Royal College of Physicians and Society of Physicians in Wales
Joint annual update in acute and general internal medicine

Improving general internal medicine (GIM) patient care and clinical practice
Abstracts

16–17 November 2017 Cardiff Marriott Hotel
We would like to thank all those who have supported the Royal College of Physicians (RCP) and Society of Physicians in Wales (SoPW) joint annual update in acute and general internal medicine. In particular, we thank the Wales Deanery School of Medicine for joining the RCP and SoPW in developing this initiative and providing some funding, the RCP college tutors and postgraduate centres for helping to promote the poster competition, and finally all the entrants for taking the time to submit and share their work.

If you would like information about next year’s joint annual conference and would be interested in entering a future poster competition, please contact:

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The RCP and SoPW joint annual update took place on 16 and 17 November 2017 at the Cardiff Marriott Hotel. It was a successful and well-attended event, with over 200 delegates and 20 speakers.

The poster competition is now well established and is organised in support of all student, trainee and consultant members or non-members of the RCP, to provide a platform for sharing best practice from across Wales and for individual development. This competition is a collaborative initiative between the RCP, the SoPW and the Wales Deanery School of Medicine.

Entrants were required to submit an abstract detailing ‘A project you have implemented or been involved with that has improved GIM patient care and/or brought an improvement to your clinical practice and working environment’. We were pleased with the response and the quality of the abstracts received.

The abstracts were assessed by the RCP vice president for Wales Dr Gareth Llewelyn, the chair of the SoPW Dr Jonathan Goodfellow, RCP regional adviser Dr Andrew Freedman and the head of the Wales Deanery School of Medicine Dr Claire Williams.

The lead author for each abstract received free entrance to both days of the conference, and other authors were offered a discounted entry fee. The lead author of the winning abstract was also invited to present at the conference and awarded a prize of £250.

Authors whose abstracts were accepted were invited to present them as posters at the conference for all delegates to view and discuss. The assessors awarded prizes of £150 and £100 for the second- and third-placed posters displayed at the conference.

Posters
The full abstracts that were presented as posters can be found on pages 4–34.

Short oral presentation
The winning abstract that was given as an oral presentation can be found on page 35.

These abstracts are also freely available online at: www.rcplondon.ac.uk/walesupdate2017
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**Lewis Thomas Gibbon Jenkins of Briton Ferry Fellowship**

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Routine testing serum magnesium in acute admissions to the adult cystic fibrosis unit – are we doing the right thing?

Jamie Duckers,1 Lowri Allen,1 Lorraine Speight,1 Dawn Lau,1 Ian Ketchell,1 Dev Datta2

1All Wales Adult CF Centre, University Hospital Llandough, Cardiff, UK
2Biochemistry Department, University Hospital Llandough, Cardiff, UK

Background

The All Wales Adult Cystic Fibrosis Centre (AWACFC) routinely measures serum magnesium (Mg) levels as a component of an electrolyte profile on acute admissions, and treats hypomagnesaemia (<0.7 mmol/L) with intravenous magnesium. There is no consensus guideline on whether routine measurement and replacement of Mg in this population of patients is of value. Serum Mg is not always an accurate representation of total body Mg and 20–30% of Mg is bound to plasma proteins.

Aim

To retrospectively review the Mg levels measured on admissions to AWACFC over a consecutive 3-month period and to retrospectively correct measured Mg level according to patients’ concurrent albumin level. To ascertain the clinical utility of measuring serum magnesium in this patient population.

Method

The serum Mg and albumin levels of all admissions to the AWACFC over a 3-month period were collected and medications were reviewed to ascertain whether drug-induced hypomagnesaemia was relevant. In patients with hypomagnesaemia (<0.7 mmol/L), their albumin level was used to calculate an adjusted Mg using the following equation:

Adjusted Mg = serum Mg + [0.0072 x (39 – albumin concentration)]

Results

There were 64 admissions over the 3 months. The mean Mg level was 0.80 mmol/L (range 0.45–1.12 mmol/L). Seven of the 64 patients (11%) had hypomagnesaemia (range 0.45–0.69 mmol/L). All seven were on proton pump inhibitors (PPI) and one was using fluoxetine, one paroxetine and one citalopram (all medications that are known to reduce Mg levels). When using serum albumin level to calculate adjusted Mg, six of the seven had normal adjusted Mg levels.

Conclusions

89% of all acute admissions to the AWACFC had a normal serum Mg level. In the 11% with a low serum Mg, all were on medications known to lower Mg and all but one patient actually had a normal adjusted Mg, as they had low serum albumin reflecting their underlying cystic fibrosis condition. This snapshot would suggest that the routine measurement of serum Mg may not be of value and it is important to use serum albumin levels to correct Mg and to be mindful of concurrent medications, in particular PPI, which reduce Mg levels.
Gastroenterology outreach service – quality improvement project to improve service delivery and patient care

Lavanya Shenbagaraj, Aarij Siddiqui, Linzi Thomas, Lisa Williams, Sophie Henson, Chinlye Ch’ng
Singleton Hospital

Background
Early involvement of and management by specialists has been shown to have a favourable impact on outcomes in a number of acute medical conditions. Delivery of high-quality acute medical care by specialists was highlighted as an aim of the Darzi review in 2008.

Aim
To provide a high-quality, expedient, daily reach-in gastroenterology service during weekdays for acute gastroenterology patients admitted to the Singleton Hospital medical assessment unit (MAU).

Methods
We introduced a daily gastro reach-in service for patients admitted to the MAU. The project was done for a period of 5 weeks. The gastro team, mainly consisting of the registrars supported by consultants, reviewed acute gastro patients admitted from the take and advised on investigations and management plan and, if appropriate, took over the care.

Results
23 patients were referred in the 5-week period. Common reasons for gastro review included upper gastrointestinal bleed (26.1%), decompensated liver cirrhosis (47.8%), colitis (17.4%), abdominal pain (4.3%) and dysphagia (4.3%).

Positive outcomes of the project included early endoscopy within 24 hours of admission (30%). All patients seen by gastro outreach had endoscopy if appropriate within 48 hours of admission.

The project helped to accomplish crucial and timely patient management for eg biologics in unwell colitic patients, steroids in alcoholic hepatitis and facilitated early patient discharges (35%).

Ward referrals for gastroenterology opinion were nearly halved during the period of the gastro outreach project.

66.6% of inpatients in the gastro ward had a gastroenterological problem during the project, compared with only 20% 1 month prior to the project.

Our vision
Following excellent feedback from all medical consultants, we are in the process of turning this project into a permanent service in Singleton Hospital.

Conclusion
We present a new model of acute gastroenterology service delivery which fulfils the targets of a high-quality, expedient, consultant-supported, trainee-led service and an excellent training opportunity.
Senior vs junior doctor: A comparison of medical student experiences of near-peer and senior clinician-led acute medicine tutorials in North Wales Clinical School

Katie Bishop,1 Fiona Rae,1 Nibu Thomas,2 Charlie Tombs1
1Wrexham Maelor Hospital 2Ysbyty Glan Clwyd

Background
Modern medical education places more demands on the undergraduate and postgraduate systems. Near-peer education has absorbed some of these pressures by providing junior doctors as teachers, a role previously reserved for senior clinicians. As teachers, trainees develop skills in leadership, presentation and communication while consolidating knowledge that could assist in postgraduate examinations. Its role in bedside and clinical skills lab teaching is well described in the literature. This study evaluates the role of trainees in the acute medicine tutorial setting.

Methods
In a large district general hospital in north Wales, final-year Cardiff University medical students’ acute medicine tutorials were randomly allocated to a junior or senior doctor. Student opinions were then invited through questionnaires and focus groups.

Results
There was no statistical difference in students’ perception of the level, pace and usefulness of the sessions. All teachers were approachable and enthusiastic. Students felt that senior doctors were more knowledgeable and better able to explain concepts. Students felt that all sessions were useful to their learning.

Discussion
Students enjoyed and derived educational benefit from both types of tutorial. Senior doctor-led sessions were more beneficial in developing technical medical knowledge, whereas more practical advice was gained from trainee-led teaching.

Exposure to trainees provided the opportunity to discuss clinical and non-clinical aspects of becoming a doctor. Through these discussions, students’ concerns were addressed and they developed an understanding of what is expected after qualification, eg dealing with a medical emergency or being on call. They were reassured and gained confidence in their ability to practise medicine, thus assisting the transition from student to doctor.

Students requested the inclusion of both types of tutor in their undergraduate curriculum. Therefore, following this project, trainees have been further involved in delivery of the Cardiff University final-year curriculum in the North Wales Clinical School.

Figure 1: Comparison of mean Likert scale responses in junior and senior doctor groups.
Documenting to reduce harm: A quality improvement project to reduce catheter-associated harm in acute medical admissions in a district general hospital in north Wales

Nibu Thomas,1 Jiexin Cao,2 Hannah Lock,2 Sion Jones2
1Ysbyty Glan Clwyd 2Ysbyty Gwynedd

Background and objective
20–50% of hospitalised patients receive a urinary catheter, with up to 80% and 100% experiencing short- and long-term complications respectively. This project aims to reduce harm by improving documentation and encouraging early review.

Method
In total, we conducted three POSA (plan–do–study–act) cycles. Initially, notes of all medical inpatients with catheters were reviewed and compared with NICE and European Association of Urology Nurses standards. We then conducted teaching sessions in medical and emergency departments. Following further data collection, results were presented at local departmental meetings and an updated catheter care plan was introduced. Again, data were collected and presented locally.

Results
Documented indication for catheterisation improved from 38 to 100% and planned date of review increased from 13 to 69%, with documentation of complications increasing from 13 to 42%. All documentation improved throughout the project.

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<th>Phase 3 Jul 2017</th>
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<tr>
<td>Number of patients</td>
<td>208</td>
<td>208</td>
<td>208</td>
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<tr>
<td>Patients with catheters</td>
<td>31</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>New catheters inserted</td>
<td>24</td>
<td>29</td>
<td>22</td>
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<tr>
<td>Indication for catheter</td>
<td>38%</td>
<td>68%</td>
<td>100%</td>
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<tr>
<td>Documented date of insertion</td>
<td>67%</td>
<td>66%</td>
<td>85%</td>
</tr>
<tr>
<td>Identity of catheterising healthcare provider</td>
<td>46%</td>
<td>69%</td>
<td>100%</td>
</tr>
<tr>
<td>Catheter sticker with details of catheter size</td>
<td>46%</td>
<td>69%</td>
<td>100%</td>
</tr>
<tr>
<td>Urine colour and volume</td>
<td>42%</td>
<td>22%</td>
<td>54%</td>
</tr>
<tr>
<td>Planned date for review</td>
<td>13%</td>
<td>19%</td>
<td>69%</td>
</tr>
<tr>
<td>Trial without catheter date</td>
<td>17%</td>
<td>23%</td>
<td>50%</td>
</tr>
<tr>
<td>Complications encountered documented</td>
<td>13%</td>
<td>10%</td>
<td>42%</td>
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Conclusion
This project identified areas of weakness and scope for improvement in the optimisation and documentation of urinary catheterisation in acute medical admissions. Although documentation has improved, there are areas for development and these will be targeted in the planned phase 4. Documentation of indication and planned date of review encourage consideration of whether the intervention is necessary and prevent short-term catheters becoming long term by omission. Similarly, the presence of complications was more frequently highlighted. All could reduce the harm associated with catheterisation.

16–17 November 2017
Introduction

Inpatients with dementia can struggle to communicate effectively with healthcare staff and are at a high risk of developing delirium. The ‘This is me’ (Alzheimer’s Society) booklet contains questions that explore life events, preferences and causes of anxiety for patients.

We are undertaking a quality improvement project within the Royal Glamorgan Hospital (RGH) to improve the delivery of personalised care to inpatients with dementia. Initially, this was through improving the use of ‘This is me’ booklets on the elderly care wards, but has subsequently progressed onto the creation of ‘dementia packs’ for family/friends.

Data collection

- Primary audit of ‘This is me’ use on elderly care wards.
- Focused interviews and questionnaires for family/friends (n=16) and clinical staff (n=36), assessing the perception of the quality of personalised care delivered to inpatients with dementia.

Results

Primary audit: 18% of patients with dementia had a ‘This is me’ booklet completed (n=32) – target 100%.

Focused interviews highlighted concerns that staff did not know the patient’s preferred name, food/drink preferences or communication requirements.

Conclusions

Personalised care was not being delivered routinely to all inpatients with dementia in RGH. Family/friends’ dissatisfaction with care provision stemmed from basic issues, including staff not knowing the patient’s preferred name, and was further compounded by family/friends having a general lack of understanding surrounding dementia and delirium. We have therefore created ‘dementia packs’, the primary aim being to educate and support family/friends through the patient’s disease progression.

‘Dementia packs’ include the following:

- ‘This is me’ booklet
- Music therapy information pack
- Patient information leaflet on dementia/delirium (pilot)
- Wales Dementia Helpline information.

The next phase of this project is for ‘dementia packs’ to be used routinely for inpatients with dementia on the elderly care wards. Both family/friends’ and staff satisfaction will be reassessed following this intervention throughout autumn 2017.
The Mess Trainee Meeting – improving trainee morale and patient safety by improving communication and engaging trainees

Sabreen Akhtar,1 Deborah Wales,1 Majd Protty,2 Elizabeth Farnworth,1 Gill Warwick2
1Nevill Hall Hospital 2Royal Gwent Hospital

Introduction
There are multiple reports/case studies highlighting that engaging junior doctors by improving communication results in improved patient safety.1 However, herein lies the challenge: how do you improve communication between trainees and managers?

Aim
To improve patient safety by engaging junior doctors and improving communication between junior doctors and managers/clinicians.

Methods
Monthly Mess Trainee Meetings were initiated as an alternative method to intranet/email communication. The doctors’ mess was deliberately chosen as the venue, and refurbished to create an informal, yet confidential atmosphere; lunch was provided. The meetings were advertised and a trainee-led agenda circulated, with minutes noted and co-chaired by the associate college tutors, the lead author and the Mess Committee. Key issues and ideas discussed during the meetings were taken forward to the appropriate body/meeting, including the Medical Directorate, Education Committee and medical director.

Results
The meetings were well attended. The issues raised varied significantly and ranged from patient safety and core medical trainees being unable to attend outpatient clinics, to lack of procedural skills experience and parking. The solutions were just as diverse, coming from both trainees, consultants/managers, with some proving challenging to implement, yet others surprisingly easy. For example, the solution provided, driven and implemented by a trainee in response to a lack of procedural skills experience was the introduction of a procedures bleep.

Conclusion
The GMC highlights the need for good, effective communication.2 However, in the current climate with low junior doctor morale and disengagement, there are significant challenges in trying to improve communication between trainees and managers/consultants.3 Nevertheless, we have shown that a traditional method, the Mess Trainee Meeting, can be very effective in creating these links and establishing communication channels. These channels not only improve patient safety and trainee morale, but engage, empower and encourage trainees to be the drivers of positive change, transforming the future NHS Wales into a modern, sustainable healthcare system.

References

Figure 1: The Mess Meeting and simulation-based education for CMTs.
Introduction

Acute kidney injury (AKI) can be alerted electronically (e-alert) to clinicians by utilizing software that tracks creatinine changes. We aimed to establish whether e-alert-triggered nephrology and critical care outreach team (CCOT) patient review resulted in improved outcomes.

Methods

Patients with AKI e-alerts were reviewed by nephrologists (grade 2 and 3 AKIs) and CCOT (grade 1 AKIs) on the same day. This was carried out for 30 consecutive days and outcome data were prospectively collected for a follow-up period of 80 days.

The control group consisted of patients with an AKI e-alert generated over 60 consecutive days with no intervention.

Results

E-alerts identified 398 genuine AKIs, with 125 and 273 cases in the intervention and control groups respectively. There were no significant differences between the groups in mean age (75.0±14.9 years vs 75.2±14.4 years, p = 0.909), baseline creatinine (97.0±52.6 μmol/L vs 99.7±57.7 μmol/L, p = 0.467), hospital-acquired AKIs (31% vs 34%, p = 0.573) and severity of AKI (grade 1: 55.2% vs 55.7%; grade 2: 28.0% vs 21.2%; grade 3: 16.7% vs 23.1%, p = 0.194).

The proportion of patients discharged home by 30 days post AKI was significantly higher in the intervention group (56.0% vs 44.7%, p = 0.018). Death-censored median length of hospital stay was significantly lower with intervention (8 vs 13 days, p = 0.034).

Figure 1: 80-day KM survival curve.

The rate of progression of grade 1 and 2 AKIs to grade 3 trended towards being lower in the intervention group (10.3% vs 6.3%, p = 0.115). There were no statistically significant differences between the intervention and control groups in the need for renal replacement therapy (RRT), use of ICU beds, renal recovery and peak creatinine level.

Conclusion

Our study supports the use of intervention in patients triggered with AKI e-alert, with evidence of shorter length of hospital stay and potentially improved patient survival.
Safe prescribing of steroids in metastatic spinal cord compression

Maimoona Ali, James Grose, Mark Taubert
Royal Gwent Hospital Velindre Hospital

Aim
The aim of this project was to assess the current prescribing of dexamethasone in metastatic spinal cord compression (MSCC) within Velindre Hospital, to include whether the starting dose of dexamethasone in such cases was correct and whether the tapering dose of steroid took place in the time frame set out in the NICE guidelines. We were also checking whether blood glucose monitoring was carried out regularly for all patients receiving high-dose dexamethasone.

Audit standards
1 100% of patients diagnosed with MSCC should be commenced on 16 mg dexamethasone.
2 100% of patients should have their dexamethasone dose tapered within 5 days of the first dose of radiotherapy unless neurological deterioration is noted in this time.
3 100% of patients should have their blood glucose monitored if commenced on high-dose dexamethasone.

Method
The physiotherapy team at Velindre Hospital compiled a database of all inpatients admitted with a diagnosis of MSCC, which was used for data selection. In 2016, 157 patients were admitted with MSCC, therefore we decided to capture about 20% of these cases. Consequently, the data collection took a retrospective form, analysing in date order (continuous data collection) patients diagnosed with MSCC who were treated with radiotherapy, as an inpatient, at Velindre Hospital.

Results
See chart below.

Implementation of change
1 An alert sticker, to be applied on the inpatient medication chart in the ‘special instructions’ section of the dexamethasone prescription.
2 Educational posters, detailing the guidance on blood glucose monitoring for patients receiving high-dose dexamethasone.

Conclusion
Despite none of the 100% audit standards being achieved, we felt that – in part – some of the data collected were reassuring of good practice.

This project involved different members of the multidisciplinary team working together: physiotherapists, pharmacists, pharmacy technicians, nurses and doctors. This ensures a shared responsibility to optimise the implementations of this project.

References

First medical note review from March 2016 to January 2017
Audit standard 1 28/30 cases (93%) were initiated on the recommended dose of dexamethasone 16 mg daily.
Mainly in the form of 8 mg twice-daily regimens
Audit standard 2 20/30 (67%) cases had their initial starting dose of steroids tapered within 5 days of starting radiotherapy, whereas 10/30 (33%) received a greater than 5-day course of 16 mg.
None of these cases were found to have worsening neurology to require this
Audit standard 3 25/30 (83%) of cases had blood glucose monitored at least once daily while they received high-dose dexamethasone treatment. 5/30 cases did not receive any blood glucose monitoring during treatment (17%).
Following implementation medical note review from February 2017 to June 2017
Audit standard 1 27/28 cases (96%) were initiated on the recommended dose of dexamethasone 16 mg daily.
Mainly in the form of 8 mg twice-daily regimens
Audit standard 2 25/28 cases (89%) had their initial starting dose of steroids tapered within 5 days of starting radiotherapy. The remaining 3/28 (11%) received a greater than 5-day course of 16 mg.
None of these cases were found to have worsening neurology to require this
Audit standard 3 All 28 cases (100%) had blood glucose monitored at least once daily while receiving high-dose dexamethasone treatment. 3 cases (10%) had their blood glucose monitored four times a day, as their blood glucose was >12 mmol/L.
One case was discussed with the endocrinologist StR at the local tertiary centre as their blood glucose was consistently >12 mmol/L.

16–17 November 2017
Approximately 36 core medical trainees (CMTs) train within the local health board, and are split between two sites. While most trainees work in the tertiary referral centre, the education centre and educational facilities are based at a smaller district general hospital (DGH), 6 miles away. Prior to this initiative, very few CMTs attended practical skills sessions at the DGH and often paid to attend sessions further afield to achieve related annual review of competence progression (ARCP) outcomes. Additionally, no specific resuscitation skills training existed for CMTs. This initiative sought to streamline and condense skills training for CMTs, providing them with a time-efficient means, tailored to their curriculum and ARCP requirements.

The ARCP decision aid was used to identify key practical skills for CMTs, including lumbar puncture and abdominal paracentesis. Faculty were recruited preferentially from the body of medical registrars and consultants working within the trust, and equipment sourced or innovated. Two training days were organised throughout the year, each attended by 12 CMTs. The days consisted of four morning practical skills sessions and three afternoon resuscitation skills sessions. Trainees were issued attendance certificates to demonstrate their experience of curriculum-based skills for each day attended. Anonymised feedback consisting of rating scales and free-text comments was collected from trainees.

All attendees (24) completed feedback forms. The majority (21/24) gave the simulation sessions the maximum score. Feedback for the practical skills sessions was also very positive, with average scores for each station ranging from 3.6 to 3.9 out of a maximum of 4. Free-text comments specifically mentioned CMTs’ appreciation of a full day of skills and emphasis on small-group teaching.

This initiative, which streamlined skills training for CMTs, was very well received by trainees as demonstrated in the excellent feedback. Consequently, we have established these skills days regularly for CMTs within the health board.

CMT skills training days: streamlining practical and resuscitation skills training in our local health board

Dena Pitrola,1 Melanie Cotter,2 Anil Kumar,1 Govind Menon1
1University Hospital of Wales 2University Hospital Llandough
Rituximab experience in nephrology
Rhodri Pyart, Beverley Eley, Sian Griffin
University Hospital of Wales

Introduction
Rituximab is a B-cell-depleting monoclonal antibody that is licensed for use in ANCA-positive vasculitis, but is also increasingly used off-label in other relapsing or resistant immune-mediated renal diseases. We reviewed the extensive south Wales renal experience to assess appropriateness of use, patient outcomes and adverse events.

Methods
Clinical notes and the renal database identified primary renal disease, prior treatment histories, treatment resistance and relapses, rituximab therapy duration, infection prophylaxis, complications and long-term outcomes.

Results
37 such patients received treatment with rituximab from 2011 to 2016. The primary diagnoses are detailed in Figure 1.

In all cases, rituximab therapy appeared to be a reasonable approach given the failure of standard treatments, the lack of alternatives and based on anecdotal evidence in the literature.

Patients with active disease, a degree of preserved kidney function and who had been intolerant or resistant to conventional therapy had excellent outcomes.

A scarred kidney on biopsy or poor renal function predictably led to, at best, a blunted renal response to therapy and these patients invariably ultimately progressed to end-stage renal disease (ESRD). However, even in such cases, non-renal manifestations of disease improved and ESRD may have been delayed.

No patients died during treatment with rituximab, and only one patient stopped treatment owing to self-limiting serum sickness.

No patients developed serious infections during or post treatment. Adherence to hepatitis screening was >90% but around one-quarter of patients did not receive prophylaxis for Pneumocystis carinii pneumonia (PCP).

Conclusion
Our experience supports the growing body of evidence that rituximab is generally safe and well tolerated and has a significant role to play in the management of resistant and relapsing immune-based renal disease – possibly as first-line therapy. Randomised controlled trials are needed to fully elucidate.
Outcomes of multidisciplinary renal emergency simulations: improved participant confidence in communication and team working

David Rees, Sarah Mcmillan, Helen Jefferies
University Hospital of Wales

Introduction
Clinical simulation is an effective tool in undergraduate and postgraduate medical education. Favourable outcomes for acutely deteriorating ward patients depend on a multidisciplinary team (MDT) approach, which integrates knowledge, high-acuity communication and awareness of human factors. The nephrology and transplant ward teams identified learning needs from review of recent clinical incidents. Clinical MDT simulation of common emergency scenarios has since been introduced, aiming to improve effectiveness and safety of multidisciplinary working.

Method and results
Simulations were designed to address scenarios including venous needle dislodgement and management of hypoglycaemia on haemodialysis, with mannequin-based simulation and structured debrief. Nurses, doctors and untrained ward staff with a range of clinical experience were invited to participate in simulations. A questionnaire was devised to explore participants’ perception of their clinical knowledge, readiness to participate in managing a clinical emergency, confidence in recognising and caring for an acutely ill renal patient, and confidence in communicating their opinion to the MDT, escalating and asking for help. Responses were assessed pre-scenario, immediately post scenario, and 4 weeks after the scenario. Written feedback was also obtained.

Figure 1: Average change in confidence for participants in a single simulation.

Discussion and conclusions
Confidence increased immediately post scenario throughout the questionnaire domains, and this improvement was sustained 4 weeks after the scenario. Written feedback from both doctors and nurses was positive. Participants asked for further opportunities to participate, and highlighted the value of simulation for less experienced and newly qualified staff to learn in a realistic, safe and supportive environment. Monthly MDT simulations of dialysis and non-dialysis emergency scenarios, in collaboration with the hospital Resuscitation Department, have become an important part of the directorate education programme.

References
3 iTrust Debriefing. Bristol Medical Simulation Centre.
Wells’ score and D-dimer quality improvement project: Improving the management of patients presenting with pulmonary embolism (through the use of Wells’ score)

Arlène Gatt, Khaliq M Hamdan, Mun Wai Lam, Rhian Fuge, Samuel L Rice
Prince Philip Hospital

Aim and objectives
The aim was to improve the risk stratification process in patients presenting with pulmonary embolism (PE) through the Wells’ score, as well as reducing the number of inappropriate CT pulmonary angiogram (CTPA) requests. Every patient with suspected PE should be given a Wells’ score. Those with a Wells’ score >4 should be offered a CTPA and those with a Wells’ score ≤4 should be offered a D-dimer test.

Method
The first cycle involved a retrospective study between April and July 2016, while the second cycle involved a prospective study between April and July 2017. This included all D-dimer requests for PE in Prince Philip Hospital during the above periods (excluding GP requests).

Of the positive D-dimers

<table>
<thead>
<tr>
<th>Wells’ Score</th>
<th>CTPA done</th>
<th>CTPA Positive for PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Provided</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td>Wells’ Score &gt;4</td>
<td>32</td>
<td>7</td>
</tr>
</tbody>
</table>

If Well’s score not provided, or greater than 4 (inappropriate request)

a) Was the D-dimer test rejected?
b) If the test was accepted, what was the reason for this?

Results
> A general reduction in the number of D-dimer requests: 117 in 2017 compared with 158 in 2016.
> An increase in providing a Wells’ score with the D-dimer request, thus an improvement in risk stratification: 77% of D-dimer requests had a Wells’ score, compared with 23% in 2017.
> Difficulties arose in the lab setting in rejecting inappropriate D-dimer requests: only 18% of the inappropriate D-dimer requests were rejected.

Conclusions
Overall, there was a significant improvement in the risk stratification of patients presenting with PE, through the Wells’ score. However, this change may not be sustainable in the long term. Perhaps a second test of change would be a pop-up system on Welsh Clinical Portal, where one can input the Wells’ score into the calculator prior to requesting the D-dimer, rather than at the lab stage.

References
A multidisciplinary approach to improving compliance with venous thromboembolism prophylaxis at the Royal Glamorgan Hospital

Melanie Nana, Cherry Shute, Flora Kokwaro, Rhys Williams, Helen Lane
Royal Glamorgan Hospital

Aim
To use a multidisciplinary approach to improving compliance with venous thromboembolism prophylaxis (VTE) in a district general hospital.

Method
Baseline data were collected prospectively at ward level using the medical notes and drug charts of a total of 38 patients from wards 12 and 14 on a single day. The data were collected using a standardised data collection tool that was specifically designed by the multidisciplinary team (MDT). The data were analysed in order to evaluate compliance with local and national VTE prophylaxis guidelines.

Following the data analysis, the following interventions were implemented by a team made up of doctors, pharmacists and nurses in order to improve clinical practice:

1. Education aimed at all members of the MDT.
2. Educational posters highlighting the need to ‘Think about clots’ and the key recommendations of NICE CG92.
3. A ‘VTE sticker’ was designed by the MDT to be placed in the patient notes, as a prompt to prescribers to review or clarify VTE risk assessment/prophylaxis for individual patients.

The above action plan was implemented over a period of 4 weeks. Following this period, data collection was repeated in order to assess whether the action plan had improved practice.

Results
The interventions improved compliance with the assessment, documentation and prescribing of VTE prophylaxis in medical inpatients on wards 12 and 14 at the Royal Glamorgan Hospital.

The results demonstrated large improvements in VTE risk assessment completion within 24 hours of admission, but demonstrated scope for improvement in some areas. The team is therefore working to develop a further action plan to further improve practice.

Conclusion
A multidisciplinary approach has demonstrated success in improving compliance with VTE prophylaxis.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Baseline</th>
<th>Post action plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight documented on admission</td>
<td>13%</td>
<td>28%</td>
</tr>
<tr>
<td>VTE risk assessment completed</td>
<td>89%</td>
<td>100%</td>
</tr>
<tr>
<td>VTE risk assessment completed within 24 hours of admission</td>
<td>53%</td>
<td>86%</td>
</tr>
<tr>
<td>LMWH correct for patient weight</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>LMWH correct for renal function</td>
<td>81%</td>
<td>97%</td>
</tr>
<tr>
<td>Patients with missed doses</td>
<td>36%</td>
<td>48%</td>
</tr>
<tr>
<td>Reason for missed dose documented</td>
<td>30%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Table 1: Summary of the results of the baseline and post-action plan data results.
Antimicrobial prescribing: a review of current practice and improvement project

Sara Long, Alex Elliott-Green, Sinead O’Mahony
University Hospital Llandough

Introduction and aims
Antimicrobial resistance is a growing threat to global public health.¹ In response, healthcare organisations have introduced antimicrobial stewardship programmes promoting prudent use of antimicrobial agents.

This project evaluated the use of antimicrobial agents in an older adult inpatient setting and aimed to enhance compliance with current trust prescribing guidelines.

Methods
Project design was completed using the Institute for Healthcare Improvement ‘Model for Improvement’.² Weekly review of active antimicrobial prescriptions was completed. Antimicrobial agent, indication, duration, use of antimicrobial prescribing sticker, documented 48-hour review and outcome were noted.

Two plan–do–study–act (PDSA) cycles with the aim of improving documented 48-hour review were completed. PDSA 1 introduced a 48-hour review sticker; PDSA 2 involved the ward pharmacist placing the sticker on the patient’s drug chart. A project noticeboard was established, providing staff with run charts and regular updates.

Results
81 active prescriptions were reviewed. The majority of prescriptions (65%) were ward initiated and only involved one antimicrobial agent (88%). Use of broad-spectrum agents was 31% of total prescriptions. 76% of prescriptions were for a duration of ≤ 7 days.

Antimicrobial prescription stickers were present for 86% of prescriptions; indication was documented for 92% and duration for 86% of prescriptions. 48-hour review initially demonstrated 45% completion. PDSA 1 had no effect. Completion improved to >70% following PDSA 2.

Discussion
This ward generally prescribed specific agents and for an appropriate duration. In addition, antimicrobial stickers were a part of prescribing culture, and were a positive driver for indication and duration documentation. 48-hour review was poorly completed. Although a specific 48-hour review sticker did demonstrate a positive effect, it was deemed unlikely to be sustainable. Following discussion with the trust antimicrobial stewardship team, further work piloting a new antimicrobial prescribing sticker prompting ‘Clinician 48-hour review’ instead of ‘Consultant’ will be completed.

References
Renal tract cancer – are we thinking about it in iron deficiency anaemia?

Lavanya Shenbagaraj, Linzi Thomas, Lisa Williams
Singleton Hospital

Background
Iron deficiency anaemia (IDA) accounts for 4–13% of referrals to gastroenterology. The commonest cause of IDA is gastrointestinal blood loss. 1% of patients with IDA will have renal tract malignancy. There are clear recommendations for the investigation of the GI tract, but not the renal tract, in unexplained IDA.

Aim
The aim of the quality improvement project is to increase awareness about renal tract malignancy as one of the important causes of IDA. The project also aims to increase awareness about consideration of further testing and imaging in asymptomatic patients with positive urine dip in the context of unexplained IDA.

Methods
An initial questionnaire was distributed and completed by 15 junior doctors and one nurse specialist at Singleton Hospital on a Wednesday afternoon in January 2017. A case scenario of a patient with IDA was given and junior doctors were asked to formulate a management plan. A sheet prompting different tests for IDA was given out. The results were initially presented in the audit meeting and then in the Friday medical meeting to increase awareness among clinicians. A teaching session for F1 and F2s was conducted to increase awareness on investigations for IDA. The same questionnaire was given again to the juniors following intervention and the data were collected.

Results
The percentage of doctors requesting urine dip to look for microscopic haematuria improved from 16% to 56%. 30% of the doctors would consider renal tract imaging if all GI investigations were negative.

Conclusion
Urine dip is a cost-effective tool to screen patients with microscopic haematuria. Renal tract imaging should be considered in patients with IDA with normal GI investigations and with microscopic haematuria. Urine cytology is a simple but useful test to screen for renal tract malignancy.
Decompensated cirrhosis in the medical assessment unit – a neglected group?
Lavanya Shenbagaraj, Linzi Thomas, Chin Lye Ch’ng
Singleton Hospital

Introduction
Decompensated chronic liver disease is a medical emergency with a high mortality. The recent NCEPOD report 2013 on alcohol-related liver disease highlighted that the management of some patients admitted with decompensated cirrhosis in the UK was suboptimal. The British Society of Gastroenterology liver care bundle highlights crucial investigations that can influence outcome if performed early (<6 hours).

Aim
To assess our current performance and to standardise and improve the care of patients with decompensated liver cirrhosis by introducing the liver care bundle in the Singleton Assessment Unit (SAU).

Methods
We prospectively reviewed patients admitted with decompensated liver cirrhosis to the medical assessment unit between October and December 2016. A teaching session was given to the F1 and F2 doctors about management of decompensated liver cirrhosis. Following discussion with the assessment unit staff, it was agreed to include the liver care bundle along with the usual proforma for patients with known cirrhosis. The liver care bundle was made readily available in the medical assessment unit for the clerking doctor. A second cycle was conducted after introducing the liver care bundle in SAU.

Results
The initial audit, which included 12 patients, showed that blood tests such as magnesium and phosphate were not done regularly in most patients. Blood cultures were done only in 17% of patients. Ascitic tap was done only in 8% of patients within the recommended 6 hours. Re-audit showed a reasonable improvement in the above parameters.

Conclusion
There has been an improvement in the management of patients with decompensated liver cirrhosis following intervention with scope for improvement. Increased awareness about the liver care bundle to guide management of these complex patients is crucial.
Quality improvement project in rota design: how can we help core medical trainees at University Hospital of Wales meet their curriculum requirements and improve training satisfaction?

Juliette Lewis, Govind Menon, Neelam Hassan, Carolyn Tang, Anil Kumar
University Hospital of Wales

Introduction
Following an update to the Annual Review of Competence Progression (ARCP) decision aid, core medical trainees (CMTs) are now required to attend 20 outpatient clinics per year. 68% of CMTs in Cardiff & Vale University Health Board have cited difficulties in attending clinics and exposure to unselected emergency admissions as barriers to successful outcomes at ARCP, as well as contributing to poor job satisfaction.

Aim
To ensure that the curriculum requirements for CMTs are being addressed across a variety of posts at University Hospital of Wales (UHW), Cardiff.

Method
Introduction of a buddy scheme, whereby trainees in specialty posts will have two allocated week slots (per 6-month rotation) during which they attend the medical assessment unit 9am–5pm to assist with the take and complete ACAT assessments. The reciprocal general medicine post trainees are thus released from the take and can attend clinics 9am–5pm, and resume ‘on-call’ duties at 5pm.

Results
There are 26 UHW CMT posts. Allowing for rotational site changes, 19 trainees were available to evaluate the pilot. The questionnaire response rate was 74% (14/19), thus we obtained data regarding 28/38 posts. The average number of clinics attended per post was 9 (range 0–41). ACATs were achieved in 68% of posts (19/28). 100% of trainees (n=14) were aware of the new curriculum requirements and 93% (13/14) were aware of the pilot initiative. 64% (9/14) trainees participated in the pilot project during this period. This initiative enabled 44% of trainees (4/9) to complete additional curriculum requirements.

Conclusion
This initiative enabled CMTs to more easily access clinics and complete additional ACAT assessments, and received largely positive feedback. From August 2017, the buddy scheme has been formally integrated into the rota to ensure that CMTs continue to meet their curriculum requirements and gain successful ARCP outcomes.

Specialty posts
- Cardiology
- Dermatology
- Haematology
- ITU
- Renal

General medicine posts
- Care of the elderly
- Endocrinology
- Gastroenterology
- Neurology
- Respiratory

Data were collected from CMTs via a questionnaire 3 months following the introduction of the pilot scheme (February–June 2017).
The ‘slumpogram’ and its association with mortality and length of hospital stay

Aled Lloyd, Hasan Nadim Haboubi
1 Morriston Hospital 2 Singleton Hospital

Introduction
Frail, older patients are occasionally incapable of keeping their head out of the field of view of a chest X-ray (CXR), resulting in a ‘slumpogram’. This study aims to investigate the link between a slumped appearance on a CXR, mortality and length of hospital stay.

Methods
The CXRs of patients aged over 65 years admitted to the Abertawe Bro Morgannwg University Health Board catchment area were investigated in a retrospective analysis of all CXRs taken during the first week of January 2015. Using the Agfa IMPAX radiology software, a total of 806 CXRs were examined to identify slumped patients, defined as any CXR where any part of the head obscures any part of the chest. CXRs showing significant respiratory or musculoskeletal pathology were excluded, as these may have falsely led to a slumped appearance.

These were compared with age-matched controls who had an X-ray on the same day. The degree of slumping was measured by the number of ribs covered. Non-parametric tests were used to measure the correlation between the length of hospital stay and mortality.

Results
Fifty-three slumpograms and 53 age-matched controls were identified.

There was a statistically significant correlation between the length of stay and the number of ribs covered (p = 0.038). In patients aged over 80 years, there was a statistically significant association between the number of ribs covered and death (p = 0.015).

Conclusion
A slumped CXR is associated with length of hospital stay, and in patients over the age of 80 is associated with increased mortality. These results require further validation but, if true, offer the possibility that a simple test performed routinely on nearly all medical admissions can be used to indirectly measure frailty and may thus be able to inform both resource allocation and discharge planning.
Retrospective analysis of head CT and lumbar puncture in diagnosis of subarachnoid haemorrhage: are we doing too many or too few?

Joshua Latham
Great Western Hospital, Swindon

Objectives
Subarachnoid haemorrhage (SAH) is an uncommon, yet serious cause of headache with high mortality and morbidity, as well as serious financial implications for the NHS. Currently, the recommended method of diagnosis of a suspected SAH is by head computed tomography (CT), followed by lumbar puncture (LP) if the CT is done more than 6 hours after symptom onset. The intention of this research is to evaluate the appropriateness of the number of CT scans and LPs done for suspected SAH.

Design, setting and participants
Retrospective analysis of CT requests and reports in a single secondary care setting produced a cohort of 349 participants with presenting complaint of headache within a 1-year period.

Primary and secondary outcome measures
The primary outcome measure was the number of LPs done following negative head CT scans. The secondary outcome measures were the number of positive and negative head CTs and LPs in the sample.

Results
Analysis showed that 90.1% of head CTs done on patients presenting with headache were negative for any pathology and, of those, only 9.1% received LP to assess for SAH, in some cases going against radiological advice. Of the 28 LPs performed, none were positive for SAH. The results of this audit show the need for clinical rules for stratifying patients at risk of SAH and requiring a head CT scan, with the aim being to reduce the number of unnecessary scans due to the associated harm. Furthermore, the results also suggest that the diagnostic value of LP may be limited and that guidelines aiming to achieve CT within 6 hours of symptom onset may be superior in terms of diagnostic accuracy and patient safety.

Figure 1: Stacked bar chart showing the number of positive and negative head CT scans among the sample (n=343). The ‘Positive CT’ column also shows data on the number of CTs positive for SAH and other pathology. The ‘Negative CT’ column also shows data on the number of CTs following which secondary LPs were done and not done (with and without radiological recommendation of secondary LP on CT report).
Improving the initial response to critically ill patients on the ward: an interprofessional learning initiative

Jessica Notzing,1 Celia Beynon,2 Matthew Short2
1Royal Glamorgan Hospital 2University Hospital of Wales

Background
The benefits of interprofessional resuscitation training are well documented.1,2 In our workplace, we identified several problems surrounding resuscitation attempts, including inappropriate defibrillation and administration of chest compressions to patients with a valid DNACPR order.

Aims
Our objective was to improve the response to patients with cardiorespiratory arrest through the provision of multidisciplinary clinical and simulation training.

Actions taken
We designed and implemented a teaching programme for all tiers of nursing staff and foundation doctors on the respiratory ward at University Hospital of Wales. The programme covered advanced life support (ALS) algorithms, the contents of the trust resuscitation trolley, and a discussion of potential barriers to successful resuscitation attempts. Following this, we covered clinical skills including airway manoeuvres, chest compressions and safe defibrillation, and put these into practice with simulated scenarios incorporating ‘real-life’ ward challenges.

Measures and outcomes
Pre- and post-course confidence levels and knowledge were assessed through the use of SurveyMonkey. Candidate feedback was positive, showing an improvement in all areas after the intervention (Figure 1).

Conclusions and future plans
We conclude that multidisciplinary simulation teaching helps to improve teamwork, confidence and clinical skills. We recognise the difficulty in demonstrating a tangible improvement to patient outcomes from our data; however, we can infer that increased confidence in relevant skills will help the multidisciplinary team respond appropriately to a cardiopulmonary arrest. We aim to identify further areas of improvement by evaluating 2,222 calls to the ward over the next 6 months and plan expand from this pilot initiative to involve other departments within the trust.

Figure 1: Pre- and post-survey confidence.

References
Utility of the hepatoma arterial-embolisation prognostic (HAP) score in hepatocellular carcinoma (HCC)

Nor Farzana Abdul Aziz, Andrew Yeoman, Marek Czajkowski
1Cardiff University 2Royal Gwent Hospital

Background
Hepatocellular carcinoma (HCC) remains one of the most devastating cancers, with increasing incidence worldwide. The hepatoma arterial-embolisation prognostic (HAP) score is a more recent prognostic tool developed to assist decision making on treatment options and to predict patient survival specifically for patients undergoing transarterial chemoembolisation (TACE). Factors considered in the HAP score include size of tumour, α-fetoprotein, bilirubin and albumin levels, which are common parameters of liver disease. The objective of this study was to assess the utility of the HAP score in clinical practice to provide prognosis to patients diagnosed with HCC, irrespective of treatment modalities received, by analysing patient survival.

Methods
This retrospective study was carried out on 200 patients diagnosed with HCC from Aneurin Bevan Health Board (ABHB) from 2007 to 2017. HAP score at diagnosis and overall median survival for each patient were calculated and then analysed using the Kaplan–Meier survival curve and Cox regression method.

Results
The overall median survival for patients with HAP A, B, C and D was found to be 987 days (95% confidence interval (CI) 636–1,337), 794 days (95% CI 365–1,223), 248 days (95% CI 148–347) and 71 days (95% CI 52–89) respectively (p<0.0001) (Figure 1). These results clearly reflect that HAP A and HAP B patients survived significantly longer compared with HAP C and HAP D patients, irrespective of the treatment modalities that they received.

Conclusion
The role of prognostic scores in HCC is very important in clinical practice, as it helps to inform both clinicians and patients when discussing treatment options as well as providing a time frame for patient survival. The use of the HAP score to estimate survival and also assist decision making has been validated in this study for not just TACE, but also for other treatment modalities.
The impact of a structured diabetes education in enhancing knowledge on insulin prescription among junior doctors in Royal Glamorgan Hospital, Llantrisant – a questionnaire-based study

Khaliq Hamdan,1 Natasha Shrikrishna,2 Penelope Owen2
1Prince Philip Hospital 2Royal Glamorgan Hospital

Objective
An American report (Landrigan et al, 2004), indicated that a lack of knowledge around diabetes and insulin types had contributed towards insulin prescription errors. The recent National Diabetes Inpatient Audit (England and Wales) – NaDIA 2017 suggested that 38% of inpatients with diabetes had a medication error during their hospital stay; one of its key recommendations for the hospital diabetes team was to provide education and support to the junior doctors and nurses. We recently organised an insulin education session for the new junior doctors to raise awareness about insulin treatment in general, and managing the sick diabetes patients.

Method
We distributed questionnaires to junior doctors before and after this educational session to assess the impact of the diabetes education that was delivered by a consultant diabetologist.

Results
17 junior doctors (foundation year doctors, core trainees and registrars) attended the meeting and completed a pre-education questionnaire. A few weeks later, a post-education questionnaire was sent out to each of them; 10 replied. We assessed areas that we think each junior doctor should have some knowledge on, which were covered by the speaker during the talk.

Conclusion
The educational session has certainly increased knowledge on insulin among junior doctors. This is in line with the key recommendation made by the NaDIA 2017 reporting group, in the hope to reduce insulin prescription errors. These findings support the need for training sessions on insulin and diabetes for all new junior doctors.

Table 1: Results of the pre- and post-education questionnaires.

<table>
<thead>
<tr>
<th>Areas / topics</th>
<th>% pre-education (n=17)</th>
<th>% post-education (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in managing insulin</td>
<td>18%</td>
<td>30%</td>
</tr>
<tr>
<td>Target range of blood glucose level</td>
<td>59%</td>
<td>90%</td>
</tr>
<tr>
<td>Managing insulin during acute illness</td>
<td>65%</td>
<td>60%</td>
</tr>
<tr>
<td>Types of insulin</td>
<td>67%</td>
<td>78%</td>
</tr>
<tr>
<td>Timing of insulin in relation to meals</td>
<td>82%</td>
<td>95%</td>
</tr>
<tr>
<td>Insulin dose alteration (based on scenarios)</td>
<td>72%</td>
<td>73%</td>
</tr>
<tr>
<td>Pre-mixed insulin</td>
<td>88%</td>
<td>100%</td>
</tr>
<tr>
<td>Ultra-long acting insulin</td>
<td>24%</td>
<td>50%</td>
</tr>
<tr>
<td>Insulin during DKA and hypoglycaemia</td>
<td>71%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Table 1: Results of the pre- and post-education questionnaires.
Improving the history taking and examination of patients with liver disease

Emma Kealaher
Royal Gwent Hospital

Introduction
On working on the gastroenterology ward in a district general hospital, it was noted that the clerking of patients with liver disease could be improved. This quality improvement project aimed to improve the history taking, examination and investigations of those presenting with new or chronic liver disease in the acute medical take.

Methods
To assess the clerking of those with liver disease in a snapshot 2-week-long audit on the gastroenterology ward. Then, to instigate a new proforma and re-audit post implementation to assess the improvement. Not all questions were applicable to every patient. Following this, the medical proforma was changed to augment the importance of the alcohol history and the improvement is currently being reassessed.

Results
Results were collected for 19 patients admitted to the ward. Of 18 patients from whom it was possible to take a history, 17 had an alcohol history documented. However, some documentation simply stated ‘alcoholic.’ Because of this, the number of units per week was only calculable in 66% of patients; previous alcohol intake was also only assessed in 44%. A risk factor history was rarely documented in jaundiced patients, with only 1/13 patients having foreign travel, tattoos and recent antibiotics documented. Only 60% of patients with haematemesis had a rectal examination.

Discussion
Possible ways to improve the clerking of liver patients included the implementation of a new ‘liver proforma’ to be used in addition to the acute medical proforma. On a busy medical take, however, it was decided that this would be too much additional paperwork. Instead, the alcohol history has been focused on, as the previous proforma only left a blank space to document the alcohol intake. The new proforma has sections for alcohol history, units per week and previous intake. An audit to assess for improvement is currently taking place.

Emma Kealaher
Royal Gwent Hospital

Cardiff Marriott Hotel
Aims
The National Institute for Health and Care Excellence (NICE) made recommendations regarding the management of COPD exacerbations. Anthonisen’s criteria (increased dyspnoea, amount and purulence of sputum) have traditionally been used to direct antibiotic therapy. NICE recommends the use of increased sputum purulence, clinical signs or radiographic evidence of pneumonia to direct antibiotic therapy. Co-prescription of long- and short-acting muscarinic antagonists has been shown to increase cardiovascular mortality.

We aimed to evaluate whether existing guidelines were followed by admitting physicians at Royal Gwent Hospital.

Methods
Data were collected on 87 admissions of patients with COPD from 19 February 2017 to 5 April 2017. Only those admissions where an acute exacerbation of COPD was the provisional diagnosis were included (n=51). Specific criteria recommended by NICE were evaluated.

Results
39 (76.47%) patients were admitted via A&E.

47 (92.16%) had an appropriate diagnosis as per Anthonisen’s criteria. 50 patients were prescribed antibiotics appropriately (Anthonisen’s A and B criteria (31), sepsis (32/51), pyrexia (7/51), CRP >30 mg/L (27/51) and consolidation on chest X-ray (CXR) (17/51)).

49.98% of patients had a CXR. 86.27% had an electrocardiogram. Baseline functional status was documented in only 30 (58.82%) patients.

Arterial blood gas analyses were done in 38 (74.51%) cases. Target oxygen saturation (SpO₂) was documented (either in notes/drug chart) in 22 (43.13%) cases. Oxygen was prescribed appropriately in only 17 (33.33%) cases. Six out of 38 patients (15%) already on a long-acting muscarinic antagonist (LAMA) were prescribed ipratropium without holding the LAMA.

Conclusions
There are deficits in the use of arterial blood gas analyses, appropriate oxygen prescriptions and muscarinic antagonist prescriptions. Data were presented to admitting physicians in the medical assessment unit and accident and emergency in order to raise awareness about these. A re-audit is planned in winter 2017 to evaluate change. Anthonisen’s criteria may be used to direct antibiotic therapy.

References
A survey-based evaluation of clinic letter structure – how far are we from RCP guidelines?

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Introduction
A standardised format for clinic letters does not exist. The Royal College of Physicians (RCP) recommends specific criteria for the content of patient records, but adherence to these guidelines when formatting clinic letters has been variable.1,2 We aimed to investigate preference of the structure of clinic letters among primary- and secondary-care physicians and to evaluate the relevance of grade of training and effect of previous training in letter writing.

Methods
Based on an independent analysis of letters written by 36 consultants at Aneurin Bevan University Health Board, four templates of clinic letters providing similar information were structured. They were disseminated among senior and junior doctors (in different grades of training) working in both primary and secondary care, with requests to select their preferred structure using a conventional Likert scale (scored 0–3).

Results
Statistical analysis of 74 responses (24 from primary care and 50 from secondary care) showed that primary-care physicians preferred a bullet-point letter compared with hospital doctors, p = 0.008. Junior doctors in secondary care (37/74) preferred a structured template with additional free text (RCP format) compared with their consultants, p = 0.005.

Only 17.6% of participants had received some form of training in letter writing, of whom the vast majority were hospital consultants (p = 0.036).

Conclusions
Letter writing is an incredibly important aspect of medical documentation, both for continuity of care as well as for medico-legal purposes. GPs prefer a bullet-pointed structure, while junior hospital physicians seem to prefer a format with structured headlines that most closely adheres to RCP guidelines. Discrepancies exist in training of letter writing and this may have implications in the long term. 95% of our respondents felt that there was a need for training in letter writing, and implementing RCP guidelines into such training may need to be considered by UK educational bodies.

References
Comparison of salvage therapies to intravenous steroids in improving outcomes in acute severe ulcerative colitis (ASUC)

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Background
Acute severe ulcerative colitis (ASUC) is a potentially life-threatening complication of ulcerative colitis. While intravenous steroids remain very important in the medical management of ASUC, about 60% of patients will not respond to them. In steroid-refractory cases, second-line salvage therapies such as ciclosporin and infliximab are used to prolong the colectomy-free survival of patients due to an increased risk of complications such as pouchitis, small bowel obstruction, male impotence and decreased female fertility.

Aims
The main aim of this study was to assess the effectiveness of second-line salvage therapies such as ciclosporin and infliximab in comparison to intravenous steroids in prolonging colectomy-free survival of patients with ASUC.

Methods
An electronic database of ASUC-related hospital admissions in University Hospital Llandough (UHL) and University Hospital Wales (UHW) between the years 2006 and 2015 was obtained from the respective coding departments. 242 hospital admissions were included in the study, with 192 admissions responsive to intravenous steroids, 36 steroid-refractory admissions treated with ciclosporin and 14 steroid-refractory admissions treated with infliximab. Kaplan–Meier survival curves were constructed using SPSS to compare long-term (within 5 years of hospital admission) and short-term (within 6 months of hospital admission) colectomy-free survival.

Results
No statistically significant difference in short-term (p = 0.276) and long-term (p = 0.145) colectomy-free survival between steroid-responsive and steroid-refractory group treated with salvage therapy was noted using the log rank test.

Conclusion
Salvage therapy is at least as effective as intravenous steroids in prolonging colectomy-free survival in ASUC. Further assessment required using other paper-based records of patients started on infliximab, as electronic records did not always include this detail and therefore were likely to underestimate the number of patients on this drug.

Reference
Evaluation of the stroke thrombolysis service in Royal Gwent Hospital, Newport, Wales

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Introduction
Stroke is one of the largest causes of disability worldwide and is the fourth leading cause of death in the UK, causing 7% of all deaths. Every year, more than 100,000 people in the UK are diagnosed with stroke. The benefits of treating acute ischaemic strokes using intravenous thrombolysis with recombinant tissue-type plasma activator (rt-PA) have been well established: notably, the National Institute of Neurological Disorders and Stroke (NINDS) trial showed a clear benefit if treated within 3 hours of symptoms onset.

The objective of this audit is to evaluate the stroke thrombolysis service in Royal Gwent Hospital, Newport, Wales.

Methods
All patients who have been admitted into the Hyperacute Stroke Unit and administered intravenous thrombolysis with alteplase in 2016 were identified from the Sentinel Stroke National Audit Programme (SSNAP) database. A proforma was designed to register the collected data.

Results
72/796 (9%) of ischaemic stroke patients were thrombolysed in 2016. 94% of patients who received thrombolysis obtained a CT scan within 60 minutes of arrival into the hospital, with the mean time being 41 minutes (standard deviation (SD): 1 hour 22 minutes). Mean door-to-needle time was 1 hour 15 minutes (SD: 34 minutes), with 42% being thrombolysed within the first hour. 94% of patients were given thrombolysis within the recommended 4.5 hours from onset of symptoms, with 61% being treated within 3 hours. The mean time was 2 hours 49 minutes (SD: 53 minutes).

Conclusion
The results revealed quick and efficient brain imaging upon arrival to hospital. Most patients also received thrombolysis within the 4.5-hour recommended time limit. However, with only 42% being thrombolysed within the first hour, there is still a need to improve door-to-needle times.
Developing an algorithm to manage patients with coronary artery stents who require endoscopic intervention

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Introduction
Coronary artery disease (CAD) causes about 2,100 deaths annually per million of the population in England and Wales, about 110,000 deaths in total (NICE guidelines).

Approximately 39,000 percutaneous coronary intervention (PCI) procedures were undertaken in the UK in 2001, equating to 663 per million of the population—a rate that had increased at an average of 14% per year over the previous 10 years. This has led to an expansion in the prescription of antiplatelet medication.

Given the large number of patients on such antiplatelet drugs and/or anticoagulants, the risk of gastrointestinal bleeding (GIB) is high. Such situations are often difficult to manage if the patient has to remain on antiplatelets in order to maintain stent patency. Current British Society of Gastroenterology (BSG) guidance regarding omitting such drugs involves ‘discussing with cardiology’, but this approach is not always practically possible. We therefore aimed to review the literature and create a new algorithm utilisable by all for management of such situations.

Methods
A PubMed search was undertaken for any combination of the search terms ‘coronary artery disease, percutaneous coronary intervention (PCI), percutaneous transluminal coronary angioplasty (PTCA), stent, anti-platelet, gastrointestinal bleed, and endoscopy’. Full manuscripts were interrogated for relevance and summarised.

Results
120 papers were identified, of which 15 showed relevance to the topic. These were amalgamated to produce an algorithm by which patients on antiplatelets for coronary artery stents can be managed should they warrant endoscopic management. The algorithm takes into account stent type, time duration since stent insertion, antiplatelet type/s, reason for gastrointestinal endoscopy (emergency versus elective/diagnostic versus therapeutic).

Conclusion
There is a paucity of evidence for management of patients on antiplatelets for coronary artery stents who require endoscopy. Given the limitations of such a search, we suggest an algorithm that may be utilisable for such situations.
Applications are invited for a Lewis Thomas Gibbon Jenkins of Briton Ferry fellowship.

This award was established in honour of the late Nancy Crawshaw to provide money for the promotion of medical research within Wales. Monies from the trust fund can be provided for travelling bursaries, with an emphasis on training for research, linked with Wales, or for research into any aspect of physical disease prevalent in, but not necessarily exclusive to, Wales. The fellowship will support salary and associated costs for the fellow for up to 2 years, together with a contribution (where appropriate) to laboratory expenses.

Please note that, as part of the terms and conditions of the award, the successful applicant will be required to provide a report within 3 months of completing their fellowship.

Full details of how to apply are available on the RCP website. Please email your application for the attention of the academic vice president. Closing date: 30 April 2018.

To apply, visit:
rcplondon.ac.uk/fundingandawards

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The Lewis Thomas Gibbon Jenkins Fellowship aims to promote medical research in Wales and is a unique career opportunity for GIM trainees in our deanery. It enabled me to undertake a fully funded research project, which will hopefully lead to a higher degree (MD). Thanks to the funding received, which covered my salary and laboratory expenses, I was able to undergo a 2-year out-of-programme research fellowship in Cardiff University and Cardiff Metropolitan University under the supervision of Dr Aled Rees and Professor Philip James. This allowed me to focus fully on my research without the distractions and pressures of life as a specialist registrar. Moreover, since up to 12 months of research experience can be counted towards accreditation, my CCT date will not be delayed unduly.

My research has focused on circulating extracellular vesicles (EVs), which are submicron vesicles released by most cells. In recent years, EVs have emerged as potential disease biomarkers and vectors of intercellular communication. Given my background as an StR in diabetes and endocrinology, I was particularly interested in characterising circulating EVs in the context of obesity and its secondary complications, which is rising in prevalence in Wales. The aims of my study were to compare circulating plasma EVs between healthy volunteers and severely overweight individuals with comorbidities, and to examine the effects of weight loss on EVs, with a particular focus on those derived from adipose tissue.

By designing and conducting my own study, I gained great insight into life as a clinical academic; this included the inevitable ups and downs of laboratory work and learning the complexity of regulatory approval and research governance. One of the particular highlights has been the opportunity to collaborate with a number of scientists and postgraduate students who I would not usually interact with in the clinical arena. The experience has definitely strengthened my organisational, time management, leadership and interpersonal skills, as well as developing various academic competencies such as scientific writing and application of statistics. The development of new research collaborations will also stand me in good stead in my future career.

To conclude, the out-of-programme research experience which was supported by the Lewis Thomas Gibbon Jenkins Fellowship has strengthened my CV by allowing me to complete work required for an MD thesis and to meet the academic requirements of the StR training curriculum. I also feel more empowered and aware of the professional pathway that I would like to follow when it comes to applying for a consultant post. I am very grateful for having been given this opportunity by RCP Wales and would have no hesitation in recommending applications for the 2018 award to any trainees in Wales interested in undertaking research.
Circulating plasma EVs as important messengers in obesity-driven inflammation

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Introduction
Extracellular vesicles (EVs) are submicron vesicles released by most cells. They contain protein, enzymes and microRNA of the donor cells and are believed to play a role in paracrine communication. Circulating EVs might reflect heightened immune/inflammatory status in obese individuals and play a role in initiation/modulation of chronic low-grade inflammation associated with obesity.

Aims
To compare circulating plasma EVs between healthy volunteers and morbidly obese individuals attending a multidisciplinary weight loss clinic, and to assess the effects of lifestyle changes on the circulating EV profile.

Methods
EVs were isolated by differential centrifugation and measured by nanoparticle tracking analysis (NTA). EV cellular origin (platelets CD41, monocytes/macrophages CD11b, erythrocytes CD235a, endothelial cells CD144) and adipocytokine expression (IL6, TNFα, interferon γ, adiponectin, FABP4, PPARG) were evaluated by time-resolved fluorometry immunoassay.

Results
Circulating EV profile and concentration in metabolically healthy volunteers was unaffected by BMI (all p = not significant). However, the EV profile in healthy men appears to be more pro-inflammatory than in women, with higher EV-expressed CD41, CD144, EV-IL6, interferon γ and FABP4 (all p < 0.05). This was also reflected by lower plasma adiponectin concentration in males (128 µg/mL vs 272.3 µg/mL, p < 0.005). Plasma FABP4 correlated strongly with BMI (r = 0.91, p < 0.005) and was lower in healthy lean versus obese individuals (13.5 (6.4) vs 23.8 (6.4) ng/mL, respectively (p<0.05)), despite fasting glucose and HOMA-IR being within the normal range (p = not significant). Dietary and lifestyle management affected the EV profile, with lower signals observed from platelet- and endothelial cell-derived EVs (p < 0.05) as well as FABP4, TNFα- and interferon γ-expressing EVs at 6 months’ follow-up (p < 0.05, p = 0.05, p = 0.06, respectively). The exosomal marker CD9 correlated with FABP4, interferon γ, adiponectin and TNFα (r = 0.49, r = 0.41, r = 0.59, r = 0.53, all p < 0.05), suggesting that exosomes are the main carrier of these adipokines.

Conclusion
EVs can be regarded as diverse biological vectors playing an important role in regulation of adipose tissue homeostasis and inflammatory processes. Their concentration, cellular origin and content do not directly correlate with BMI, but are affected by gender and the presence of obesity-driven comorbidities.
Aim
To combine modern technology with traditional teaching methods to improve CMT experience in Wales.

Method
We established trainee needs by carrying out an online survey and evaluating results of the UK trainee satisfaction survey. Both highlighted concerns regarding adequate clinic attendance, PACES teaching and preparation for further specialist training. We then successfully applied for a grant from the Wales Deanery ‘Trainees Transforming Training’ initiative and worked with a medical student with an interest in website design to develop a website over an 18-month period.

The website includes:
- An online booking system, allowing exposure to specialist clinics and facilitating successful completion of the Annual Review of Competence Progression (ARCP). It also allows CMTs to explore specialties outside those in which they are rotating.
- Key dates for both ARCP and Royal College of Physicians conferences.
- Advice regarding membership exams from a current PACES examiner, advertisement of local teaching sessions and a ‘find a PACES buddy’ system.
- ECG of the week.
- Online podcasts added by senior trainees with an interest in teaching and the chief registrars.
- A quality improvement area.
- Specialist registrars have contributed to a section regarding further training and taster opportunities have been made available.

Results
The website has been live for 14 months, has 267 users and on average 350 views/month.

Feedback (by means of an online survey) has been overwhelmingly positive, with 75% of trainees reporting that the website improves their CMT experience. Facilitation of multi-hospital quality improvement projects has been a favourable feature. Sustainability has been considered, with six new CMTs joining the committee to ensure that the website remains up to date and of high quality.

Conclusion
The trainee-led site has been well received thus far. We hope it will continue to help engage and develop the physicians of the future.
Congratulations to Dr Holly Morgan and Dr Melanie Nana, and all the entrants whose abstracts were accepted into this year’s competition!

About the RCP

The Royal College of Physicians (RCP) aims to improve patient care and reduce illness, in the UK and across the globe. We are patient centred and clinically led. Our 34,000 members worldwide, including over 1,200 in Wales, work in hospitals and the community across 30 different medical specialties, diagnosing and treating millions of patients with a huge range of medical conditions.

Involving patients and carers at every step, the RCP works to ensure that physicians are educated and trained to provide high-quality care. We audit and accredit clinical services, and provide resources for our members to assess their own services. We work with other health organisations to enhance the quality of medical care, and promote research and innovation. We also promote evidenced-based policies to government to encourage healthy lifestyles and reduce illness from preventable causes.

Working in partnership with our faculties, specialist societies and other medical royal colleges on issues ranging from clinical education and training to health policy, we present a powerful and unified voice to improve health and healthcare.

This poster competition was run at the RCP–SoPW joint update for the third time this year, to support sharing of best practice and to provide a platform for individual development of physicians in Wales and the surrounding regions. This year’s entries have demonstrated the wide and innovative practice that is happening across Wales and further afield. Improving clinical practice underpins the delivery of high-quality care to our patients.

Don’t wait for the next competition – the Wales office would love to receive further examples of your innovative practice and ideas. We can include them in our regular Wales vice president’s newsletter, sharing with our members. To inform our policy development, we hope to maintain an inventory of case studies and innovative practice.

If you are interested in entering next year or would like to send us something in the meantime, please contact Jacqui at the RCP Wales office.

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