

**INSPIRE**

**ABSTRACTS OF THE 3RD ANNUAL
GRADUATE ENTRY RESEARCH
IN MEDICINE CONFERENCE
GERMCON 2020**

Editors

- **Adrian McGrath**
- **Emily R. Reid**
- **Charlie D G Cunningham**
- **Ilyas M Khan**
- **Francesco P Cappuccio**
- **Andrew Gadie**

Organized by

Warwick Medical School, University of Warwick, UK

Swansea University Medical School, Swansea University, Wales, UK

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GERMCON 2020

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Emily R. Reid
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Andrew Gadie
(Editors)

Abstracts of the 3rd Annual

Graduate Entry Research in Medicine Conference

GERMCON 2020 (12th–18th October 2020)

Organized by

Warwick Medical School, University of Warwick, UK

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Abstracts of the 3rd Annual Graduate Entry Research in Medicine Conference (GERMCON 2020)
12-18 October, 2020

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GERMCON 2020

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GERMCON 2020

About GERMCON 2020

The Graduate Entry Research in Medicine Conference (GERMCON) germcom.com was established in collaboration between the University of Warwick and Swansea University and funded by INSPIRE, a scheme established by the Academy of Medical Sciences and the Wellcome Trust aiming to engage medical, dental, and veterinary students in research. This is especially important for Graduate Entry Medical (GEM) students, who have less opportunity and time to engage in research due to their accelerated medical degree.

Warwick Medical School (WMS) is excited to host this year's virtual conference, which could not have taken place without the INSPIRE Staff Committee and the help of a volunteer Student Committee from the Warwick Academic Medicine Society (WAcMS). We would like to thank all those involved in organising GERMCON, as well as all the speakers, judges, and presenters.

About the Editors

Adrian McGrath is presently studying Medicine & Surgery at Warwick Medical School. He obtained his B.Sc – Biology with French for Science - whilst studying at Imperial College London and later studied for his M.Phil - Clinical Science, Rare Diseases & Genetics - at the University of Cambridge. In addition to his extensive interests in clinical research that range from showing the effects of *Mycobacterium marinum* infection in humans and zebrafish to understanding the role Pre-Exposure Prophylaxis (PrEP) in sexual health, he is also the lead author for Infectious Disease for the Geeky Medics website.

Emily Róisín Reid is Senior Teaching Fellow in Medical Education and the Director for Student Experience, Employability and Progression at Warwick Medical School. She is a Fellow of the Higher Education Academy, a Fellow of the Warwick International HE Academy, and maintains several professional memberships relating to her field. After graduating with BA (Hons) English and French, she undertook her first career in commercial industry and gained two postgraduate qualifications. A decade ago, she changed career supporting those with disabilities and long-term health conditions to rehabilitate into work. She has spent the last five years at Warwick Medical School supporting medical students, completing a Master's degree in Career Development and is pursuing her PhD in the field of career decision-making. Her research interests relate to widening participation in medicine, academic medical careers and social justice.

Charlie D G Cunningham is a Senior Careers Consultant and PhD Lead at the University of Warwick. With over 10 years' experience in education, training and development and employer engagement. He focuses on empowering students to make their own decisions with a particular interest in international students, having himself lived and worked in the USA and Europe; he gained his first degree at Georgetown University in the USA. He is embedding enthusiastic proactive careers consultation supporting students across the university and in specific departments to explore career options, develop confidence in key employability skills and apply effectively for next steps in their career.

Dr Ilyas Khan is a Reader in Regenerative Medicine based at Swansea University Medical School and specialises in articular cartilage development, regeneration and repair. He completed his first degree at the University of Portsmouth prior to gaining an MRC Studentship at Imperial College London, where he completed his PhD studies in the study of skin development at Charing Cross Medical School. He then went to work under the mentorship of Professor Charlie Archer at Cardiff University whose group identified and isolated stem cells from articular cartilage. Dr Khan has extended these latter findings to identify the optimal methods to differentiate these stem cells to produce cartilage opening out their use in tissue engineering. Dr Khan is currently engaged in large scale clinical trials to test the use of stem cells for cartilage repair. Dr Khan the Academic INSPIRE Lead for Swansea University Medical School.

Professor Francesco Cappuccio is currently the Cephalon Chair of Cardiovascular Medicine & Epidemiology at Warwick Medical School and also Honorary Consultant Physician, University Hospitals Coventry & Warwickshire NHS Trust, Coventry. Francesco was awarded his medical degree from the University of Naples (*Magna cum laude*), obtained his MD from the same institution and MSc in Epidemiology from The University of London. Prof Cappuccio main research interests are in the prevention, detection and management of hypertension and its complications of the heart, brain, kidneys and the circulation. His work also encompasses the epidemiology of cardiovascular disease and sleep, nutrition and health, metabolic abnormalities and cardiovascular risk, risk in ethnic minorities, both in developed and developing countries. There isn't enough space to list his achievements suffice to say he was awarded a D.Sc in 2012 by Warwick University, his published work has garnered over 38,000 citations and his h-index is a dizzying 84. He has been a President of the British and Irish Hypertension Society and is currently Head of the World Health Organisation (WHO) Collaborating Centre for Nutrition, for whom he has also been a scientific advisor since 2005. Professor Cappuccio is the Academic INSPIRE Lead for Warwick Medical School.

Andrew Gadie completed his undergraduate degree in Clinical Psychology at Bangor University where he also completed his M.Sc in Psychological Research. He has extensive research experience in the field of Psychology, conducting research projects at the Universities of Bangor, Cambridge and the Nanyang Technical University, Singapore. He is now studying Medicine at Warwick University Medical School. His research interests currently include "Wearables" in monitoring and diagnostics, and, Big Data analysis.

INSPIRE Organising Committee

Prof Francesco Cappuccio	INSPIRE Warwick Academic Lead, Professor of Cardiovascular Medicine
Assoc Prof Ilyas Khan	INSPIRE Swansea Academic Lead, Associate Professor of Regenerative Medicine
Charlie Cunningham	Senior Careers Consultant
Emily Reid	WMS Director of Student Experience, Employability and Progression

Student Committee

Adrian McGrath	Lead Coordinator
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Jean-Pierre Laake	WAcMS President
Felicity Andrews	WAcMS Committee
Rani Thuruthiyil	WAcMS Committee

Keynote Speakers



“If I were thirty years younger...developing a research portfolio in the era of Covid-19”

Professor Lesley Roberts

Professor Lesley Roberts is Pro-Dean Education and Deputy Dean in Warwick Medical School. She joined Warwick in 2014 from the College of Medical and Dental Sciences at the University of Birmingham having held various roles within education (medical and allied subjects) at both the undergraduate and postgraduate levels.

With extensive experience in primary care and population-based research and epidemiology, she has a diverse research portfolio, undertaking and supervising research in a range of environments. Her research ‘lab’ has been Bolivian homes, African clinics, UK Schools and a variety of primary and secondary care clinics, file rooms and the odd portacabin, to name but a few...

Lesley has spent many years supporting student publication and is proud to have co-authored multiple papers with students she has supervised, considering some of these amongst the most interesting work she has conducted.

With reference to medical student research, she has supervised over the years, Lesley reflects on whether Covid-19 will restrict student research or whether it might just provide an opportunity to rethink how current medical students can develop a research portfolio, of its time and for its time.



“The ‘Four Seasons’ of a clinical academic (without borders)”

Professor Francesco Cappuccio

Professor Francesco Cappuccio is Cephalon Professor of Cardiovascular Medicine & Epidemiology at Warwick Medical School, Consultant Physician at UHCW NHS Trust, and Academic Lead for Inspire at Warwick. He joined the University of Warwick in 2005 from St George’s, University of London, having held various roles including the Chair of Clinical Epidemiology & Primary Care from 2000 to 2005.

He is a cardiovascular physician, a clinical epidemiologist, and a public health expert. He trained in General (Internal) Medicine (with a European Specialty in Hypertension) and in Epidemiology and Public Health.

Franco’s main interests are in the prevention, detection and management of hypertension and its complications of the heart, brain, kidneys and the circulation, with research interests in the epidemiology of cardiovascular disease and sleep, nutrition and health, metabolic abnormalities and cardiovascular risk, risk in ethnic minorities, both in developed and developing countries. He has been Scientific Advisor to the World Health Organization since 2005.

During his clinical and academic career, Franco has always taught and supervised undergraduate and postgraduate students, sharing his authorship with his students on numerous peer-reviewed articles, so contributing to the development of their academic portfolios. Franco will share his own personal pathway to academic medicine and will highlight some of his learning points.



“Building your Profile as a Researcher”

Professor Vinod Patel

Professor Vinod Patel is a Professor in Clinical Skills at Warwick Medical School and an Honorary Consultant Physician in Endocrinology and Diabetes, Acute Medicine and Medical Obstetrics at the George Eliot Hospital NHS Trust.

Having started in General Practice, he trained in Endocrinology and Diabetes at the Hammersmith and the Royal London hospitals and obtained a Doctorate on Haemodynamic Factors in the Pathogenesis of Diabetic Retinopathy from the University of London which led to multiple publications.

Whilst his specialist area of research is the prevention of diabetic complications, he has a passion for clinical diabetes care, for which his joint qualification in hospital medicine and general practice has allowed him to work relatively seamlessly across the primary care/secondary care interface to improve effectiveness in delivery of diabetes care for the local community.

Vinod will be discussing a journey in Clinical Research from a personal perspective, including the trials and tribulations he has faced during his research career. This involves a broader scope than clinical research alone, owing to his portfolio career including clinical cases, clinical guidelines, and many commentaries. He also has an invention to talk about!

Workshop Speakers



“Octopus: A Revolution in Scientific Publishing”

Dr. Alexandra Freeman

Alexandra Freeman is the Executive Director of Winton Centre for Risk and Evidence Communication at the University of Cambridge. Before joining the Winton Centre in 2016, she had a 16-year career at the BBC, working on series such as *Walking with Beasts*, *Life in the Undergrowth*, *Bang Goes the Theory*, *Climate Change by Numbers* and as series producer of *Trust Me, I’m a Doctor*. Her work won a number of awards, from a BAFTA to a AAAS Kavli gold award for science journalism. In addition to developing and making television series, Alex worked with associated content across a whole range of other media – designing websites, games, formal learning resources and social media content – to bring science to the widest possible audience.

Now back at the Winton Centre she has a particular interest in helping professionals such as doctors, journalists or legal professionals communicate numbers and uncertainty better, and in whether narrative can be used as a tool to inform but not persuade. She is an advocate of Open Research practices and the reform of the science publishing system.

Alexandra will be giving a talk on Octopus, a new publishing platform designed to replace journals and papers as the means of sharing scientific knowledge and ideas. It is designed to serve the needs of science and scientists above all else: to use every digital tool possible to ensure that good scientific practice is recognised and rewarded, and that there is no longer any advantage to questionable research practices.



“Dear Editor, you really should publish my paper...”

Dr. Saran Shantikumar

Saran Shantikumar is a registrar in public health and NIHR clinical lecturer at the University of Warwick. Having completed his MBChB at the University of Leeds, along with a BSc in Clinical Sciences, he pursued the Academic Foundation Programme followed by Academic Clinical Fellowships in Vascular Surgery and Public Health, picking up qualifications in statistics and a PhD in molecular biology along the way.

A self-confessed medical meanderer, the common theme during his training has been academia and the related requirement to publish. He is developing a research interest in infectious disease and primary care.

“Getting published as a medical student or junior doctor can sometimes feel like a barely achievable feat; the holy grail grasped only by future professors, beneficiaries of cronyism or those lucky enough to be allocated a clued-in supervisor. But that’s not true – and please stop looking for excuses – because there’s a future PubMed record with your name on it, if you want it. I’m a junior doctor in public health, and I’ll talk about the lessons I’ve learned during my successful and failed attempts at publishing. Please do come prepared to discuss any of your own publishing experiences; whether admirable, adequate, or awful, the learning will be of great service to your colleagues.”



“Developing a Research Idea”

Professor Martin Underwood

Martin Underwood is a Professor of Primary Care Research at Warwick Medical School, adjunct Professor at Monash University, Director of Warwick Clinical Trials Unit and NIHR Senior Investigator.

After training in Manchester, Professor Underwood worked as a GP in Lusaka, Manchester, Tower Hamlets, and latterly in Coventry. He has been actively engaged in a wide range of research, with his main area of research focused upon improving

the diagnosis and management of musculoskeletal disorders, particularly back pain and osteoarthritis.

In this area, he has a large portfolio of primary care studies, including qualitative studies, systematic reviews, observational epidemiology, and definitive randomised controlled trials. Completed and ongoing trials have evaluated the use of therapeutic approaches to chronic musculoskeletal disorders and improving care pathways. Furthermore, he his work encompasses a broad range of rehabilitation and secondary care interventions, and he has chaired guideline development groups on behalf of NICE.

Drawing upon his extensive research experience, including leading large primary care studies, Professor Underwood will be discussing his approach to developing a research idea; how to move from an idea and concept, to a tangible research question, to desiging an executing an effective research project!

Attendees are strongly encouraged to come to this session with a research idea in mind (not lab science or animal studies), to observe the thought process which goes behind designing an appropriate research project.

Prize Winners

POSTER PRIZE WINNERS

Poster 05: Rosie Hall & Mary Rose Harvey
Poster 09: Mihari De Soysa
Poster 21: Adrian McGrath & Rhiannon White
Poster 24: Gabriela Barzyk
Poster 26: Emily Wade
Poster 32: Aoife Moffatt
Poster 34: Gursh Hayer
Poster 37: Natasha Bechman & Emma Brandstatter
Poster 39: Jasmine Zanelli
Poster 42: Georgia Gray

PRESENTATION PRIZE WINNERS

Michael Barrett
Oliver Burton
Elinor Clarke
Todd James Cooper
Thomas Dale MacLaine
Andrew Gadie
Mary Rose Harvey
Tehreem Khan
Nicholas Lowe
Adrian McGrath
Imogen McMurray
Andrea Sargent
Charlotte Taylor
Beth Woodward

GERMCON 2020

POSTER 1

The Obesity Paradox in Critical Care: A Systematic Review

Jennifer Reay
University of Warwick

Background

Obesity has trebled worldwide since 1975 (WHO 2020) and is a major risk factor for chronic disease and premature death (Lewandowski 2011). It is now considered a major global public health problem (WHO 2020). It is estimated that at least 25% of patients in American intensive care units are obese (Alipour et al. 2019). Despite the health burden of being overweight, some studies have shown that obese patients fare as well, if not better than their non-obese counterparts in the intensive care setting (Gong 2016). This has been termed the ‘obesity paradox’ however the reasons remain unclear and some studies still doubt its existence at all (Papadimitriou-Olivergeris 2016).

Aims

To conduct a systematic review of the available literature on the impact of survival rates in critically ill patients.

Methods

A systematic electronic search of MEDLINE, EMBASE and Web of Science was conducted in May 2020. A hand search of the references of the included studies was also undertaken. Only studies in the English language were included.

Results

289 studies were reviewed by title and abstract, 217 were rejected based on title and 72 were rejected based on abstract. After duplicate studies were removed 13 studies were accepted. Statistical analysis was undertaken using RevMan 5.4 software developed by the Cochrane group. Obese critically ill patients had a lower mortality [OR 0.92 (95% CI 0.86-0.98) p-0.02] expressed through a random effects model.

Key messages

There was evidence for an obesity paradox in critical care. However, the reasons for this remain unclear and require further research. As BMI does not include any assessment of body morphology, including additional measures such as waist height ratio could provide further clarity on the obesity paradox.



POSTER 2

Chloroquine and COVID

Francesca Claridge-Owen
University of Warwick

Background

In December 2019 SARS-CoV-2 was discovered, which causes Covid-19. Human-human transmission was identified, and WHO announced a worldwide pandemic on 11th March 2020. Covid-19 has caused over 700,000 deaths globally. There is currently no treatment for Covid-19 and repurposing current drugs with known safety profiles was an attractive option. Aminoquinolines were trialled against Covid-19. Preliminary in vitro results showed encouraging results.

Methodology

This study will review data on the use of chloroquine or hydroxychloroquine to treat Covid-19. I will search PubMed, Embase, Cochrane Library database, ClinicalTrials.gov and medRxiv.org for published and preprint studies. I will include, RCTs, retrospective studies, observational studies and case reports. I will accept variation of methodology due to limited data available.

Results

Five preprint and five published peer reviewed studies were included. There was significant heterogeneity between papers, including different doses of chloroquine or hydroxychloroquine. Most studies had a low number of patients included and admitted that they were underpowered.

Key Points

Three studies included reported results which were statistically significant supporting the use of chloroquine or hydroxychloroquine. Two studies had statistically significant results reporting worse outcomes with chloroquine or hydroxychloroquine. Five studies reported no statistically significant results between standard care and the use of an aminoquinoline.

Conclusion

There is no reliable evidence that either chloroquine or hydroxychloroquine will significantly improve the condition of patients with Covid-19. Due to known side effects of these drugs, it would be sensible to be cautious when giving them as they may have no benefit to patients with Covid-19.



The Role of the Autophagy-Inducer Spermidine in Cardiovascular Ageing

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Background

Spermidine is a compound of the polyamine family which has been shown in a number of animal models to stimulate autophagy and result in a number of cardioprotective effects. It is an easily accessible nutrient being particularly abundant in wheatgerm, fermented soybeans and aged cheeses. Spermidine cellular concentrations have been shown to decrease with age and correlates with impaired cardiovascular health. It is proposed that increasing consumption of this nutrient has implications in improving cardiovascular health.

Methods

A keyword search was carried out using 'Spermidine and autophagy and cardiovascular health'. Search engines PubMed, Google Scholar and Web of Science were used to collate papers. Inclusion criteria included: 1) English Language 2) Peer Reviewed Studies 3) Ethical approval acquired where relevant 4) No evidence of bias in research (Relevant conflicts of interest). The final analysis included 22 papers.

Results

Spermidine has shown promise in the preservation of cardiovascular health in a number of animal models. Spermidine's effectiveness is predominantly through the induction of autophagy and increased nitric oxide synthesis, all improving cardiovascular health. A survey study in humans has correlated increased spermidine intake with increased cardiovascular health. More thorough research is needed to elucidate a strong connection between spermidine intake and increased cardiovascular health in humans

Key Messages

Animal models and a human survey study have highlighted the potential of spermidine in improving cardiovascular health. With ageing populations, the simple introduction of a compound that can be acquired through diet and have a drastic cardiovascular impact is an attractive implication for improving overall health.



Evaluation of Type 2 Diabetes Remission and Relapse Rates after Bariatric Surgery

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Background

Obesity and type 2 diabetes are pandemics intimately intertwined with the formers' influence on the latter well documented in the literature. In recent years, bariatric surgery has presented itself not only as a tool for significant weight loss but a metabolic surgery with concurrent benefits to diabetes remission. This review aims to analyse how remission changes with time from surgery as weight recidivism is a common post-operative event.

Methods

A systematic review was performed on all eligible articles with short- and long-term data pertaining to type 2 diabetes remission after surgery. Articles were attained from a literature search of the PubMed database.

Results

From 490 abstracts, 56 full-text articles were reviewed, of which six met inclusion criteria of this review. Except for a single study, all studies reported initial remission more than 40% with the exception reporting remission at 21% in its first follow-up. Relapse varied between studies; four studies reported relapse between 10-20% within six years follow-up; one study 41.9% relapse when follow-up was extended to 15 years; another with relapse at 24% within 12 years and the final study reporting relapse at 28% within five years.

Conclusions

The likelihood of relapse has been underestimated with significant clinical consequences for both patients and clinicians when considering bariatric surgery in part due to the metabolic benefits. Accompanying weight recidivism post-surgery, relapse does not mean the end of surgery's benefits but apropos of the COVID-19 pandemic, every effort should be made to mitigate the possibility for relapse via pharmacotherapy and extended psychological support post-surgery.



Video Consultation vs Face to Face Consultation in the Management of Diabetes Mellitus

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Background

With growing technology capabilities, and the COVID-19 pandemic putting pressure on health services to use remote consultation, the feasibility of using teleconsultation in regular management of chronic disease is to be considered. The popularity of teleconsultation is rising, and since the population of chronic disease sufferers in the UK is considerable, this method of consultation has, in recent years, started to be explored for various conditions. Diabetes affects 4 million people in the UK, and this review specifically focuses on the use of teleconsultation in diabetes management, in comparison to more traditional face to face consultation. If clinical outcomes are not compromised, the benefits of using a remote service could allow for the use of teleconsultation for diabetes management to be normal practice.

Methods

A systematic literature search was conducted to select published articles from web-based health databases. Data extraction and analysis of results followed.

Results

9 studies were selected. Primary outcomes HbA1c, LDL levels and blood pressure were shown to remain, overall uncompromised, by the use of teleconsultation in comparison to face to face consultation. Patient satisfaction was also high, with few limitations of remote consultation found. Economic and time saving proved to be major advantages for patients using teleconsultation for their diabetes management.

Conclusions

This review identified a lack of literature on the use of teleconsultation in diabetes management, although the research reviewed did support teleconsultation use in diabetes. Future research should address the use of teleconsultation in diabetes care over a reasonable duration, with a reasonable sample size, through RCT's.



The Role of Intermittent Fasting and Exercise in the Reduction of Diabetes Risk Factors; A Narrative Review

Jade Wilmot

University of Warwick

Background

The burden of diabetes is an ever-increasing problem for health systems worldwide. 463 million people are currently living with diabetes globally and that number has been projected to rise to near 700 million by 2045.

Aim

To explore the impact of intermittent fasting (IF) and exercise training (ET) on the known risk factors for diabetes and infer its potential effect on the prevention of, touching on its potential use for managing diabetes itself.

Methods

Systematically searching the databases Embase, Medline and Web of Science for RCT published in the last 5 years using the search terms 'fasting' and 'diabetes mellitus, type 2' or 'prediabetic state' or 'metabolic syndrome'. Quality assessment performed using the CASP tool and bias assessed using the Cochrane Collaboration tool. No formal statistical analysis of the results of the included studies was performed.

Results

13 studies were included (six used the intervention, IF, and seven studies used ET). All of which found a significant change due to the intervention – intermittent fasting or exercise training – in one or more of the outcomes measured. Of studies involved; HbA1c was reduced in 4 of 6, glycaemic indices were improved in 8 of 11, 50% saw a reduction in insulin indices, and body composition was improved in all 7 as a result of the intervention compared to the control or with change over time (from baseline to post-intervention tests).

Key Messages

The results from these studies would indicate that IF and ET, especially in combination should be considered in playing a role in the management of diabetes.



An Investigation into the Effect of Statins on HbA1C Levels in Pre-diabetic and Diabetic Patients

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Background

Growing concern about statin use and risk of developing diabetes mellitus. Some literature suggests diabetogenic effects with long term statin use (Casula et al., 2017; Kim et al., 2018; Navarese et al., 2013), especially for prediabetic patients (Kostapanos et al., 2009). Majority of prediabetics/diabetics are on statins due to age-related comorbidities or diabetic complications, with a greater than 50-fold increase in prescription prevalence between 1995 and 2013. We sought to analyse HbA1c levels over time for this patient group.

Method

Filtered EMIS search, inclusion criteria: 1. Diabetic/prediabetic; 2. Continuous statin use for a full year; 3. HbA1c measures before, up to a month after and 9 months after statin commencement. Relevant data securely collected and analysed on Minitab 17 through paired t tests.

Results

247 patients identified. 62 patients randomly selected for analysis. For prediabetics, mean HbA1c significantly increased ($p=0.05$) before statin use (41.1mmol/mol [40.2-43.9]) to after short-term statin usage (42.7mmol/mol [40.8-45.0]). There was a similar insignificant increase in diabetics.

Key Messages

Currently, no specific recommendations for statin use in prediabetics. Patients on long-term statins, at risk of developing diabetes, need regular HbA1c monitoring. Statins should be continued if diabetes develops, in accordance with NICE guidelines, as CVD complications pose a greater health risk and there is no evidence that statins affects glycaemic control. However, healthcare professionals should be aware of the diagnostic limitations of HbA1c, and should use it in conjunction with other tests for diagnosis.



Bisphosphonate Prescribing Trends and Assessment of Treatment Outcomes

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Background

This audit set out to determine the compliance of bisphosphonate prescribing trends within Kennoway Medical Group with NHS Fife's Osteoporosis Management Policy, with a retrospective focus on fracture outcomes amongst patients actively receiving bisphosphonate treatment.

Methods

Kennoway Medical Group requested an audit of their bisphosphonate prescribing practice to determine whether this is concordant with local policy. The standards of the audit are based on NHS Fife's Osteoporosis Management Policy. Egton Medical Information System (EMIS) and Docman were used to obtain the data for 58 patients on bisphosphonate treatment. Microsoft Excel was used for composition of graphs and statistical analysis involving the calculation of means, standard deviation, and an unpaired T-test. Data were compared to the initial standards.

Results

A suboptimal compliance rate (67%) of bisphosphonate prescribing was identified, along with findings of age-specific fracture risks in patients receiving bisphosphonate treatment.

Key Messages

Recommendations are proposed to Kennoway Medical Group for quality improvement. Other practices should consider implementing similar changes.



Video Consultations Uncut: A Systematic Review of the Benefits and Limitations Regarding Use as an Alternative to Face-to-Face Consultations in UK General Practice

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Background

Within general practice the term video consultations (VC) is often met with apprehension. However due to the recent surge in use of VC, we want to explore the potential benefits and limitations in order to identify whether it is a viable alternative to face-to-face consultations (FTFC).

Methods

This review was conducted by searching medical databases for existing literature related to video consultations in general practice. Papers were carefully screened, and data extracted based on pre-determined themes.

Results

Response to the use of VC was mixed with FTFC generally being favoured. However, many identified that VC were convenient for working patients, those with children and was also time saving. VC were also considered to be more beneficial than telephone consultations due to the visual aspect provided. Concerns were identified regarding workload and problems with technology and data security

Key Messages

Many patients are happy to use VC as an alternative to FTFC. It has been identified as improving accessibility to primary care however uncertainty regarding the technology and its security has also been highlighted. To combat this, we are already seeing publication of clearer guidelines regarding how and when to use VC. However, we recommend supplementing this with comprehensive guidelines regarding patient safety as well as thorough training on set-up and use. As use becomes more prevalent, further research will also be important.



Experiences of West Midland Funeral Directors in Arranging for GPs to Complete Cremation Form 4

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Background

When someone dies in the community, the registered General Practitioner (GP) must physically examine the deceased and complete Cremation Form 4 to allow a cremation. This work is not paid for by the NHS and may come second to increasing NHS workload. Financial cost is often a factor for families in choice of Funeral Director, leading to potential difficulties when the GP is located some distance from the Funeral Home. The Funeral Director acts as an intermediary in arranging for the GP to complete the cremation paperwork to enable cremation, yet their role has been understudied.

Methods

We interviewed seven Funeral Directors from the West Midlands using semi-structured interviews to collect qualitative data. Participants were recruited by email and five were interviewed face-to-face and two by email. Thematic analysis was conducted on interview transcripts using NVivo v.10.

Results

Participants told us of the consequences the current system has and its impact on GPs, Funeral Directors and the bereaved. Participants reported that GPs were sometimes too busy to attend to complete Cremation Form 4 in good time, leading to delays to funeral plans. It was reported that Funeral Directors had to act to facilitate the physical examination, sometimes by moving the deceased. Funeral Directors reported considerable distress from the bereaved when they became aware of this. COVID-19 has led to changes to the administration of the deceased and we hope this work will increase our knowledge of this area.

Key Messages

This research highlights a conflict between the duty the GP has to their living and deceased patients and the way the cremation paperwork system fails to work effectively for families in the experience of the Funeral Directors we interviewed.



Is FibroScan® as Effective as Biopsy or MR in Quantifying Liver Disease in Diabetes?

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Background

The incidence of NAFLD and NASH is rising and liver disease is one of the largest causes of death in 35-49 year-olds in the UK. NAFLD and diabetes mellitus often coexist, especially with increasing prevalence of metabolic syndrome. FibroScan, is an investigative tool for liver fibrosis in NAFLD and other chronic liver disease, it requires minimal operator training and exhibits reduced sampling error when compared to liver biopsy, making it a readily accessible option.

Methods

Databases were searched on 2 occasions, papers from January 1980 to April 2020 were included. Full text review was carried out on 177 papers. Due to insufficient papers including the comparison of FibroScan and MR, analysis focused on the comparison of FibroScan and biopsy only.

Results

Prevalence of NAFLD was between 2.7% and 100%. The number of patients excluded due to insufficient LSM or CAP acquisition ranged from 0 to 50%. FibroScan failure rates varied across papers, those investigating T2DM patients reported no FibroScan failures. Discordance was reported in up to 13.4% of patients. There was a lack of consensus in the data for a particular LSM for a corresponding histological fibrosis stage.

Key Messages

On its own FibroScan is able to accurately identify significant steatosis and fibrosis, currently it is not robust enough to grade the stages of NAFLD. With further research FibroScan in combination with other non-invasive screening tests, could be used to rule out a large proportion of patients that are not high risk, and help clinicians refer those who need it most to specialist clinics.

(Abbreviations: CAP = controlled attenuated parameter, LSM = liver stiffness measurement, MR = magnetic resonance, NAFLD = non-alcoholic fatty liver disease, NASH = non-alcoholic steatohepatitis)



The role of gut-microbiome targeted therapies in the management of non-alcoholic fatty liver disease: a systematic review and meta-analysis

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Background

Non-alcoholic fatty liver disease (NAFLD) is the most common cause of chronic liver disease in the Western world. Pre-clinical evidence suggests that gut microbiome-targeted therapies (MTTs) may represent a new therapeutic target for the condition. The aim of this research was to evaluate the current evidence supporting the role of MTTs in the management of NAFLD.

Methods

The electronic databases MEDLINE, EMBASE and Web of Science were searched. Randomised controlled trials that compared MTTs with placebo or usual care in patients with NAFLD were eligible for inclusion. MTTs were defined as probiotics, prebiotics, synbiotics, antibiotics and faecal microbiota transplantation. A random effects meta-analysis was performed, and statistical heterogeneity was assessed using I². If identified, this was explored using univariable meta-regression analysis.

Results

12 studies were identified. 8 reported a significant reduction in hepatic steatosis following MTTs. MTTs were associated with a significant reduction in alanine aminotransferase (ALT) (WMD: -6.96 IU/L, 95% CIs: -11.78,-2.14) and aspartate aminotransferase (AST) (WMD: -6.52, 95% CIs: -12.05,-0.99) compared to control. However, significant heterogeneity between studies was reported (ALT: I² = 98.66%, AST: I² = 99.60%). For ALT, meta-regression revealed mean age at baseline was significantly associated with treatment effect estimate (p=0.010). MTTs were not associated with a significant reduction in body mass index (BMI) (WMD: -0.27 kg/m², 95% CIs: -0.62,0.08 kg/m²)

Key Messages

MTTs were associated with a significant reduction in hepatic steatosis and liver function markers, but not BMI. Although promising, significant heterogeneity between studies means the results are difficult to interpret.



Safety & Immunogenicity of Ebola Vaccine Candidates: A Systematic Review

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Background

34 outbreaks later, Ebola virus still carries an unchanged fatality rate of up to 90% as a haemorrhagic, infectious disease. This systematic review endeavoured to analyse the safety and immunogenicity of the main vaccine candidates: rVSV-ZEBOV; ChAd3-EBO ± MVA-BN; Ad26.ZEBOV + MVA-BN.

Methods

Studies were searched for across peer reviewed literature and trial databases (Embase, Medline, Scopus). Human studies published in English from 2010 were included. Studies underwent eligibility and bias assessment prior to data extraction. Adverse events (AEs) were recorded as well as geometric mean antibody titres.

Results

20 studies were qualitatively included and 11 were suitable for meta-analysis. Locally, mild/moderate injection site pain had the highest case number with AD26.ZEBOV recording the greatest prevalence (68.2%). There was an increased, significant risk of local AEs with vaccine usage against placebo overall (9 studies: relative risk [RR], 1.82, [95%CL 1.43-2.20]). Systemically, the greatest incidence was mild/moderate headaches, highest being in Ad26.ZEBOV(55.4%) with a statistically significant increase in AEs observed across all vaccine types against placebo (10 studies: RR, 1.42 [1.34-1.50]).

rVSV-ZEBOV produced the greatest glycoprotein-specific response to 360 days which may be significant compared to the other vaccines. At 360 days, rVSV-ZEBOV may produce significantly higher neutralisation antibody levels (NA) than Ad26.ZEBOV. Only rVSV-ZEBOV underwent meta-analysis for NA and it significantly increased antibody production against placebo (5 studies: Hedges' g, -1.17 [95% CL -1.28- -1.06]).

Key Messages

The vaccine candidates are safe to use and reveal immunogenicity profiles against EVD. NA data should be gathered so a complete immunogenicity profile can be made of all candidate vaccines.



Spinal Tuberculosis in the Adult Population: A 10-Year Single-Centre Audit Performed at UHCW

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Background

Spinal tuberculosis (STB) is a common manifestation of extrapulmonary tuberculosis with significant morbidity/mortality risk. Insidious onset and low yield of diagnostic tests challenge management, increasing poorer outcome risk.

Methods

A retrospective audit conducted October 2009 – 2019, extracting demographics, clinical data and outcomes from electronic patient records and the TB service database.

Results

45 cases identified. Median age: 39 years (18-87). 7% had a known TB contact, 42% had comorbidities. On admission, 78% had STB-specific symptoms, 60%: constitutional symptoms, 49%: both. 87% tested for HIV: none positive. Most frequent STB site was lumbar (49%) followed by thoracic (24%), cervical (18%), and lumbosacral (16%). 3 patients had active TB in other organs. Diagnostic biopsies or aspirations performed in 96% of patients. TB specific microbiology requested in 93% of these samples. Exposure to anti-TB drugs (ATT) for >7 days statistically significantly influenced TB culture results. 64% completed ATT beyond recommended 6 months, 38% > 9 months, and 21% for > 12 months. 13 patients received surgical treatment. All-cause mortality: 7%. Loss to follow up: 13%. 92% of patients successfully completed treatment with adequate clinical outcomes.

Key Messages

To further improve UHCW's close following of best practice leading to high rates of favourable outcomes, we recommend that:

- HIV testing be done in all patients
- Importance for prompt biopsy and cultures be further highlighted to start patients on ATT swiftly, improving outcomes further, as seen by exposure to these drugs for >7 days being negatively associated with positive TB culture results.



A Short Patient Clerking Teaching Intervention to Increase First Year Graduate-Entry Medical Student Self-Efficacy and Knowledge

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Background

Patient clerking is a vital skill and learning tool for medical students, which may have variable teaching coverage. Self-efficacy, belief in capacity to perform a task, may be low in first year medical students in relation to patient clerking skills as learning opportunities can be impromptu.

Methods

A teaching session was designed for first year graduate-entry medical students to introduce the concept of patient clerking with a practical documentation element. Students were asked to rate their self-efficacy on a 5-point Likert scale before and immediately after the session. A short knowledge assessment was also completed before and immediately after the session to determine knowledge acquisition from the session.

Results

100 first year graduate entry medical students participated in the intervention. Self-efficacy ratings increased from median 1 (IQR 1-2) to 3 (IQR 3-4) ($n=95$, $p<0.001$ by Wilcoxon Signed Rank test). Knowledge assessment scores increased from median 4 (IQR 3-5) to 5 (IQR 5-5) ($n=97$, $p<0.001$ by Wilcoxon Signed Rank test). The increased in self-efficacy and knowledge of the students immediately post-intervention suggest the teaching session was effective, however due to the limitations of the study design this cannot be definitively causally linked. Assessment over time to determine the maintenance of knowledge and self-efficacy was not performed in this study, and would be a valuable addition for future work.

Key messages

A targeted teaching intervention may be effective in increasing student self-efficacy and knowledge in relation to patient clerking skills.



Inclusivity in GEM: What More Can We Do?

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The Universities of St. Andrews & Dundee (ScotGEM)

Background

We conducted research as part of The University of St Andrews (UoStA) Global Challenges Programme. The aim was to formulate a proposal on how to make the university a beacon of inclusivity. We envisaged a four-domain solution that encompasses improvements under the headings: a) Regional Inclusivity; b) Culture and Belief; c) Disability and Mental Health; and, d) Celebrating Diversity. Our findings revealed that there are many areas in which GEM students feel inclusivity can be improved.

Methods

We received 36 responses to our student survey, which was designed to elicit attitudes towards inclusivity under our domains. 24 of these responses were from Scottish Graduate Entry Medicine (ScotGEM) students, 9 from BSc medicine, and 3 from other programs. The survey was anonymous, and participants were asked to consent to their responses being used in our report.

Results

All respondents agreed that UoStA has a reputation for prohibitively high accommodation costs, meaning that students must often seek affordable housing that is far away from campus. 88% of respondents expressed that they would like to know more about other cultures – highlighting the need for general cultural learning as well as focused medical teaching on pathological presentations in patients from different backgrounds. Peer support services do not allow 1st year students to become peer supporters, highlighting a perceived lack of awareness surrounding GEM students' potential as valuable assets to the university: 63.9% were open to this rule being changed.

Key Messages

Our research reveals concerns being expressed by GEM students within our four domains, showing that work needs to be done to make the medical school and greater university more inclusive. We suspect many of the same inclusivity issues will resonate in GEM cohorts beyond UoStA.



A Model for Recognition, Remembrance and Reflection Sessions for Medical Students Working during the Covid-19 Global Pandemic

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During the Covid-19 pandemic, Warwick Medical Students had their training paused and were offered roles in the National Health Service (NHS). Fourth year students worked in paid assistantship roles, while other years worked as Health Care Support workers (HCSW) or in previously qualified professions. Other medical schools have previously employed students in an HCSW role before, with much success (Davison and Lindqvist, 2019). However, during the pandemic, students experienced more death of patients than expected for their level of training. Even before the pandemic, medical students experienced a higher rate of depression and anxiety, while feeling more stigmatised than the general public (Schwenk et al., 2010). Therefore, Recognition, Remembrance and Reflection sessions were established to praise the work of the medical students, as well as provide a platform for supporting wellbeing. The format of the sessions involved talks from senior staff at the medical school, the hospital chaplain, and staff who worked alongside the students. Additionally, the sessions involved reflection tasks. A 5-point Likert Scale questionnaire has been devised to assess students' experience of working during the pandemic and gain their feedback from the event.

The sessions are taking place on Thursday 3rd and Friday 4th September so the data will be collected then and will be ready to present for the INSPIRE conference.



POSTER 19

Resuscitation for Medical Disciplines Warwick: A Year of Progress

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Background

The RMD Basic Life Support (BLS) course aims to teach students BLS with CPR/AED and first aid. A successful pilot course was run at Warwick Medical School in 2018. Subsequently, four courses were offered for 2019-20.

Aims

- Educate medical students and life-science students in BLS and first aid
- Analyze the number of students successfully progressing through the course
- Gather student feedback regarding the course structure and content

Methods

The course was primarily advertised to first year medical students. After this initial sign-up, the opportunity was then given to the life sciences.

The RMD BLS course is a four-week programme. Students are required to attend all sessions and pass an exam in order to be certified as competent by the European Resuscitation Council.

At the end of the course, students were asked to provide feedback on instructors, course content & structure, and overall feedback.

Results

Overall, 277 students signed up (237 medical & 40 life-science students), but 83 students withdrew before the exam. The remaining 194 students all passed their final exam.

Course feedback was consistently positive, with common themes of:

- Friendly instructors
- High-quality teaching
- Increased confidence in skills

Many students expressed an interest to become instructors.

Conclusion

Considering the 100% exam pass rate and positive feedback, it appears that students have been satisfactorily educated in BLS & first aid and found the course useful. An almost complete uptake of available spaces also indicates a clear interest and need for the course to continue.



Lectures to my Ears – A Systematic Review into the Potential of Podcasts in Undergraduate Medical Education

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Background

There has been a long tradition of medical students using resources other than lecture notes to study from and the as result of easier access to personal, portable media devices, they have turned to the internet for resources such as videos, blogs and podcasts, which easier fit around busy lifestyles. Due to this, podcasts have been experimented with as educational tools in comparison to their already established teaching delivery methods.

Methods

A literature search was carried out using three databases for literature between 2010 and 2020. Papers specifically involving undergraduate medical students and using the noun “podcast” were included and papers were included into the review. Common themes were analysed, and descriptive statistics were derived from categories that papers were sorted into. In total, 189 papers were found and 11 were included in the review.

Results

The aim was to establish how podcasts were used in undergraduate medical education, the effect on student attainment, opinions of medical students on podcasts. It was found that most (82%) papers had used a video-audio podcast rather than the audio only resource as described by the dictionary definition. A broad range of medical topics were taught using podcasts and included clinical skill tasks. Students have reacted positively to the introduction of Podcasts but do not yet prefer them to established teaching tools such as lectures. Students like the interactivity between the educator and themselves which is what Podcasts do not yet achieve. Regarding student attainment, Podcast’s do significantly improve grades as a stand-alone tool however, they do not yet exceed the increase in student attainment as seen in other traditional teaching methods. However, by combining podcasts with established methods, a greater increase in student attainment is seen.

Conclusion

In conclusion, Podcasts do have a positive effect on student attainment but to achieve higher attainment scores and increased knowledge retention, podcasts should be future investigated as a supplementation tool to traditional teaching methods.



Medical Students' Experiences in the Co-Development of Care Companion, a Personalised Web-based Resource to Support Informal Caring

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Background

There is a growing need to address the physical, psychological, and social challenges faced by informal carers in the UK. Care Companion is an innovative online platform, that provides reliable and accessible information for unpaid adult carers. Its website is populated by resources written by medical students under the direction of carers, who are continuously consulted to draw on their experiences of support and current challenges.

This study aims to describe the experiences of medical students in the development of Care Companion and the impact this had on their personal and professional development.

Materials & Methods

Semi-structured interviews were carried out with three medical students involved in the co-development of Care Companion. Interviews were anonymously recorded, transcribed and analysed using iterative thematic analysis to identify important themes.

Results

Overall, participants had a positive experience. The students acknowledge the perceived need and value of the resource and believed they each brought a unique insight to the project which resulted in a better product. Key benefits included: benefit to CV, improvement to clinical skills and financial compensation. The main drawback was time management due to clinical and academic commitments. Medical students felt encouraged to continue their work and pursue more research opportunities in the future.

Key Messages

This study suggests a positive role in for medical students in the co-development of a resource to help carers, with several personal and professional benefits.



Exploring the role of video-enhanced primary care consultations using diagnostic equipment

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Background

There has been a substantial increase in demand on NHS primary care and GP workload in recent years. Alternatives to traditional GP consultations have been proposed to alleviate staff workload and improve patient access. Video consultations integrate visual components to improve patient experience. A novel method of offering pharmacy-based video consultations with diagnostic equipment is available for patients via a private GP service. There is limited research into patient and GP experiences using private video consultation services⁷, but is crucial for safety and quality of care.

Methods

Routinely collected patient data from Dec 19 to Jun 20 analysed. Interviews were conducted with ten GPs to explore their experience in providing video consultations, including barriers and benefits. Interviews will be analysed using inductive thematic analysis.

Results

Preliminary evidence following GP interviews point towards an overall positive experience from the GPs. Patient data shows spike in use before lockdown. Benefits include easy and rapid access as well increased reliability for diagnosis. Some of the barriers identified were issues with technology and limitations in hands on examinations. GPs found the service useful and efficient, and felt they could build good doctor-patient relationships.

Key Messages

If these services are a safe and efficient alternative to traditional methods, then these can be widely adopted to help alleviate the pressure on NHS, offering a safe and better quality access to healthcare.



Systematic review: can induced pluripotent stem cells replace embryonic stem cells in Parkinson's disease treatment?

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Background

The growing concern and difficulty behind using embryonic stem cells in stem cell therapy has resulted in the shift to induced pluripotent stem cells (iPSC) in Parkinson's disease treatment. However, there has not been a systematic review comparing the efficacy of both these stem cell types and whether iPSCs can equate to embryonic stem cells in Parkinson's disease treatment.

Methods

To determine this, the effects of iPSCs and embryonic stem cells in 6-OHDA lesioned rodent models of Parkinson's disease over a 16-week period was systematically evaluated. The effect of the stem cell types was determined via amphetamine induced rotation behavioural analysis of rodent models of Parkinson's disease. The databases searched to obtain the data include PubMed and Cochrane. From this search, three animal research studies were identified for each respective stem cell type.

Results

Following quantitative analysis, the data indicated significant improvement in rotational behaviour in rodent models of Parkinson's disease before and after stem cell therapy for both stem cell types (Induced pluripotent stem cell p-value = 0.007; Embryonic stem cell p-value = 0.003). Finally, both stem cell types were compared using two-way ANOVA and indicated no significant difference between rotational behaviour in rodent models of Parkinson's disease (p-value = 0.777).

Key Messages

It may be concluded that iPSCs equate to embryonic stem cells in Parkinson's disease treatment and can act as a replacement. This is a promising result for the upcoming Japanese clinical research project, which is using iPSCs to replace dopaminergic neurones of Parkinson's disease sufferers.



Brain Tumour Diagnosis: Outcomes in 120 Biopsy and Craniotomy Procedures

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Background

Brain, central nervous system and intracranial tumours account for the 9th most common cancer type in the UK. At the time of the investigation, University Hospital Coventry & Warwickshire neurosurgical team outlined the standard of a 3-week period between pre-surgery multidisciplinary team (MDT) meeting and the date of the surgical procedure. To analyse whether the trust is meeting its targets relating to craniotomy and biopsy, a retrospective audit of procedures carried out between May 2018 and June 2019 was undertaken.

Methods

Record identification took place via Clinical Results Reporting System, Refer A Patient and Senior Performance Analyst at the trust. Collated information included date of referral, date of MDT meeting, details of procedure, diagnosis, length of admission and mortality status as of January 2020. Patient data was anonymised, and trends were analysed.

Results

120 patients were identified, with 38 biopsies and 82 craniotomies performed. The average length between MDT meeting and surgical procedure was 20.53(3-110) days, meeting the trust standard. Analysis of patient data revealed that data recording methods were not systematically uniform. Furthermore, a trend was identified where glioblastoma IV grade was the most common diagnosis at 41%, accounting for 62% of all deaths.

Key Messages

The audit identified the need to standardise reporting strategies. Further audit cycle implementing a reporting checklist is hoping to better this outcome. In addition, the study enabled focus on glioblastoma, where early-stage identification remains a huge challenge to care. With increased understanding of regional incidence, this can benefit local referral protocols.



What is the Effect of Hyaluronan-Enriched Embryo Transfer Medium on Assisted Reproductive Outcome?

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Background

Assisted reproductive technologies (ART) are a group of treatments which aim to improve fertility. One such adjunct treatment is hyaluronan-enriched transfer medium (HETM). Hyaluronan is a macromolecule found naturally in the female reproductive tract. When hyaluronan is added to embryo transfer media in the lab, it may help the embryo to implant into the uterus and subsequently increase live birth rates.

Methods

Electronic database searches were carried out in May 2020 using predetermined search terms. Prospective randomised controlled trials which compared the use of HETM to a control group with no or low hyaluronan concentration were included in this systematic review. Studies were only included if they reported one or more of: live birth rate, clinical pregnancy rate, implantation rate, multiple pregnancy rate, or abortion (miscarriage) rate. Papers were screened by two independent reviewers, and data was extracted and critically appraised independently.

Results

Our literature search yielded 32 studies, seven of which reported our primary outcome of live birth rate. Analysis of the data suggested that HETM appeared more beneficial if used in a population of patients who had recurrent implantation failure. There was no clear evidence to suggest that HETM was beneficial in an unselected patient population.

Key Messages

Our literature search identified a conflicting body of evidence regarding the benefit of HETM in ART, with a range of methodological quality. There is currently a lack of high quality RCTs available, and further studies are needed to clarify if HETM is beneficial in patients with recurrent implantation failure.



Does Embryo Development Differ between Women with Polycystic Ovary Syndrome and a Control Group? A Retrospective Cohort Study

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Background

Polycystic Ovary Syndrome (PCOS) is one of the most common infertility diagnoses. Multiple metabolic disturbances are covered by 'PCOS' but it remains uncertain which disturbances contribute to altered embryo development in this condition. High body mass index (BMI) is commonly seen in PCOS women and has previously been linked to poorer reproductive outcomes.

Methods

Using specialised imaging of embryos, the study tests whether PCOS is associated with differences in early embryo development when compared with embryos from age-matched controls. Sub-group analyses aim to evaluate the effect of BMI on this relationship. Timings of specific developmental events were compared between groups using a linear mixed model analysis. These included timing of cellular divisions to the blastocyst stage. BMI of the PCOS women was added to the analysis to evaluate the effect of this variable.

Results

The time to 3-cells was slower in the PCOS women however this did not reach statistical significance. Time to blastocyst expansion was however significantly slower in the control group. The times to 2, 3, 5, 6, 8 and 9 cells, compaction, morula formation and blastocyst expansion increased with increasing BMI in the PCOS women, however were not statistically significant.

Key Messages

BMI is likely to affect embryo development in PCOS women. The results suggest that the causative factor of poorer reproductive outcomes in PCOS may not be related to the timing of developmental milestones in the pre-implantation embryo. This is important to understand when advising women about their chances of successful fertility treatment.



Lack of Evidence for Functional LHCGR in Human Cultured Endometrial Stromal Cells

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The luteinising hormone/chorionic gonadotropin receptor (LHCGR) is a g-protein coupled receptor essential for the maintenance of pregnancy through its functions in the ovary. In addition to other gonadal functions, LHCGR is purported to be expressed and functional in human endometrium, including being linked to decidualisation. However, several studies have previously challenged these assumptions, making extra-gonadal LHCGR expression and function a contentious issue.

To investigate the presence of LHCGR in endometrium, the expression of a battery of receptors was determined using RNA-sequencing on whole tissue and cultured stromal cells from human endometrial biopsies. We further assessed intracellular cyclic AMP after treatment with gonadotropins or other hormones to assess LHCGR function. The effects of LHCGR on decidualisation were measured by inducing decidualisation with and without gonadotropin stimulation and monitoring secretion of critical decidua markers. Finally, we tested the bioactivity of our gonadotropins with cyclic AMP and cell proliferation assays in HEK-293 transfected to express LHCGR.

Here we show minimal expression of LHCGR in whole endometrial tissue and in cultured stromal cells. Neither luteinising hormone or chorionic gonadotropin was able produce a statistically significant increase in intracellular cyclic AMP, but the ability to generate a response was shown upon forskolin and prostaglandin E2 treatment. Our decidualisation assays showed that neither gonadotropin was necessary or sufficient for decidualisation. Finally, experimentation in HEK-293 confirmed the bioactivity of our human chorionic gonadotropin.

Our results challenge the consensus of the field that LHCGR is expressed in human endometrium and functionally involved in decidualisation.



Effect of Epidemic Viral Haemorrhagic Fevers on Pregnancy Outcomes: A Literature Review and Meta-Analysis

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Background

The exponential rise in world population has facilitated the spread of zoonotic viral diseases. An example is viral haemorrhagic fevers (VHFs) typically occurring in the developing world. Pregnant women are thought to have worse experiences of viral diseases but their outcomes in VHFs are under-researched. This review aims to systematically review the literature on maternal and foetal outcomes in VHFs.

Methods

A literature search was performed on Medline, Embase, Cochrane (Central) and Health Technology Assessment Database. This yielded 7 studies for review. Data on maternal, obstetric, foetal and neonatal outcomes was extracted and synthesised via tabulation, weighted means and meta-analysis.

Results

There was a general paucity in outcomes reported. A non-significant increase in maternal death in VHF-positive women compared to non-pregnant controls was seen (Odds ratio = 1.28, 95% CI = 0.64, 2.55). Ebola Virus Disease (EVD)-positive women had a significantly higher rate of antepartum haemorrhage ($p=0.002$). Live birth rates were lower in women with EVD compared to Lassa fever (LF). The neonatal risk of death was not significantly different between EVD and LF, with little to no comparability.

Key Messages

VHF-positive pregnant women are at higher risk of maternal morbidity and obstetric haemorrhage compared to controls. Sub-Saharan Africa endures significant disease burden that stifles development, healthcare systems and medical research. The findings from this systematic review reflect the paucity and incompleteness of currently available evidence, highlighting the need for further vital research to avoid preventable maternal morbidity.



A Retrospective Audit of Axillary Lymph Node Assessment and Treatment at UHCW Breast Unit

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Background

In accordance with NICE, breast centres should follow a set pathway in the treatment and assessment of the axilla in early invasive breast cancer. Adherence acts to minimise overtreatment and adverse post-surgical outcomes such as lymphoedema. This audit aims to assess adherence to this pathway at the UHCW breast unit. It will also evaluate the accuracy of the pre-operative axillary ultrasound scan. Results will be compared on a national level using the nationwide audit carried out by Public Health England.

Methods

A retrospective audit approach was used to assess care received by a sample of 352 patients diagnosed with invasive breast cancer across 2015 and 2018 respectively. Exclusions were applied to those receiving palliative care, neo-adjuvant chemotherapy and those with a previous diagnosis of breast cancer.

Results

Adherence to pre-operative axillary ultrasound (US) scanning equalled 99% and subsequent appropriate needle sampling, 92%. There was a 93.2% overall adherence to the recommended sentinel lymph node biopsy in those with US or needle sampling negative nodes. The positive predictive value of the axillary ultrasound sat above national average at 53.2%.

Key Message

Overall, the results are in line or better than national performance measured in the NHSBPS audit. The NICE recommended assessment and treatment pathway appears to be fully cemented into the UHCW breast unit's practice. However, in just over a third of patients, additional non-sentinel lymph nodes were taken at sentinel lymph node biopsy. This is an area that would benefit from further research into the risks/advantages of additional sampling.



Effective Oncology teaching to Medical Undergraduates: A Systematic Review

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Background

Cancer is still one of the most common causes of death worldwide and thus it is critical to analyse how it is being taught at undergraduate level. This research compares current methods of undergraduate oncology teaching to ascertain which methods are most effective in improving both student confidence and clinical competence.

Methods

A systematic review of the literature was conducted; searches were performed in MEDLINE, EMBASE, Web of Science, Education Research Complete and the Cochrane Library.

Results

Very few comparative studies were elucidated by the search; only two studies directly compared teaching methods. 17 studies were included to demonstrate effective teaching principles that improved student confidence, and clinical ability. The use of new technologies such as virtual learning environments can enhance learning but cannot entirely replace clinical teaching and direct patient contact. Clinical clerkships appear to be more effective when taught with didactic components that enhance learning. Shorter learning programmes outside of the curriculum can improve student understanding and interest in oncology, and these do not need to be lengthy undertakings to show effects.

Conclusion

This study has found 17 articles on oncology teaching at undergraduate level further to Gaffan et al.'s original paper that fit the inclusion criteria. Oncology teaching needs to be less disparate in the curriculum, with multi-modal methods of teaching and should ideally include as much direct patient contact as is feasible. Further studies should be conducted to directly compare methods, and knowledge level to discern how best to improve oncology curricula.



Isolation of Cell-Free Tumour DNA from Peripheral Blood: A Method Development Study in Patients with Neuroendocrine Tumours

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Background

The presence of cell-free genetic material (cfDNA) circulating freely in the blood has a range of potential clinical uses, particularly in the diagnosis and management of a range of cancers. However, there currently exists no standardised and validated method of extracting and analysing this cfDNA from peripheral blood samples, and it is unclear to what extent the various methods that are commercially available are appropriate for use in a non-specialist clinical laboratory setting. This study aimed to compare a range of commercially available DNA isolation kits (Maxwell, QIA and MagMAX), and evaluate their efficacy and appropriateness for use in a non-specialist lab.

Methods

Plasma samples from seven patients with Neuroendocrine tumours were used to extract cfDNA using each of three different isolation kits. The isolated products were then evaluated in terms of the quantity of cfDNA, as well as the presence of specific mutations known to be present in some Neuroendocrine tumours, as a proxy of the quality of extracted cfDNA.

Results

Using cfDNA quantity as a measure of kit efficiency, it was found that the Maxwell was the most efficient in cfDNA isolation, followed by the QIA, with MagMAX found to be the least efficient kit. In terms of appropriateness, the Maxwell was the most straightforward method, with QIA and MagMAX having the advantage of being able to process a large volume of sample. The QIA had the added advantage of lowest cost per sample, and fastest total running time.

Key Messages

Effective cfDNA isolation is possible in a non-specialist setting, with the optimal kit dependent on the value a laboratory places on factors such as efficiency, time and cost.



How Long do People Stay at Secure Forensic-Psychiatric Units and What Factors Influence Length of Stay?

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Background

Length of stay (LoS) within forensic-psychiatric care is not widely reported and data on the duration of LoS already available is highly variable due to differing factors. Understanding of LoS and the factors which affect it are important to understand as there are implications for patients, clinicians and commissioners.

Aims

1. To determine what is the LoS within secure forensic-psychiatric units.
2. To understand the extrinsic and intrinsic factors that affect LoS in secure forensic-psychiatric units and identify any modifiable factors.

Methods

The research questions were answered using a systematic review approach and results were summarised narratively. Search of the databases PsycINFO, Embase, Medline, CINAHL was carried out in May 2020, looking for data on the LoS in secure units and extrinsic and intrinsic factors which affect LoS. Two authors independently reviewed the full texts of potentially relevant studies to determine eligibility for inclusion. Only studies in English language and access to full texts were included.

Results

A total of 38 publications were identified which met the inclusion criteria and were included in the review. Of the studies 12 contained only LoS data, 15 contained factor data and 11 reported on both. LoS studies reported on UK and International settings, with high secure and medium secure units within the UK. Most studies reported on intrinsic factors.

Conclusion

LoS increases at higher levels of security in secure forensic psychiatric units. Most studies used admission to discharge data as opposed to admission to census data. Similarly, the level of security setting patients are placed in is a factor which contributes to LoS. Extrinsic factors such as the setting, resources available and treatment received all affect LoS. More research is needed on extrinsic factors affecting LoS to consider if these factors are modifiable or not.



The HEALTH Passport: A Secondary School Approach

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Background

The nation's health is on a steady decline with cardiovascular disease taking over as the leading cause of death in the UK. Many of the contributing risk factors are modifiable by adhering to a healthy and active lifestyle. By using the HEALTH Passport adults were able to successfully adjust their habits to improve predicted life expectancy. This research aims to investigate if imbedding the HEALTH Passport into the curriculum of secondary school students could equip them with healthy lifestyles choices, to be carried through to adulthood.

Method

A conference of 254 trainee teachers was held to evaluate teaching on risk factors identified, alongside opinions on the new HEALTH Passport. Trainees were provided teaching on the key risk factors and workshops and questionnaires were used to evaluate the new Passport. Thematic analysis was performed on the 119 secondary specific responses in NVivo.

Results

The response to the HEALTH Passport for Secondary schools was overall positive with recurrent additions/amendments mentioned. Participants stated it could be a "hugely valuable resource", and highlighted noteworthy issues with the curriculum, specifically food education. It was noted that secondary students may not admit to illegal activity (if this was being monitored by teachers.

Key Messages

The HEALTH Passport for Secondary schools has the potential to influence the lifestyle choices of teenagers for the better. It would need to be adapted dependent on age. How data is reviewed and shared with needs to be assessed more thoroughly in order for successful and truthful student engagement.



Do Local Authorities Benchmark Fairly? Using Machine Learning to Develop a Model of Nearest Neighbours to Improve Benchmarking

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Background

To improve services for their population, Local Authorities (LAs) require a method of comparing themselves to other, similar local authorities. A commonly used model, one used by Public Health England, is the CIPFA Nearest Neighbours (NNs) model. This research explores whether defining NNs using machine learning (ML) yields similar results to the aforementioned model; and examine selected health outcomes in Coventry, benchmarking against NNs found using the ML method, should they be different.

Methods

A dataset was curated to include eighteen variables, matched to those used in the CIPFA model, alongside proxy variables where necessary. The optimal number of clusters were determined, after which unsupervised ML by k-medoid clustering was employed to identify similar local authorities. Selected health outcomes for Coventry were then compared between clusters using Kruskal-Wallis and Bonferroni-corrected Mann-Witney tests.

Results

Of the ten indicators compared, seven had the same results between the two models, whilst three had different results between the models. The results of this analysis demonstrate that using ML to identify NNs for LAs, compared to the CIPFA model does yield differences that are statistically significant for some of the health outcomes used in this comparison.

Key Messages

Given that the two models largely agree with one another provides some reassurance that there is potential for the ML method to be “trusted” and become increasingly acceptable. The significance of identifying these differences is that they encourage further research in the area of using ML methods for benchmarking purposes, in the context of public health.



How are Self-Triage and Symptom Checkers Tools Being Used During the COVID-19 pandemic?

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Background

Symptom checkers tend to have lower diagnostic accuracy when compared to healthcare professionals and suggest more risk-averse triage advice. There is little evidence to suggest that symptom checkers threaten patient safety, though assessment of this is lacking. COVID-19 symptom checker literature is still in its infancy; however, these tools have been used to avoid in-person appointments, identify new symptoms and monitor outbreaks.

Methods

Medline, Google Scholar and Google were searched between July and August 2020. The search was restricted to include studies in the last five years, studies published in English and included electronically published studies ahead of print.

Results

31 search results were identified with 5 removed due to duplication. 26 records were screened resulting in exclusion of 4 records. Full-text articles were assessed for eligibility with a further 4 excluded. 18 articles met the eligibility criteria however, 4 were grey literature and not specifically referenced. A summative table was synthesised with some of the digital symptom checkers (both COVID-19 or otherwise) currently available.

Key Messages

For a COVID-19 symptom checker to be accurate and reliable, one study suggested that both sensitivity and specificity need to be balanced. Studies show symptom checkers have been useful during lockdown – regional flare-ups monitored, novel symptoms identified and patients have accessed advice without risking exposure. Over 16 days, one COVID-19 symptom checker suggested ‘self-care’ to 240 patients, meaning that 240 appointments were potentially avoided. However, research is lacking in terms of compliance, health outcomes and patient safety.



The HEALTH Passport: Trainee teacher Evaluation of a Primary School Approach

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Background

Chronic disease is still a significant burden on the global population. The HEALTH passport has previously been shown to be an effective intervention to help adults modify their chronic disease risk factors through lifestyle changes. This research aims to investigate whether this approach is feasible for primary school age children, and if so, how a newly adapted HEALTH Passport for primary would be best utilised.

Method

A conference of 254 trainee teachers was held to evaluate teaching on risk factors identified, alongside opinions on the new HEALTH Passport. Trainees were provided teaching on the key risk factors and workshops and questionnaires were used to evaluate the new Passport. Thematic analysis was performed on the 95 primary specific responses in NVivo.

Results

The Passport for primary was generally well received. Participants reported it was a “lovely idea” and that they “really liked this approach”. They specifically noted the emotional wellbeing section was “very useful” to “raise awareness and make it personal”. However, trainees did note that it would “need to be differentiated for age groups” they expressed concerns about the mental health impact of weighing children and recording BMI at young ages.

Conclusion

The HEALTH Passport for primary has potential as an intervention strategy but would need to be adapted dependent on the school level and made more child friendly. References to weight/BMI should be changed or removed and emotional wellbeing strategies should be focused on where possible.



Audit on Initiating and Monitoring Methotrexate in the George Elliot Rheumatology Clinic

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Background

Methotrexate is a first line agent used in various conditions. Its immunosuppressive effects are well documented as well as its adverse reactions. The British Society of Rheumatology (BSR) has released guidelines on initiation and monitoring of Methotrexate. Patients should have a chest X ray before initiating treatment along with bloods including FBC, LFT, U&E, ESR, CRP. Bloods should be also be monitored every 2 weeks for 8 weeks then monthly after starting Methotrexate. Once stable blood monitoring can be done every 2 to 3 months.

Methods

20 patients were selected randomly from rheumatology department who were recently started on Methotrexate. A search was then performed on the review system of George Eliot Hospital Nuneaton and following categories were made to see if

- 1-Pre-treatment CXR done
- 2-Pretreatment blood tests done
- 3-Post treatment initiation monitoring of blood tests done
- 4-Folic acid was co-prescribed

Results

95% of patients had a CXR done before starting, 5% (1 patient) did not, but it was due to the patient already having a previous CT scan prior to initiation.

100% patients had bloods done before starting

100% of patients has bloods done after starting.

100% of patients have been co-prescribed Folic acid.

Key Messages

The results of the audit are reassuring with the guidelines being followed and acted upon. However, there is a need to continue the high standards that have been set and therefore a continuation of current practice is recommended with some adjustments to improve the service



The Impact of Pre-Operative Biologic Therapy on Post-Operative Surgical Outcomes in Ulcerative Colitis: A Systematic Review and Meta-Analysis

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Background

Biologic therapy has emerged as an effective modality amongst the medical treatment options available for ulcerative colitis (UC). However, its impact on post-operative care in patients with UC is still up for debate.

Aims

This review attempted to evaluate the risk of having post-operative complications following biologic therapy in patients with UC.

Methods

A systematic search of the relevant databases was conducted with the aim of identifying studies which compared the post-operative complication rates of UC patients, who were either exposed or not exposed to a biologic therapy, prior to their surgery. Outcomes of interest included both the infectious and the total complication rates. Pooled odds-ratios and 95% confidence intervals were calculated.

Results

19 studies, reviewing a total of 12,308 patients with UC, were included in the meta-analysis. 2199 of those had had an exposure to a biologic therapy prior to surgery. The pooled OR for the infectious complications and the total complications were 0.95 (95% CI 0.62-1.45) and 1.14 (95% CI 1.04-1.28) respectively, which suggests that there was no significant association between the pre-operative biologic therapy and post-operative infectious or total complications. Moreover, the duration between the last dose of biologic therapy and surgery did not influence the risk of having a post-operative infection.

Key Messages

This meta-analysis suggests that the pre-operative biologic therapy does not increase the overall risk of having a post-operative infection or any complication. Being on biologic therapy should not delay an abdominal surgery in patients with ulcerative colitis.



POSTER 40

Changes to Surgical Procedure in COVID-Positive and Suspected Patients

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The last few days have seen the dissemination of the infection disease known as COVID-19, with confirmed cases climbing daily. Having spread rapidly to all corners of the globe this virus can lead to respiratory distress and even failure (1). Despite being unprepared for an outbreak of this magnitude, healthcare professionals have been quick to implement a series of measure to reduce infection rates (2).

Due to the changes in normal operating procedure during this trying time, a number of surgical specialties have laid out a series of guidelines regarding changes in elective operating procedures. As such the European journal of Trauma and emergency medicine (3) have produced a series of recommendations for preparing staff for operating in the current climate. These recommendations have been subdivided into 8 sections:

- 1) General recommendations.
- 2) Operating on COVID positive patients.
- 3) Operating theatre set up.
- 4) The transport of COVID positive patients.
- 5) Surgical staff preparation, including the use of personal protective equipment.
- 6) Considerations taken into account with regards to the anaesthesia used.
- 7) Surgical approach.
- 8) Case completion and post-operative care.

Today's clinicians will be leading the way within the pandemic. With everyday life being drastically changed we must maintain the standards that are expected for patients and uphold safety standards staff require. Due the unprecedented times we have been forced to learn from our experiences and others, ensuring that we limit the speed and maximise our ability to treat patients with COVID-19.



Get into The Digital Age: A Patient Satisfaction Survey Investigating Pre- and Post-Operative Information Provision in Lower Limb Surgery

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Background

Planned lower limb surgery is common, with over 90,000 hip and 95,000 knee replacements performed in the UK yearly. Patient satisfaction is an important element of healthcare provision, usually measured by functional outcomes but influenced by many other factors. Few studies have assessed patients' views on the information given to them pertaining surgery and patients are infrequently consulted when designing information packs which can lead to confusion during the recovery period and poorer long-term outcomes. We aimed to assess if patients were satisfied with the information they received around their operations and identify potential improvements.

Methods

Set in a major trauma centre in the West Midlands, a survey was administered to patients who used the orthopaedic service over the course of one month. Surveys were designed in Qualtrics and administered face-to-face on paper. Thematic content analysis was performed.

Results

Eighty patients completed the survey, of which 88.8% of patients were satisfied with the information they received. Discussions with surgeons were the most useful resource and 53% of patients requested more internet resources. Post-operative patients more likely to be dissatisfied with information provision. Over 20% of patients requested more information on post-op pain and recovery timelines.

Key Messages

Although patients were generally satisfied, areas for change were identified. Suggested improvements take the form of webpages, a mobile platform or forum for asking healthcare professionals questions. Extra resources could contain educational videos, patient experiences and an interactive recovery timeline. These suggestions may enable NHS Trusts to "get into the digital age".



Why do Medical Students Refuse the Influenza Vaccine, and what Can be Done to Improve Vaccination Rates?

Georgia Gray
University of Warwick

Background

The annual influenza vaccination is recommended for all frontline healthcare workers in the UK and is a crucial way of reducing mortality for vulnerable patient groups. However, to date the UK government has never explicitly monitored influenza vaccine uptake in medical students. This is important to ascertain, as students regularly move between clinical areas and are both a perfect vector for the spread of influenza and at an increased risk of contracting influenza themselves.

Methods

This service evaluation collected data about medical student uptake of influenza vaccination in one UK medical school. 251 students at different course stages completed questionnaires, answering questions on vaccination status and Likert-scale 'belief' questions to assess the subjective reasons behind vaccine refusal

Results

The results revealed a substantial difference between year group cohorts (approximately 20%), with older cohorts having a significantly lower vaccination rate than younger cohorts. Furthermore, two significant negative predictors of vaccination were found ($p < 0.001$), related to scepticism over the effectiveness of the vaccine and lack of convenient access to the vaccination itself.

Key messages

Results indicated that integrating information about the influenza vaccine into the curriculum would reduce lack of knowledge over the efficacy of the vaccine.

Furthermore, the centralisation of vaccination programmes at mandatory university-based learning events would mitigate against the problem of diversity of vaccination locations and lack of central accountability.

The results of this service evaluation provide significant predictors of vaccination status for medical students and potential occupational health interventions to improve vaccine uptake in this group.



PRESENTATION 1

A Clinical Audit Cycle Examining Inhaler Prescriptions for Asthmatics at Brookside Surgery. Is COVID affecting Asthma Care?

Jasmine Zanelli & Laura Wheeler
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Background

Despite availability of effective treatment, asthma mortality rates in the UK are on the rise with 2019 seeing the highest deaths for 20 years. A recent national report into asthma deaths carried out by the RCP found in up to 50% of cases there were avoidable factors that may have contributed. Based on four key recommendations from this report, an audit into the practice at Brookside surgery revealed particular weaknesses in adherence to annual asthma reviews and over-prescription of short-acting beta agonists (SABA). This study aims to re-audit and assess effectiveness of implementations made post-audit. We will also consider the impact of the COVID-19 pandemic on these measures

Methods

Aligned with methodology of the original audit, we randomly selected 100 patients currently registered at Brookside surgery and, using EMIS, searched for and recorded their medication history for the preceding 12 months. Searches were also made for evidence of an asthma review and RCP questions.

Results

At re-audit 63% of patients attended for their annual asthma review. This compares to 69% of patients the year prior. The percentage of patients with dangerous SABA use stayed relatively stable with 5% at re-audit compared to 6% previously. However, 10% less patients were using SABA's at levels which are suggestive of need for clinical review- reducing from 37% to 27%. Further results are still being elucidated

Key messages

The shift to virtual management of patients during the COVID-19 pandemic does not appear to have significantly impacted adherence to annual asthma reviews. On further inspection of our data we will try and establish whether this also translates to maintaining safe inhaler prescriptions.



PRESENTATION 2

Coronavirus Disease 2019 (COVID-19) Outcomes in HIV/AIDS Patients: A Systematic Review

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Background

The aim of the study was to systematically review current studies reporting on clinical outcomes in people living with HIV (PLHIV) infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Methods

We conducted a systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines. A comprehensive literature search was conducted in Global Health, SCOPUS, Medline and EMBASE using pertinent key words and Medical Subject Headings (MeSH) terms relating to coronavirus disease 2019 (COVID-19) and HIV. A narrative synthesis was undertaken. Articles are summarized in relevant sections.

Results

Two hundred and eighty-five articles were identified after duplicates had been removed. After screening, eight studies were analysed, totalling 70 HIV-infected patients (57 without AIDS and 13 with AIDS). Three themes were identified: (1) controlled HIV infection does not appear to result in poorer COVID-19 outcomes, (2) more data are needed to determine COVID-19 outcomes in patients with AIDS and (3) HIV-infected patients presenting with COVID-19 symptoms should be investigated for superinfections

Key messages

Our findings suggest that PLHIV with well-controlled disease are not at risk of poorer COVID-19 disease outcomes than the general population. It is not clear whether those with poorly controlled HIV disease and AIDS have poorer outcomes. Superimposed bacterial pneumonia may be a risk factor for more severe COVID-19 but further research is urgently needed to elucidate whether PLHIV are more at risk than the general population



PRESENTATION 3

How Contaminated is your Mobile Telephone? A Presentation on a Systematic Review of Healthcare Workers' Mobile Phones as a Vector for Cross-Contamination of Infection in Clinical Environments

Katie McLean
University of Warwick

Background

The mobile phone is a now valuable tool in healthcare, allowing rapid access to information and facilitating communication between healthcare workers (HCWs). Due to being in regular contact with the face and hands, there are concerns that HCWs' mobile phones are reservoirs for pathogenic microorganisms. These may cause healthcare associated infections (HCAIs) if transferred to vulnerable patients by contaminated hands of HCWs. The burden of HCAIs on healthcare systems is considerable.

Methods

A systematic literature review was performed between April and July 2020. Six databases were searched, papers were screened and filtered, and relevant data was extracted from eligible studies. Studies were critically appraised using checklists for either Cross-sectional Studies or Randomised Controlled Trials. A narrative synthesis of evidence was performed on results from studies.

Results

Seventeen studies (published 2012-2020) were included, conducted in hospitals in countries with a high human development index (defined by the UN). The mean percentage of mobile phones contaminated with pathogens across studies was 52.7%. Viral contamination was less prevalent than bacterial contamination. Large percentages of HCWs regularly used mobile phones at work and never disinfected them. Some studies tested a mobile phone cleaning protocol and bacterial pathogens were reduced or eradicated completely.

Key messages

To prevent cross-contamination between mobile phones, hands and patients, NHS trusts should provide guidance to staff and clinical students regarding mobile phone cleaning. Mobile phones should be disinfected regularly to prevent contamination with pathogens.



PRESENTATION 4

Effects of Incentives and Subsidies on Tuberculosis Testing Rates in Rural Philippines

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Background

International Care Ministries (ICM) is a Philippines-based non-governmental organization with a mission to reduce the burden of extreme poverty in the Philippines. Between February 2018 and January 2019, ICM conducted the first randomized controlled trial (RCT) to investigate whether providing food and transportation costs increases the rate of attendance to the rural health unit (RHU) for tuberculosis (TB) testing.

Methods

Study participants were assigned to one of four RCT groups based on incentives or subsidies that they were given: A) no incentives or subsidies (i.e., control group); B) food; C) transportation costs to the RHU; and D) food and transportation costs to the RHU. Between February 2019 and January 2020, ICM conducted the second RCT with three RCT groups: A) food and transportation costs to the RHU (i.e., control group); B) food, transportation costs to the RHU, and subsidies for chest x-ray; and C) food, transportation costs to the RHU, subsidies for chest x-ray, and accompaniment of a counsellor (i.e., a trusted community member) to the RHU. To elucidate the effect of incentives and subsidies in increasing the rate of RHU attendance for TB testing, a logistic regression model was developed using RHU attendance for TB testing as the outcome, and RCT group, age, and sex as the predictors.

Results & Key Messages

The first RCT has shown that providing both food and transportation costs was associated with the highest odds of attending the RHU for TB testing (Odds Ratio (OR) = 7.06, 95% Confidence Interval (CI) [4.79, 10.38], $p < 0.05$), compared to providing no incentives or subsidies. Males had significantly lower odds of attending the RHU for TB testing (OR = 0.63, 95% CI [0.47, 0.83], $p < 0.05$), compared to females. In the second RCT, chest x-ray subsidies and counsellor accompaniment did not significantly increase the odds of attending the RHU for TB testing ($p > 0.05$). Overall, providing food and transportation costs was shown to be a promising strategy for encouraging TB testing in rural Philippines.



PRESENTATION 5

What are the Effects of Hypertension as an Existing Comorbidity on Mortality Rate in Patients with COVID-19? A Systematic Review and Meta-Analysis

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University of Warwick

Background

Coronavirus has spread throughout the world rapidly, and there is a growing need to identify host risk factors to identify those most at risk. There is a growing body of evidence suggesting a close link exists between an increased risk of infection and an increased severity of lung injury and mortality, in patients infected with COVID-19 who have existing hypertension. This is thought to be due to the possible involvement of the virus target receptor, ACE2, in the renin-angiotensin-aldosterone blood pressure management system.

Methods

A systematic literature search in several databases was performed to identify studies that comment on hypertension as an existing comorbidity, and its effect on mortality in hospitalized patients with confirmed COVID-19 infection. The results of these studies were then pooled, and a meta-analysis was performed to assess the overall effect of hypertension as an existing comorbidity on risk of mortality in hospitalized COVID-19 positive patients.

Results

A total of 12243 hospitalised patients were pooled from 19 studies. All studies demonstrated a higher fatality rate in hypertensive COVID-19 patients when compared to non-hypertensive patients. Meta-analysis of the pooled studies also demonstrated that hypertension was associated with increased mortality in hospitalized patients with confirmed COVID-19 infection (risk ratio (RR) 2.57 (95% confidence interval (CI) 2.10, 3.14), $p < 0.001$; $I^2 = 74.98\%$).

Key messages

Hypertension is associated with 157% increased risk of mortality in hospitalized COVID-19 positive patients. These results have not been adjusted for age, and a meta-regression of covariates including age is required to make these findings more conclusive.



PRESENTATION 1

Is a Single Plate Enough? Primary Surgical Fixation Methods for Distal Femoral Fractures

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Background

Distal femoral fractures are notoriously complex to surgically fix. Currently, the majority are fixed using a single locking plate. However, surgeons at the major trauma centre of University Hospital Coventry and Warwickshire (UHCW) have observed a large number of single locking plates failing, resulting in a revision surgery with alternative or supplementary fixation being required. This projects aim was to establish the complication and revision rates of single locking plates and to compare outcomes with double locking plates used in primary surgical fixation of distal femoral fractures at UHCW.

Methods

Patients were identified using operating procedure codes matching surgical fixation of distal femoral fractures between June 2016 and June 2019. Retrospective analysis of clinic letters, theatre notes and x-rays for 53 patients with single locking plates and 13 patients with double locking plates was performed.

Results

12 patients (32%) with single locking plates suffered complications, with 9 (24%) requiring a revision surgery. This compares to only 2 patients (15%) within the double locking plate group. The most common complication of single locking plates was plate breakage before union (21%). Periprosthetic fractures and increasing age reduced the success rate of single locking plates.

Key messages

1 in 3 single locking plates suffered complications compared to 1 in 7 double locking plates, meaning single locking plates are 2.6x more likely to fail. This rises to 3.7x in those with a periprosthetic fracture. Therefore, double plates should be adopted as the primary fixation method for distal femoral fractures, especially with periprosthetic fractures.



PRESENTATION 2

Temporomandibular Joint Dysfunction following use of a Supraglottic Airway Device in General Anaesthesia

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Background

Supraglottic airway devices (SADs) are used for securing the airway in over 50% of general anaesthetics in the UK. Although considered relatively safe devices, there are several potential complications. These include temporomandibular joint (TMJ) dysfunction, which has been reported in isolated cases but not well-characterised in clinical studies to date. This study investigated TMJ dysfunction following the use of a SAD during general anaesthesia.

Methods

Fifty adult surgical patients scheduled to receive a SAD were recruited. Pre-operatively, patients were asked to complete a 12-item questionnaire (to assess subjective TMJ function at baseline) and objective measurements of the jaw (inter-incisor distance, forward and lateral jaw movements) were taken. The questionnaire and objective measurements were then repeated two-to-24 hours after the operation.

Results

There were no statistically significant differences in mean inter-incisor distance, forward jaw protrusion and right lateral jaw movement post-operatively versus pre-operatively ($p=0.588$, $p=0.135$ and $p=0.372$ respectively). Mean left lateral jaw movement was significantly reduced post-operatively ($p=0.029$). Subjectively, 90% of patients reported no changes post-operatively in any of the parameters questioned. New post-operative symptoms included jaw joint pain (4% of recruits), jaw muscle pain (4%), jaw grinding (2%), jaw locking (1%), and difficulty chewing (1%).

Key messages

There was a low incidence of subjective TMJ discomfort following SAD use. Most objective measures showed no significant change post-operatively. If shown to be consistent in future studies, these results can help reassure patients during the anaesthetic consenting pre-operatively, particularly for those worried about having an airway device inserted.



PRESENTATION 3

Endoprosthetic Reconstruction & Intramedullary Nailing for Pathological Fractures of the Proximal Femur: A Systematic Review and Meta-Analysis of Survival and Complications

*Sallu Dawo, Birgit Fruhstorfer
University of Warwick*

Background

Up to 50% of new cases of cancer diagnosed eventually metastasise to bone. The femur and humerus are common sites for metastases to the bone. Pathological fractures of the femur can lead to impaired mobility, severe pain, morbidity and reduced quality of life. This review compares survival and complication rate following endoprosthetic reconstruction (EPR) and intramedullary nailing (IMN) for impending and complete pathological fractures of the proximal femur associated with metastatic bone disease.

Methods

A systematic review of the literature was performed searching Medline, Cochrane, Web of Science and EMBASE databases for articles published within the last 40 years reporting outcomes for surgical treatment of metastatic lesions in the proximal femur. Twenty-eight studies with 2631 patients treated for 2657 lesions were included. Meta-analysis was performed to compare pooled estimates and 95% confidence intervals for IMN and EPR.

Results

EPR provides a greater 1-year survival rate than IMN (39% vs 33.2%, $p > 0.05$). Systemic complications were lower in patients treated with EPR than IMN (3% vs 7.9%). Rate of tumour progression was lower in EPR than IMN (0.9% vs 2%). Patients treated with EPR were less likely to experience implant failure or dislocation than the IMN group (3.6% vs 5.8%). Pooled deep infection rate was higher in patients treated with EPR than in the IMN group. Significant heterogeneity ($p < 0.05$) was present in studies reporting on both treatment modalities.

Key messages

Survival, complication and reoperation rates are comparable between EPR and IMN. EPR provides a greater 1-year survival rate than IMN. EPR also lasts the lifetime of the patient and provides a greater protection against local recurrence. Risk of systemic complications is lower in patients treated with EPR, but they are more susceptible to deep infections than patients treated with IMN.



PRESENTATION 4

Comparing Outcomes of Plate versus Screw Osteosynthesis of Scaphoid Non-union: A Systematic Review and Meta-Analysis

*Mary Rose Harvey & Rosie Hall
University of Warwick*

Background

Scaphoid nonunion is commonly treated with open reduction and internal fixation with a headless compression screw. The use of variable-angle buttress plates has also been described, although this has been considered a salvage procedure. The aim of this systematic review is to compare plate and screw osteosynthesis of scaphoid nonunion to determine whether either has preferable outcomes.

Methods

A database and hand search was performed, and included studies were critically appraised using NIH Quality Assessment Tools. Meta-analyses or narrative syntheses were performed for relevant data.

Results

Twelve studies met the eligibility criteria for inclusion. The evidence suggests that there are no significant differences between plate and screw interventions for the outcomes of Disabilities of the Arm Shoulder and Hand, Modified Mayo Wrist Score and grip strength. Range of motion demonstrated incidences of improvement in extension, flexion, ulnar deviation and radial deviation for both interventions. However, there was considerable variety in reporting methods, making statistical comparison difficult.

Key messages

Plate osteosynthesis of scaphoid nonunion is a viable alternative to screw osteosynthesis in terms of outcomes. Surgeons may choose to use this method of fixation based on preference or clinical need. There is a need for consistent reporting standards in order to draw valuable inferences from research.

Case series studies can lead to significant advancements in medicine, but this systematic review must be interpreted with caution due to inherent biases in such study designs. Randomised controlled trials with well-established comparators and standardised reporting techniques will provide a higher level of evidence.



PRESENTATION 5

Troponin Measurement in Paediatric Cardiac Surgery: A Systematic Review

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Objectives

Troponin is a commonly used biomarker of myocardial injury following surgery. However, there are inconsistencies in the measurement and reporting of biomarkers due to a lack of standardised approach. This systematic review evaluates the use of troponin in paediatric cardiac surgery.

Methods

The MEDLINE, CENTRAL, EMBASE, and LILACS/IBECs databases were searched and relevant systematic reviews or meta-analyses were reviewed for additional studies. Inclusion criteria were the measurement and reporting of troponin in children undergoing cardiac surgery, with no restrictions on study design, year or language.

Results

125 studies were identified. The most frequent aim was risk factors/prognostic value for post-operative course (28, 22.4%) followed by cardioplegia (27, 21.6%). Cardiac troponin I was the most reported assay (93, 74.4%). 116 different time points for troponin measurement were identified: preoperative baseline was the most frequent (79, 63.2%) followed by 24-hour post-operative (43, 34.4%). Forty-nine (39.2%) studies only represented troponin values across time points graphically. 57 (45.6%) studies also reported other cardiac biomarkers, with CK-MB being most frequent in 32 (25.6%). The most frequent clinical variables compared were cardiopulmonary bypass time (95, 76%), aortic cross-clamp time (73.6%), and duration of inotropic support/inotropic score (68, 54.4%).

Conclusions

The current literature illustrates marked differences in how troponin is measured and reported in paediatric cardiac surgery. We found variations in assay, time points and clinical outcomes, alongside uncertainty regarding other cardiac biomarkers and lack of reporting of numerical troponin values. These inconsistencies precluded the pooling of results for meta-analysis and highlight the importance of a standardised approach to the measurement and reporting of troponin release following cardiac surgery in children.



PRESENTATION 1

Barriers to Equality in Healthcare Faced by Sex Workers: A Systematic Review

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Background

Sex workers (SWs) are generally regarded as a vulnerable population which often suffer from poor health and unsuitable access to healthcare. This paper aims to understand barriers to healthcare faced by SWs in the UK and has therefore focused on 'Western' cultures.

Methods

A search of PubMed, Embase, Web of Science and the International Journal of Equity in Health and reference/citation searches were conducted. The search focused on papers assessing barriers to healthcare experienced by SWs that met the following parameters: were published between 2015 and the present, focused on 'Western' cultures and were published in English. The barriers identified were classified using the Health Care Access Barriers (HCAB) Model and thematic analysis was then performed as described by Higginbottom et al.

Results

The search identified 29 papers originating from 11 countries and assessed female sex workers (FSW), male sex workers (MSW) and transgender sex workers (TSW) from a range of sexualities, ethnicities and migrant status'. Overwhelmingly, the most frequently identified barrier was occupational stigma (OS). Poor professional practise, mistrust of healthcare professionals, structural barriers within healthcare, health illiteracy and fears associated with seeking healthcare were also identified.

Key messages

Based on this review, this paper concludes that focusing on anti-discrimination training targeted at healthcare professionals will hopefully encourage the delivery of high-quality care that maximises respect for autonomy and positive health outcomes for SWs.



PRESENTATION 2

Exploring the Use of a Clinical Ethics Service in an NHS Trust

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Background

At work, healthcare professionals regularly experience ethical dilemmas such as issues around capacity and consent, withdrawing treatment and making treatment decisions. To cope with such issues, clinicians utilize a variety of methods including individual reflection, discussions with colleagues or discussions at departmental meetings. However, more formal support services have been developed, such as clinical ethics forums. These exist in different forms internationally. In this specific NHS Trust, forum members include doctors, nurses, ethicists and lay members and it functions to provide ethical advice to clinicians regarding their dilemmas. Other roles of the forum are to provide ethical education and to consider Trust policies from an ethical perspective.

Methods

This aims of this research were to explore the use of the clinical ethics forum at the Trust from the perspectives of its users (clinical staff) and forum members, using a mixed methods approach (semi-structured interviews and a survey).

Results

The majority of healthcare professionals surveyed were aware of the existence of the clinical ethics forum, but the majority had not used it. Forum members described an underutilization of the forum; their perception was that the forum had a low profile within the Trust. Challenges included maintaining forum membership and a lack of protected time to deliver a satisfactory service. Barriers to the use of the forum were explored and suggestions were made as to how to increase clinician engagement with the forum, the most remarkable being to improve the profile of the forum and to provide a more timely and quality assured service.



PRESENTATION 3

Experiences and Attitudes of the LGBTQ+ Community on Care/Nursing Homes

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Background

Recent research has found that older lesbian, gay, bisexual, transgender and queer (LGBTQ+) people have a negative attitude towards care/nursing homes and are concerned about facing discrimination based on their sexuality and gender identity. This study aims to build upon current understanding by reviewing research into the LGBTQ+ communities' perspectives and experiences of care/nursing homes. Additionally, I sought to explore the attitudes of care/nursing home staff towards providing care for LGBTQ+ residents. Based on these findings, recommendations for improvements will then be made.

Methods

A systematic review was conducted by carrying out a database search on Medline, Web of Science and Embase. The following terms were included in the search, "Sexual and Gender Minorities" OR "Homosexuality or Homosexuality, Female or Homosexuality, Male or Bisexuality or Transgender person or Transsexualism" OR (LGBTQ+ or lesbian or transgender or queer or bisexual or pansexual or gay) AND "Homes for Aged OR Nursing Homes OR Care Homes or Residential Facilities OR Long Term-Care" AND "Older or Elderly". Following this, themes were identified by extracting and categorising the data.

Results

The LGBTQ+ community had a negative perception of care/nursing homes. They were concerned that they would have to conceal their identity, experience abuse and become socially isolated. This could be tackled by introducing initiatives to promote inclusivity. Most staff had a positive attitude towards LGBTQ+ residents, but there were significant exceptions to this. Despite their positive attitude, staff often lacked awareness on LGBTQ+ issues.

Key messages

Care/nursing homes are not welcoming for LGBTQ+ people as they perceived to be heterosexual environments. Staff require more training on LGBTQ+ issues to adequately support their LGBTQ+ residents. Additional training would encourage staff to engage their residents in conversations about sexuality and gender identity.



PRESENTATION 4

Are Female Patients More Satisfied with Female Doctors? A Systematic Review

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Background

Gender bias in biomedical research and the clinical environment has led to health inequalities between men and women, potentially leading to poorer clinical outcomes for female patients. In some cases, female doctors have been seen to improve clinical outcomes for female patients. Therefore, is it possible that patient satisfaction also improves when women are treated by doctors of the same gender?

Methods

A literature search was performed, and articles were included if published in a peer-reviewed journal, focused on measuring the impact of a doctor's gender on patient satisfaction, disaggregated patient data by gender, and were available in English. 16 papers were included for data extraction.

Results

16 papers were included for data extraction. Out of these 16 papers, 14 measured global satisfaction and statistically compared patients treated by female doctors with patients treated by male doctors. 4 studies observed female patients to be more satisfied with female doctors, 4 studies observed female patients to be less satisfied with female doctors, and 6 studies observed female patients to be neither more nor less satisfied with female doctors.

Key messages

The findings of this review neither support nor discount the hypothesis that female patients are more satisfied when treated by female doctors. However, the highest quality studies showed that women were more satisfied with female doctors compared to male doctors. A standardised tool is required that can accurately measure the experiences of women from different backgrounds within a variety of clinical settings. Additionally, the gender gap in certain medical specialities must be addressed so women have an equal opportunity to be treated by a female or male doctor.



PRESENTATION 5

Facilitators and Barriers to Pre-Exposure Prophylaxis (PrEP) Acceptability among Ethnic Minority Men-who-have-Sex-with-Men (EMMSM): A Systematic Review

*Adrian McGrath, Tommer Spence, Frances Griffiths
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Background

Ethnic Minority Men-who-have-Sex-with-Men (EMMSM) are at disproportionately high risk of HIV infection. Racial disparities also exist in the use of Pre-Exposure Prophylaxis (PrEP), an intervention highly effective at reducing the risk of HIV acquisition. This systematic review aims to identify the facilitators and barriers to PrEP use in EMMSM and provide recommendations to improve uptake.

Methods

A systematic search of nine databases identified primary research published in English after 2000 exploring the acceptability of PrEP among EMMSM in high-income countries. Studies were screened independently by two review authors; data was extracted, and methodological quality was appraised using standardised forms. Facilitators and barriers to PrEP uptake in EMMSM were categorised using a socio-ecological model and analysed by narrative review.

Results

X 54 studies were included for review. Facilitators and barriers were mapped to the individual, interpersonal, community, institutional and structural level. Common facilitators included its perceived benefit to serodiscordant relationships, the psychological reassurance it offers, and a self-perceived high risk of HIV infection. Common barriers to PrEP use were associated with social stigma, fear of side-effects and poor relationships with healthcare providers.

Key messages

A broad consensus was found in the extant literature, with well-established facilitators and barriers to PrEP use in EMMSM which were mapped and described using a socio-ecological model. We identified key areas of interest and gave recommendations to improve PrEP uptake and optimisation. Future efforts should focus on improving cultural competency in healthcare providers, and developing multi-level strategies to improve PrEP awareness, education, and outreach to EMMSM communities.



PRESENTATION 1

Utilising Features of Metabolic Syndrome to Cost-Effectively Improve MAFLD Diagnosis Rates in Intelligent Liver Function Testing (iLFT)

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Background

A novel, algorithm-based testing pathway called “intelligent Liver Function Testing” (iLFT) has been developed in order to facilitate the diagnosis of liver disease. 29.9% of iLFT is returned with descriptive outcomes of elevated ALT alongside other abnormalities, but without a definitive diagnosis. These cases will proceed to costly investigations and lengthy wait times for liver clinic.

Once investigated, 69% of patients with descriptive outcomes will have fatty infiltrates in their liver on ultrasound scan, consistent with Metabolic Associated Fatty Liver Disease (MAFLD), or metabolic associated steatohepatitis (MASH). MAFLD is closely associated with metabolic syndrome and often presents with deranged liver function tests, but requires further investigations. Investigation and treatment is key as MAFLD is one of the leading causes of mortality from liver disease and cancer.

Methods

The aim of this study was to cost-effectively improve the iLFT algorithm so that more patients can be confidently assigned a definitive diagnosis of MALFD/MASH instead of a descriptive outcome.

Results

In a binomial logistic regression, BMI and glucose impairment were found to be the strongest predictors of fatty infiltrates in the liver. The iLFT algorithm can be improved to aid the diagnosis of MAFLD by stratifying patients into three BMI categories (≤ 26 , 27-34, ≥ 35), adding HbA1c, HDL cholesterol, and triglycerides to iLFT panel. This can safely increase the diagnosis rate, reduce referral to ultrasound scan by 18.70%, and reduce referral to liver clinic by 8.22% (95% sensitivity, 95% PPV).

Key Messages

The improvement to the algorithm offers a savings of £18.57 for every £1 spent.



PRESENTATION 2

Dipeptidyl Peptidase-IV Inhibitors for Non-Alcoholic Fatty Liver Disease Treatment in Patients with Type 2 Diabetes Mellitus: A Systematic Review

Jessica Quimpo
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Background

Non-alcoholic fatty liver disease (NAFLD) is a spectrum of liver conditions caused by a build-up of fat in the liver, in the absence of alcohol. It is an important public health concern due to the increasing obesity epidemic. Patients with type 2 diabetes mellitus (T2DM) and NAFLD are at a higher risk of developing severe forms of NAFLD. There is growing evidence for the use of incretin-based therapies, such as dipeptidyl-peptidase-IV inhibitors (DPP-IV inhibitors), to treat the condition. The aim of this review was to determine whether DPP-IV inhibitors are effective in improving NAFLD in T2DM patients.

Methods

A systematic review was done and the Jadad scoring system was used to assess the methodological quality of trials.

Results

Only 4 trials fit the inclusion criteria resulting in a total of 168 participants. This review provides further evidence that sitagliptin does not significantly improve hepatic fat content or NAFLD progression according to; histological assessment, MRI imaging and serum ALT levels. The results were limited by a low number of RCTs investigating a wide range of DPP-IV inhibitors, inconsistency between trials, low sample numbers, short duration and a lack of reporting diet and exercise regimes.

Key messages

Future trials are needed to accurately conclude the efficacy of DPP-IV inhibitors on NAFLD in T2DM patients. These trials should be long in duration and have a large ethnically diverse sample size. Standardisation is required in trials, both in the types of participants included and in the method of measuring drug treatment outcomes.



PRESENTATION 3

The Use of Honey in the Prevention and Treatment of Radiation/Chemotherapy-Induced Oral Mucositis in Paediatric Patients

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Background

Conventional treatment of oral mucositis has been proven to be ineffective and poorly tolerated by paediatric patients, of whom 80% suffer from this debilitating side effect of cancer treatment. Honey has long been known for its antibacterial, anti-inflammatory and wound-healing properties. No review of the evidence for its specific use in paediatric patients has been undertaken, rendering its potential as a gold-standard treatment in children unconfirmed.

Methods

Following PRISMA guidelines, four major electronic databases were screened for empirical studies, published from 1st January 2010 to 31st December 2019 in the English language. Any studies featuring only participants outside of an age range of 0-18 years were excluded and the quality of included studies was assessed using Cochrane's Risk of Bias tool and the Jadad scale. The main investigated outcomes were the impact of honey on mucositis prevention, severity reduction and length of time spent in hospital.

Results

A total of 52 publications were screened from the databases, of which six were included. Three studies were RCTs, with the other three being a quasi-experimental study, observational blind study and open labelled controlled study. The results showed that honey was effective at preventing the development of oral mucositis, reducing the severity of the grade of mucositis and reducing hospitalisation time post-development.

Key messages

The findings showed that honey is effective in the treatment of oral mucositis in paediatric patients over the age of one year. Due to its sweet nature, ease of availability and cost-effective production, honey would be an easy candidate for widespread implementation to enable patients to benefit from this natural remedy.



PRESENTATION 4

Is Sub-Dissociative Ketamine a Safe and Effective Analgesic in Paediatrics for Acute Pain? A Systematic Review and Meta-Analysis

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Background

It is widely recognised that pain is undertreated in the paediatric population in an acute setting and the distress caused can lead to long-term detrimental effects. The current recommended treatment for moderate to severe pain in paediatric emergency settings is predominantly opioids, however, an alternative treatment may be beneficial. Sub-dissociative ketamine may improve pain management, by giving a more effective analgesia that can be used for all patients including those with an opioid tolerance. The objectives of this review are two-fold. Firstly, to assess the effectiveness of ketamine in pain reduction compared to current treatments and secondly to evaluate it for safety, by reviewing the adverse event profile.

Methods

Searches were conducted using MEDLINE, EMBASE and Cochrane Database of Systematic Reviews to identify randomised controlled trials (RCTs) that compared sub-dissociative ketamine to a control for analgesia in a paediatric population. This review was carried out independently by two researchers (last search conducted in April 2020).

Results

A total of 5 RCTs were used in the meta-analysis which found that ketamine is non-inferior relative to the control group treatments (fentanyl and morphine) for pain management. The standard mean difference (SMD) in pain reduction was -0.06 [95% confidence interval (CI) 0.29, 0.16] at 30-minutes post administration and -0.08 [95% CI -0.33, 0.17] at 60-minutes. However, ketamine was also associated with an increased risk of adverse events, albeit transient and mild, with a risk ratio of 2.94 [CI 95% 1.56, 5.55] compared to the control group.

Key messages

Sub-dissociative ketamine at a dose of 1mg/kg is an effective analgesia for use in children in an acute setting and is comparable to existing treatments. Ketamine does come with an increased risk of adverse events, although these are transient and mild, therefore unlikely to require medical intervention.



Catching Us When We Fall: A Rapid Evaluation of the Non-Fatal Overdose Response in Dundee, Scotland

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Background

Opioid-related deaths continue to take the lives of hundreds in Scotland each year, with non-fatal overdose (NFOD) as a significant risk factors for repeat non-fatal and fatal overdoses. Evidence suggests that individuals who survived a recent life-threatening overdose might be more likely to initiate and continue with treatment if they are approached and presented with the right opportunities. In Dundee, Scotland, the Non-Fatal Overdose Response was established in November 2019 to provide an acute, immediate action to those who have experienced an NFOD. The purpose of this evaluation was to evaluate the current Response and examine how this provides the best care arrangements to meet needs.

Methods

The reviewers undertook a rapid review of the peer-reviewed literature to identify and assess the feasibility, acceptability, and effectiveness of post-overdose interventions. They also gathered insights from an online survey with 25 key stakeholders and telephone interviews with 12 delivery staff and 5 governance staff. Interviews were transcribed, coded, and analysed using thematic analysis.

Results

The review found that the Response has particular success in its speed, efficiency, effectiveness, coordination and communication, and partnership working. The reviewers have made best-practice recommendations around improving data collection, recording, and sharing; improving measuring, monitoring, and reporting outcomes and feedback; ensuring sustainability, resources, and funding; improving and adding links with other services; promoting a more proactive/preventative approach; and ensuring clear and explicit accountability. Further quantitative and quality improvement research including those who have experienced an NFOD is warranted.



PRESENTATION 2

HealthSHIP (Health Students Helping on Pandemics): An Open-Source Volunteering Platform Written for Healthcare Students, by Healthcare Students

Ronald MacDonald & Cassandra Baiano

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Background

The outbreak of COVID-19 across the globe saw varied grass-roots efforts to attempt to organise and manage volunteers on the ground. Such efforts were managed largely through Facebook, Twitter, Google Forms and various other platforms. Each of these platforms had their own benefits and pitfalls, so HealthSHIP was quickly designed and deployed to offer a bespoke volunteer management system in the Dundee / St Andrews area. This report will coincide with the open-source release of the platform so that its success may be built upon by other teams across the world. The platform was written and run by 2x GEM students on the ScotGEM course (Universities of St Andrews / Dundee), who had previous experience in software engineering and IT project management.

Methods

This paper is a report that delves into some of the key strengths and weaknesses of the platform. Its intention is to allow other groups and organisations to quickly deploy a volunteer management platform should local or national requirements require it. The report is accompanied by the full source code for the platform so that it can be stood up by other groups for testing, development and deployment.

Results

The paper demonstrates how the platform's engagement and utilisation may have been increased from the very beginning, by discussing some of the key "sticking points" in the initial deployment of the platform. It also includes reports from users (volunteers and service users) of the platform, illustrating how it was used throughout the course of the COVID-19 pandemic.

Key messages

Service delivery and improvement: User engagement, IT infrastructure and delivery, Healthcare IT / Project management



Virtual Reality Simulation – The Future of Orthopaedic Training? A Systematic Review and Narrative Analysis

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Background

Virtual Reality (VR) simulation provides users with an immersive, 3D experience that can be used to allow surgical trainees to practice skills and operations in a safe yet realistic environment. The field of Trauma and Orthopaedics (T&O) is yet to include VR in core teaching, despite its advantages as a teaching aid, particularly against current simulation tools. This study aims to conduct a systematic review to investigate the efficacy of VR in T&O training, against current methods.

Methods

A systemic review of databases Medline, Embase and the Cochrane Library for randomized controlled trials focusing on VR training against conventional training in orthopaedic surgery was performed. Data synthesis was performed through narrative analysis.

Results

16 studies were identified, totalling 431 participants. 47 outcomes were measured. 8 studies completed both pre- and post-test assessment; 7 noted a statistically significant improvement for the intervention group from baseline. 6 studies achieved significance for the intervention group post-test results over control in all outcomes measured. Although significance between intervention and control was not always achieved, most studies found the intervention outperformed the control.

Key Messages

VR provides a modern and immersive teaching tool that can develop skills and give confidence to trainees. This study demonstrates the potential for VR simulation as a training aid T&O and encourages its use alongside conventional teaching methods. However, long-term analysis of the results of VR training on surgical trainees has yet to be conducted. To provide conclusive justification for its inclusion in surgical training, this study recommends that future research follows trainees using VR into the operating room, to determine that VR teaches skills that are transferable onto actual surgeries, subsequently leading to better patient outcomes.



The (Future) Doctor Will See You Now: Piloting a Longitudinal Virtual Patient in Medical Education, Simulating General Practice

Thomas Dale MacLaine
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Background

Virtual patients provide numerous learning opportunities for medical students, yet only support one-off patient interactions. In order to emulate general practice, allowing for multiple encounters with a single patient, we developed a new longitudinal virtual patient (LVP).

Methods

Our LVP was integrated into 2nd year at a graduate-entry medical school, in the 2019/2020 academic year. Students were asked about their prior experience and expectations of LVPs, before they engaged with two consultations and one results session. Data were collected from this survey and from the engagement with the LVP. Feedback was collected and thematically grouped.

Results

120 students responded to the survey. 1.7% had previous experience with virtual patients, with the majority of students expecting the LVP to make a difference to their clinical reasoning. 142 students had engaged with the LVP, with 53% having completed over 75% of the work. Informal feedback arose around accessibility, professional learning and development, and engagement with the LVP module.

Discussion

Our data indicate that LVPs are agreeable to medical students, with good engagement and positive reports of clinical learning.

Conclusion

Future evaluation of this work, exploring reasons of engagement or lack of, will support refinement of the LVP to accommodate the learning needs of the medical students.

Key messages

Students in graduate-entry medicine often have little experience with virtual patients. LVPs aimed to emulate general practice are well received in medical education, offering additional learning resources. Students valued the learning from the LVP, with feedback recommending minor changes for future academic years.



PRESENTATION 5

The Experiences of Medical Students, Carers, and a Digital Design Company in the Co-Development of Care Companion, a Personalised Web-based Resource to Support Informal Caring

Rhiannon White, Adrian McGrath, Emma Scott, Jeremy Dale
University of Warwick

Background

As the importance of informal carers in healthcare provision in the UK is increasingly recognised, there is a growing need to address the physical, psychological, and social challenges they can face. Care Companion is an innovative online platform, that aims to provide reliable and accessible information for unpaid adult carers. Its website is populated by resources written by medical students under the direction of carers, who are continuously consulted to draw on their experiences of support and current challenges.

Methods

Semi-structured interviews were carried out with three key groups: the carer panel group, medical students and the digital development company. Interviews were analysed using iterative thematic analysis to identify important themes and issues relevant to the experience in co-developing Care Companion

Results

Participants had a range of computer literacy and all had previous caring experience. Motivations for involvement included the perceived value of the project, perceived need for carers to have easy access to online resources and potential personal benefit. Overall, participants had a positive experience. Perceived advantages to a collaborative approach included the unique insights from each group, the potential to improve the end-product, personal gratification and professional development. The disadvantages included differences in working style, a lack of clear product ownership, and logistical issues in coordinating meetings and managing demands with other responsibilities.

Key messages

This study suggests a positive role in a collaborative approach to the design of a personalised web-based resource for carers, in which key groups benefit personally and professionally.



PRESENTATION 1

CAMHS to AMHS: How Satisfied are Young People with their Transition from Child to Adult Mental Health Services?

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University of Warwick*

Background

Transitional care is a crucial component of mental health service provision; 25 000 young people (YP) under the care of Child and Adolescent Mental Health Services (CAMHS) reach the transition boundary with Adult Mental Health Services (AMHS) each year in the UK. The cumulative effect of changes within the social, educational and relational domains of YP's lives make this a critical time period. The MILESTONE study followed transitioning youth over this period, collecting data on transition experiences and outcomes.

Methods

Data previously collected from the 8-country MILESTONE study was analysed using IBM SPSS Statistics. Descriptive frequency statistics were generated for baseline characteristics and outcome measures. Logistic regression using satisfaction scores (<8/10= 0; 8+/10= 1) were analysed using univariate/multivariate analyses to calculate odds ratios.

Results

287/1005 YP were eligible for inclusion in analysis. UK YP were less satisfied than other EU YP, and those YP aged 18+ were more satisfied than those under 18. Higher YP-reported transition preparedness, desire for parental involvement, success of information transfer, and relationships with AMHS staff significantly increased satisfaction. Clinician-reported transition preparedness was not significant in predicting overall transition satisfaction. Multivariate analysis highlighted that, accounting for all other variables, country, age, YP-reported transition readiness and YP-AMHS clinician relationships were all significant ($p < 0.10$) in increasing their satisfaction with transition.

Key messages

The project highlights the importance of how YP perceive their transition preparedness, and the fostering of strong relationships with their new service providers, to improve satisfaction with mental health services in the future.



PRESENTATION 2

Spatial Navigation Testing for Dementia Diagnosis in a Setting of Low Literacy and Multilingualism

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Background

There are over 2.9 million people living with Alzheimer's disease in India. Alzheimer's is a global disease characterized by progressive cognitive decline, the extent of which is assessed to aid diagnosis. Since the Indian population has a diverse range of schooling and language ability, traditional measures of cognitive decline may not be appropriate. Tools that assess cognitive changes in skills obtained outside a formal learning environment are likely to have more diagnostic benefit. The aim of the project is to aid in the development of screening tools for cognitive decline that are effective for patients with low literacy levels.

Methods

Patients with dementia and healthy controls were recruited from outpatient clinics at NIMHANS, Bengaluru. Each participant completed an ACE-III assessment and a questionnaire on spatial navigation.

Results

16 patients and 28 healthy controls were recruited. The average ACE-III score was 51 for patients and 86 for controls out of a possible 100. The average spatial navigation score was 61% for patients and 94% for controls. This showed a statistically significant difference ($p < 0.001$) in perceived navigational skill between patients and controls.

Key messages

Significant differences between the self-perceived navigational skill of patients and controls were observed, with a higher number of self-reported difficulties within the patient group. This adds to the growing evidence that spatial navigation assessment may act as an appropriate substitute for existing cognitive tests. Future research will need to focus on cross-cultural cooperation to devise more in-depth navigational assessments.



PRESENTATION 3

Prevalence of Amnesia in Individuals Committing Crime: A Systematic Review & Meta-Analysis

George Hawker
University of Warwick

Background

Claims of amnesia have been used as a legal defence by those committing criminal offences. However, the most recent review of the prevalence of these claims was conducted over 30 years ago. Given the legal implications of a diminished criminal responsibility it is imperative to fully appreciate the circumstances surrounding such claims. The primary aim of this systematic review was to provide updated pooled prevalence estimate of amnesia in those convicted of committing crimes. Furthermore, to determine any possible sources of heterogeneity, we aimed to perform subgroup analysis of relevant contributing factors e.g. crime committed, age.

Methods

A systematic search of the literature was conducted through the following databases: PsycINFO (1806 - Oct 2019), Embase (1947 - 2019), Ovid MEDLINE(R) (1946 - Oct 2019), Web of Science (all years), Scopus (all years). This review was carried out in concordance with the PROSPERO protocol CRD42019154401. Meta-analysis and subgroup analysis of eligible studies were then performed. Pooled prevalence estimates were calculated using the metaprop command in STATA 16.0. Forest plots were constructed to present prevalence estimates with 95 % confidence intervals (CI) and assigned study weights. Eligible full-texts were quality assessed using the Joanna Briggs Institute (JBI) Appraisal Checklist for Studies Reporting Prevalence Data.

Results

17 eligible studies were included in quantitative synthesis, reflecting a total sample of 3206 persons. The overall pooled prevalence of amnesia was 32.02 % (95 % CI: 26.15 - 38.17 %, I² = 91.12 %, p < 0.001). Subgroup analysis of prevalence by crime committed showed no significant differences (heterogeneity between groups p = 0.78). Similarly, claims of amnesia before or after trial showed no significant difference (heterogeneity between groups p = 0.74). This indicates that rates of claiming amnesia do not directly correlate with more severe crimes or the influence of a trial, respectively.

Key messages

This study presents the first meta-analysis for prevalence of amnesia in criminal offences. However, the foremost limitation is the lack of objective diagnostic testing of amnesia claims which may have contributed to significant heterogeneity. Future work should focus on determining mechanisms of amnesia and improving diagnostic screening.



PRESENTATION 4

Can Improving Quality of Sleep Reduce the Symptoms of Cancer-Related Fatigue? A Systematic Review

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University of Warwick

Background

Cancer-related fatigue (CRF) is a debilitating condition that results in reduced quality of life for cancer patients. The relationship between tiredness and fatigue has been established in cancer patients and has been shown to be reciprocal, with tiredness influencing fatigue and vice versa. This aim of this study is to determine whether an improvement in sleep quality can ease the symptoms of CRF and whether this can support the theory that CRF symptoms stem from the effect of tiredness.

Methods

Three databases were searched resulting in an initial identification of 259 papers. The papers were filtered using an inclusion criteria, resulting in a final list of 20 papers for analysis. The remaining papers (20) were critically appraised using the CASP RCT checklist and assessed for bias using the Cochrane Collaboration's tool for assessing risk of bias in randomised trials before being used in the systematic review.

Results

Of the 20 papers, 9 used a form of cognitive behavioural therapy (CBT) to improve sleep, 3 papers used a sleep education program, 8 used an exercise program. The remaining interventions used were "energy and sleep enhancement" (EASE) intervention, Individualized Sleep Promotion Plan (ISPP), acupuncture, armodafinil, Cognitive behavioural stress management (CBSM) intervention and reflexology. In total, 14 papers showed an increase in sleep quality that also resulted in an improvement in fatigue symptoms.

Key messages

Improving quality of sleep does ease the symptoms of CRF, however, the 'chicken or the egg' question regarding CRF and tiredness cannot be answered at this stage.



PRESENTATION 5

Sleep Quality and Duration and Development of Depressive Symptoms in Children and Adolescents: A Systematic Review of Prospective Studies

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Background

Sleep quality and duration play an integral part in brain development, learning, memory and various other cognitive functions whilst also determining overall wellbeing. Recent epidemiological data has found that sleep duration and quality is declining around the world leading to number of serious health consequences, namely depression and anxiety disorders. This trend is particularly rising in children and adolescent populations. Sleep disturbances have been shown to be a risk factor for the development of depression in children and adolescents. However, the directionality of this relationship has not been well studied or synthesised in these populations. Aim: To carry out a systematic review of the literature studying the prospective association between poor sleep quality and short sleep duration and the development of depressive symptoms in childhood and adolescents.

Methods

We performed a systematic search using PubMed, Embase, Web of science and Cochrane up to (October 20, 2019). Included studies were prospective, had a follow-up of ≥ 1 year for incident outcomes, had sleep quality and/or quantity at baseline, and measures of incidence of low mood or anhedonia or anergia or irritability at follow up. Studies needed to include children or adolescents (12-18yrs) in the baseline analysis. Studies that matched this criterion were then included in the final qualitative synthesis.

Results

Fourteen prospective studies were included in the final synthesis. Of these, seven studies primarily investigated sleep quantity/duration as an exposure. Four of these found that a reduction in baseline sleep duration significantly predicted onset of depression or worsening of depressive symptoms on validated sleep questionnaires. Studies which included sleep quality as the primary exposure also reported a significant longitudinal relationship between sleep quality and depression. Interestingly, primary sleep problems also resulted in worsening of depressive symptomatology in patients with existing diagnosed depression.

Key messages

Poor sleep quality and decreased sleep duration may be risk factors in the development of depression in adolescents. However, definitive conclusions cannot be made due to variance between study designs and cohort samples. Therefore, in order to further clarify the directionality of this relationship, further studies that improve on the current designs will be needed.



PRESENTATION 1

A Meta-Ethnographic Review of Factors Relating to Vaccine Hesitancy in the European Parental Population

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Background

One in ten European children are at risk of contracting a vaccine-preventable disease due to low immunisation coverage. As parents play an important role in the vaccination decision, understanding their perception about inoculations is essential to address the low uptake. The aim of this study was to gain better insight into the factors that influence parental vaccine hesitancy in Europe and to produce a better framework to explain this phenomenon.

Methods

This meta-ethnographical review was carried out in April-May 2020 by following Noblit and Hare's approach. The articles retrieved from relevant medical databases were primary papers written in English, published after 2000 and presenting qualitative data. The appraisal process involved the use of CASP qualitative checklist. 'Line of argument' synthesis was used to develop a higher order interpretation.

Results

Thirteen studies were included in the analysis from which five themes were identified: 1) Trust in professionals, institutions, and government, 2) Relationship and communication with healthcare professionals, 3) Perceived minimal threat of the disease, 4) Personal experience, 5) Too young to vaccinate. The meta-ethnographic synthesis revealed how the different themes interact with one another to influence parental choice. Moreover, the duty to protect was showed to play an important role in how these factors are perceived by parents.

Key messages

This review presents an updated framework explaining vaccine hesitancy in the European parental population. Uptake of childhood immunisations could be encouraged by fostering trustworthy relationships between parents and medical professionals and through clearer messages on the risks of vaccine-preventable diseases.



PRESENTATION 2

Identification of GP Referral Patterns in which Malignant Melanomas were Referred as Non-Urgent

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²University Hospital of Wales

Background

Cutaneous malignant melanoma is the deadliest form of skin cancer, thus early detection and prompt referral is pivotal to improve prognosis. A recent audit has revealed that ~50% of GPs refer melanomas as “Routine” as opposed to “Urgent Suspected Cancers” (USC), potentially resulting in late management. We aimed to identify reasons why GPs are discouraged from using the USC referral route for clinically obvious melanomas.

Methods

Analysis of all “routine” referrals sent by GPs through Teledermatology between August 2017 and July 2018 was carried out using the Welsh Clinical Portal. Questionnaires were sent to these GPs for enquiry.

Results

42% of melanomas (n=120) were referred routinely by GPs. From the 15 GP responses received, the consensus was that because referrals are reviewed, and if needed, re-prioritised within two days by a Consultant Dermatologist, the referral priority (Routine, Urgent or USC) chosen is given minimal consideration. Additionally, some GPs lacked the confidence to suspect malignancy in difficult-to-identify lesions. Overall, using the routine channel has no effect on the outcome of the referral as both referral routes are given equal priority. Malfunctions in the referral system, however, have resulted in a referral backlog thus forcing USC referrals to be reviewed as priority. Consequently, routine referrals were reviewed twenty days later than usual, potentially delaying urgent management.

Key messages

Encouraging GPs to refer skin lesions accurately and educating them about melanoma subtypes is necessary to guarantee undelayed management in secondary care. Subsequently, an education tool was produced to install confidence in GPs to enthuse their index of suspicion.



PRESENTATION 3

Experiences with the Enhanced Return to Play Guidelines in Rugby Union - are they being Successfully Implemented Across Levels of the Game and are they Protecting Players?

*Imogen McMurray
University of Warwick*

Background

Rugby union has now seen 61 players retire due to ongoing concussion issues. In 2014 the Rugby football union (RFU) brought in the enhanced return to play guidelines (ERTP) to protect players from the cumulative effects of concussion and to ensure the correct recovery period for players was followed. However, previous studies have found that player education and the implementation of the guidelines is lacking, in particular at the amateur level.

Methods

An interview study of 16 participants, including coaches, players and medical staff at both professional and amateur level either face to face or over Skype, with set consistent stem questions that guided the interviewer.

Results

This study found that the guidelines, in most cases, are being implemented across all levels of the game but the effectiveness is dependent on player education, which appears to be variable at the amateur level.

Key messages

This study has shown that while implementation of the guidelines has improved, further education about the long-term effects of concussion is needed at all levels. Headcase, the RFU initiative brought in for the amateur level, is failing to penetrate with many amateurs having never heard of it.

One novel finding of this study, was the idea that the ERTTP guidelines are not aligned with the professional player's working week, requiring contact training on the last day before a match. Further work needs to be done by the RFU to encourage player education and more research is needed on the longer-term impact of concussion.



PRESENTATION 4

Does Exposure to Environmental Tobacco Smoke lead to Increased Severity of Illness in Infants Hospitalised with Bronchiolitis?

Kayleigh Nicholson
University of Warwick

Background

Bronchiolitis is the most common disease in infants under 1 year old. Although most cases are mild, hospitalisation for severe disease can occur. As hospital admissions are rising each year, understanding risk factors for severe bronchiolitis is becoming increasingly important. To date, there have been no reviews investigating the effects of smoke exposure on severity of bronchiolitis.

Methods

In this review, systematic searches of databases were performed, in addition to reference lists and grey literature searches. Comprehensive exclusion criteria were used to identify suitable papers. Outcomes used to define severity included severity scores, clinical criteria, respiratory support, admission to ICU, and readmission following discharge. Following extraction of data, a narrative synthesis of results was performed

Results

Of the 12 studies included, three studies found second hand smoke exposure was significantly associated with severe bronchiolitis. Another three studies found exposure significantly increased the risk of readmission. Although two studies suggested there is no effect on ICU admission, one study found postnatal smoke exposure further increases the risk of ICU admission in patients with prenatal smoke exposure. One study found smoke exposure results in a significant risk of requiring oxygen supplementation, however this was not reflected by the percentage of infants with smoke exposure in the most intensive treatment groups.

Key messages

Postnatal smoke exposure increases the risk of severe bronchiolitis, whether this translates to an increase in the intensity of care required is unclear. Further research into effective smoking cessation methods is warranted to decrease the number of severe bronchiolitis cases.



PRESENTATION 5

A Systematic Review of Physical Activity and its Effect on Burnout and/or Quality of Life in Medical Students

Charlotte Taylor, Emma Scott
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Background

Medical students are at high risk of burnout and reduced quality of life (QoL). The prevalence of these increases throughout medical school and raises the risk of dropping out. It is important to investigate strategies which could be used to reduce the incidence of burnout and increase QoL, thus mitigating their negative effects. Physical activity has been shown to reduce burnout and increase QoL in different populations. This systematic review aimed to examine whether physical activity/exercise changes the likelihood of burnout and/or influences QoL in medical students.

Methods

Articles were identified through the databases Embase, Medline, PsycINFO, Scopus and Web of Science. Studies were included if both physical activity/exercise and burnout or QoL were measured. A comparison between the two was required. Only studies with medical students were included. A narrative synthesis was conducted due to heterogeneity in the dataset.

Results

Fifteen studies were included, comprising 10,500 medical students. Of these, eight measured burnout, six measured QoL and one measured both burnout and QoL. Physical activity was negatively associated with burnout with a weak-moderate effect size. There was also a positive relationship between physical activity and QoL scores. Furthermore, the findings were suggestive of a dose-response effect of physical activity on both burnout and QoL; higher intensities and frequencies precipitated greater improvements in outcomes.

Key messages

This review demonstrates that physical activity has an important role in reducing burnout and enhancing QoL. These findings have significant implications for practices aiming to promote wellbeing in medical education.



PRESENTATION 1

What is Known about the Career Outcomes of UK Undergraduate and Graduate Medical Students: A Scoping Review

Emma Andrews
University of Warwick

Background

The medical profession in the UK is currently facing serious workforce challenges with both shortages in specialties and in location. Anecdotally, it has been hypothesised that graduate medics may be more inclined to work in some shortage specialties and settle in under-doctored areas. Graduate entry medicine was first introduced in the UK in 2000. In the academic year 2018/19 9.9% of the students commencing medical degrees were studying on graduate entry programmes, with many more graduates on standard entry programmes.

Methods

To outline the landscape of the current research a scoping review was conducted, using the framework proposed by Arksey and O'Malley 2005. After duplicates were removed 5311 papers, from Medline, Web of Science and Education Research Complete, were screened by abstract and title. 55 papers were selected to screen based on full text, and 6 papers were chosen for inclusion in the review.

Results

Doctors from graduate entry programmes are more likely to enter directly into training than those on standard entry programmes, but are no more likely to enter GP training. Graduates from standard entry programmes, however, are more likely to enter GP training. Looking at specialty choice in general, graduates on both standard and graduate entry programmes are more likely to pick higher earning specialties.

Conclusions

Those on graduate entry programmes have the same ambitions as undergraduates but are more confident in them. Moving directly into specialty training may be motivated by external responsibilities, but these additional responsibilities do not cause those on GEPs to choose more 'family friendly' specialties such as GP.



What is the Effect of a Peer-Teaching Programme at Medical School on Student Performance? A Systematic Review and Meta-Analysis

Clarissa Brierley, Leila Ellis, Emily Róisín Reid
University of Warwick

Background

The practice of peer-assisted learning (PAL) at medical schools alongside the core medical curriculum has increased steadily in recent years. While it has been suggested that the learning environment peer-tutors and their students share allows concepts to be presented at the correct level, the efficacy of PAL relative to traditional teaching methods is not clearly defined.

Methods

A systematic review of randomised studies of PAL conducted in medical school was completed. A literature search was conducted in four databases and records were selected following strict eligibility criteria. Following full text assessment, two reviewers independently extracted data. The impact size of the study outcomes was assessed using a modified version of “Kirkpatrick’s Levels of Learning”. Student test scores were standardised by calculating the standardised mean difference (SMD).

Results

25 randomised controlled trials were included in this review. Meta-analysis of 19 articles identified a significant improvement in the academic performance of medical students who received PAL compared to those in the control group (SMD = 0.43 [95% confidence interval 0.07 – 0.80]; $p=0.02$). The impact of PAL was more marked amongst clinical than pre-clinical medical students, and when used for teaching practical skills compared to theory. PAL was also more effective than non-PAL methods in assessments run more than four weeks after course completion.

Key messages

Medical students taught using PAL derive objective benefit in terms of academic performance, relative to non-PAL teaching methods. PAL is of particular value in the clinical stages of training. The long-term outcomes of PAL remain understudied.



PRESENTATION 3

Medical Specialties that Interest Students and Why

Lauren Grahame
Swansea University

Background

Whilst at university medical students have the opportunity to spend time in different specialities, however this may only be for a day or two, or in the case of more niche specialities, not at all. Without the exposure on placement, students may never know about the wide variety of career pathways available to them.

Methods

A quick sell event was set up where clinicians can speak for 2 minutes about their chosen speciality and why students should be interested, with an informal networking event for the students to ask any questions afterwards. Interests in different specialities will be measured before and after the event with via questionnaires. Due to the Covid-19 outbreak the event had to be cancelled, instead a survey was sent out to the students to gather information on what specialities the students were interested in and what helped them decide their career route. The results of this survey can then hopefully be used to create more successful career events in the future.

Results

- Emergency medicine and Medical Specialities were the most popular specialities
- The biggest difference between genders is their interest in Medical Specialities
- Majority of students are currently interested in 4 different specialities
- No significant difference in age groups and specialities interested in
- The major factor is deciding future careers is if it suits a student's personality

Key messages

The specialities introduced to students earlier on throughout their university career seem to be the most influential on helping them make career choices.



PRESENTATION 4

ScotGEM Stories: Sharing Student Experiences

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The Universities of St. Andrews & Dundee (ScotGEM)*

Background

The novel Scottish Graduate Entry Medicine (ScotGEM) course had the first intake of students in 2018/19 and is delivered in partnership between the Universities of St Andrews and Dundee. The ScotGEM Stories website was launched by students to publish their reflections and share their experiences. In ScotGEM, students undertake much of their medical education in remote and rural Scotland with the aim to boost future recruitment to these areas.

Methods

The ScotGEM Stories website is delivered via WordPress with oversight from Student Editors and Staff Reviewers. The website was launched in December 2019 with various social media outlets linked later.

Results

The website has had 6,480 views since launch with 29 posts and 33 hours of watch time on YouTube, sharing the experiences of students and staff involved in the delivery of the course.

Key messages

There was an appetite amongst the cohort to have an outlet to reflect on their experiences and express themselves. There is also a desire from ScotGEM students - many having taken the long route to studying medicine - to motivate and enthuse potential prospective students to take a similar leap by exploring deeply some of the experiences that have reaffirmed their decision to study medicine. There is a shared value in promoting positive experiences from students and staff that both groups perhaps do not fully realise or experience first-hand. Rural Scotland provides a venue for medical students to realise the doctors they aspire to become - and ScotGEM Stories aims to share their journey.



PRESENTATION 5

The Use of Simulation in Medical Student Education on the Topic of Breaking Bad News

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Background

Breaking Bad News (BBN) is a critical skill for doctors when disclosing life-changing information with patients. Simulated patients (SPs) are widely used to develop communication skills, though the best method to engage them in undergraduate BBN medical education is unclear.

Methods

We searched 14 databases with the search terms “Medical education”, “Patient simulation”, “Bad news”. Two independent blinded reviewers screened articles by title and abstract, followed by full text review. Full texts were checked for quality and bias, before their inclusion into the review. Data was systematically extracted and thematic analysis was used to identify themes and subthemes within the selected articles.

Results

Out of the 2117 articles screened, 29 publications met the inclusion criteria. Studies investigate a variety of simulated patient models, including actors as patients (65.5%), peers (7.0%), and cancer survivors (3.5%). Several models exist for training BBN, which is done at varying times in undergraduate medical training. Students report needing additional guidance with BBN between training and clinical exposure. Our thematic analysis centres around two overarching themes: intrinsic components of BBN, and the validation of models used in BBN consultations.

Key messages

SPs are beneficial for training BBN, allowing students to practice vital communication skills without detriment to patient care. Students may benefit from top-up training or support when using BBN skills in practice. Several models used to deliver BBN training are published, with limited literature comparing effectiveness





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