Specialist Estates Services

NEWSLETTER

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Introduction

Dear Colleagues,

I hope you've all enjoyed a well-deserved summer break.

I'm delighted to pen a few words of introduction to our autumn newsletter.

Artificial Intelligence is increasingly impacting on professional and personal lives, and whilst there are many risks associated with the tool, opportunities are immense for healthcare. We've included an article highlighting work that we are doing with our NHS Wales partners to explore AI potential in the field of Radiology. As you'll see, even at this stage, great opportunities have been identified for achieving improvements in volume and quality of diagnostic work we are doing. We are confident that this collaboration will position us well to broaden the scope of investigation and to generate wide ranging benefits for patients in the future.

It was great to see a large number of Estates and Facilities Management colleagues at this year's IHEEM Wales Regional Conference back in May. As you'll read in Simon Russell's article, the programme offered a packed agenda of items across healthcare engineering and estate management, and it was great to see sessions led by our own NHS Wales staff and to be part of the discussions which arose from the presentations.

John Prendergast has written about our Endoscope Decontamination Forum which was held at the Royal Welsh Showground in June. This was attended by NHS colleagues and our private sector partners in the field. It's great to see a commitment to this profession, which relies on high and consistent standards being achieved for patient safety.

We've included a piece on Bob Baker's presentation on Water Safety to the IPS & AHCP Welsh Branch Conference Event, which was also held in June. Healthcare covers so many professions and it's great to see colleagues crossing between disciplines to share experiences.

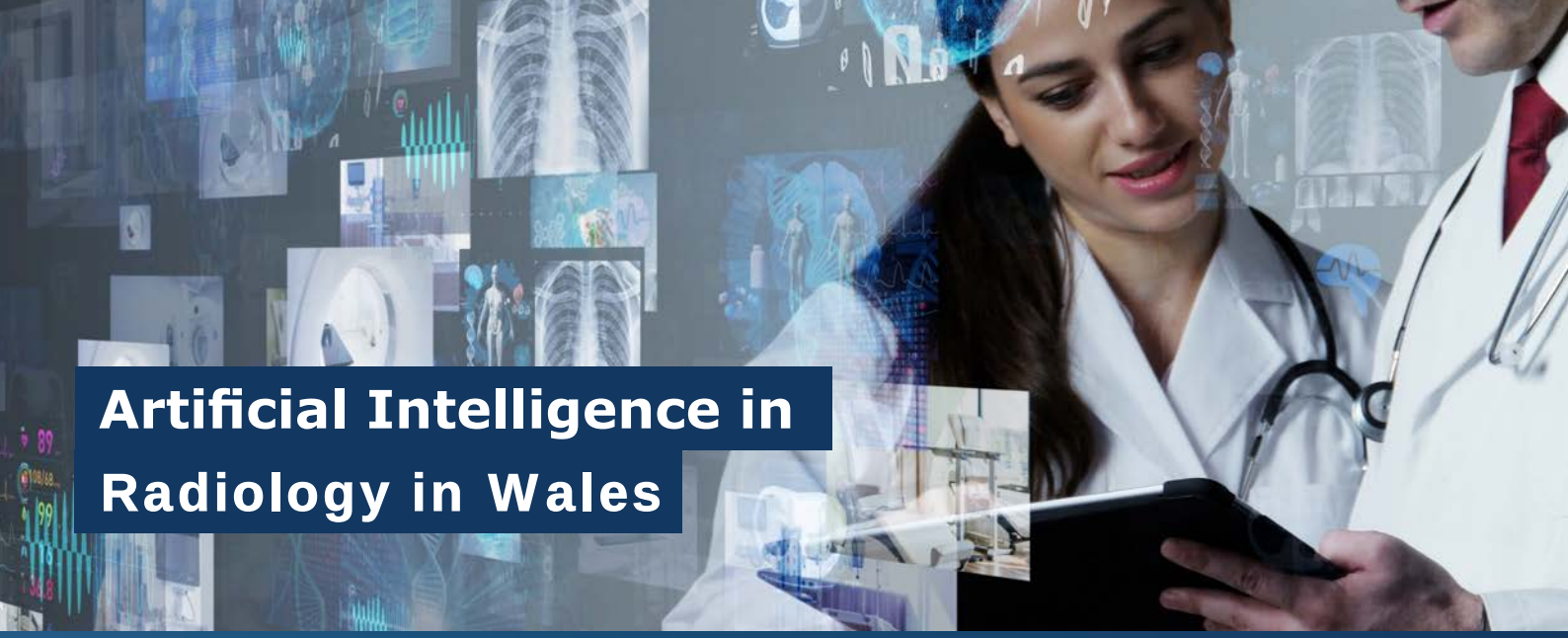
There's an interesting ***'History Corner'*** piece on the University Hospital of Wales, and a photo quiz of naming the hospital. I self-assessed my scores, and am pleased to report I passed.

Many Thanks,

Stuart

Stuart Douglas
Director

stuart.douglas@wales.nhs.uk



Artificial Intelligence in Radiology in Wales

Artificial intelligence (AI) is transforming numerous fields and Radiology is no exception. Radiology, a branch of medicine that uses imaging technology to diagnose and treat diseases, has always been at the forefront of technological advancement. The integration of AI into Radiology promises to enhance the accuracy, efficiency, and overall effectiveness of medical imaging.

Over the decades, the introduction of groundbreaking technologies such as computed tomography (CT), magnetic resonance imaging (MRI), and ultrasound, revolutionised the Radiology field, providing more detailed and accurate images. However, the integration of AI marks a new era, where machine learning algorithms and advanced data processing capabilities are poised to take Radiology to unprecedented levels of precision and efficiency.

AI algorithms, particularly those based on deep learning, have shown remarkable competence in analysing medical images. These systems can detect abnormalities such as tumours, fractures, bleeds, and lesions with a high degree of accuracy. For instance, AI solutions can assist Radiologists by highlighting areas of concern on scans, facilitating earlier detection of cancers and other conditions.

AI systems can gather and analyse vast amounts of data from diverse sources, enabling them to recognise patterns that might be missed by the human eye. This capability significantly enhances diagnostic accuracy. Studies have demonstrated that AI can match the performance of Radiologists in identifying certain conditions, helping to lead to more timely diagnoses.

Artificial Intelligence (AI) in Radiology Implementation Group

We had the initial idea to create a Welsh AI group, and the 'AI in Radiology Implementation Group' was established to provide a collective understanding for the assessment and impact of AI on NHS Wales organisations. Across Wales to date, there has been somewhat of a fragmented, uncoordinated view of the use in AI and its capability. We needed one view of Wales, with multi-organisation collaboration.

Our group aims to:

- Establish an understanding of the current status of AI methodologies that are currently available;
- Provide a shared and common approach for evaluation of AI tools;
- Evaluate how these AI solutions can integrate and work co-operatively with current Radiology systems and workflow in Wales, using anonymised data from Wales;
- Help evaluate how these methodologies could impact on Radiology departments across Wales.

The group is a multidisciplinary group that represents Welsh patients and will be involved in the safe testing and trialling of potential future AI within Radiology Services.

SES - Led Project

One of the roles of the SES imaging team is to give expert advice and guidance to all health boards and to facilitate their imaging needs. We have already created a joined-up approach by implementing a successful national diagnostic programme. As a team, we can enable projects to be rolled out more efficiently, leveraging buying power by using positive relationships that we have already forged with suppliers, utilising national frameworks, and influencing what can be achieved in the longer term in a more controlled way.

This SES project really champions the values of NWSSP in delivering value for money across NHS Wales, creating efficiencies and potential cost savings; innovation through investigating new advances in technology and delving into a currently topical subject; and excellence through partnership, working with groups such as Public Health Wales, Imaging Executive, NIAW, Life Sciences Hub Wales, and Welsh Government.

AI can contribute towards every aspect of the patient journey through Radiology.

At the very start, it can be utilised to speed up scan times.

Andrew Ward and I have recently successfully secured over one million pounds of Welsh Government funding for purchasing AI software upgrades on Siemens and GE scanners across Wales. This can help shorten scan times by up to 73%, directly improving patient care and experience, as well as increasing clinical productivity.

We aim to increase throughput by 20% once the AI solutions are fully commissioned. Therefore, for a low-cost investment, with minimal building requirements, we can significantly increase our capacity.

On our mobile MRI units, we can increase patient numbers by around eight per day, which over the course of a year could be 2,800 additional patients scanned.

It also means that Radiographers have more time per patient, invaluable for improving patient care, and important for compassion towards patient's needs. This is particularly important for claustrophobic, additional needs or paediatric patients and makes the whole imaging journey more comfortable.

There is also a saving of energy consumption per patient, accumulating to significant overall energy savings per year.

Progress so far

Our AI group has successfully evaluated different bone age AI solutions using Welsh data. If there are concerns over a child's growth, then a bone age study is performed, which helps evaluate how fast or slowly a child's skeleton is maturing and indicates their level of biological and structural maturity better than the chronological age.

Specialised paediatric Radiologists report an X-Ray of the hand & wrist. But with the decline in the number of these specialists, inevitably there have been reporting delays. They often take 15-20 minutes each to report, and there can be inconsistencies and subjectivity with the reporting. We have evaluated bone age AI solutions that can aid the bone age diagnosis. So far, the results have been extremely successful, 100% accurate agreeing with the original Radiologist report, and all taking 10 seconds to return a report.

Negatives of AI

Understandably, there are concerns over the use of AI in healthcare. People might lose their jobs; will it be wrong? To reassure, this will not remove the need for human reporters. It can function as an aid to ensure we are creating capacity for their expertise elsewhere. It also enables readers to achieve higher efficiency, reducing reading time and minimising errors.

The hope is that by tackling the project in an all-Wales manner, with us leading it, we will be able to secure the funding we need to move this positive healthcare initiative forwards.

The Future

So where will this project take us next? Once the bone age solution has been evaluated and ratified, there are many avenues that we can take. Fracture detection, lung pathology and stroke diagnosis are just some of the areas we hope to look at. We have already started the ball rolling with an AI fracture detection solution that has potential to aid clinicians in busy emergency departments, as missed or delayed diagnosis of fractures on X-ray is a common error with potentially serious implications for the patient.

For stroke, the solutions can automatically categorise brain images following CT scans to detect signs of stroke in 30 seconds, compared to a 30-minute scan to manual-reporting period. These stroke solutions are already successfully implemented across Wales. With stroke being the fourth single leading cause of death in the UK and occurring every five minutes, this latest technological innovation has the potential to save lives and improve the long-term outcomes of damage by speeding up the 'golden hour' of stroke diagnosis to drug treatment.

As AI technology continues to advance, its capabilities in Radiology will expand. Future AI solutions are expected to integrate more sophisticated algorithms and processing power, enabling even more accurate and comprehensive analysis of medical images.

The integration of AI into Radiology represents a significant leap forward in medical imaging and diagnostics. By enhancing accuracy, efficiency, and patient outcomes, AI has the potential to transform Radiology practice fundamentally. However, it is crucial to address the challenges that accompany this technological revolution.

As we look to the future, the continued evolution and integration of AI will undoubtedly play a pivotal role in advancing medicine and improving healthcare delivery in Wales.

Joanne Sewell
Assistant Diagnostic Imaging Advisor

SES / IHEEM Wales Regional Conference 2024

Specialist Estates Services (SES), in conjunction with IHEEM, IHEEM Wales Branch and NHS Wales, held the annual Wales Regional Conference, Exhibition, and Gala Awards Dinner on 28th and 29th May 2024 at the International Convention Centre, and the Gala Dinner at the Celtic Manor Resort, Newport.

The programme entitled "Back to the Future" looked at lessons learnt from the past to deliver the healthcare estate of the future, building on the issues from the 2023 conference, and focused on three main streams:

- Workforce development
- Structure and architecture
- Shared resources

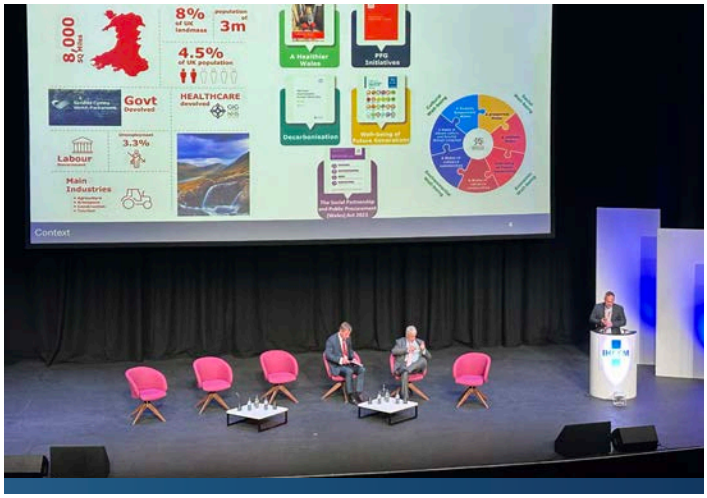
Following a welcome address by Peter Sellars, IHEEM CEO, setting the scene and context for the two-day conference, keynote speeches were given by Neil Frow OBE Managing Director at NWSSP and Stuart Douglas, Director of NWSSP-SES.

Keynote Speakers

Neil Frow, set the context and background of NWSSP including its inception in 2010 and going live in 2011. Over the years the organisation has grown providing high-quality professional technical and administration services to NHS organisations across Wales. NWSSP's core values are 'partnership and collaboration working with health boards based at five main administrative locations and four main stores across Wales'. The organisation has now grown, to 5,777 staff who have helped generate £166M of professionally influenced savings.

During Covid, NWSSP supported the health boards in setting up field hospitals, providing procurement and estates support, and chartered their own flights to bring in vital PPE stock during the pandemic. Strategic projects in the pipeline include electronic prescribing, diagnostic hubs, and TRAMs (Transforming Access to Medicines), including creating three new regional hub facilities. As part of the Decarbonisation strategy NWSSP has acquired 37 electric vehicles, but limitations with the infrastructure and battery technology mean we are also investigating other technologies such as hydrogen.

Neil commented that it is always better to be part of the future than to sit by and watch it happen.



Stuart Douglas' keynote speech, entitled 'Holding a Steady Course', highlighted the targeted investment which is taking place in the NHS estate in Wales around backlog maintenance through the Estates and Facilities Advisory Board (EFAB) and using tools such as EFPMS to prioritise the investment going forward.

Stuart mentioned the importance of estates data and the necessity of keeping that data up to date, allowing a clear sight of risk which would present opportunities for greater collaboration in procuring and acquiring estates data in the future.

Tools available for rationalisation include the Occupeye service offered by SES which measures actual room occupancy using sensors and can help plan and refine desk and meeting space numbers ultimately leading to site disposals where the occupancy is not there.

Lessons to be learnt include developing a clear project brief at the start of a project and ensuring controls are in place to ensure there is no deviation from the original brief.

Stuart concluded his presentation by commenting on cost benchmarking allowing for inflation levels (historical and projected) required good data with the need to share data with the BCIS to improve the quality of our cost planning data.

Some other highlights from the two-day programme of presenters included:

Structural Architectural Challenges

Mark Parsons, Assistant Director of Capital Planning from Swansea Bay University Health Board and Jonathan Brindley, Sales and Marketing Director at ModuleCo spoke on the new modular theatre development at Neath Port Talbot Hospital noting the issues of a constrained site and delivering a new theatre complex in a relatively short period of time. This involved working closely with the successful contractor ModuleCo and SES during the early design stages to ensure a compliant scheme and closely coordinating the new install with the existing infrastructure.

Simon Day, Head of Maintenance & Engineering and Malcolm Morgan, Senior Estates Officer at Hywel Dda University Health Board presented on their experience around managing RAAC (reinforced autoclaved aerated concrete) at Withybush General Hospital. Following the alert published by the Institution of Structural Engineers around the potential failure of RAAC in premises, HDUHB had surveys carried out by Curtins across their sites to identify any issues present. Withybush was identified as having RAAC and on further inspection required remedial work to mitigate the risk of premature failure. This involved a complicated programme of decanting clinical areas, arranging temporary propping and associated remedial works, all manged successfully by the inhouse estates team led by Simon and Malcom.

Shared Resources

Paul Fitzpatrick, Director of Estates and Facilities at Aintree University Hospital spoke on his experiences of managing an estates organisation and bringing facilities services back in house through a shared resource across the region. This was followed by Mark Furmage from Cwm Taf University Health Board chairing an interactive section on Generation Z and how to engage with them and attract them to the Service.

Governance IT and Workforce

The second day of the conference consisted of two sessions, the first covered 'Governance and IT' with presentations from Cambridge University on using their AI tool 'innex.ai' for intelligent searches and Quiqsolutions offering of a bespoke digital audit tool.

The final session of the conference on 'Workforce' began with John Prendergast, SES, discussing the IHEEM competency framework and the need for improved governance around training and appointments. Followed by Des Keighan, Swansea Bay University Health Board presenting on the coaching and mentoring offering from IHEEM Wales, and the digital CPD management system which IHEEM will be offering to its members to demonstrate compliance with Engineering Council CPD training requirements.

Gala Awards Dinner Winners

The Gala Awards Dinner at the Celtic Manor was held with after dinner speaker Colin Jackson, CBE, 100m hurdling champion and Strictly Come Dancing contestant, presenting the awards. Congratulations to the following award winners at the Award Gala Dinner recognising their achievements and contributions to the Welsh Health Service.

Thanks to the support of IHEEM, NHS Wales colleagues and healthcare specialists, along with Peter Sellars (CEO, IHEEM), Alison Ryan (President, IHEEM) and Tania Davies (COO, IHEEM), we heard from a wide range of speakers from with NHS Wales and healthcare specialists to give valuable insight into the event's theme "Back to the Future". We are already looking forward to next year's conference.

Simon Russell
Deputy Director

Endoscope Decontamination Forum June 2024

SES hosted and facilitated the annual Endoscope Decontamination Forum at the Royal Welsh Showground, Builth Wells June 2024. As always, the event was well attended with a multi-disciplinary attendance, representing all Health Boards and Trusts across NHS Wales.

The weather was not as pleasant as previous, however the event remains popular with both delegates and corporate partners alike. The event administration is managed through IHEEM Wales, and SES would like to convey thanks for the continual support they offer running such events.

The event acts as an open forum to share ideas, promote innovation and discuss difficulties for people decontaminating extraordinarily complex medical devices. Endoscopes are an essential part of all diagnostic therapies, but without effective decontamination, they cannot be used without significant risks to patients. Mark Gapper, Head of Engineering within SES, opened the event and welcomed the audience and corporate sponsors. He also paid respects to one of our previous staff members, who was pivotal in setting up the forums in its earlier form, dating back to 2007. Graham Stanton passed away after a short illness in April 2024, Mark recognised the devotion he gave to the subject of decontamination.

John Prendergast, Principal Decontamination Engineer, set the scene with a presentation identifying the areas that present the greatest challenges when decontaminating flexible endoscopes. He explained how other priorities can often interact and create obstacles to organisations pursuing the best decontamination practice.

Michael Murray, representing Steris UK followed on, touching on one of the areas John highlighted as a concern. Manual cleaning of endoscopes offers challenges, and Michael gave his views on how we need to evolve and how can we assure our patients of an effective process.

After a break, we continued with a session dedicated to the decontamination of semi-critical medical devices to include less invasive devices used for ultrasound and specialist treatment activities (e.g. cardiac probes). This follows on from the recent release of Welsh Health Technical Memorandum (WHTM) 01/06-part F.

There is no common solution in this area and although we strive to use validated high-level disinfection, we sometimes must derogate away from best practice as these devices can be found in many areas of healthcare service delivery, including community-based treatment areas.

Ellie Wishart (Nanosonics UK), Sam Hardy (Tristel) and Sohail Shami (Partners for Endoscopy), looked at the various systems available to decontaminate such devices, often directly at point of use. Systems available include Vapourised Hydrogen Peroxide, Ultraviolet line of sight and chemical cleaning agents impregnated wipes. Whatever system is employed, pre-cleaning is essential to the outcome.

Lunch followed with an opportunity for delegates to browse the exhibition. Our corporate partners provided a plethora of innovations, developments, and educational opportunities. Without the kind support of the exhibitors, the event would not have been the success it has developed into and we thank them for their ongoing support.

After lunch, we had the pleasure of listening to Mett Smart (Director -20/30 Laboratories) who discussed the microbiological contamination often present within flexible endoscopes. Her presentation probed the questions, 'Can we look at ways to reduce and do we look in the correct direction when assessing contamination', 'Are the HTM/WHTMs too rigid and should we look to other parts of the developed world to provide more accountable methods of monitoring such risks to patients?', as always, it was highly thought-provoking and engaging.

The event ended with a new feature, an interactive discussion using the experience of our corporate partners as a panel, answering questions fuelled by the audience. The technology for this was well marshalled by our own Aidan Parkes (Decontamination Engineer) and chaired by Mark Furmage (Decontamination Office – CTMUHB). The session proved highly popular, and interaction was superb, between delegates, the panel, and the chairperson.

John Prendergast brought the Forum to a close, thanking everyone (delegates, participants, and exhibitors) for such an engaging day, which will ultimately improve practises and reduce risks to patients across NHS Wales.

Special thanks go to Peter Barrow (Decontamination Engineer – SES) for linking with the premises and our corporate partners, the admin team at SES for event support (Emma Mazey and Joanne Munn), the facilities team at the RWS including catering and administration, the AV team (Andrew Bufton) and IHEEM.

John Prendergast
Principal Decontamination Engineer

IPS & AHCP Welsh Branch Conference Event

Bob Baker, Principal Mechanical Engineer for SES and John Prendergast, Principal Decontamination Engineer, recently spoke at the IPS & AHCP Welsh Branch Conference Event at the All Nations Centre, Cardiff on 25th June 2024.
Bob is an Authorising Engineer for water services for most of the health boards in Wales. He has a passion for engineering and working with various stakeholders to help deliver safe, quality projects through collaboration, teamwork, and effective communication.

Bob's presentation at the conference was entitled 'Safe Water in Healthcare Premises' and covered;

- Safe water supply,
- How is water managed in a hospital
- Relevant standards and legislation
- Details of Legionella and Pseudomonas
- Control measures
- Good practice
- Lessons learnt

The presentation also included Bob's real-life examples from his wealth of experience of being the Water Services Authorising Engineer for many health boards in Wales and detailed the issues he has come across both good and bad.

John Prendergast, Principal Decontamination Engineer also made a keynote entitled 'Decontamination – Quality = Patient Safety?'. John works with health boards on a daily basis to ensure that everyone is following the same high standards for decontamination in order to create a safe and efficient work environment with patient safety at the forefront of everyone's minds across the whole of Wales.

Bob Baker
Principal Mechanical Engineer

Emma Mazey
Information Officer

History Corner

This hospital is also known as the 'Heath Hospital' due to its location in the Heath district of Cardiff. UHW is a teaching hospital for Cardiff University medical students. Work started on the building in 1963 and was eventually opened in 1971, the total cost was around £22 million. UHW was Europe's first fully integrated hospital and medical school. UHW is the third-largest hospital in the United Kingdom and the largest hospital in Wales.

The ground was chosen by Cardiff council due to its accessibility for patients. A competition to bid was launched and eventually won by Stanley Wayman Milburn, an architect with a special interest in schools and hospitals and he had previously designed 10 hospitals in the North East of England. The design of the hospital which features long, parallel slabs was later mimicked by the Prince Charles Hospital in Merthyr Tydfil.

The hospital was officially opened by Queen Elizabeth II on 19th November 1971.

Since its opening, the hospital has continued to expand including a £16 million birthing centre, and a £1m development to introduce a walkway to connect the two separate parts of the hospital. In 2020, the hospital became the major trauma centre for the South Wales region. UHW is Wales' only kidney transplant centre and caters for patients from South, Mid and West Wales.

In 2019, the health board announced plans to build a new hospital by 2030 as part of a wider reorganisation of hospital services. The hospital has been a part of several TV documentaries showcasing the realities of the pressures on the NHS.

Emma Mazey
Information Officer

Aerial Photo Quiz

As you may know, SES are in the process of moving offices and as such we have been going through our archives and we have stumbled upon a whole host of aerial photographs of our Welsh Health Estate. However, to make this quiz really difficult, these are not modern photographs so this will really test your knowledge to see how the Welsh Health Estate has grown and changed since the early 2000s.

1.

Hint:

This hospital is part of the Aneurin Bevan University Health Board

2.

Hint:

This hospital is part of Cwm Taf Morgannwg University Health Board and has recently had a major refurb to the main outpatient department

3.

Hint:

This hospital is part of Hywel Dda University Health Board.

4.

Hint:

This hospital is part of Cardiff and Vale University Health Board, this hospital is also known by another name relating to the address of the building.

5.

Hint:

This hospital is part of Hywel Dda University Health Board and has changed name since this photograph was taken.

6.

Hint:

This hospital is part of Aneurin Bevan University Health Board. This current facility was opened in 1970 and no longer has a functioning A&E department as it has recently been transferred to a larger hospital in the health board.

Quiz Answers:

1. *Royal Gwent hospital, Newport – 27th October 2001*
2. *Prince Charles Hospital, Merthyr Tydfil – 7th April 2002*
3. *Prince Philip Hospital, Llanelli - 7th April 2002*
4. *University Hospital of Wales, Cardiff – 27th October 2001*
5. *West Wales General Hospital (now known as Glangwili General Hospital), Carmarthen, 7th April 2002*
6. *Nevill Hall Hospital, Abergavenny – 31st May 2002*

Most Recent Publications:

WHTM 06-02	Electrical safety guidance for low voltage systems
WHTM 06-02	Safety Handbook (supplement)
WHTM 06-03	Electrical safety guidance for high voltage systems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