

**Hull University Teaching Hospitals NHS Trust**

**Poster Abstracts Judging Pack**  
**HEAT 2020 – Learning in a clinical environment**

## **Abstract 1:**

**Title of Abstract: Cone Beam CT in pre-surgical assessment of mandibular third molars.**

**Do patients benefit?**

**Authors: Aaron Chai and Afroz Khan**

### **Introduction**

Removal of mandibular third molars is one of the most common surgical procedures carried out in oral and maxillofacial surgical units. It is often accompanied by morbidity, such as post-operative pain, swelling, and trismus. However, the most significant complications are neural damage, including dysesthesia affecting the lingual nerve and inferior alveolar nerve (IAN). It has been reported in the literature that the incidence of IAN injury after wisdom tooth surgery ranges from 0.4 % to 13.4 %.[1][2]The introduction of cone-beam computed tomography is a relatively new development in dentomaxillofacial radiology and has been increasingly used in our department to provide accurate imaging of the relationship third molar root and the mandibular canal. However, the usage of CBCT in preventing the occurrence or decreasing the risk of IAN injury in high risk patients remains controversial. The aim of this study was to determine if additional CBCT imaging changes the initial outcome of patients deemed to be already high risk on panoramic radiography and to determine the level of agreement (Kappa Statistics) between panoramic radiography and CBCT when assessed by a senior colleague.

### **Methods**

The sample consisted of 32 individuals who underwent preoperative radiographic evaluation before extraction of impacted mandibular third molars. On panoramic radiographs, the most common signs of corticalization (darkening of roots, diversion of

mandibular canal, narrowing of mandibular canal and interruption of white line) and the presence or absence of corticalization between the mandibular third molar and the mandibular canal on CBCT images were evaluated. To determine if there were any complications from the surgical extraction or any change in surgical technique used, data was collected from Lorenzo (IT system) and medical notes. A telephone survey was also conducted if data was found to be insufficient.

### **Results**

It was reported following panoramic radiography and CBCT, 87% (n = 28) of patients still underwent complete third molar removal, 10% (n = 3) of patients underwent coronectomy and 3% (n = 1) of patients opted for "just monitoring". There were no obvious changes from the original treatment plan when only panoramic radiography was available. No particular changes to the surgical technique were seen from the electronic notes. The level of agreement between panoramic radiography and CBCT was 0.67 (Kappa Scoring) when assessed by a senior colleague, showing a substantial agreement. Lip numbness was reported at 6% (n = 2) after 6 months.

### **Discussion/Conclusion:**

Although CBCT is more accurate in determining the relationship of the mandibular canal to the third molar root, it does not appear to reduce the risk of inferior alveolar nerve damage. In our group of patients that was initially assessed with an OPT followed by a CBCT, it does not appear to significantly change the initial treatment plan of patients. This retrospective audit shows that panoramic radiography is an equally effective method for pre-operative assessment of mandibular third molars. It is important that before a CBCT is obtained, the clinician actually determines the actual benefit the investigation brings to the surgery. We

have implemented some changes to the way CBCT has been ordered in our department.

### **Acknowledgements**

We would to thank Mr Crank(Consultant OMFS ) for the feedback provided on this QI project.

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## Abstract 2

**Title of Abstract: 14/31/62 day targets, are we hitting them? A Quality Improvement project on waiting times for suspected cancer patient in an OMFS unit.**

**Authors: Anupam Chandran and Jerome Philip**

### **Introduction**

The introduction of the 14/31/62 day cancer targets have ensured effective cancer diagnosis and treatment delivery for cancer patients. It is important to ensure hospitals strive to ensure that they are meeting these targets to ensure timely cancer diagnosis and treatment for patients as well as prevention of fines which can have detrimental effects on departmental budgets. It was decided to look at previous OMFS cancer patient data following a series of breaches over the past few months to further investigate reasons for this.

### **Methods**

Data was collected over patients treated in 2018-2019 using electronic patient records. Patient demographics were recorded in addition to the date patients were first referred; the date patients were first seen ; the date the patient decided on their treatment and the surgery date. This was checked with the Somerset MDT data to check for any discrepancies.

### **Results**

Data was collected on 47 patients treated between the years 2018-2019. The percentages for the 14/31/62 day targets were noted to be 61%, 83% and 30% respectively. This was noted to be below the gold standard targets given by Cancer research Uk targets of 93%, 96% and 85% respectively.

### **Discussion/Conclusion**

It was noted that there were a number of reasons for the shortfall of targets. These included capacity issues, delays in getting imaging and formal histology reports and having theatre availability for treatment for these patients. The reasons are to be discussed in our clinical Governance meeting and strategies are to be implemented to resolve these issues. Solutions that have been suggested include: allowing junior Dental Core Trainees to carry out biopsies to increase capacity and requesting imaging early if suspected cancers have a

high index of suspicion.

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**Acknowledgements**

**References**

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Waiting Times for Suspected and Diagnosed Cancer Patients 2018-2019 Annual Report – NHS England

## Abstract 3

**Title of Abstract: Stroke in Pregnancy dilemma in diagnosis**

**Authors: Aparna Yandra and Hiranmayi Muddada**

### Introduction

Incidence of stroke in pregnancy is extremely rare. New onset neurological symptoms are often associated with pre-eclamptic etiology. However this particular genuine neurological case has faced delay in management because of dilemma diagnosis. The main red herring being pregnant status of patient.

### Methods

Retrospective analysis of clinical presentation, of a pregnant patient with neurological symptoms and sequence of events in hospital from accident and emergency to relevant unit for appropriate clinical management.

### Results

37-year-old patient, 30 weeks into her third pregnancy presented to accident and emergency with history of having multiple short duration episodes of dysarthria and unilateral facial palsy. She was already known to have hypertension in pregnancy but not diagnosed to have pre-eclampsia. An initial CT scan was unremarkable. She was initially reviewed by Stroke team and neurological team and advised to have no evidence of stroke. She was for MRI scan and for observation. However, stroke ward considered admission inappropriate as no obvious neurological deficit or clinical episodes suggestive of transient ischaemic attack. She was admitted under obstetricians, with a provisional diagnosis of possible Atypical Pre-eclampsia with partial seizures and was commenced on Magnesium sulphate. Subsequently MRI was reported to show signs of left sided putaminal acute ischaemic lesion. She was transferred from labour ward to Stroke unit and managed appropriately. She was commenced on Aspirin and thromboprophylactic dose of Fragmin view of her age, pregnancy status and medical complication. Investigations into causes for stroke in young persons were all unremarkable. She has no residual neurological symptoms. She had an Elective caesarean section at 37 weeks as maternal choice which was because of a previous traumatic delivery with forceps. At 8 weeks postnatal follow-up with Stroke unit and Cardiology all her investigations were normal and she was deemed to have had Ischaemic

stroke from a thromboembolic event in pregnancy. However she continues to remain on antihypertensive medications.

### **Discussion/Conclusion**

Incidence of stroke is 30 in 100,000 pregnancies

Seizures can occur following stroke but are not part of acute presentation, new onset seizures in pregnancy after 20 weeks and <2weeks post-partum are deemed as eclampsia unless proven otherwise. Focal Neurological deficits are not typical of eclampsia as they often present with tonic-clonic seizures. Time-sensitive and reperfusion therapies are associated with improved functional outcome. Pregnancy is relative contraindication for thrombolysis. American Stroke Association guidelines – Intravenous administration of recombinant plasminogen activator(rt-PA) is to be considered in pregnancy to treat moderate to severe stroke when benefits outweigh risks of uterine bleeding within 4.5 hours of stroke onset. These cases have significant improvement in outcome. Although rt-PA does not cross placenta – there is still theoretical risk of placental bleeding and IUD. Antenatal patients should be monitored for vaginal bleeding/ uterine bleeding, USS to assess for placental haematoma and fetal well being can be used. To date no studies recommend caesarean section, early epidural is recommended to avoid blood pressure fluctuations. 25-30% recurrent strokes account of all strokes. Identification of cause and treatment remains mainstay of management and way forward to avoid recurrence.

### **Acknowledgements**



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## Abstract 4

**Title of Abstract:** A case presentation of a 19 year old female with abdominal distension, weight gain and nausea

**Authors:** Dr Benjamin J Snowden, Mr F Biervliet and Miss T Adedipe

### Introduction

Ovarian cysts are a common cause of presentation to emergency gynaecology services. Without imaging they are sometimes difficult to differentiate from other causes of pain in the abdomen or pelvis.

### Methods

### Results

A 19 year old nulliparous female presented to general practice with abdominal distension ? cause with a background of a previous ovarian cyst 2 years earlier: This was a benign 12-15cm mucinous cystadenoma that was fully excised laparoscopically with a re-construction of left-over ovarian tissue. PMHx included irregular menstrual periods, depression on Sertraline and 10-a-day smoker.

She later presented with abdominal pain to the Emergency Department 9 days later. In addition to weight gain, sleepiness, nausea and easily fatigability as her symptoms had worsened over 3 months. She was referred to gynaecology and found to have a symptomatic massive abdomino-pelvic cyst ?cause.

An ultrasound scan prior to Gynaecology review had demonstrated a massive abdomino-pelvic loculated cyst, measuring 705mm x 386mm x 203mm. She had an MRI scan following presentation which was unable to fully visualise the cyst within the field of view. It reported a large loculated cystic lesion up to 38cm in size with fluid contents. Appearances suggest a large likely mucinous ovarian cystadenoma. Her Ca-125 result was raised but a-FP, LDH and blood b-HCG were normal or negative

Her symptoms worsened following her MRI with vomiting, so the decision was taken to remove this cyst surgically on the emergency list. Initially, a laparoscopic approach was considered but an open approach was used due to the size and possible recurrence of the lesion.

In theatre via a midline laparotomy (xiphisternum to pubic symphysis) we removed a 20.6kg L ovarian cyst with the stretched overlying fallopian tube. We managed to retrieve the specimen intact, along with a partial omentectomy. She was transferred to HDU overnight where she remained stable, she returned to the ward day 1 post op and was discharged day

3.

Histology demonstrated a Borderline mucinous tumour of the L ovary – likely stage 1a – the omentum had no abnormalities detected.

She was followed up in the gynae-oncology clinic where she will have a further MRI and likely completion surgery in the form of an omentectomy and appendicectomy.

### **Discussion/Conclusion**

Ovarian cysts in adolescence are largely benign and functional in nature with a small percentage presenting as germ cell tumours or borderline tumours.

Mucinous cystadenomas (mOC) account for approximately 10–15 % of all benign ovarian neoplasms whilst borderline mOC comprise up to 67 % of mucinous neoplasms that are not considered strictly benign. Mocs usually occur in women aged 20-40 years, as a unilateral lesion, with a mean size of 18 cm. They can become quite large filling up the abdominopelvic cavity and could lead to ureteral obstruction, abdominal compartment syndrome. *It could be primary or metastatic with metastatic tumours tending to be smaller (mean size of 11-12cm) and possibly bilateral.*

*Though in this case, the primary tumour marker was CA125; CEA has been described as a useful tool to aid diagnosis and to monitor progress post-operatively.*

Though gold standard is laparotomy, total hysterectomy, bilateral salpingo-oophorectomy, and staging procedure including lymphadenectomy, as our patient was a young nulliparous woman, fertility sparing surgery limited to the removal of cyst without rupture and omentectomy was done. *Moreso given her previous histology and intra-operative findings on the day. Ability to completely excise this large 38cm mass without cyst rupture in this particular body habitus has to be commended as several reports in literature depict a correlation between rupture and increasing size.*

Intra-epithelial (non-invasive) mOC, FIGO stage I, has a recurrence rate of only 5.8 % whilst stage I invasive mOC has a 5-year survival rate of 91 %, whereas advanced-stage tumor usually die of disease

### **Acknowledgements**

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## **Abstract 5**

**Title of Abstract: Basic Practical Skills (BPS) in Obstetrics & Gynaecology – Introduction of a National Franchise**

**Authors: Daniel Websdale, Dr Uma Rajesh and Donna Major**

### **Introduction**

The Basic Practical Skills in Obstetrics and Gynaecology course has been designed to introduce trainees to safe surgical techniques and obstetric clinical skills in a structured workshop environment.

The Royal College of Gynaecology (RCOG) designed this course for ST1 – ST3 doctors to compliment the RCOG Training Portfolio Logbook and is linked to OSATs. HILS became an official regional franchised centre to run the course in 2018 and to date it has ran three times with Dr Rajesh as director.

### **Methods**

The course is delivered over two consecutive days and primarily focused on giving candidates as much hands on practice as possible.

Day One Group Sessions

Basics of handling instruments

Knot tying and suturing techniques

Day One Simulated Stations

Hysteroscopy

Laparoscopy

Gynaecological Examination

Day Two Lectures/ Videos

Deteriorating Patients

Caesarean Section

Operative Vaginal Delivery

## Day Two Simulated Stations

Episiotomy and Perineal Repair

Fetal Blood Sampling

Operative Vaginal Delivery

Postpartum Haemorrhage

The stations combine the use of simulated models from retailers and those created by members of the faculty such as using hollowed dyed potatoes to realistically simulate a uterus.

Every candidate is required to attend all stations and demonstrate they can perform the each skill adequately before their competence is signed off

## Results

Each candidate is required to complete anonymous feedback on all aspects of the course, the following are statements from October 2019 on how the course will help change their practice in the future:

“Given me confidence to apply what I’ve learnt in clinical practice”

“Made many practical skills clear, with an understanding of rationale behind them”

“Much more informed about the basic and an idea of what to do in PPH and shoulder dystocia situations”

“Being more familiar with the basic principals will help me feel more confident in practice”

“Increased confidence in procedures”

“Set a very nice example of how good communication in a team can be fruitful”

## Discussion/Conclusion

BPS has demonstrated a great balance between informative lectures and engaging stations with faculty members sharing their own experiences and anatomy notes to enhance the learning.

It would be relevant to follow-up the candidates six - twelve months later to see if they experienced any of the stations in their working environment and if so, did attending the course improve their confidence when handling the situation.

The course continually plans to run annually at HILS with the excellent support of both local

and regional faculty.

### **Acknowledgements**

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## Abstract 6

**Title of Abstract:** Evaluation of Foundation Year 2 trainees' reports of rotation in the General Practice in Hull

**Authors:** Diana Kluczna

### Introduction

Foundation programme aims to bridge the gap between the medical school and speciality or core training for the newly qualified doctors. It consists of six rotations across a two-year long programme<sup>1</sup>. In the North Yorkshire and East Coast Foundation School there are 154 places for new foundation doctors starting their rotations in August 2020, out of those, nearly 70% (107) include a General Practice (GP) rotation<sup>2</sup>. The "Guide to Foundation Programme Training in General Practice in the East of England" by Health Education England (HEE) provides a framework and a model on which local practices can build on to suit their individual needs<sup>3</sup>. This project aims to evaluate GP rotation within the foundation programme against statements from the HEE guide.

### Methods

A short anonymous online survey was distributed among trainees based in Hull who were currently undertaking or have recently completed their General Practice (GP) rotation<sup>4</sup>. Trainees were asked to identify the start date and location of their GP placement. The survey focused on the following four domains: 1) home visits, 2) weekly timetable, 3) repeat prescriptions and 4) additional activities. The trainees were also able to leave comments in a free-text box. There were no mandatory questions and therefore any question could have been skipped by the responder.

### Results

A total of 15 responses were collected. The majority (80%) of responders started their rotation in December 2019, with the remainder starting in August 2019. Responses were collected from trainees based across eight different GP practices, there were two trainees who reported being at the same practice. The survey responses were highly varied across all of the four main domains. With regards to home visit numbers, responses ranged from nearly 30% of trainees reporting going on multiple home visits each day and with around 14% reporting going on home visits less than once a week. Reported home visit supervision levels ranged from around 13% trainees always being accompanied by another clinician to 80% of trainees always going alone. Majority of responders (53.3%) reported no scheduled debrief time following clinics and 33.3% no allocated non-clinical (admin, audit or personal development) time. Out of those who had an allocated non-clinical session, the duration again was variable between different GP practices. Over 70% of trainees also reported regularly signing repeat prescriptions. Furthermore, over 30% of responders reported being expected to complete additional activities which trainees felt was outside of the programme



requirement.

### **Discussion/Conclusion**

The survey evaluating experiences of foundation trainees during their General Practice rotation highlighted important discrepancies from the HEE guide. Furthermore, there is variability between different GP practices across Hull, resulting in inconsistencies in trainee experience, clinical exposure and supervision levels. It is crucial to evaluate the survey responses to better understand what support is needed for trainees, supervisors and GP practices across the region.

### **Acknowledgements**

Thank you to foundation trainees who completed the survey.

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## Abstract 7

**Title of Abstract:** Objective assessment of cough: an early marker of response to biological therapies in asthma?

**Authors:** Dominic Sykes

### Introduction

Cough is an important symptom of asthma. The objective assessment of chronic cough has been enhanced by the development of ambulatory cough monitoring systems. Mepolizumab is a biological agent that has been demonstrated to reduce exacerbations in eosinophilic asthmatics in the long term.

### Methods

Patients were initiated on treatment with Mepolizumab and had a 24-hour cough count recorded at baseline. This was repeated 1, 3 and 6 months later. Asthma control was assessed via the asthma control questionnaire (ACQ).

### Results

In the 11 patients (8 females) included in this study with a mean age of 53.6 years, the mean 24-hour cough count was 172.4 at baseline, after 1, 3, and 6 months following initiation of treatment of Mepolizumab the mean cough count fell to 101.4, 92, and 70.8 respectively. The area under the curve of cough count on treatment was significantly improved over baseline measurements ( $p < 0.02$ ). All 11 patients had a reduction in 24-hour cough count at 6 months when compared to baseline

### Discussion/Conclusion

We demonstrate a clear improvement in objective cough count at one month, which is sustained over 6 months. Objective cough measurement could be used as an early, precise and clinically relevant endpoint in both the assessment of response to therapy as well as future drug development.

**Acknowledgements**

All authors who contributed:

Dr. Shoaib Faruqi, Dr. Michael Crooks, Professor Alyn Morice

**References**

## Abstract 8

**Title of Abstract: A qualitative exploration of how the speciality of PBL tutors' impact upon their perceptions of and behaviour within PBL**

**Authors: Emilia Grace Palmer, Gabrielle Finn, Marie Cohen**

### **Introduction**

The Problem-Based Learning (PBL) tutor has been extensively analysed in the literature. Particular interest has been paid to the link between the tutor's behaviours and student learning, and the impact of the tutor's content knowledge on outcomes. Despite this, the impact of the tutor's medical speciality on the facilitation of the group remains unstudied. Thus, this study aims to identify themes arising from how the PBL tutor's speciality impacts upon their opinion of and behaviours within PBL.

### **Methods**

This prospective qualitative study consisted of 11 interviews exploring the opinions of PBL tutors at Hull York Medical School (HYMS) regarding their perceptions of PBL and the influence their profession has on the group. Recruitment was done through email advertisement sent by the HYMS PBL-lead. All data was collected by the primary researcher through one-to-one semi-structured interviews. Question stems, grounded within an iterative design, guided discussion within the interview. A pilot interview was used. Data analysis was performed via an inductive approach, such that during analysis the codes, themes and then theories were founded purely from the data, not preconceived ideas. Coding was done via an open, axial approach; based on grounded theory. Eleven PBL tutors at HYMS were recruited, consisting of 6 general practitioners (GP) and 5 specialists.

### **Results**

Five global themes emerged: 'the role of the tutor within PBL', 'the impact of the tutor's career on their behaviour', 'the relationship between the tutor's career and the student', 'external factors affecting the tutor's role', and 'education and assessments'. The results have been categorised into three themes. (1) Behaviour of the tutor within PBL: Little difference existed between GP and specialists' behaviours within PBL tutorials, and perceptions of the role of the PBL tutor; furthermore, their behaviours are consistent with those outlined within literature. (2) The impact of content knowledge: Both GP and specialists feel more confident and are most likely to assume directive behaviours in discussions centred-around their content knowledge. GPs believed that their careers resulted in superior knowledge of the PBL curriculum, allowing them to feel confident within most cases, though potentially at the expense of student self-directed learning. Alternatively,

specialists frequently described feeling unconfident, unknowledgeable within PBL tutorials, owing to their highly specialised knowledge. (3) Professionalism: Tutors perceive that students' negative opinions of medical specialties stem from a variety of sources, including the media, personal experiences and the hidden curriculum.

#### Discussion/Conclusion

This is the first study to analyse the impact of the PBL tutor's speciality on their behaviours within, and perceptions of PBL. Notable differences were found between GPs and specialists with respects to the impact of their career on their knowledge of the PBL cases, and thus behaviours within PBL. Based on these results, the study provides 10 practical teaching

| <b>TABLE 1: THE 10 PRACTICAL TEACHING POINTS</b>  |
|---|
| 1. Group training in group dynamics management, especially in times of conflict   |
| 2. Formation of a clear management protocol for situations of conflict  |
| 3. Reimbursing tutors if they take students on an appropriate social occasion   |
| 4. Education in maintaining the facilitator role within tutorials   |
| 5. Timetabling regular observing of facilitation within tutorials by a more experienced tutor   |
| 6. Education of GPs around the implications of taking a directive role  |
| 7. Support for specialists in developing good behaviour in times that they are tutoring within a discussion they do not have knowledge of |
| 8. Educating tutors in challenging and correcting students' misconceptions of medical conditions and specialities                         |
| 9. Demonstrating to tutors the importance of modelling good professional behaviours   |
| 10. Creating a clear reporting system for unprofessional behaviours   |

points for improving PBL at HYMS, summarised in Table 1.

#### Acknowledgements

Thanks to Professor Gabrielle Finn, the principle supervisor, for continuous support. The biggest gratitude to every tutor who has contributed their time to this research, it would not have been possible without you.

#### References

None

## Abstract 9

**Title of Abstract:** HYMS Finals Revision Course “Finals Crash Call: 2020”

**Authors:** Firuza Dzhakhangirli, David Lloyd

### Introduction

Study groups have proven to be the most effective way of learning in the health sciences<sup>1</sup>. Especially when it comes to medical school examinations, where one must perform under immense pressure. Collaborative work to solve complex problems was shown to heighten confidence and reduce exam anxiety amongst students<sup>2</sup>. The aim of our course was to create a study tool that would step away from the traditional methods of revision and offer a stress-free environment to foster group discussions.

### Methods

I have identified the acute need for the written exam revision course aimed at the final year students of the Hull and York Medical School. Hence, my colleague and I organised a two-day teaching event “Finals Crash Call: 2020”, comprising fifteen high-yield specialities. Each session was delivered by a junior doctor: from FY1 to CT2. While the use of presentation slides assisted with structuring the sessions, it was having a recent graduate as a teacher that deepened the connection with the audience. Facilitators utilised written and verbal linguistic tools and visual aids such as images and diagrams as well as encouraged logical thinking during the discussions. Using this combination of methods, our course aimed to build on the knowledge and comprehension of the students to promote their higher-order cognitive skills as per Bloom’s taxonomy<sup>3</sup>.

### Results

The course proved a success as based on the students’ feedback. Attendees particularly enjoyed engaging in the case-based discussions and the opportunity to be tested in real-time using SBA questions. We found that there was strong interest for an extended course in the future spanning across more than two days. There was also demand to expand the material, with haematology and orthopaedics being the most sought after disciplines. Students were asked to rate the relevance of every session on the scale of ten. Figure 1 is the breakdown of their responses. Based on the results, there was a higher proportion of verbal and spatial learners, as sessions such as Acute Care and Dermatology, where discussions were encouraged and relevant graphics were applied, received higher scores.

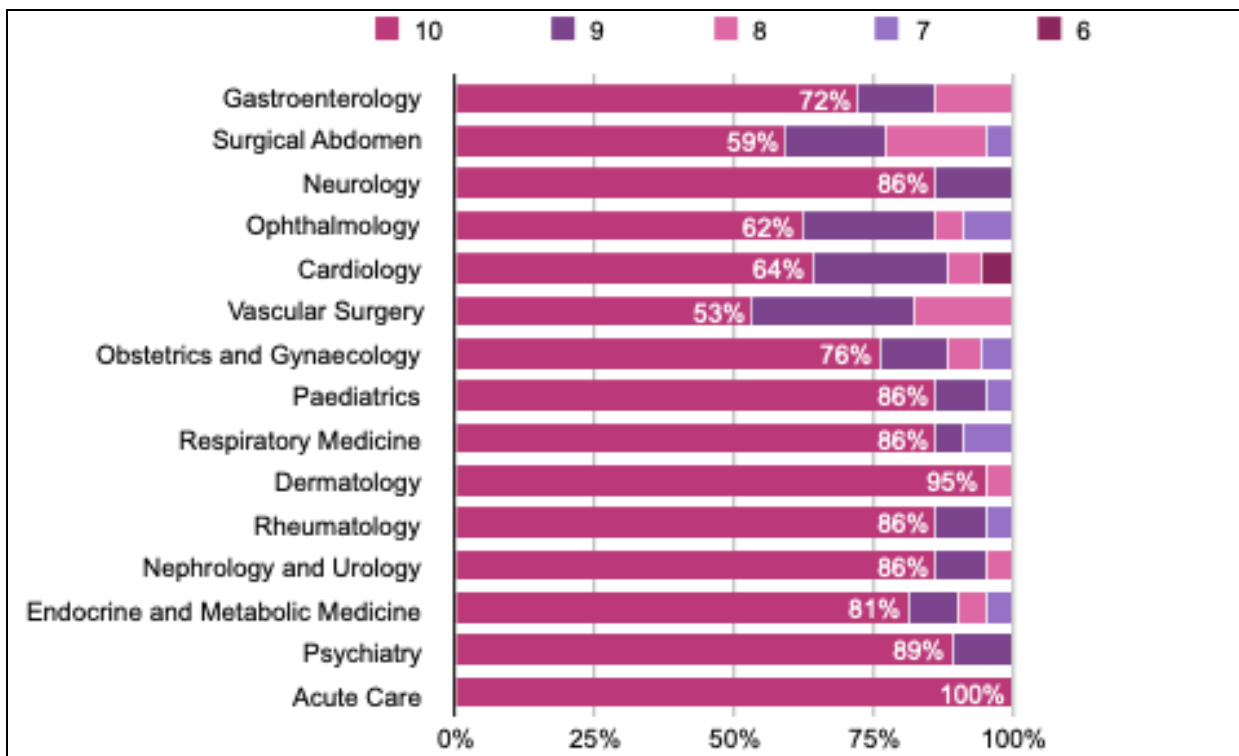


Figure 1. Relevance of specialties (/10) as per course participants.

### Discussion/Conclusion

Finals Crash Call: 2020" was a unique course. Not designed to teach, but rather to encourage alternative ways of approaching exam preparation, it provided participants with a safe environment to revise numerous specialties across a short period of time, learn from the experience of junior doctors and engage in discussion of exam-like questions with their peers and facilitators. As such, it was successful at boosting the students' confidence at sitting their finals as evidenced by their feedback. We suggest that our revision tool is suitable for a diverse group of learners, with those preferring the interpersonal learning style benefitting the most. We recommend running this event earlier in the academic year as to incorporate more specialties and spread it over multiple weekends. This would provide an opportunity for the students to reflect on their progress and highlight the areas for improvement.

### Acknowledgements

I would like to express my gratitude to the course co-organiser, Dr David Kent, all the facilitators: Dr Christa Brew, Dr Oliver Watson, Dr David Chang, Dr Davide Zanicelli, Dr Ben Nadin, Dr Amman Mader, Dr Mohammad Habboub, Dr Chloe Bromley, Dr Lauren Croft, Dr Rebecca Kelly, Dr Emma Pearson, Dr Ye Myat, Dr Ying Qi Yeo, Dr Caroline Bamber; Dena Larvin, HYMS Student Liaison Administrator, and my friends, Galina Badalova, Ekaterina Sergienko and Tiffany Lau.

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## Abstract 10

**Title of Abstract: Audit: Reconstructive Free Flap Surgery Success in Oral & Maxillofacial Oncology Patients**

**Authors: Gagandip Dhanjal, Aaron Chai, Natasha Naeem, India-Spiers Laborde, Jerome Philip, Kelvin Mizen and Stephen Crank**

### Introduction

Free flap (FF) surgery is considered to be 'gold standard' for head and neck reconstruction following surgical resection. The main three types of free flaps carried out at Hull University Teaching Hospitals include: radial forearm; fibula and anterolateral thigh (ALT). The latter has been shown to be the most successful in the literature. The first 24 to 48 hours following anastomosis of the FF to the newly 'cancer-free' cavity is critical and require very close monitoring to detect signs of failure. National and international success rates for FF head and neck reconstruction vary slightly but are generally over 95%. Complete failure of FF requires revision with a new surgical approach such as a pectoral major or a completely new FF.

### Methods

Data was retrospectively collected from January to December 2018 in Castle Hill Hospital, Oral & Maxillofacial Surgery, oncology log. Data was reviewed and all reconstructive surgeries involving a FF was included. A total of 25 cases were documented to have had soft or boney FF surgery. Each case was reviewed on Lorenzo to assess success by analysing the operative and clinical notes.

### Results

Of the 25 free tissue transfer surgeries, 60% (n=15) radial forearm; 24% (n=6) fibula and 16% (n=4) ALT. FF success is considered when the flap survives with or without the need for revision surgery. The success rate of radial forearm and ALT FF were both 100%, however, the former had a complication rate of 20% (n=3) that required salvage (revision) surgery. Fibula FF had a success rate of 83%, whereby 1 flap completely failed and another requiring revision surgery. The one complete failure in 2019 was related to an SCC of the left cheek, stage T4N0. The overall complication rate was 12%. The success rate of all FF surgeries at Hull in 2019 was 96%.

### Discussion/Conclusion

Free tissue transfer in oncology is a high stakes operation, due to the morbidity it can cause for the patient in terms of physical/functional and psychosocial recovery. The majority of flap compromise in the literature is venous related from either thrombosis or kinking of the vessels causing obstruction. As such close monitoring of the flap is required, with hourly

observation for the first 24 hours then four-hourly for 48 hours. The risk factors of flap compromise are still unclear, but some proposed factors include reduced ASA status, comorbidities, current tobacco use and previous radiotherapy. From the literature, venous thrombosis requires early intervention to allow for better success in salvage surgeries, whereas flaps with arterial compromise have been known to be salvaged successfully after 24 hours. Hull's free tissue transfer surgeries in 2019 exceeded that of the literature and confirms the high success of ALT flaps with no need for any revision surgery, contrary to the other two types of FF. Care given to patients following resection of intra-oral malignancy does not end after they are off the operating table. Strict flap observations are required to monitor the need for possible time-critical salvage surgery and maintain high success in FF reconstruction for patients.

### Acknowledgements

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# Abstract 11

Title of Abstract: Improving Rheumatology Referrals at Hull and East Yorkshire Hospitals

Authors: Kathryn Graves

## Introduction

Throughout working in the trust for two years, myself and colleagues have found it very difficult to get a quick response to an inpatient rheumatology referral. This is because the registrars do not carry a bleep, therefore relying on sending a fax or calling the registrar room in the hope that a registrar is available.

## Methods

A run chart was created, highlighting the areas in the current referral process which caused the longest delay. Five referrals using the current fax system were tracked from time of referral until time of response. A new email referral system was then implemented. Five more referrals were then tracked to see if the duration to get a response was reduced. The process was then repeated several months later to ensure standards had been maintained.

## Results

Using the old fax referral system, the average time to receive a response was 2.4 days. Using the new email system, the average time reduced to 0.8 days. The process was repeated to ensure standards were maintained, and the mean time remained at 0.85 days.

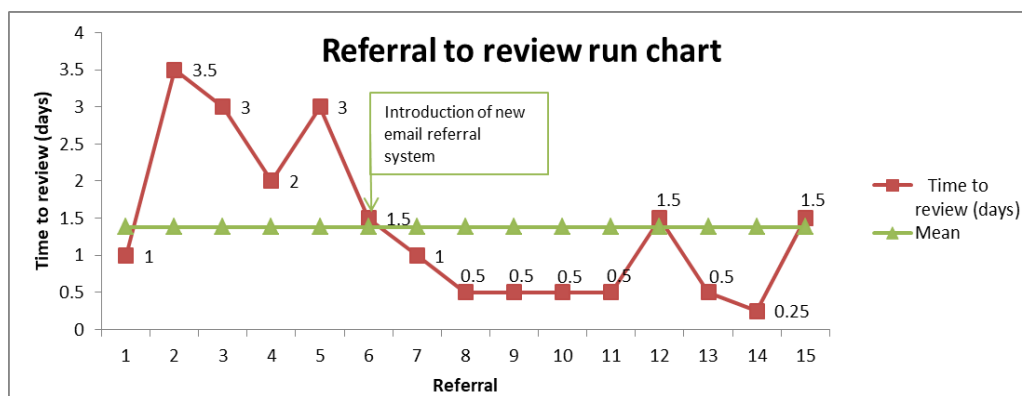


Figure 1. Run chart showing the time from referral to review.

## Discussion/Conclusion

The new email referral system significantly reduced the time taken to receive a response to

inpatient referrals from the rheumatology team. The most important outcome from this project is that patients can begin investigations/treatment more promptly. Other positive outcomes include saving the ward doctors time, as they are less likely to need to “chase up” the referral. The email system also ensures that the referrals are legible and are able to include more information for the registrar to act upon. In addition, no longer relying on fax referrals should reduce the chance of referrals being sent to the wrong number, or being misplaced.

### **Acknowledgements**

With thanks to Dr Ogunbambi as the project supervisor.

### **References**

## **Abstract 12**

**Title of Abstract: A closed loop audit of venous thromboembolism risk assessment of ENT inpatients**

**Authors: Laura Savage , Benjamin Nadin, Philip Johnson, Ashley Walden and Rebecca Collingwood**

### **Introduction**

Thromboprophylaxis is an important patient safety strategy used in hospitals as a method to reduce risk factors for preventable causes of morbidity and mortality. Surgical patients tend to have a higher risk of developing thromboembolism during an inpatient stay due to immobility during the perioperative period and other factors. Venous thromboembolism (VTE) leads to an increased mortality and morbidity as well as prolonged hospital stays (1). Hull university teaching hospital's guidelines state that every patient should receive an initial assessment of their VTE risk on admission. This should be recorded on their electronic patient record and a follow up assessment 24 hours after admission. These are part of the key performance indicators of the ward and is linked to financial payments to the ward. This audit aimed to assess the current completion of VTE assessments and to develop a change to improve practice where necessary.

### **Methods**

This project followed a clinical audit methodology. The setting was an inpatient surgical ward at a tertiary hospital. The criteria were completion of VTE risk assessment at admission and 24 hours later. Local guidelines state that all patients should receive these assessments and so the standards for both criteria were set at 100%. An initial audit of VTE assessment completion was performed to assess current practice over a 14-day period. An intervention was developed and implemented to address areas for improvement from the initial audit. A re-audit was performed to identify the impact of these changes.

## Results

The initial audit identified that 78% of patients were receiving initial VTE assessments. Follow up assessments were completed in 11% of patients. This is below the standard for both criteria. Issues identified included: no designated clinician responsible for VTE, failure to reconsider VTE assessment after admission. A prompt sticker was developed for use during ward rounds and each day an individual was assigned responsibility for VTE assessment. The re-audit found that 90% of patient received an initial assessment. Follow up assessments were completed 86% of the time. Although an improvement, both criteria failed to meet the standards set.

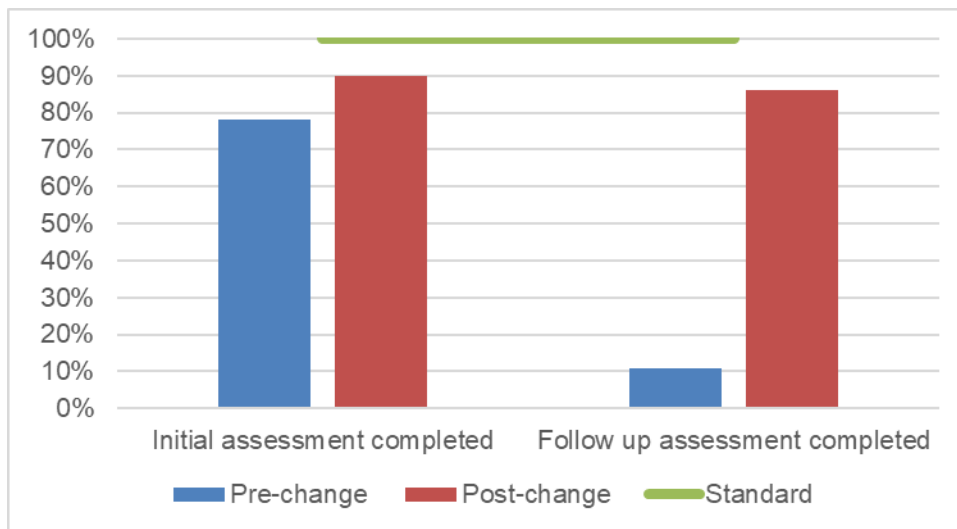


Figure 1. Mean percentages of completed VTE assessments, before and after changes implemented, compared to the audit standard (Set at 100%).

## Discussion

The initial audit identified a small but significant number of patients that never received an initial assessment. Whilst a majority of patients failed to receive a follow up assessment. The re-audit after these changes identified significant increases in VTE assessment completion both on admission and at 24 hours. Introduction of these changes has improved performance; however further improvements remain necessary to meet the standard for assessment at 24 hours. Areas for further improvement not addressed in this audit include locum staff unfamiliar with ward practice and patients transferring between sites.

## **Acknowledgement**

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## Abstract 13

**Title of Abstract: Prescription Proforma for Acetylcysteine for management of paracetamol overdose**

**Authors: Lucy Faulkner, Kirsty Russell, Bryony David, Pallavi Gungadin, Joshua Fick**

### **Introduction**

Paracetamol is the *most common* drug taken in overdose in the UK, making up 48% of all poisoning related hospital admissions<sup>1</sup>. Every year, Emergency departments across the country deal with around 100,000 cases of paracetamol poisoning.<sup>2</sup>

Current guidelines recommend Acetylcysteine for patients meeting certain criteria. This antidote is prescribed based on weight, and involves three infusions at different concentrations and in different volumes. This leads to a potential for errors due to lack of knowledge, calculation errors and human error. In addition, this is a time-consuming process which can delay initiation of treatment.

Many NHS trusts nationally have developed prescription proformas for Acetylcysteine. We carried out a QIP to introduce a prescription proforma for Acetylcysteine for use in our trust. We have been monitoring the effects of this proforma and are in the process of developing a Version 2.

### **Methods**

A proforma was developed using guidelines from the BNF<sup>3</sup>, Toxbase<sup>4</sup>, Royal College of Emergency Medicine<sup>5</sup> and the trust guidelines<sup>6</sup>.

Samples of notes from patients presenting to ED with paracetamol overdose requiring Acetylcysteine were analysed before and after. Prescriptions were examined for errors and we collected data on the timing of events.

Datix's prior to introduction of our proforma highlighted the need for a proforma and enabled us to identify areas responsible for errors.

In addition, we sought the opinion of prescribers through questionnaires.

**Results**

Introduction of our prescription proforma caused a substantial decrease in the rate of prescription errors from 70% to 20%, no post-intervention errors were related to drug concentration, volume, rate or duration. Our proforma decreased the time between initial clerking to Acetylcysteine delivery from 2hours 33minutes to 1hour 32minutes.

The initial questionnaire showed prescribers lacked confidence in Acetylcysteine prescription (65% felt less/much less confident compared to other prescriptions they regularly complete) and found this a time-consuming process (80% felt it took longer/much longer than other drugs they regularly prescribe). This was particularly true amongst Junior Doctors (below ST3) who are often the ones responsible for completing this task.

The post-intervention questionnaire showed prescribers felt confident in using the proforma (100% agreed/strongly agreed), saved time (75% agreed/strongly agreed), improved patient safety (100% agreed/strongly agreed) and preferred it as a method of prescribing Acetylcysteine (100%).

There have been no further Datix's related to Acetylcysteine since introduction of our proforma.

**Discussion/Conclusion**

Prior to our QIP, prescribers lacked confidence in prescribing Acetylcysteine, resulting in prescription errors and treatment delays. Introduction of a prescription proforma resulted in reduced prescription error rates as well as more prompt initiation of treatment, likely due to time saved in prescription as well as facilitating clearer documentation.

We feel this project aligns with the trust's aim to continually improve patient safety. Early initiation of Acetylcysteine is associated with improved patient outcomes. This may also facilitate timely movement of patients through the acute care settings to help meet national targets.

We are continuing to monitor the effects of our proforma, and are currently developing a Version 2.

### **Acknowledgements**

Many thanks to the Senior nursing staff in the Emergency Department, Emergency Department Consultants, Acute Medicine Consultants and Pharmacy Department for the input and support in this QIP.

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6. Hull University Teaching Hospitals trust guidelines available at: <https://pattie.info/Interact/Pages/Content/Document.aspx?id=7117&SearchId=528561>

## Abstract 14

**Title of Abstract:** Chronic Pelvic Pain in Women: Improving the Quality of the Care Pathway in the Women and Children's Hospital, Hull.

**Authors:** Megan Coverdale, Mr Androniks Mumdzjans, Adam Dalby, Muna Ewadh, Marina Pagaki-Skatiara, Giovanna Licastro, Emily Ratford and Harjot Kumar

### Introduction

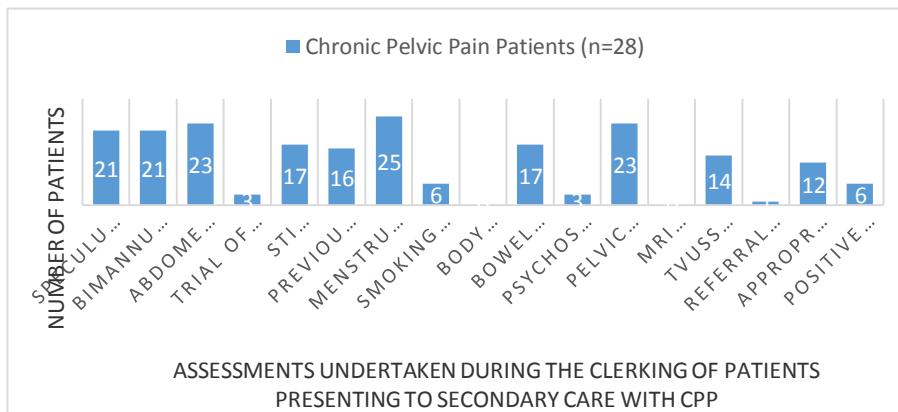
Chronic Pelvic Pain (CPP) is defined by The Royal College of Obstetricians and Gynaecologists (RCOG) as the "intermittent or constant pain in the lower abdomen or pelvis of a woman of at least 6 months duration" (2012, p.2). It is a common, painful and debilitating symptom that can lead to a cascade of psychological complaints including anxiety and depression. Consequently, thorough and effective management of CPP is essential to maximise quality of life, and ultimately identify the underlying cause for the pain. Significant improvements must be implemented within the Hull University Teaching Hospital's (HUTH) Gynaecology outpatient department when clerking a patient who is presenting with CPP. This study unravels the reasons as to why this is the case, and we aim to develop an extensive, standardised proforma to utilise within secondary care for initially managing a patient presenting with CPP.

### Methods

An audit undertaken within the HUTH Gynaecology department, held within April 2019, identified that a large proportion of patients received notably different care provision upon their admission to secondary care with the presenting complaint of CPP. Baseline data was audited on 28 patient notes, chosen at random throughout a 1 month period, whose main presenting complaint was defined as chronic pelvic pain, diagnosed by their general practitioner.

## Results

Upon analysis of the investigations and treatment initiated within each of the 28 patients, there was a marked difference in the clerking of chronic pelvic pain. Significant parts of the clerking were not addressed that are detrimental to assessing the pathogenesis underlying the chronic pelvic pain, including psychosocial and gastroenterological history (RCOG, 2012, pp. 4-5). Noticeably not all patients were examined fully- in 25% of patients, both a speculum and bimanual vaginal examination did not occur. Reviewing the definition of CPP as per the RCOG, the pain must have been present for 6 months before referral to gynaecology within secondary care, and upon investigation of the 28 patients, 5 had been suffering for less than this time which did not warrant a referral for CPP (RCOG, 2012, p.2). Patients who underwent a diagnostic laparoscopy for their CPP and had no remarkable findings identified for causing their CPP totalled 54%. This infers significant negative surgeries.



## Discussion/Conclusion

The level of care provision for the 28 individuals audited was unsatisfactory. When compared to the standardised approach of managing CPP, as recommended within the RCOG Green-top Guideline No. 41, multiple steps within patient management were not addressed (2012). This meant many patients underwent surgery unnecessarily. This could have been prevented, reducing the number of negative laparoscopies for CPP. As a result of this, we aim to introduce a standardised approach to clerking patients with CPP. This will be achieved via our implementation of a CPP proforma, ensuring that diagnostic laparoscopies are only undertaken once all other investigations have been exhausted.

## Acknowledgements

Many thanks to HUTH's Gynaecology department for access to patient notes.

**References**

The Royal College of Obstetricians and Gynaecologists. 2012. Chronic Pelvic Pain, Initial Management, Green-top Guideline No. 41. 2<sup>nd</sup> edition. [Online]. Available at: <https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg41/> [Accessed 08/02/2020].

## Abstract 15

**Title of Abstract:** Quality Improvement Project on Prescription of Parkinson's Disease Medications

**Authors:** N Htoon, A Huda and U Muhammad

### Introduction

Antiparkinsonian medications should not be withdrawn suddenly in view of the risks. We conducted this quality improvement project in Diana, Princess of Wales Hospital (Grimsby) from January to May 2019. The rationale of the project was to discover whether Parkinson's disease medications were correctly prescribed 'On Time' or not. The objective was to improve the quality on prescribing medications for Parkinson's Disease to meet the standards as per NICE Guidelines. Standards: 1. All patients with Parkinson's disease who have been admitted to the medical wards should have their medications prescribed on time. 100%. 2. All patients with Parkinson's disease who have been admitted to the medical wards should be given their medications on time. 100%. 3. All patients with Parkinson's disease should have their discharge letter mentioning correct prescription of Parkinson's disease medications. 100%.

### Methods

Parkinson's disease patients admitted to medical wards and medical outliers were included. Retrospective data was collected for the initial audit and both retrospective and concurrent data was gathered and analysed to see quality improvement after implementation of action plan. Action plan was to give education to junior doctors and nurses by highlighting the importance of prescription of Parkinson's disease medications and to attach coloured sticker 'On Time' at the front of medication prescription chart to maintain awareness of that importance. Patients with new diagnosis, deceased patients and patients who had end of life care during hospital admission and at the time of discharge were excluded. In addition, patients without discharge letters on Web V and discharge letters without the list of medications were excluded. Sample design was drawn to achieve effective data gathering.

**Results**

Initial audit included sample size of 24 patients, which we looked at hospital discharges between 1<sup>st</sup> January and 15<sup>th</sup> March 2019 as per inclusion and exclusion criteria. Then we implemented our action plan and also presented the initial audit findings at our weekly lunchtime meeting. After implementation, we gathered data to see improvement, for which we looked at hospital discharges (sample size: 11) between 16<sup>th</sup> March and 15<sup>th</sup> May 2019.

**Summary Table of the Findings of Prescription of Parkinson's Disease Medications**

| No  | Standards                                       | Initial Audit | After Implementation |
|-----|---|---------------|----------------------|
| 1a. | Correct prescription at the time of clerking    | 45.83%        | 88.88%               |
| 1b. | Correct prescription after review by Pharmacist | 75%           | 100%                 |
| 2.  | Giving medications on time                      | 87.50%        | 100%                 |
| 3.  | Correct prescription on the discharge letter    | 50%           | 90.90 %              |

**Discussion/Conclusion**

During implementation of our action plan, we also emphasised on how to prescribe Parkinson's disease medications correctly and explained the risks of missing doses of Parkinson's disease medications. It is noted that there were significant improvements in prescription of Parkinson's disease medications after our implementation. However, there were limitations such as maintaining the quality improvement and further improvement to meet standard 100%.

**Acknowledgements**

We would like to say 'thank you' to all the junior doctors and nurses taking part in the implementation process and especially to clinical supervisor Dr Kamath, local audit team and our colleagues.



**References**

NICE Guidelines (NG 71) Published date: July 2017

Local hospital guidelines

## Abstract 16

**Title of Abstract:** PATERNAL PERSPECTIVES ON LIVING WITH A CHILD WITH 22Q11.2 DELETION SYNDROME

**Authors:** Oanh Kieu Vo, Alisdair McNeill, Katharina Sophie Vogt

### Introduction

The 22q11.2 deletion syndrome (22q11.2DS) is the most common chromosomal microdeletion syndrome. The multiple physical anomalies and the psychosocial impact associated with 22q11.2DS on patients and family units have been relatively well described in the literature. However, a systematic review revealed a paucity of paternal perspectives; with fathers less likely to take part in studies exploring psychosocial perspectives. This study therefore thought to explore the experience of fathers with a child diagnosed with 22q11.2DS.

### Methods

Semi-structured interviews were conducted with ten fathers. Transcribed interviews were analysed using thematic analysis.

### Results

Five major themes were revealed: i) perceptions and uncertainties shaped by the diagnosis; ii) the effects of the major clinical features (e.g. congenital heart defects and developmental delays) on daily living, education and employment experiences iii) the continuing and limitation of parental support iv) battling to gain familial, societal and social support iv) the paternal views on their children's aspirations, achievements, and the evolving expectations around them.



Figure 1: Diagram shows five major themes derived from the results

### **Discussion/Conclusion**

This study is the first to comprehensively review the psychosocial impact of 22q11.2DS on patients and families, and further explored this through the under-represented paternal perspectives. Findings illustrate the families' struggle to make sense of their journey of 22q11.2DS in the early and late parenting years. This highlights the need of better awareness about 22q11.2DS in society and better understanding of sociocultural influences in order to help diminish these challenges. Such information will provide health providers to improve child outcome through improving parental supportive care.

### **Acknowledgements**

Firstly, I want to thank the University of Sheffield for providing me a bursary to pursue my BMedSci research degree. Secondly, huge thanks to my supervisors Dr Alisdair McNeill and Katharina Sophie Vogt for invaluable teachings, support and guidance throughout this degree. Lastly, I want to acknowledge my gratitude to my family and friends who had given amazing moral and mental support throughout my degree.

**References**

Vo, O. K., Mcneill, A., & Vogt, K. S. (2018). The psychosocial impact of 22q11 deletion syndrome on patients and families: A systematic review. *American Journal of Medical Genetics, Part A*, 1–11. doi: 10.1002/ajmg.a.38673



|                              |     |     |    | (Num<br>erator<br>) |            |     |     |    | (Num<br>erator<br>) |            |
|------------------------------|-----|-----|----|---------------------|------------|-----|-----|----|---------------------|------------|
| PULMONARY EMBOLUS            | 51  | 33  | 18 | 11                  | <b>61%</b> | 50  | 25  | 25 | 17                  | <b>68%</b> |
| ATRIAL FIBRILLATION          | 214 | 128 | 86 | 46                  | <b>53%</b> | 245 | 155 | 90 | 69                  | <b>77%</b> |
| COMMUNITY ACQUIRED PNEUMONIA | 420 | 384 | 36 | 21                  | <b>58%</b> | 291 | 252 | 39 | 20                  | <b>51%</b> |

### Discussion/Conclusion

CQUIN targets for SDEC in these conditions are 50%-75% across the full year, these also represent the thresholds at which minimum and maximum payment are received. In the HUTH Trust across the first two quarters of the year we have exceeded the minimum threshold for payment on these targets for all conditions. It is recognised in the design of the audit that many patients would be excluded from the audit as inappropriate for SDEC given that each of these conditions has the potential to be life threatening and warrant hospital admission. The audit may also serve as a starting point for further work in which the outcomes of patients can be examined. There is little data regarding the outcomes of patients who have received SDEC, and how these compare to patients admitted to hospital.

### Acknowledgements

**References**

- 1) <https://improvement.nhs.uk/resources/same-day-emergency-care-cquin/>

## **Abstract 18**

**Title of Abstract: An Occasional Cause of Intermittent abdominal Pain in Adults: Ileocaecal Intussusception**

**Authors: Samuel Clarkson, David Hettle and Jayan George**

### **Introduction**

Intussusception, the commonest cause of bowel obstruction in children, is rare in adults, and is almost always associated with underlying pathology. While children can often be managed conservatively, adults usually require surgical intervention. Intermittent cases present a particular diagnostic challenge. We present the case of a 26-year-old male medical student who presented with intermittent episodes of abdominal pain over a 3-year period, which resulted in 5 hospital admissions, in 3 different countries, before a diagnosis was finally made. Emergency laparotomy confirmed ileocaecal intussusception. A right hemicolectomy and terminal ileal resection with primary anastomosis was performed. Histopathology identified the underlying pathology to be a Meckel's diverticulum.

### **Methods**

### **Results**



## **Discussion/Conclusion**

Intussusception was first reported in 1674 by Paul Barbette (1). It occurs when a proximal section of bowel (intussus-ceptum) invaginates into the lumen of the adjacent section (intussusciens). Whilst common in children and almost always idiopathic; it only accounts for 1% of bowel obstructions in adults and 90% have a pathological lead point (2). In the large bowel, 66% of lead points are malignant, whereas in the small bowel the majority are benign (3). Intermittent, non-specific symptoms make adult intussusception a diagnostic challenge, with only 50% of cases diagnosed pre-operatively (4). The commonest reported symptoms are abdominal pain, followed by nausea and vomiting (5). The classic paediatric triad of pain, an abdominal mass and rectal bleeding is seen in less than 10% of adults (5). Worldwide, ultrasonography is the most widely used diagnostic tool. It is useful in children but is of limited value in adults for whom CT scans are the gold standard. As seen on our patient's USS in Fig. 2, the "target" sign is almost pathognomonic of intussusception, either on USS or CT.

## **Learning Points**

- Intussusception is a potentially reversible cause of bowel obstruction in adults and must be considered in patients with recurrent pain and obstructive symptoms.
- Imaging during an episode of pain has higher diagnostic value than more invasive tests between attacks.
- Adult intussusception is rarely idiopathic and cases which resolve spontaneously should be investigated to identify underlying pathology.

## **Acknowledgements**

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## Abstract 19

**Title of Abstract: Pre-theatre surgical preparation: getting it right to prevent delays and cancellations**

**Authors: Dr Stephen McAleer, Oanh Kieu Vo, Nuruljannah Ismail, Rosa Maeve McGing and Samuel Chumbley**

### **Introduction**

At Hull University Teaching Hospitals NHS Trust a substantial amount of theatre time is lost because patients have not had the required pre-operative preparation prior to surgery, such as blood samples, group and save for blood transfusion, ECG, and other necessary pre-operative steps. One of the Trust's areas for improvement in surgery is to investigate and address the reasons for the number of cancelled operations. This project sought to investigate the causes for the number of delayed and cancelled operations and to improve the use of theatre time, by ensuring that patients have all the appropriate pre-surgery preparation required, in order to reduce the number of on-the-day delays and cancellations.

### **Methods**

Theatre timing data is contemporaneously recorded for all patients who undergo treatment in theatres at Hull University Teaching Hospitals NHS Trust using the online software ORMIS (Operating Room Management Information System). A baseline audit was performed and revealed that during the month of January 2019, there was a total of 333 minutes of theatre time lost due to delays. Baseline audit results were presented at the surgical and anaesthetic departmental governance meetings, with senior members of both teams engaged in the process from the outset. The focus of this project has been on pre-theatre preparation for emergency and acute general surgery, with the patient ready at "send" request on the online ORMIS system used as the point of reference for theatre timings. All doctors involved in the admitting of patients to surgical wards at Hull University Teaching Hospitals NHS Trust, involved in consenting patients for surgery, booking patients for theatre and accepting patients for surgery, namely doctors in surgery and anaesthetics, were informed about the project and its aims by education sessions, departmental meetings and the development of information posters in key areas, which highlighted to staff the important pre-surgical preparation needed. An acronym was developed to act as an aide memoire for staff in ensuring that this pre-surgical preparation was complete. The acronym used was BODGE, standing for bloods and cannula, online venous thromboembolism (VTE) assessment, drug chart VTE assessment, group and save and ECG. Doctors in surgery and anaesthetics were informed at each stage and with each intervention in the process at departmental audit and governance meetings, with continuous feedback on the interventions received throughout.

## Results

A total of 333 minutes of delays was recorded for the month January 2019. Following education sessions and enhanced awareness of the necessary pre-surgical investigations through the use of the BODGE poster, the total recorded delays fell to 132 minutes in January 2020, representing a saving of 202 minutes, or 3.4 hours, of operating department time (Figure 1).

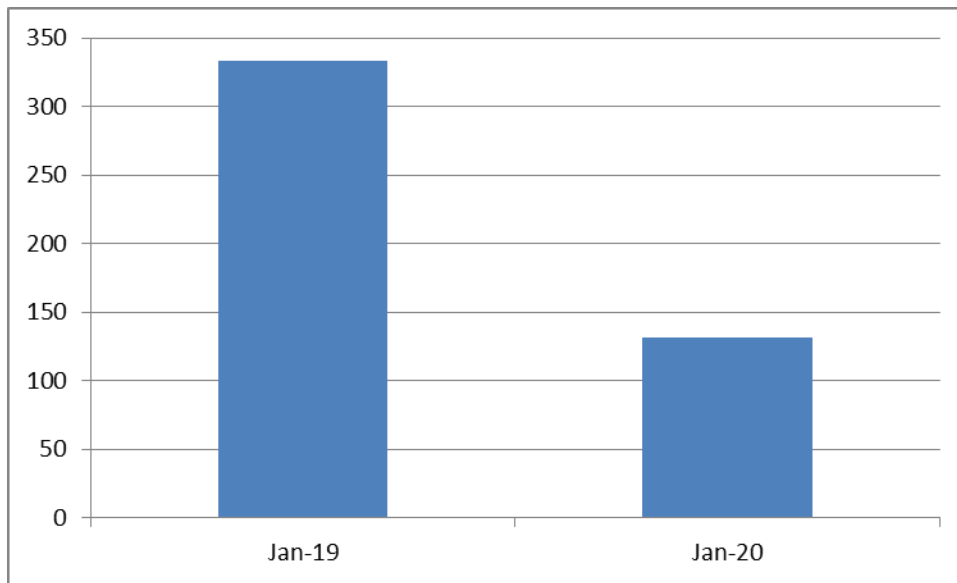


Figure 1: Number of theatre delays recorded in January 2019 and January 2020

## Discussion/Conclusion

Through the use of education sessions, enhancing awareness of this project at departmental meetings, and developing prompt posters with a suitable acronym, we have demonstrated that significant savings in operating department time can be achieved. Keys to success have encompassed reminders to the staff involved about the process, including ward and theatre communication, and ongoing education sessions.

## Acknowledgements

## References

## Abstract 20

**Title of Abstract: Understanding factors of efficacy or resistance to biologic therapy in chronic spontaneous urticaria**

**Authors: Dr Sujoy Khan and Sarah Sholtysek**

### **Introduction**

Chronic spontaneous urticaria (CSU) is characterized by itchy, red, raised skin eruptions (wheals) occurring for >6 weeks, without any stimulus. It may or may not be associated with angioedema (swelling). Standard treatment options include high-dose antihistamines with addition of leukotriene receptor antagonists for resistant cases. Omalizumab is now recommended by National Institute for Health and Care Excellence (NICE) for use in patients with CSU unresponsive to standard treatments. Omalizumab is a humanized IgG1k monoclonal antibody that binds to free human IgE in serum, and currently the only biologic therapy approved. However, the exact mechanism of action remains unclear. Hospital-only administration adds pressure on nursing times and increases costs of therapy substantially. This outcome reporting audit aimed to document (1) efficacy; (2) safety profile; (3) failure rates; and (4) identification of factors relating to efficacy or resistance to omalizumab.

### **Methods**

The health records of patients with resistant CSU who received Xolair® (Omalizumab, Novartis) between the years 2017-2019 were reviewed. Omalizumab 300mg was administered subcutaneously with antihistamines every 4 weeks for 6 months, followed by an 8-week treatment interruption. In case of recurrence, further doses were approved after clinic review. Patient demographics, laboratory features (autoantibody status, IgE level, tryptase), weekly urticaria activity score (UAS7) during treatment were analysed. UAS7 at zero was considered complete remission (CR), UAS7 1-28 as partial remission (PR), UAS7>28 as non-responder (NR). Descriptive statistics including parametric and non-parametric tests were done using GraphPad Prism version 7.00 for Windows, GraphPad Software, La Jolla California USA.

## Results

Twenty three patients (18 women, mean age 39.6 years, range 18-76 years) were reviewed. Mean UAS7 at baseline was 34( $\pm$ SD 5.2) with range 20-42. A total of 396 doses of omalizumab was used (mean of 17 doses) with no adverse events. Mean UAS7 post 1<sup>st</sup> cycle was 19( $\pm$ SD 15.1) with range 0-42 (difference in means extremely significant,  $p < 0.0001$ ). 6 patients achieved CR after 1<sup>st</sup> cycle (26%) and 4 in sustained remission (7 months follow up). 13 patients had PR (48%), 6 classed NR (26%). 15 patients required 2<sup>nd</sup> cycle, with good responses after each dose. 13% patients had sustained effect after 2<sup>nd</sup> cycle for 4-5 months, while 53% relapsed in 3-4 weeks. 10 patients required 3<sup>rd</sup> cycle again with excellent responses after each dose, but 9 patients required 4<sup>th</sup> cycle and 5 patients are on 5<sup>th</sup> cycle. Overall, 14 patients remain indefinitely on therapy.

Thirteen of 23 patients had significant angioedema, only 15% attained CR after 1<sup>st</sup> cycle. Median baseline IgE was 250 U/ml ( $n=13$ , IQR25-75 25-470), tryptase 4.9 ng/ml ( $n=16$ , IQR25-75 3.8-6.5), antinuclear antibody was negative in all patients tested with two patients positive for anti-thyroid peroxidase antibodies. There was no difference between baseline IgE level and tryptase with response to Omalizumab.

## Discussion/Conclusion

Omalizumab is extremely safe and effective in CSU, but a third of patients were resistant with relapses of urticaria common following interruption of therapy. No patient specific factors to predict response were identified, and presence of angioedema appears to have a negative outcome. Alternative therapeutic strategies need to be identified, as indefinite use of biologic therapy is unsustainable.

## Acknowledgements

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## Abstract 21

**Title of Abstract:** Evaluation of the response of human prostate cancer cells following treatment with metabolic inhibitors using NMR spectroscopy.

**Authors:** Dr Tanveer Rob

### Introduction

Prostate cancer is the second most common cause of cancer-related deaths in men in the UK. Frequently, there is a lack of symptoms, which often leads to distant metastasis before a diagnosis is made. Understanding the metabolic features in highly metastatic cancers will help produce treatments that specifically target metabolites.

### Methods

LNCaP-LN3 (highly metastatic) and LNCaP (poorly metastatic) cells lines were cultured for experiments. A TC10 Automated Counter was used to measure the cell viability and growth after the addition of 2-Deoxyglucose (glycolysis inhibitor), FX11 (LDHA inhibitor) and lactate for 72 hours. Using a 9.4T Nuclear Magnetic Resonance probe, the following metabolites were measured after 72 hours of treatment with FX11: lactate, glutamine, alanine, aspartate, choline and fatty acids. Metabolite levels were normalised using cell counts.

### Results

2DG and FX11 significantly reduced growth in both cells lines and FX11 reduced cell viability significantly in the LNCaP cell line. The addition of lactate significantly increased growth after treatment in both cell lines. NMR spectroscopy showed that Lactate levels were significantly decreased after the application of FX11 in the LN3 cell line whilst glutamine levels were significantly increased. Metabolite levels in LNCaP cells did not have significant differences between treatments. The LN3 cell line had significantly more levels of lactate, glutamine, alanine, aspartate and choline compared to the LNCaP cell line after normalisation.



**Discussion/Conclusion**

FX11 inhibits growth and reduces lactate levels in LN3 cells. To compensate for the reduction in lactate, glutamine metabolism may be increased for energy. Highly metastatic cells have greater concentrations of key cancer metabolites in LN3 cells. This provides evidence that LDHA inhibition is a promising therapy for prostate cancer.

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**References**

N/A

## Abstract 22

**Title of Abstract:** Impact of anatomical location of cerebral lesions on the diagnostic accuracy of single-voxel spectroscopy: a retrospective study of lipid and cerebrospinal fluid spectral contamination

**Authors:** Vassili Crispi , Katherine Sanders, Lawrence Kenning and George Spink

### Introduction

Single-voxel spectroscopy (SVS) demonstrates a high diagnostic yield but is affected by factors, such as spectral contamination, which can lead to erroneous diagnosis, unnecessary treatment or increased morbidity and mortality. This aimed at determining how spectral quality and SVS diagnostic accuracy are affected by spectroscopic parameters, such as voxel volume and placement in association to spectral contamination.

### Methods

A retrospective, observational study was undertaken with data collection from suspected brain tumour patients who had been referred for spectroscopic examinations between January 2012 and August 2018. Ninety-three SVS studies were included. Clinical data on voxel location and volume, proximity to the calvaria, proximity to the ventricular system, echo time (TE), Cho/Cr, NAA/Cr and Cho/NAA ratios, lactate and lipids signals, histopathologic diagnosis and operation details was collated. Accuracy of lesion classification was assessed by comparison of overall diagnosis against discrimination between entities and tumour grades. Independent t-test, Kruskal-Wallis H test and descriptive analysis were used to evaluate relationship and compare differences between groups. Statistical significance was set for  $p < 0.05$ .

### Results

Preliminary analysis demonstrated high entity accuracy (91%) of neoplastic and non-neoplastic lesions but lower grade accuracy (87%). Further analysis (Table 1) amongst histologically graded gliomas reported similar findings with higher entity accuracy (100%), but lower grade accuracy in periventricular (73%) compared to non-periventricular (90%) and in subcalvarial (86%) compared to subcortical (88%). Whilst accuracy varied markedly across cerebral coordinates, no significant

variation in voxel volume was detected across cerebral coordinates ( $p=0.605$ ) or proximity to the calvaria ( $p=0.127$ ).

### **Discussion/Conclusion**

Descriptive spectral analysis of 17 misclassified lesions highlighted findings consistent with spectral contamination in the form of lipids from peri-calvarial fat in subcalvarial voxels and of metabolite dilution and/or enhanced lactate signals from sub-arachnoid or ventricular cerebrospinal fluid in subcalvarial or periventricular voxels compared to corresponding correctly classified lesions. This was deemed responsible for misdiagnosis in association with increased cranial concavity, reduced brain-skull and/or brain-scalp distance and cortical thickness and inadequate voxel placement and OVS or incorrect partial volume correction. Therefore, it is suggested that additional planning should be undertaken when acquiring spectra of lesions located in frontal, occipital or temporal regions. This study proved that SVS is a valuable clinical tool in the diagnosis and characterisation of brain lesions, but spectral contamination is an important factor to be accounted for when planning the sequence. Overall, this study has increased the understanding of the effect of spectral parameters on diagnostic accuracy to guide clinical evaluation of brain tumour spectra, particularly where spectral contamination is suspected in association with anatomical and pathologic variation., as well as future research.

### **Acknowledgements**

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Table 1: Accuracy of SVS in determining overall, entity only and grade only diagnosis of histologically grade gliomas per cerebral coordinates and proximity to the calvaria and the ventricular system.

|                                     | Overall accuracy diagnosis | Entity accuracy diagnosis | Grade accuracy diagnosis | P value for voxel volume |
|-------------------------------------|----------------------------|---------------------------|--------------------------|--------------------------|
| Total number of lesions             | 62/71 (87.0)               | 71/71 (100.0)             | 62/71 (87.0)             | NA                       |
| Cerebral location of lesion         |                            |                           |                          |                          |
| Basal ganglia                       | 1/1 (100.0)                | 1/1 (100.0)               | 1/1 (100.0)              | 0.605*                   |
| Frontal                             | 12/14 (86.0)               | 14/14 (100.0)             | 12/14 (86.0)             |                          |
| Frontoparietal                      | 3/6 (50.0)                 | 6/6 (100.0)               | 3/6 (50.0)               |                          |
| Frontoparietotemporal               | 0/1 (0.0)                  | 1/1 (100.0)               | 0/1 (0.0)                |                          |
| Insula                              | 5/5 (100.0)                | 5/5 (100.0)               | 5/5 (100.0)              |                          |
| Occipital                           | 5/6 (83.0)                 | 6/6 (100.0)               | 5/6 (83.0)               |                          |
| Parietal                            | 12/12 (100.0)              | 12/12 (100.0)             | 12/12 (100.0)            |                          |
| Parieto-occipital                   | 3/3 (100.0)                | 3/3 (100.0)               | 3/3 (100.0)              |                          |
| Parieto-temporal                    | 1/1 (100.0)                | 1/1 (100.0)               | 1/1 (100.0)              |                          |
| Temporal                            | 18/20 (90.0)               | 20/20 (100.0)             | 18/20 (90.0)             |                          |
| Temporo-occipital                   | 2/2 (100.0)                | 2/2 (100.0)               | 2/2 (100.0)              |                          |
| Proximity to the skull              |                            |                           |                          |                          |
| Subcalvarial                        | 24/28 (86.0)               | 28/28 (100.0)             | 24/28 (86.0)             | 0.127†                   |
| Subcortical                         | 38/43 (88.0)               | 43/43 (100.0)             | 38/43 (88.0)             |                          |
| Proximity to the ventricular system |                            |                           |                          |                          |

|                     |              |               |              |                    |
|---------------------|--------------|---------------|--------------|--------------------|
| Periventricular     | 8/11 (73.0)  | 11/11 (100.0) | 8/11 (73.0)  | 0.367 <sup>†</sup> |
| Non-periventricular | 54/60 (90.0) | 60/60 (100.0) | 54/60 (90.0) | 0.367 <sup>†</sup> |

Note - Unless otherwise indicated, data are median and interquartile range OR mean  $\pm$  standard deviation. NA = no cases were recorded. Data are numbers of SVS studies, and data in parentheses are percentages.

\*Kruskal-Wallis Test

<sup>†</sup>Independent t-test

## Abstract 23

**Title of Abstract: Cognitive Assessment For Elderly Patients in Admission Units**

**Authors: Ye Myat, Zwe Soe Lwin and Zin New Htut**

### **Introduction**

Dementia is an umbrella term used to describe a range of progressive neurological disorders, that is, conditions affecting the brain. The Alzheimer's Society states there are over 850,000 people living with dementia in the UK today. As a person's age increases, so does the risk of developing dementia. Many people with dementia are thought to still be undiagnosed. Early diagnosis can help promote early and optimal management for patients and their families in order to improve quality of life. When elderly patients over 75 years are admitted to admission units, cognitive assessment using Abbreviated Mental Test Score needs to be performed to screen dementia. Patients with less than 8 on AMTS require further Mini Mental State Examination and they may need referral to either hospital mental health team or Memory Clinic after ruling out delirium. Thus, the aim of this audit is to find how many elderly patients get screened for dementia on admission and to promote the numbers by necessary interventions.

### **Methods**

This was a retrospective audit in Hull University Teaching Hospital with systematic sampling of the clinical records on two admission units; acute medical (AMU) and elderly assessment (EAU) units. A descriptive analysis of the results was performed from January 2020 to February 2020. AMTS is a 10-point questionnaire which assesses orientation to person, place, time, attention, calculation, recall and repetition. MMSE (30-point questionnaire) is used to assess the ability to perform complex tasks.

### **Results**

This study has 120 patients in total, 60 in AMU and 60 in EAU

In AMU, only 16.6 % of patients (10 out of 60) were assessed and all assessments were performed by doctors. Among them, seven patients had a score of less than 8 and the rest had 10 out of 10. MMSE was not performed.

In EAU, AMTS was done in 51 patients (85%). 20 out of 51 (39.2%) patients were assessed by doctors whereas 31 patients (60.8%) were done by nurses and care support workers. In these 51 patients, 15 patients (29.4%) had a score of 10 out of 10. The remaining 36

patients (70.6%) had a score less than 8. MMSE was done only in 5 patients and a referral to mental health team was made.

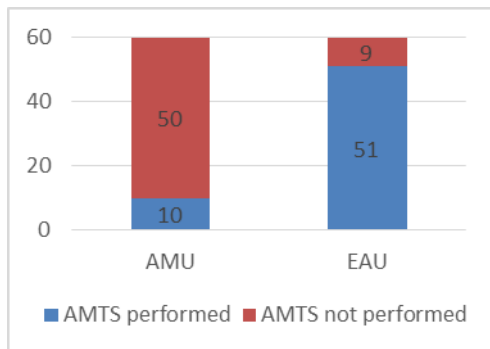


Figure showing performance of AMTS in AMU and EAU

### Discussion/Conclusion

Our trust guideline states that all acute admissions over 75 years need to be screened for dementia and if dementia is suspected, patients must be referred to mental health team. Unfortunately, it is difficult for busy admission units like AMU and EAU to meet this goal. What we noticed is that EAU does better because other ward staff such as nurses and care support workers in addition to doctors share the duty to do AMTS. We aim to replicate the factors from EAU in AMU and do interventions such as posters, presentations and group emails to achieve higher numbers of AMTS assessment.

### Acknowledgements

We would like to thank our supervisor, Dr Tun Aung, Elderly Medicine Consultant and our colleagues on EAU and AMU.

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