WARWICK
MEDICAL SCHOOL

INSPIRE

GRADUATE-ENTRY RESEARCH IN MEDICINE CONFERENCE GUIDE AND ABSTRACT BOOKLET

Supported by...

BMA MDU The Academy of Medical Sciences

WELCOME

We are delighted to welcome you to our fourth annual Graduate Entry Research in Medicine Conference. You will be joined by colleagues from across the UK to celebrate the exceptional standard of work that has been achieved by students studying fast-track accelerated programmes.

Warwick Medical School (WMS) is home to the UK's largest exclusively graduate-entry programme, with around 200 students in each cohort. This event has been heavily subsidised by the Academy of Medical Sciences and the INSPIRE initiative, which is designed with the intention to supporting students to develop their interest and skills within academic medicine. In order to build on the successive years of strength this conference represents, we have teamed up with Swansea Medical School for a collaborative bid to attempt to run this event in the future, hosted between these two schools.

At WMS, we believe that Academic Medicine is very much a continuum and not a dichotomy; a crucial role in the future of what it is to be a doctor. However, we know that in accelerated degrees students have significantly less time not only to conduct research, medical education or leadership, but moreover are at a detriment in the time it takes to be able to disseminate this work. As such, we believe that events like today are crucial in providing students with a platform to be able to engage in this side of their role, which will become ever crucial in your career in the years to come.

This year, our event will be hosted at Scarman Conference centre, where the welcoming hospitality team will be able to cater to your every need, including complimentary refreshments throughout the day. The day will be filled by an exciting programme of INSPIREing keynotes and oral and poser presentations by colleagues from throughout the UK.

We have made a conscious effort to make the day as **ECO-FRIENDLY** as we can. We are not mass printing this guide, and we are reducing waste from single-use plastic, through not supplying lanyards or plastic consumables. We hope you will support us in this aim.

There will be intermittent breaks throughout the morning, and facilities can be located via looking at the map located within the guide. You will be able to help yourself to refreshments on offer throughout the day, so please feel free and make yourselves feel at home in the lounge areas.

We hope you have a wonderful day!

Best Wishes,
The Warwick INSPIRE GERMCON Committee

Graduate Entry Research in Medicine Conference 2021

08:30-09:00 Registration

Main theatre

09:00-09:30 Welcome & Introduction

09:30-10:30 **Dr Steven Laird**
How do we get to where we are? A story from a research focussed clinician

10:30-11:00 Refreshments & poster viewing

Breakout rooms

11:00-12:00 Oral presentations morning session

	Breakout room 1			Breakout room 2	
1	**Olivia Ellard & Christina Dennison**	*Interventions addressing loneliness among university students: a systematic review*	1	**Abbie Tutt**	*A scoping review of Neuroendoscopic Lavage as a treatment for Intraventricular Haemorrhage and Posthaemorrhagic hydrocephalus in the premature infant*
2	**Anna Scott**	*Using the 100,000 Genomes Project to explore SARS-CoV-2 infection susceptibility in the UK rare disease population*	2	**Claire McGregor**	*Frailty scores in the Older Person Assessment Service: To what extent do allocated scores vary between healthcare professionals?*
3	**Alexander Reynolds**	*Cardioplegia choice does not affect most surgical outcomes: Meta-analysis of HTK versus multi-dose solutions*	3	**Jared Charlton-Webb**	*EMRTS out of hospital cardiac arrest recording: how does it compare to Utstein and other International Registries?*

Main theatre

12:00-13:00 **Professor Prithwish Banerjee**
The academic apple: How to grow it from seed

Scarman Restaurant

13:00-14:00 Lunch

Breakout rooms

14:00-15:00 Oral presentations afternoon session

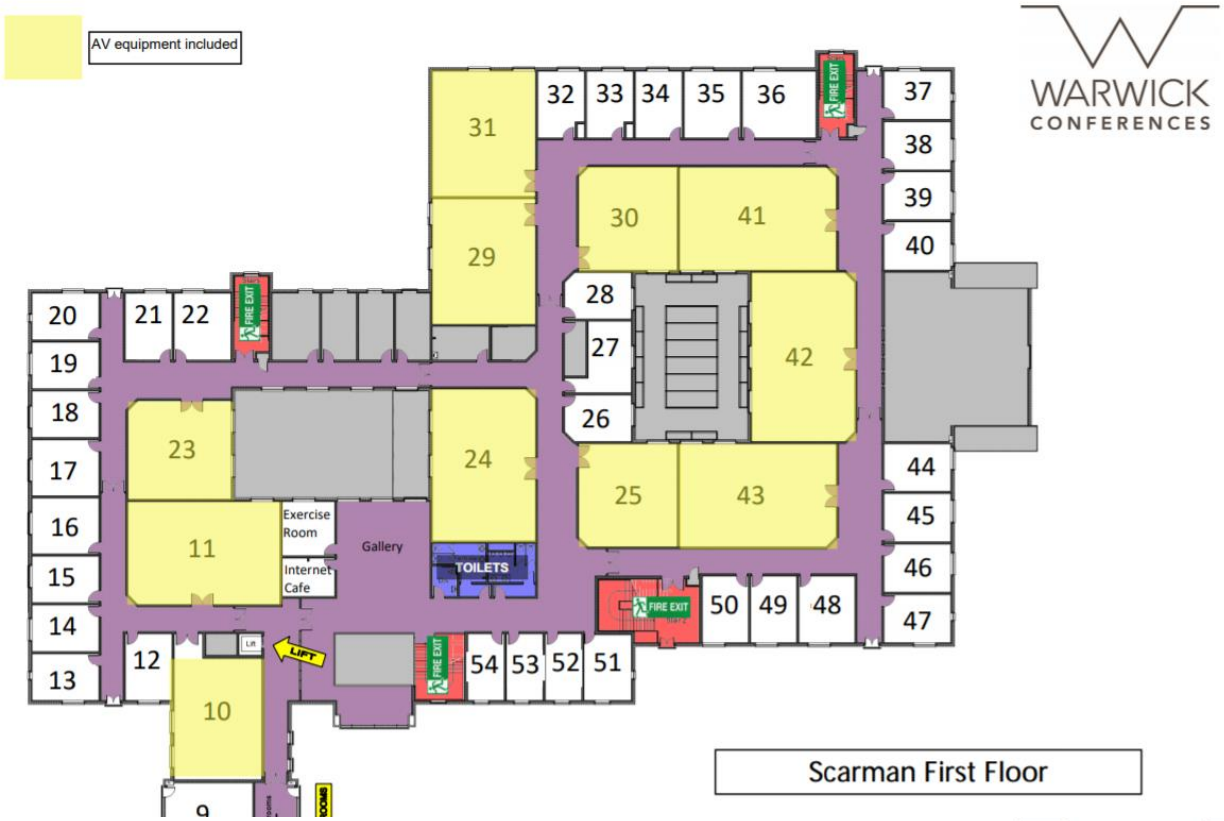
	Breakout room 1			Breakout room 2	
1	**Amy Haddock**	*An attempt to increase video consultation (VC) use in a General Practice in the Scottish Highlands during the COVID-19 pandemic.*	1	**Hope Rowden**	*EUTOPIA - Progestins effects on an endometriotic cell line*
2	**Melina Vasileiadou Pelling**	*Longitudinal Variation in Volatile Organic Compound Levels in Whole Saliva*	2	**Joanne Igoli**	*Spiritual Care First Audit Cycle of a Full Audit on a Trauma and Orthopedic (T&O) Ward in the Scottish Highlands*
3	**Gauri Ang**	*Are we meeting the 48-hour diagnosis to treatment guidelines in the management of Subarachnoid Haemorrhage?*	3	**Tamsin Nicholson**	*Evaluating alginate-nanocellulose Bio inks for 3D Printing human ears*

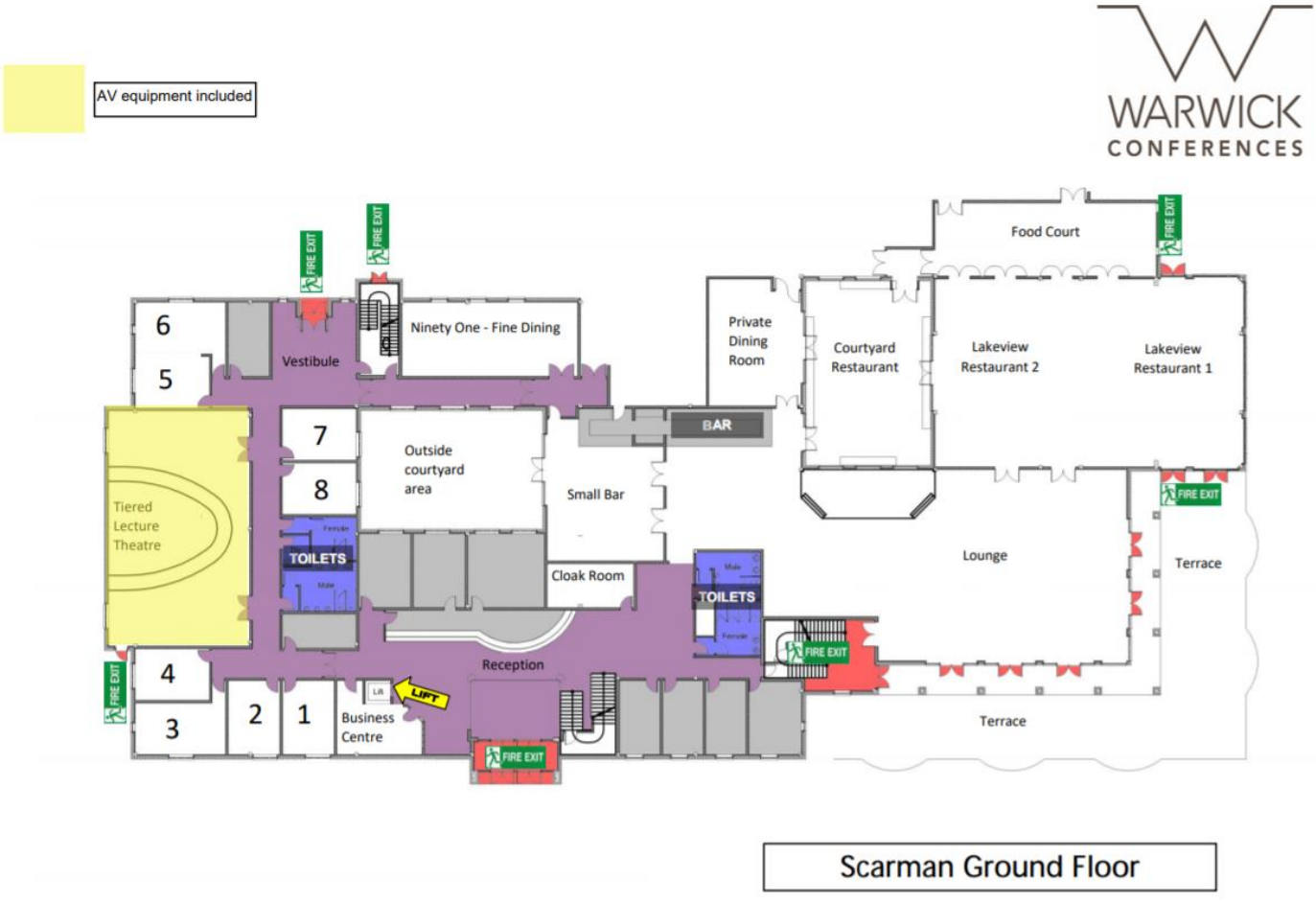
Main theatre

15:00-15:30 Refreshments & poster viewing

15:30-16:30 **Dr Thomas Dale MacLaine**
Preparation for an academic career: making the most out of medical school

16:30-17:00 **PRIZEGIVING**


AV equipment included
WARWICK CONFERENCES
31
32
33
34
35
36
37
38
39
40
41
30
29
28
27
42
26
20
21
22
19
18
23
24
25
43
44
45
17
16
11
Exercise Room
Internet Cafe
Gallery
TOILETS
46
15
14
50
49
48
47
13
12
10
54
53
52
51
FIRE EXIT
LIFT
Scarman First Floor


AV equipment included
WARWICK CONFERENCES
Food Court
Private Dining Room
Courtyard Restaurant
Lakeview Restaurant 2
Lakeview Restaurant 1
Ninety One - Fine Dining
Vestibule
6
5
7
8
Outside courtyard area
Small Bar
BAR
Tiered Lecture Theatre
TOILETS
Cloak Room
Lounge
Terrace
Reception
4
3
2
1
Business Centre
LIFT
FIRE EXIT
Scarman Ground Floor

KEYNOTE BIOGRAPHIES

Dr Steven Laird

How do we get to where we are? A story from a research focussed clinician

Dr Steven Laird strives to combine front line clinical microbiologists and infectious disease specialists to enhance infection management and diagnostic effectiveness by appropriately engaging with colleagues and patients at the bedside. His specialist interests are tropical medicine, infectious disease, microbiology, public health medicine and outbreak management.

Dr Steven Laird is a Consultant Physician in Infectious Diseases and Medical Microbiology based at the University Hospital of Coventry and Warwickshire, England and a medical examiner and clinical personnel tutor. At Warwick University At Warwick University, he is an OSLER examiner, medical student selection centre interview, a SSC 2 Project Supervisor and a SSC 1 ID and Tropical Medicine Co-module Lead.

He is currently working ongoing research as chief investigator research on a randomized, DOUBLE-BLIND, placebo-controlled study to evaluate the efficacy, safety and pharmacokinetics of a single intranasal dose of STI-2099 (COVI-DROPSTM) in Outpatient Adults with COVID-19 as well as a clinical trial looking at whether Eicosapentaenoic acid (EPAFFA)gastro-resistant capsules can reduce the inflammation in the lungs of people with COVID-19 infection with COASPIRE.

Professor Prithwish Banerjee

The academic apple: How to grow it from seed

Prof Banerjee trained in cardiology in the Yorkshire (Leeds) Deanery and obtained his accreditation in Cardiology and General Internal Medicine in 2004. He was appointed as consultant cardiologist at the University Hospitals Coventry & Warwickshire in November 2004 to establish and lead the heart failure service in this hospital. At this time he also worked as an interventional cardiologist (doing primary and elective angioplasties) and lead for cardiac imaging for 8 years. He was the network lead for heart failure for the Coventry & Warwickshire Cardiovascular Network before it was dissolved in 2013. In 2007 he became an Honorary Associate Professor at the University of Warwick, Research Lead in cardiology in his hospital in 2011, Cardiovascular Lead for the West Midlands within the NIHR Clinical Research Network (CRN) in 2012, Chair for the Midlands Heart Failure Group and continues to hold all these positions. He was appointed Honorary Professor of Cardiology by Coventry University in May 2016 and by Warwick Medical School in 2019. He is a fellow of the Royal College of Physicians and the European Society of Cardiology.

His research interests include Heart Failure with preserved ejection fraction (HFpEF), myocardial fatigue, vascular resistance in heart failure, cardiogenic shock, cardiorenal disease and electrical muscle stimulation of the legs for cardiac rehabilitation.

KEYNOTE BIOGRAPHIES

Dr Thomas Dale MacLaine

Preparation for an academic career: making the most out of medical school

After 12 years of university education, Tom can be considered a professional student. Following his anatomy degree from Dundee University, he completed a PhD at Leeds, where he explored the impact of ageing syndromes on the recovery of surgical patients.

He is now a final year medical student at Warwick Medical School, applying for the specialist foundation programme (previously AFP), with the intention of becoming an academic Trauma and Orthopaedic surgeon.

Beyond his academic background, he is the co-chair of the Warwick Academic Medicine Society, and founder and chair of the Warwick Surgical MedTech group, and co-founder of the Athena Swan sponsored Beacon Internship programme.

Breakout Room 1
Morning

Interventions addressing loneliness among university students: a systematic review

Olivia Betty Ellard,
Christina Dennison, Helena Tuomaine, Ph.D.
Warwick Medical School, University of Warwick

Background
Loneliness is detrimental to mental health, with university students at higher risk of feeling lonely than other population groups. However, little research has explored interventions to reduce loneliness among students. This systematic review identifies the characteristics and effectiveness of interventions targeting students at university or college.

Methods
PsycINFO, PubMed, ASSIA and Web of Knowledge were searched from inception using keywords linked to 'loneliness', 'intervention' and 'students'. Relevant peer and non-peer reviewed English-language articles on studies implementing an intervention with loneliness as an outcome and investigating undergraduate or postgraduate students at a higher education institute were included for quality analysis and narrative synthesis. Risk of bias was assessed at both study level and at outcome level using the revised Cochrane risk of bias tool for randomized trials (ROB2) and the risk of bias in non-randomized studies of interventions (ROBINS-I).

Results
20 articles were included, comprising 17 studies assessing loneliness quantitatively and three qualitatively, covering 27 interventions, most implemented in the United States. Interventions were based on psychoeducation, social support groups, increasing social interaction, or reflective exercises. Evidence from the RCTs suggests that most interventions had an effect on loneliness outcomes but the magnitude of the benefit is unclear. Across all quantitative studies, 86% (12/14) of interventions based on either social support groups, increasing social interaction or reflective exercises, and 40% (4/10) of interventions based on psychoeducation were deemed effective in reducing loneliness. 20 out of 24 interventions measured quantitatively were delivered in a group setting, of which 65% (13 out of 20) were considered effective in reducing loneliness scores, regardless of intervention.

Conclusions
Universities have a choice of interventions to help reduce loneliness among students either on campus or virtually. Ones promoting social connectedness appear to be more successful. More high-quality studies in a larger number of countries are needed, taking vulnerable student groups into consideration.
Key words: students, university, college, mental health, loneliness, social connectedness, interventions, prevention

Using the 100,000 Genomes Project to explore SARS-CoV-2 infection susceptibility in the UK rare disease population

Background
Since its emergence in December 2019, SARS-CoV-2 has had enormous impact as a global health threat. Age, gender, and the presence of co-morbidities are well established risk factors for both mortality and severe

Anna Scott
Department of Medical Genetics, University of Cambridge

disease. Several host genetic factors have been linked to disease severity, including variants in *ACE2*, *TMPRSS2* and the *OAS* gene cluster. The role of genetic factors in relation to infection susceptibility, rather than outcome, has been less of a focus. Determining risk factors for infection susceptibility is crucial for identifying individuals at risk and allows tailoring of public health measures, such as shielding, to those who would most benefit. This project sought to explore the role of host genetic background in determining SARS-CoV-2 infection susceptibility in the patients with a diagnosed rare disease.

Methods
SARS-CoV-2 PCR test results of 2738 participants of the 100,000 Genome Project rare disease cohort were associated with genotype at 25 pre-selected loci. Associations were determined using Fisher's test using samples of participants subset by disease, as well as across the cohort as a whole. Association testing was also performed between positive tests and disease classification to identify any disease groups with significantly higher rates of infection.

Results
Four variants (rs10735079, rs1156361, rs143334143 and rs10774671) were significantly associated with SARS-CoV-2 infection among 100K rare disease cohort. Three of these are co-located within the *OAS* gene cluster and is particularly associated with infection among participants with neurodevelopmental disorders. It was also found that participants with disorders of sex development were significantly more likely to receive a positive SARS-CoV-2 test result than other participants.

Conclusion
These findings suggest that variation in *OAS* genes may influence individual susceptibility to SARS-CoV-2. As this locus has previously been associated with severe COVID-19, this suggests that molecular mechanisms determining infection susceptibility and disease severity may be shared. Further investigation of the observed increased susceptibility to SARS-CoV-2 in patients with disorders of sex development may provide clues to mechanisms underlying susceptibility in general, as well as previously observed sex bias in disease outcome.

HTK versus multidose cardioplegias for myocardial protection in adult cardiac surgery: A meta-analysis.

Alexander C. Reynolds1BSc, Sanjay Asopa MD2, PhD, Amit Modi MD3, Nicola King PhD4
1. Swansea University Medical School, Wales, UK.
2. Southwest Cardiothoracic Centre, England, UK.
3.Sussex Cardiac Centre, England, UK.
4.Faculty of Health, University of Plymouth, England, UK.

Background
Histidine–tryptophan–ketoglutarate (HTK) cardioplegia for myocardial protection obviates the need for maintenance cardioplegia doses, and thus allows for greater focus on procedure accuracy. The aim of this meta-analysis is to evaluate the safety and efficacy of HTK versus multidose cardioplegias during cardiac surgery in an adult population.

Methods
Electronic searches were performed using PubMed, Science Direct, and Google Scholar databases. The key search terms included HTK cardioplegia AND cardiac surgery AND adult. This was followed by a meta-analysis investigating cardiopulmonary bypass (CPB) duration, cross-clamp duration, spontaneous defibrillation, inotropic support, mortality, atrial fibrillation, creatine kinase muscle brain band (CK-MB) and troponin I (TnI).

Results

Seven randomized controlled trials (n = 804) were analyzed. Spontaneous defibrillation following aortic cross-clamp removal significantly favored HTK (odds ratio [OR], 2.809; 95% confidence interval [CI], 1.574 to 5.012; I2 = 0%; p < .01). There were no other notable significant differences between HTK and multidose cardioplegia in any of the parameters measured. In particular, the OR for mortality was 1.237 (95% CI, 0.385 to 3.978; I2 = 0%; p = .721) and the mean difference for CPB duration overall was 2.072 min (95% CI, −2.405 to 6.548; I2 = 74%; p = .364).

Conclusion
HTK is safe and effective during adult cardiac surgery when compared with multidose cardioplegias for myocardial protection during surgical correction of acquired pathology in the adult population. HTK may, therefore, be suitable for complex cases or thoseof extensive duration, without the prospect of increased postoperative morbidity or mortality.

BREAKOUT ROOM 2
Morning

A scoping review of Neuroendoscopic Lavage as a treatment for Intraventricular Haemorrhage and Post-haemorrhagic hydrocephalus in the premature infant.

Abbie Tutt
Warwick Medical School

Rationale

As NeuroEndoscopic Lavage (NEL) is still regarded a relatively novel procedure for treatment[1] there has not yet been much collaboration or assimilation of data within the field and so the research base is currently fragmented. Whilst there are systematic reviews on the topic of NEL within the treatment of intraventricular haemorrhage (IVH) and post haemorrhagic hydrocephalus (PPH) there are none currently available looking at this from the standpoint of establishing where in the current sphere this intervention lies in the scheme of becoming a recognized treatment. The IDEAL guidelines allow for this by providing a clear format which can be mapped against a variety of research strategies and give a universal perspective.

Our research here is to bring the current knowledge into one space and one easily applicable paradigm so that we can clearly see what may be needed practically for the future.

Methods
We will perform a scoping review to assess the current data and evidence to support NEL as an emerging therapy.
Data will be gathered from multiple databases and a search strategy will be formed with below search terms and Boolean operators. Two key papers were used to assess the quality of search strategy structure (NEL for the management of PPH in preterm infants: safety, effectivity, and lessons learned.

Conducted search string: **((premature infant* OR preterm infant* OR neonat* OR newborn*) OR (neurodevelop*)) AND ((posthemorrhagic hydrocephalus OR posthaemorrhagic hydrocephalus) AND ((intraventricular hemorrhage OR germinal matrix hemorrhage OR intraventricular haemorrhage OR germinal matrix haemorrhage) OR ((neuroendos*) AND (lavage OR irrigation OR washout))))**

Results

Initial results have shown promising results from NEL technique for PPH treatment. 5 papers were gathered from a MedLine search. A total of 189 patients were involved in the 5 studies and shunt rates were between 56%-60.8%. A positive trend is seen in post procedure complications with fewer CSF infections and no recurrent haemorrhages. In regard to NeuroCognitive assessment one study reported "good cognitive results in 53.3% of patients" and another reported "78% were able to walk independently".

Frailty scores in the Older Person Assessment Service: To what extent do allocated scores vary between healthcare professionals?

Claire McGregor
Swansea University Medical School

Aims
There is an unmet need to minimise the variability of frailty scores allocated to patients in the Older Person Assessment Service (OPAS). The Clinical Frailty Scores (CFS) are widely used on the wards, in the community and in OPAS and can significantly alter the treatment and care pathway of the patient. Frailty scores are based on clinical judgment of cognition and physical health, ranging from 1, 'very fit' to 9 'terminally ill', however, between these values there is a great deal of subjectivity which can be detrimental to patient care. This audit aims to determine the extent of the variability between the frailty scores allocated by doctors, nurses, physiotherapists and occupational therapists in OPAS, explores the consequences of this and considers methods for minimising this discrepancy.

Methods
An audit was conducted in Morriston Hospital, Swansea's OPAS department over a period of 14 days in June 2021. The variability of frailty scores given by 4 types of healthcare processional to 26 patients was analysed.

Results
Of all the patient scores audited in OPAS, the frailty scores allocated varied by at least 1 point in 46% of patients, with a 2 point difference being found in only 3% of patients. Most commonly, variability tended to occur between frailty scores of 4-6. The average difference between the highest and lowest score given to each patient was 0.5.

Conclusions
Frailty scores are allocated based on clinical judgment and are useful in determining the risk and benefits of critical care support. The pathway of care that patients in OPAS receive can significantly vary depending on the perceived level of frailty, and where significant variability is found this must be addressed. With higher scores determining whether palliative care is given, or lower scores encouraging clinicians to provide treatments of higher risk or discharge patients, it is clear that misjudged frailty scores can be detrimental to patients where, as a consequence, the incorrect level of treatment is given.

This audit reveals that the frailty scores allocated in OPAS are not completely harmonious throughout the different healthcare practitioners, however no significant fluctuations were found. Where larger disparities are evident, methods of reducing this variability would help to ensure patients are more accurately scored and receive the most optimal treatment pathway. However, given the average variation of 0.5 per patient in this small sample, it is possible that larger disparities would be discovered in a larger sample set and so further research may be required.

EMRTS out of hospital cardiac arrest recording: how does it compare to Utstein and other International Registries?

Jared Charlton-Webb,
Swansea University Medical School
Dr David Rawlinson, Consultant,
Emergency Medical Retrieval and Transfer Service (EMRTS Wales)

The Emergency Medical Retrieval and Transfer Service in Wales (EMRTS Wales) offers Consultant and Critical-Care Practitioner led care throughout Wales. Launched in 2015 the service has grown to include four aircraft and multiple rapid response cars to serve the Welsh population. As of 2021 they have started undertaking air operations at night. The main roles for EMRTS is in direct emergency response to critically unwell medical and trauma patients, and in inter-hospital transfers for unwell patients of all ages.

The Utstein criteria are guidelines for reporting cardiac arrests, first proposed in 1991 with the name deriving from Utstein Abbey in Norway where a conference was held in 1990. The criteria were developed to allow for uniform comparison between different registries. The criteria were revised in 2015.

EMRTS incident reporting database was reviewed to compare the data fields to the Utstein criteria, to see whether the service met international guidelines. Additionally, the EMRTS database was compared to 13 international cardiac arrest registries. Lastly, the EMRTS database was reviewed to see whether termination of resuscitation (ToR) decision reporting could be improved.

On review of the EMRTS data fields, there is room for improvement to meet the Utstein criteria. It was noted that information about bystander CPR and AED use wasn't recorded, information regarding the number of defibrillations wasn't recorded, and post event outcome wasn't recorded in detail (e.g. cause of death, patient reported outcome measures, quality of life measurements). Additionally, there is a need to have more specific data fields for ToR decisions.

In comparison to the international registries, no registry fully met the criteria, with only one coming close. A lot of registries did not report outcome of the patient, nor the investigations undertaken during resuscitation, or information about the patient's comorbidities.

From here further discussion about the EMRTS database will be undertaken to see what can be altered or added to help meet the criteria, additionally sections on ToR decisions will be added. The database will be reviewed a year after change to see progress.

BREAKOUT ROOM 1

AFTERNOON

Healthcare Improvement Project: An attempt to increase video consultation (VC) use in a General Practice in the Scottish Highlands during the COVID-19 pandemic.

Amy Haddock
Scottish Graduate Entry Medicine

Introduction:
To curtail the risk of COVID-19 exposure, guidance was issued to accelerate the introduction of digital consulting to Scottish practices not already utilising it. VC provided clinicians with visual information not provided during telephone consultations but while on placement in an NHS Highland practice it was clear that VC was not being used to its full potential. As such, this project aimed to increase the use of VC at the practice in question by 20% between December 2020 and April 2021.

Method:
The primary outcome measure was the total number of VCs undertaken. Process measures included staff confidence, number of VCs declined by patients and the number of VCs with recorded issues in patient notes. The balancing measure was the number of clinicians using VC. The change implemented was a set of desktop instructions. It was hypothesised that this intervention would increase VC awareness, understanding and allow staff to concisely explain the process to patients. This resulting in an overall increased number of VCs. The instruction sheet was firstly introduced to clinical staff, adapted and then introduced to administration staff and finally to patients via social media.

Results:
The aim was achieved short term during the first cycle of change from a median VC number of 7.5 to a total of 27 in three weeks. However, long term it cannot be claimed that the aim was achieved, as the median increased from 7.5 to 8.5 which is approximately a 13% increase.

Conclusion:
The number of VCs in the second cycle of change was significantly lower that the first and this may be related to the difficulty in making behavioural changes long term. Additionally, further investigation of barriers to VC use is needed. Finally, this project and those similar may provide evidence needed for the Scottish government to accelerate the improvement of remote and rural Scotland's broadband as VC is a provision which may increase healthcare accessibility.

Longitudinal variation in volatile organic compound levels in whole saliva

Melina Vasileiadou Pelling
Warwick Medical School

Background

Volatile organic compounds (VOCs) are potential non-invasive biomarkers of disease. Variation in VOCs levels may reflect an individual's metabolic profile. Disease-specific VOCs have been reported in benign and malignant states; predominantly related to the oral cavity (halitosis, oral abscess and oral cancer). VOCs linked to the oral cavity include short chain fatty acids, polyamines, sulphur compounds. Before wider adoption of salivary volatolomics as a non-invasive diagnostic strategy, it is first important to establish the variation in VOC profiles both within and between healthy subjects.

Aim

To assess the intra- and inter- individual variability of VOC levels within whole saliva.

Methods

Unstimulated whole saliva was collected from participants after a minimum of 6 hours fasting on 5 mornings over a 3 week period (week 1: 3 samples, week 2: 1 sample, week 3: 1 sample). Exclusion criteria included: smokers, active oral disease, immunosuppression, clinically significant systemic disease. Triplicates of 500uL of saliva in 20mL glass headspace vials were incubated for 30 minutes at 37°C. Direct headspace analysis with the SIFT-MS (VoiceUltra200, Syft Technologies) was used to quantify VOCs with a targeted approach for short chain fatty acids (SCFA). Osmolality and production (flow) rates for each saliva sample was determined.

Results

Ten healthy participants (7 female) were recruited with a median age of 30 (IQR:25-32). Acetic-, butyric and propanoic acid demonstrated a wider variation within individuals. A single individual produced acetic acid levels ranging from 6.0 to 16ppbv (CV% 54), and butyric acid between 3.0 and 10ppbv (CV% 53). Hexanoic- and pentanoic acid remained the most consistent with low variability; CV% 14 (0.6 - 0.9ppbv) and CV% 11 (2.9 – 4.0 ppbv) respectively. The mean salivary flow rate for the cohort was 0.7ml/min (IQR: 0.5-0.9) and osmolality 77mOsm (IQR: 57-89). The inter-individual variability over the 3 weeks was minimal for butyric-, hexanoic- and pentanoic acid ($p>0.05$). Acetic acid ($p=0.03$) and propanoic acid ($p<0.001$) were statistically different.

Conclusion

Select VOCs within saliva can vary significantly within an individual. However, there is minimal inter-individual longitudinal variation with an acceptable coefficient of variation. It is important to define a normal range of VOCs in a healthy population to determine clinically significant disease-specific VOCs.

Subarachnoid Haemorrhage: Are we meeting the 48-hour time to treatment target?

Gauri Ang
Birmingham Medical School

Background:

Subarachnoid haemorrhage (SAH) is a life-threatening bleed into the subarachnoid space. The majority of these bleeds (85%) are caused by ruptured aneurysms of cerebral vessels (1). Treatment of SAH is time-critical, with the mortality rate of untreated SAH being 30% in 24 hours. The RCP Stroke guidelines (2016) recommend bleeding cerebral aneurysms are treated within 48 hours of diagnosis (2). However, a national audit from the Getting It Right First Time programme in 2018 revealed that 22%* of patients across UK centres were not treated within this time frame (3).

Aims:

To determine whether all SAH admissions into Queen Elizabeth Hospital Birmingham (QEHB) are meeting the 48-hour target. To determine the impact of the COVID-19 pandemic on the care of patients with SAH.

Methods:

A retrospective audit was performed on patients presenting to QEHB with SAH from 01/03/2020 and 31/08/2020 (start of pandemic). 62 Patients with aneurysmal SAH were included in the study. Patient notes were used to gather their times of their journey, non-clinical reasons for treatment delay, rebleed incidence, survival, 6-month MRI outcome. Data was then analysed using Microsoft Excel to determine where delays occur and the reasons for these.

Key findings

1. Out of 62 patients included, 14 presented to QEHB directly and 48 presented to local hospitals

2. The median time from diagnosis to treatment was <48 hours for all groups.

3. However, 23% of patients (n=14) had treatment >48 hours post diagnosis

4. Delays were noted in getting a CT-angiogram at local hospitals, referrals getting accepted, and time to treatment after admission to QEHB.

5. Common reasons for delays included issues with receiving/sending scan images and capacity issues.

6. 29% of patients are still awaiting a follow up scan >7 months post SAH. This scan usually occurs 6 months after discharge.

Conclusions

The audit revealed that 23% of patients admitted to QEHB with aneurysmal SAH were NOT given treated within the 48-hour target timeframe. Improvements in time delays can be made by:

· Educating radiographers to automatically perform CT-angiogram alongside CT when SAH is present

· Producing a concise document outlining exact referral criteria and scans needed

· Improving image transfer systems and communication between hospitals

Unfortunately, there was no comparison data from before COVID-19, making it difficult to determine the impact of COVID on meeting the 48 hour target. It is likely that the COVID-19 pandemic has significantly contributed to the delay in follow-up scans which may affect patient

outcomes. The above recommendations will be implemented into clinical practice and will be subsequently re-audited in 12 months.

BREAKOUT ROOM 2

AFTERNOON

Progestins effect on an Endometriotic cell line

Hope Rowden, Renata Pavlič, Maja Pušić, Maša Sinreih, Tea Lanišnik Rižner
Warwick Medical School

Endometriosis is a chronic inflammatory disease which affects up to 1 in 10 women of reproductive age. It occurs when endometrial cells grow outside the uterus and is categorised based on the location of ectopic lesions, namely: ovarian, peritoneal, and deep infiltrating endometriosis. The exact cause of endometriosis is yet to be determined.

Nevertheless, for the last 50 years progestins (synthetic analogues of progesterone) have been used to treat endometriosis. Progestins are known to be anti-inflammatory by inhibiting the function of certain immune cells and affecting the balance of pro- and anti-inflammatory cytokines. However, the pharmacological action of progestins in endometriosis is not completely understood.

Previous unpublished data from our laboratory has identified IL-1, IL-10 and OPG signalling pathways involved in progestins mechanism of action. The aim of this study was to further assess the role of progestins on the pro-inflammatory IL-1 signalling pathway. We examined the effect of progesterone and three progestins (Medroxyprogesterone acetate (MPA), Dydrogesterone (D) and Dienogest (DNG)) in a model cell line of peritoneal endometriosis (12-Z). We utilised Real Time-qPCR to assess expression of 6 genes involved in the IL-1 signalling pathway. We found that gene encoding IL1 receptor (*IL1R*) was upregulated by MPA and DNG whereas repressors of IL-1 signalling pathway, *IL1R2* and *IL1RN,* were upregulated by all progestins. Genes *IL1A/B* showed changes depending on the progestin, and expression of IL1R1 co-receptor *IL1RAP* was not affected by any condition. Although progestins showed different effects on expression of the investigated genes, up-regulation of *IL1R2* and *IL1RN* suggest that all progestins decrease pro-inflammatory IL-1 signalling in endometriotic cell line 12-Z.

A Spiritual Care full Audit cycle conducted on a central Trauma and Orthopaedic Ward in the Scottish Highlands.

Joanne Igoli
Scottish Graduate Entry Medicine

Background

‘*“Health is not just the absence of disease, it is a state of physical, psychological, social and spiritual well-being”’* (World Health Organisation, Precis of discussion, 1948). However, little work has been to assess holistic patient care on more acute wards, such as a trauma and orthopaedic (T&O) ward.

Methods

To assess spiritual care on the T&O ward, ward patients and staff were surveyed on their experience of and attitude towards spiritual care. Patient care documentations were also reviewed.

Interventions such as presenting in staff education meetings and putting up posters of the audit results, recommendations and rationale on the ward were carried out. A re-audit is well underway.

Results

There was no evidence of spiritual care being delivered to the T&O patients (n=24) on any documentation and by any staff. However basic spiritual care data was available for 100% of the patients on their demographic records online. This showed that 62% of the patients belonged to a religious group.
78% of patients (n=9) would feel comfortable being asked about aspects of spiritual care. However, only 35% of staff had referred a patient to spiritual care (for example chaplaincy services) and/or were aware of the referral process.

Key Messages
Patients on the T&O ward are welcoming of spiritual care
Staff are underutilising this aspect of holistic care
Staff education on the benefits and how to deliver spiritual care is needed

Evaluating Alginate-Nanocellulose Bioinks for 3D Printing Human Ears

Tasmin Nicholson
Swansea Medical School

3D printing has received increasing interest over the last few years. Previously 3D printing was largely restricted to metals and plastics, but recent developments have enabled progression towards 3D printing biomaterials (Jessop, 2019). The ability to 3D print cartilaginous structures, such as the human ear, could offer a less invasive approach to reconstructive surgery (Jessop, 2019).

This project aims to evaluate three alginate-nanocellulose bioinks: nanocellulose crystals (NCC), nanocellulose fibrils (NCF) and a blend of nanocellulose crystals and fibrils (NCB). These inks have previously been assessed for their rheological properties and show promise as candidates for 3D printing. Here, we aim to assess the printability of each ink, in terms of printing pressure, consistency of line and fidelity to the original design.

Each design was constructed on TinkerCAD, before being loaded onto CellInk's HeartWare programme for slicing. The printing pressure was identified as the point at which a continuous filament was achieved. All bioinks required pressures of ≤ 10 kPa which is low enough to allow cells to be integrated into the bioink in future. After printing, each structure was crosslinked with calcium chloride before being measured with digital callipers.

Grid assay measurements demonstrated that NCF had the greatest consistency in border thickness, and NCC had the greatest consistency of gridlines and fidelity to the original design.
A ring assay demonstrated NCF to have the greatest consistency of line. However, for the antihelix, NCB offered the greatest fidelity to the original design.

The variable performance of each bioink could be attributable to the unique properties of the ink, or degradation of the ink over time. Further research is needed to confirm this. Nevertheless, these assays have demonstrated the viability of each candidate bioink for 3D printing cartilaginous structures.
Further studies will be conducted to evaluate the use of multiple printheads to combine different bioinks into a single printed structure

and to assess the properties of each bioink in combination with cartilage cells.

BOARD NUMBER	PRESENTERS	POSTER TITLE
1	Ms. Abbie Tutt, Dr. Adina Olariu, Dr. Nadia Trecchi, Ms. Marissa Willock, Mr. Jeroen Poisson, Ms. Shereen Brown, Mr. Peter Stow, Mr. Justin Poisson, Dr. Jonathan Smith, Mr. Simon Blackburn, Dr. Cristine Sorticada Costa. Warwick University.	Great Ormond Street Hospital Postgraduate Department - Insta Kids or Tweeting Grown Ups? Differences in Social Media Use Between Staff targeted and Student targeted Great Ormond Street Conferences.
2	Claire McGregor Swansea University Medical School, Swansea Wales, UK	Patient autonomy vs the future child's welfare in Assisted Reproductive Techniques
4	Ibrahim El-gaby Green-Templeton College, Oxford	Assessing the cAMP response in human iPSC-derived cardiomyocytes using FRET
5	Eleanor Dewhurst ,Lyndsay Johnston, Sarah-Jane Reilly, Zoë Strong Scottish Graduate Entry Medicine	Video consulting in the age of Covid-19 – A quality improvements by ScotGEMstudents
6	O. B. Ellard, C. Dennison and H. Tuomainen, Warwick Medical School, University of Warwick, Coventry	Interventions addressing loneliness among university students: a systematic review
7	Anna Scott Department of Medical Genetics, University of Cambridge	Using the 100,000 Genomes Project to explore SARS-CoV-2 infection susceptibility in the UK rare disease population
8	Felicity Andrews (Warwick Medical School), Dr Natasha Patel (Guy's & St Thomas' NHS Foundation Trust	Adapting outpatient reviews in a pandemic: A retrospective analysis of outpatient monitoring outcomes in a diabetic foot clinic during early Covid-19
9	Sallu Dawo, Lizzie Sellers Warwick Medical School	Improving TSH monitoring in primary care: a complete audit cycle
10	C. Asher, B. Pisavadia, D. Srinivasamurthy. University Hospital Coventry &Warwickshire	Reducing the burden of re-admissions after lower limb bypass in critical limb ischaemia
11	Armin Nazari1, DrJustin Killick2, Rachel Kaske2, Dr Elizabeth Furrie2 1. University of Dundee School of Medicine, Ninewells Hospital & Medical School, UK 2. Department of Immunology, NHS Tayside, Ninewells Hospital & Medical School, Dunde	Implementing a no-biopsy approach to reduce time to diagnosis (TTD) and rate of biopsy of Coeliac Disease (CD) within NHS Tayside
12	Alexander C. Reynolds, BSc1; Sanjay Asopa PhD FRCS(CTh) 2; Amit Modi MD FRCS(CTh)3; Nicola King PhD4 Swansea University Medical School, Wales, UK. Southwest Cardiothoracic Centre, England, UK. Sussex Cardiac Centre, England, UK. Faculty of Health, University of Plymouth, England, UK	Cardioplegia choice does not affect most surgical outcomes: Meta-analysis of HTK versus multi-dose solutions
13	MR. Harvey, R. Hall & M. Young Warwick Medical School, Medical School Building, Coventry CV4 7HL	Green Hand Surgery: A Systematic Literature Review and Proposal for Change

14	Elizabeth Sylva Adeeko* 1, Abbie Tutt* 2, Aswin Chari 3,4, Kristian Aquilina 3,4 1 University Hospital of Coventry and Warwickshire 2 Warwick Medical School 3 Department of Neurosurgery, Great Ormond Street Hospital 4 Institute of Child Health, University College London	A scoping review of Neuroendoscopic Lavage as a treatment for Intraventricular Hemorrhage and Post-hemorrhagic hydrocephalus in the premature infant
15	Olivia Davies, Clare Blackburn (PhD (Social Science and Health) Warwick Medical School	The use of group music therapy to reduce symptoms of agitation in people living with dementia living in group residential settings: a systematic review
16	Daniel Fox, Ewan A. Stephenson, Ben L. Roberts & Robert Dallmann Division of Biomedical Sciences, Warwick Medical School	Time to Take Your Medicine: Towards Assessing the Functional Importance of Claudin-5 for Circadian Variation in Blood-brain Barrier Permeabilit
18	Claire McGregor Swansea University Medical School	Frailty scores in the Older Person Assessment Service: To what extent do allocated scores vary between healthcare professionals?
20	Amy Haddock, ScotGEM	An attempt to increase video consultation (VC) use in a General Practice in the Scottish Highlands during the COVID-19 pandemic.
21	Melina Pelling, Bhamini Vadhwana, Piers R Boshier, George B Hanna Department of Surgery and Cancer, St Mary's Hospital, Imperial College London	Longitudinal Variation in Volatile Organic Compound Levels in Whole Saliva
22	Gauri Ang and Shumail Mahmood University of Birmingham	Are we meeting the 48-hour diagnosis to treatment guidelines in the management of Subarachnoid Haemorrhage?
23	Imogen Rimmer (Swansea Medical school), with help from Dr. Julia Schaife & Dr. Manju Krishnanv (Morriston Hospital Stroke team)	Delayed young stroke post minor COVID-19 infection A case report
24	Mr Alistair Wilson, Mr Emmanuel Shofoluwe, Mr Daniel Mercer, Dr Thomas Dale MacLaine Warwick Medical School	Peer teaching vs self study -Can peer medical education improve the clinical understanding of second year medical students as they transition from pre-clinical to clinical teaching: a comparison between peer-led teaching and independent study
25	Daniel Zhou University of Warwick	The effectiveness of the skin prick test in diagnosing paediatric food allergy: a systematic review
26	Tamsin Nicholson, Tom Jovic, Prof. Iain Whitaker Swansea University	Evaluating alginate-nanocellulose Bio inks for 3D Printing human ears
27	Emma Cogswell, Estie Hughes, Alex Sergiou, Emma Andrews and Emily Roisin Reid Warwick Medical School	University of Warwick - Factors affecting career destinations of widening participation doctors
28	Flora Chamberlain, Dr Jo Fleming, Professor Jeremy Dale Warwick Medical School	The Role of Primary Care in Tackling the Climate Emergency – What is being done in Coventry and Warwickshire?
29	Hope Rowden 1,2, Renata Pavlič1, MajaPušić 1, Maša Sinreih1, Nick	Progestins effects on an endometriotic cell line

	Hopcroft 2, Tea LanišnikRižner 1 University of Ljubljana 1, University of Warwick 2, EUTOPIA	
30	R Hall, M Young, MR Harvey Warwick Medical School	Efficacy of propranolol in wound healing for adult burn patients: A systematic review
31	Laura Statham, Saran Shantikumar Warwick Medical School	A Cross-Sectional Study Examining the Relationship Between Short-Acting Beta 2 Agonist Inhaler Prescriptions and Deprivation in England in 2019.
32	Dale Harding, Meera Unnikrishnan and Kate Watkin Warwick Medical School	Intracellular Staphylococcus aureus Interactions with Antibiotics
33	Jennifer Hein Swansea University	A project report on the Tudor Hart Welsh National Health Inequalities Conference
34	Joanne Igolia, Mrs Jennifer Dunnb, Mr James Beastallca University of St Andrews & Dundee (ScotGEM), bT & ONHS Tayside, cT&ONHS Highland	Spiritual Care First Audit Cycle of a Full Audit on a Trauma and Orthopedic (T&O) Ward in the Scottish Highlands