2014 when a care home operator was fined £96,000 and £100,000 legal costs after a patient fell to their death from a window. The window sills were very low and the mechanisms to restrict the window opening were inadequate. The standards say that openings should be limited to 100mm, but in this particular case it was possible to override the restrictors and this regularly occurred. The woman's condition was such that falling was a known risk. The operator initially blamed the architect and safety consultant, but a member of staff had previous experience of a window fall and had raised concerns.

Employee health and safety is linked to patient and service use safety, and this is recognised in the guidance. If you don't have healthy and effective employees then they are not going to be able to provide care as well as they might. Manual handling practices, challenging behaviours, stress and working conditions, exposures to chemicals and diseases, and electrical and mechanical risks to staff are all considered among many others.

Steve concluded his talk by describing how the CQC's role is radically changing in terms of their powers to investigate incidents and take robust action. When new regulations come into effect in April 2015, CQC will be responsible for investigating the vast majority of service, user and patient related incidents. This means all of the discussed examples, and those things which currently fall into the acknowledged regulatory gap will be for CQC, rather than HSE, to investigate.

The final talk of the evening was given by **Neil McGuire** on the challenge of safety versus risk in innovation from his perspective within the Medicines and Healthcare Products Regulatory Agency (MHRA). He began by describing the balance of safety and innovation as one of the biggest challenges facing the industry now and into the immediate future. Industry is trying to improve performance and become more cost effective, but if not

developed and applied thoughtfully, regulations can work against such innovation. The regulator could theoretically implement a strict risk adverse approach which tightly constrains the behaviours of those it regulates. Such a scheme, stagnating improvement, would ultimately not be beneficial. A smarter approach is therefore required.

To achieve this it is first necessary to help people understand exactly what it is the regulator does: what it regulates and how it works. It is not uncommon for people to think that MHRA is a part of the National Institute for Health and Care Excellence (NICE). There are three major parts to the agency. Firstly, The Clinical Practice Research Datalink (CPRD), which provides a data resource for research, and is being tied into other aspects of research to improve on post-market surveillance. Secondly, the National Institute for Biological Standards and Control (NIBSC) which recently became part of the MHRA, and is responsible for a large percentage of the world's biological standards. Finally is the MHRA itself.

MHRA implement medical directives which will eventually become regulations. While not currently part of regulation, these directives are enshrined in EU and UK law. One of their major roles in achieving this is ensuring that medical devices work and are acceptably safe through regulation. This achieved through evidence-based judgements, post-market surveillance of devices, and action to protect patients if issues arise. The MHRA monitor Notified Bodies who oversee the approval of devices for the market.

MHRA engage with patients, the public, healthcare professionals, manufacturers and other regulators in order to fulfil its role. They aim to provide widespread dissemination of information and promote reporting of all incidents relating to drugs or devices. The reporting of incidents and information is critical to MHRA achieving its objectives. One of the biggest impediments to reporting information is the fact that clinicians are not obliged to

submit reports. Industry is legally obliged to provide information, but practitioners only do this on a voluntary basis. The system is essentially based on trust. The MHRA can only investigate if a specific concern or sufficient data has been brought to their attention.

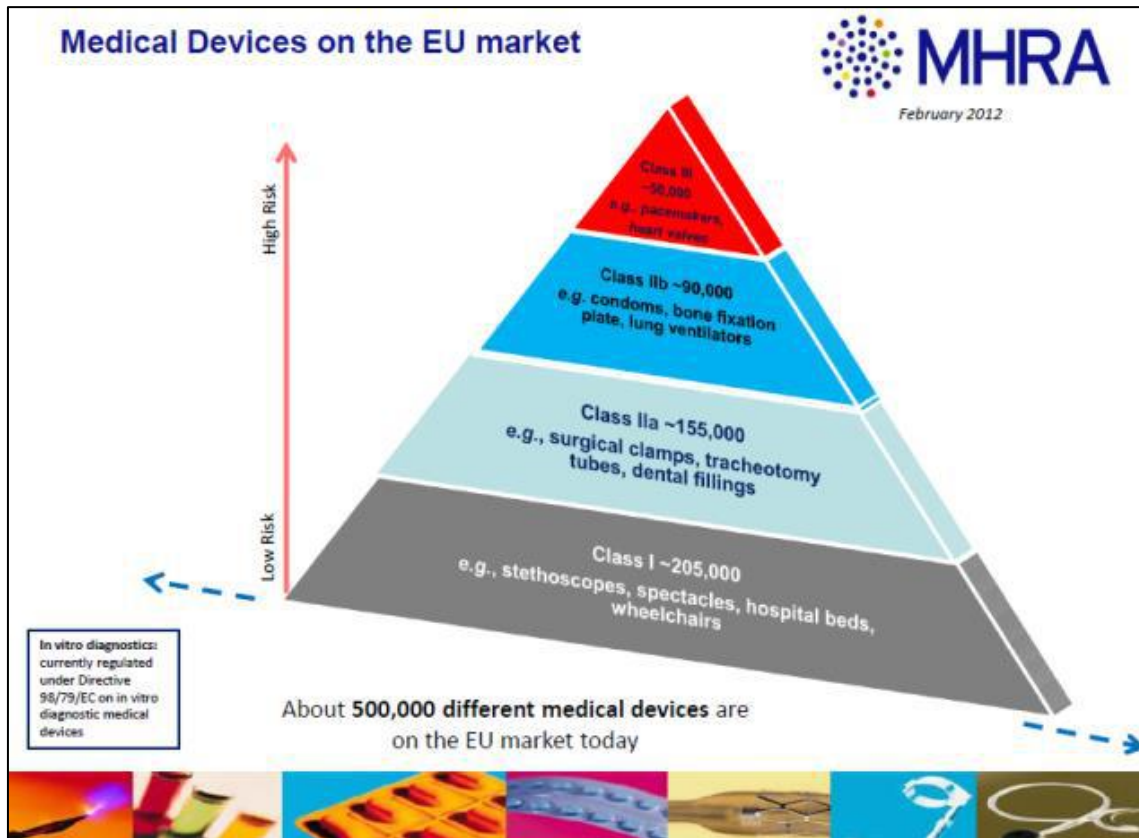
The regulatory cycle for a medical device includes pre-market phases of classification and conformity assessment, through to post-market phases of CE marking and post-market surveillance. The MHRA can intervene at any of these phases.

The regulations place obligations on manufacturers to ensure that devices are safe and fit for their intended purpose. Safe doesn't mean free from all hazards, but it does mean an acceptable level of risk which has to be balanced against the expected benefits. Devices have to be used for their intended purpose and as guided or instructed by the manufacturers. As soon as you step outside of this, if a clinician decides to put a hip joint in an elbow for example, then it is no longer the manufacturer's responsibility.

The MHRA look for alignment with recognised standards in terms of things such as biological safety, clinical safety, electrical safety, labelling, sterilisation etc. Sometimes, for newer devices, there may be higher levels of uncertainty over the potential risks. However, the MHRA framework has to cover the whole range of devices which come under their remit. This includes everything from bandages to CT scanners. This includes software and digital applications. Medical devices are classified in terms of the risks associated with them:

- Class I – Low Risk (e.g. examination gloves)
- Class IIa – Medium Risk (e.g. dental fillings)
- Class IIb – Medium Risk (e.g. stents)
- Class III – High Risk (e.g. hips and pacemakers)

Neil put all of this into perspective by highlighting the fact that there are around 500,000 different medical devices on the



market today which come under this regulatory system. This includes about 50,000 devices regulated in the highest risk class. These devices are coming onto the market at a rapid pace showing no signs of slowing down. The MHRA receives in the region of 26,000 adverse incident reports each year.

Innovation is defined as 'to make changes in something established, especially by introducing new methods, ideas, or products'. There are products on the market now that nobody would have imagined would be available a few years ago. The dilemma is in managing risk in such a way that does not stifle innovation. There is often a strong demand for innovative new solutions, but these will all have associated risks that need to be carefully considered. When innovation occurs at every step of a device's lifecycle then it becomes even more difficult to manage risk.

One of the biggest challenges is the limited amount of information available about a device before it goes onto the market. In this respect medical devices

are very different from drugs, which are often subjected to a higher degree of pre-market testing. It is necessary to research and employ a certain degree of trust on things such as the sufficiency of the device's manufacturing process. But when the device comes into situational contact with a biological organism, new risks may come to light. This is one of the reasons why post-market surveillance is so important. Manufacturers must notify the relevant Competent Authority of any malfunctions, deterioration in characteristics or performance, inadequacy in the labelling or instructions which might lead to death of a patient or serious deterioration in their state of health. As part of the regulatory process the MHRA also look out for early warning signals.

Looking forward to the how the MHRA will approach the challenges of the future, Neil emphasised the importance of engagement, communication and collaboration across all of the relevant organisations, including those who have been represented by the other speakers, but also with manufacturers, health care

professionals and patients. The issues are too large and complex to be tackled by just one group. Coordination of the different groups and encouragement of beneficial actions are important roles to be fulfilled.

Neil concluded his talk by reiterating that the ultimate goal is to improve the regulations so that things get better. This requires increased transparency in the regulatory system and engagement from all stakeholders.

The chair thanked the speakers and summarised the talks by highlighting again the clear need for collaboration between industry and regulators. Innovation is needed, but there is a balancing act between available money, current needs and the needs of the future. Innovation must balance demand, opportunity and cost. He then opened the floor to the audience for discussions.

The first question from the audience reflected on the transitional progress that had occurred within the nuclear industry in terms of recognising the importance of culture on safety. It involved local, national and international work. Changes in behaviours and attitude were heavily driven by strong cross-industry leadership, requiring supportive collaboration and knowledge sharing at a wide scale. The member of the audience asked whether such supportive sharing of experience and support was taking place within the medical sector.

The panel recognised that this is one of the key ideas. The health care industry has been grappling with a learning culture and encouraging event reporting. They suggested that so far the learning from incidents had been somewhat localised to the area within which it had happened. Sharing learning more widely is very much a focus within the health sector, and many initiatives and groups have been created to support this. The HSE is interested in promulgating examples of successes as well as learning from when things go wrong. Examples of success are reported and publicised on their website. One of the

challenges is getting people to make changes that may require an up-front investment. Promoting examples of success will hopefully encourage organisations to see the scale of the benefits that could arise from these investments. The health sector could learn from the aviation industry as well as the nuclear industry.

There are barriers to capturing and sharing information, for example the risk of a negative reaction in the press could provide a disincentive to report events or share the learning openly. The government can be overly focused on individual targets at the expense of the whole system's performance. The fragmentation of the industry, with each organisation managing its own budget and reputation, can also complicate the situation.

The second question related to the balance of the empowerment of individuals and the oversight and guidance of the regulatory bodies. Problems are not resolved just through regulations if people do not follow them. The panel discussed the importance of human factors, and how to design the system in such a way that it becomes easy for people to do the right thing. Getting the culture right is central to this. There must be a 'just' culture so that people don't feel scared to report incidents, and are rewarded for doing the right thing. Inspections from groups like the CQC can be seen as an opportunity to drive improvement, and not a risk. They provide guidance for how the industry can meet regulations, but it is only guidance. If an organisation wants to take a different approach then they are free to do so providing they can demonstrate it meets the regulations. They shouldn't be seen to stifle innovation. Such innovations can then be celebrated and rewarded. Punishment only occurs when standards fall below acceptable levels as set out in the regulations.

Steve Scott agreed with the audience member who raised the question, reiterating that the bottom line is safety, and that is a question of culture. If

evidence-based guidance, behaviours and actions known to be beneficial, are not followed then organisations need to monitor themselves to understand why this is the case. It can be very difficult to get culture right so that shortcuts aren't taken due to competing pressures.

The third question related to the data being collected by each of the speakers' organisations. If they are amassing data, then there will likely be opportunities to identify patterns within the data. The audience member asked whether such patterns were revealing any significant underlying causes of unwanted events.

The panel provided some personal views in response, first suggesting that failure to understand the guidance and why it was important was a common issue, along with management systems which implement these. Another issue seen repeatedly is the failure to listen to staff and their concerns.

A fourth member of the audience commented on the relatively negative picture that had been discussed by the speakers of the challenges facing the sector, and asked them to comment on this, and whether it is unique to health care.

The panel responded by describing how successful the UK health care sector has been both objectively and in comparison to others around the world, however, that doesn't mean it can't be better. People are living longer and more comfortable lives. As regulators it is perhaps necessary to look at where the biggest and most critical improvements can be made, and part of their job is to investigate failures, but from a practitioner and patients point of view, the majority of the performance is very high. The challenge is closing the gap between the performing and underperforming parts.

The final question asked about cases where it is not immediately apparent what is or isn't the best course of action.

There are many areas of the health care profession that are looking 'beyond compliance' and the ways in which they can obtain more reliable signals of success or concern earlier than has previously been the case. They have worked with medical device manufacturers on this such that they see the extra investigation as a positive benefit for their product. Healthcare can be inherently risky; clinicians will always be learning from their interactions with human health. It can be a slow process to learn as information can be dispersed and take a long time to come to light. It is important the data is collected, accidents, near-misses and failures are reported, and learning is extracted from this collectively.

The Chair then invited **Dr Owen Keyes-Evans** who had organised the event on behalf of the Hazards Forum to say a few words of conclusion. He thanked the speakers for successfully articulating both the similarities between the health care profession and other industries in terms of dealing with risk, as well as some of the ways in which health care is unique. He also thanked Mark Eaton for chairing the event.

Dave Fargie, a trustee of the Hazards Forum, closed the event by reiterating the thanks on behalf of the Forum to the Chair and each of the speakers for a stimulating and fascinating evening. He also thanked Dr Keyes-Evans for organising the event, and the IChemE for supporting and hosting the event. Finally he thanked the audience for their engagement before inviting everyone to continue their discussions over refreshments provided by the IChemE.

¹Chemical Engineering Matters
[http://www.icheme.org/media_centre/technical_strategy/chemical_engineering_matters.aspx]

²The Keogh Mortality Review
[<http://www.nhs.uk/NHSEngland/bruce-keogh-review/Pages/Overview.aspx>]

³Good Health and Safety, Good for Everyone
[<https://www.gov.uk/government/publications/good-health-and-safety-good-for-everyone>]

From the Secretary.....

We look forward to seeing as many members as possible at the **Annual General Meeting** on **Tuesday 24th March 2015** at the Institution of Civil Engineers, One Great George Street, London, SW1P 3AA at **16.45**. The Agenda will be as per the Notice sent to members in January, although please note that the start time has now been pushed back 15 minutes to the time shown above. **Refreshments** will be available afterwards from 17.30 prior to the start of the evening event. For those unable to attend the AGM, however, an account of the meeting is planned for publication in the June Newsletter.

The **Calendar of Events** on Page 16 shows many forthcoming events including the Hf Evening Event that follows the AGM at 17.30 for 18.00, which will be at the same address. If you wish to attend, please ensure that you register in good time to avoid disappointment. Further events are shown, most by member organisations of the Hazards Forum. The proposed date for the Hf June event is included also. Members are reminded of the benefits of attending events shown, including the offer of reduced rates for many of them, where charges are made. As usual, however, for more current information please refer to the **Events Calendar** on the **new website** under **Upcoming events**, which is now in the new format, introduced a year ago.

Brian Neale

HSE eNews – Some Examples

++ HSE Appoints New Chief Inspector of Construction ++

The Health and Safety Executive has appointed its new chief inspector of construction. Peter Baker, who is currently Head of HSE's Chemicals, Explosives and Microbiological Hazards Division, will replace Philip White on 1st April 2015. Philip, who has been acting interim chief since Heather Bryant left HSE in September 2014, will continue in his role as Head of HSE's Operational Strategy Division.

<http://press.hse.gov.uk/2015/hse-appoints-new-chief-inspector-of-construction/>

++ Company in Court after Dangerous Quarry Blast ++

A Somerset company has been fined after a quarry blast sent rocks of up to 15 kilos flying outside a danger zone toward employees and across a public road. Bristol Crown Court heard that workers acting as sentries outside the danger area were aware of rocks flying above their heads and landing all around them immediately after the blast. Rocks also landed in the processing plant area of the quarry, which is on the other side of a public road. HSE inspectors discovered that the blast had not been properly planned. Too much explosive was used in an area where the ground was already broken and measures put in place to reduce risks were inadequate.

<http://press.hse.gov.uk/2015/company-in-court-again-after-dangerous-quarry-blast/>

Parliamentary and Scientific Committee

The latest issues of “Science in Parliament”, the journal of the Parliamentary and Scientific Committee of which the Hazards Forum is a member, has among its contents the following articles. Any member who would like any further information on any of the articles below should visit the PSC website www.SciencInParliament.org.uk

HOOKING UP HULL	Mac Andrade
FRANCE BANS USAGE OF PESTICIDES	Dr Claire Mouchot
WHAT IS THE PURPOSE OF THE INTERNATIONAL YEAR OF SOIL 2015?	Matt Aitkenhead, Willie Towers, Helaina Black and Liz Baggs
PUTTING UK PHARMACOLOGY ON THE MAP	Katherine Richardson
MEDICAL PHYSICISTS AND BIOMEDICAL ENGINEERS	Dr Anna Barnes and Dr Elspeth Bartlett
POWERING HUMAN PROGRESS – PAST, PRESENT AND FUTURE	Ian Marchant
CAN CONSISTENT APPRENTICESHIP EXPERIENCE BE ACHIEVED TO DRIVE PERFORMANCE EXCELLENCE	Professor Sa’ad Medhat
CLIMATE CHANGE, FOOD SECURITY AND BIG DATA	Irina Calos, SIN Officer, Los Angeles
UK & BRAZIL: PARTNER IN SCIENCE, SPACE & INNOVATION	Dr Julia Knights, SIN Director, Brazil
DOES THE UK HAVE THE INFRASTRUCTURE IT NEEDS	Address to the P&SC by Nick Baveystock
ENERGY STORAGE	Address to the P&SC by Dr Jonathan Radcliffe and Professor Toby Peters
DEMENTIA	Address to the P&SC by Professor Alistair Burns, Dr Simon Ridley and Professor Martin Knapp

Calendar of Events

Please check the Events section of the Hazards Forum website for more information at www.hazardsforum.org.uk and to see any updates in the calendar. These may include additional events or perhaps amendments to the Events shown below.

Please note that attendance is by invitation.

Date	Event	Venue	Contact/further information
March			
24 th	SaRS Event: ASCOS: Streamlining Certification in the Aviation Industry	BAWA, 589 Southmead Road, Filton, Bristol, BS34 7RG	http://www.sars.org.uk/branches/western-branch/
24 th	Hf Event: Annual General Meeting	Institution of Civil Engineers, 1 Great George Street, Westminster, London SW1P 3AA	admin@hazardsforum.org.uk
24 th	Hf Event: Maintaining a robust Nuclear Safety Culture – from new build to decommissioning	Institution of Civil Engineers, 1 Great George Street, Westminster, London SW1P 3AA	admin@hazardsforum.org.uk
25 th	IET Event: Why radiation is safe and the world should embrace nuclear power	The Blue Lagoon, Portsmouth	http://www.theiet.org/events/local/205678.cfm?nxtId=205956
26 th	IET Event: Nuclear Engineer for Safety, Control and Security	Bristol Marriot Hotel, Bristol SS1 3AD	http://conferences.theiet.org/nuclear/index.cfm?nxtId=210978
26 th	SaRS Event: Enhancements in Monet Carlo Simulation Techniques for Availability Modelling	Birchwood Golf Club, Kelvin Close, Birchwood, Warrington, WA3 7PB	http://www.sars.org.uk/branches/the-north-west-branch/
April			
28 th	SaRS Event: The contribution of test and analysis to the No Fault Found (NFF) issues within the UK MOD	589 Southmead Road, Filton, Bristol, South Gloucestershire BS34 7RG, UK	http://www.sars.org.uk/branches/western-branch/
30 th	IET Event: Electrical Safety Management	The Strand Palace Hotel, 372 Strand, London, WC2R 0JJ	http://www.theiet.org/events/2015/214754.cfm?nxtId=213461 mcopping@theiet.org
May			
12 th	IChemE Event, Hf Supported: Hazards 25	EICC (Edinburgh International Conference Centre), The Exchange, Edinburgh, EH3 8EE	www.icheme.org/hazards25 hazards25@icheme.org
13 th	ICE Event: ICE Flooding 2015	Royal Garden Hotel, Kensington, London, W8 4PT	http://www.ice-conferences.com/ice-flooding-2015/
14 th	SaRS Event: ALARP in the Rail Industry	Birchwood Golf Club, Kelvin Close, Birchwood, Warrington, WA3 7PB	http://www.sars.org.uk/branches/the-north-west-branch/
19 th	IET Event: Cyber Security in Modern Power Systems	The Midland Hotel, Peter Street, Manchester, M60 2DS	http://conferences.theiet.org/cyber-grid/?nxtId=214792
20 th	IET Event: Sea Defences in Blackpool	The Vila Country House Hotel, Wrea Green, Preston, Lancashire, PR42PE	http://www.theiet.org/events/local/214792.cfm?nxtId=210021
June			
2 nd	IMechE Event: Fit for Purpose Safety Cases in the Nuclear Industry	The Studio Birmingham, 7 Cannon Street, Birmingham, West Midlands	http://events.imeche.org/ViewEvent?code=S6205
5 th	ICE Event: ICE Bridges 2015 – Maintaining Commitment to Infrastructure	Institution of Civil Engineers, 1 Great George Street, Westminster, London SW1P 3AA, UK	http://www.ice-conferences.com/ice-bridges-2015/about/
16 th	Hf Event: Risks Affecting Management Systems (Provisional Title)	Institution of Civil Engineers, 1 Great George Street, Westminster, London SW1P 3AA, UK	admin@hazardsforum.org.uk
23 rd	SaRS Event: 21 st AR2TS	Burleigh Court Conference Centre, Loughborough University (West Park), , Loughborough, Leicestershire LE11 3TD, UK	http://www.sars.org.uk/events/21st-ar2ts-2015/

The Hazards Forum's Mission is to contribute to government, industry, science, universities, NGOs and Individuals to find practical ways of approaching and resolving hazard and risk issues, in the interests of mutual understanding, public confidence and safety.

The forum was established in 1989 by four of the principal engineering institutions because of concern about the major disasters which had occurred about that time.

The Hazards Forum holds regular events on a wide range of subjects relating to hazards and safety, produces publications on such topics, and provides opportunities for interdisciplinary contacts and discussions.

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Registered charity number 1047047