



– extrinsic, intrinsic and germane. This study aims to explore the experiences of undergraduate students through the lens of cognitive load theory.

**Methods:** This is a qualitative phenomenology study using semi-structured interviews via Zoom. Full ethics was approved by the University of Edinburgh (Ref:2022/35). An email invitation was sent to all year groups in a medical school through the undergraduate coordinators. The interviews were recorded, transcribed anonymously, and hand-analysed for common themes.

**Results:** In total six students were recruited – three were females. Three were in final year, two in 3rd year and one in 4th year. All students found their surgery rotation affirmed their decisions whether (or not) to pursue a career in surgery. Extraneous ‘load’ was the most cited to influence their learning experiences such as passionate juniors and supervisors. Negative ‘loads’ highlighted include student numbers to clinical opportunities, unclear roles of members of the wider team and steps involved in surgery. Intrinsic ‘loads’ cited include sense of belonging to the team, professional identity formation through observation of senior students and clinicians and applying prior knowledge into practice. Germane ‘load’ include surgical skills simulation in final year into practice in theatre.

**Conclusion:** This study highlights a variety of factors affecting the medical students’ experiences in their surgery rotation. Cognitive load theory can be considered to improve students’ learning experiences.

### Highly commended SFP: Dr Chinar Parikh and Dr James Pearson – Specialist Foundation Programme, Liverpool University Hospitals NHS Foundation Trust

**Aims:** Our aims were to implement a formal foundation doctor (FD) led bedside teaching (BST) programme to 2nd year medical students on placement and to investigate students’ and doctors’ perceptions of BST.

**Methods:** A teaching programme was created with cross-specialty allocation of students to FDs on different wards for teaching sessions. A mixed-method questionnaire was distributed before and after the BST sessions to the students. A post-teaching questionnaire was then delivered to FDs. A 10-point Likert scale was used for analysis.

**Results:** Feedback was received from a pre-teaching questionnaire (n=88). A mean score of 5.25 and 8.81 was given for current quantity and perceived future benefits of BST respectively. Thematic analysis demonstrated students enjoyed BST, but did not get enough structured time on the ward due to clinical pressures. 47 doctors taught 192 students across two hospital sites. Post-teaching feedback was collected from 147 students (76.6%) and 19 doctors (40.4%). Students’ mean score for whether the session was beneficial to learning was 9.86 and wanting future sessions was 9.92. 63.2% of doctors had no formal teaching training. A mean score of 9.47 was given for the likelihood of participating again.

**Discussion:** To our knowledge, this is the largest study using FDs to teach medical students. Prior to the session, students felt that there was inadequate support on the ward to assist

their learning needs. Following the session, the students felt a welcoming learning environment was created. 2nd year medical students demonstrated that they are keen for, and benefit from, structured FD-led ward-based teaching.

### Dr Samuel Owen – Academic Clinical Fellow, Lancaster University

**Title:** Novel ways to integrate and improve sustainability in the undergraduate medical curriculum.

In the United Kingdom, healthcare utilisation is anticipated to rise exponentially with advancements in medical treatments, increased life expectancy, and heightened patient expectations. Consequently, the environmental repercussions are projected to be significant. Internationally respected sustainable healthcare institutions have emphasised the environmental impact of healthcare practices, advocating for the urgent need to address environmental concerns and promote sustainable healthcare system. However, recent studies have highlighted the challenges of integrating sustainability into undergraduate education including overcrowded curricula, limited faculty experience and the absence of an agreed syllabus.

Our study aims to investigate the effectiveness of a novel online question-based software in improving undergraduate medical students’ knowledge, attitudes, and competence in sustainability teaching. Students will complete pre- and post-intervention surveys with both quantitative and qualitative data being collected. Qualitative data will be analysed using a thematic analysis to gain further insight into a students’ experiences on sustainability teaching. Question responses on the online platform will be analysed to focus sustainability teaching further and then analyse responses against respondents’ survey results. Potentially this project will provide synergy between the use of traditional teaching modalities and online content.

In conclusion, this future study seeks to introduce a novel approach to delivering effective and accessible sustainability teaching in undergraduate medical education. By evaluating the efficacy of an online question-based software, the study will contribute to the development of evidence-based strategies for enhancing sustainability education and preparing medical students to confront the complex health challenges posed by a changing global environment.

### Dr Samin Chowdhury – Academic Clinical Fellow, Lancaster Medical Practice

**Title:** A systematic review of the use of routinely collected primary care data in kidney disease research in the United Kingdom adult population.

Kidney diseases have high morbidity, mortality, and economic burdens on the National Health Service in the United Kingdom (UK), and their prevalence is rising in the UK. Well-designed and well-conducted randomised controlled trials (RCTs) are needed to generate good-quality evidence in kidney disease research. Yet, kidney diseases have fewer RCTs than other medical specialities. The quality of kidney disease RCTs is often suboptimal.

In the UK, kidney diseases are mostly managed in primary care, relying on routinely collected data such as age, sex,

weight, and blood and urine tests. Routinely collected primary care data are defined as data collected without specific research questions developed before collection. They are cheaper, faster to analyse, and have better generalisability to supplement some of the limitations of kidney RCTs. Yet, the utilisation of such data in kidney disease research is unknown. There are concerns about the quality of research using such data as they are observational and prone to bias.

This systematic review proposes to assess the quantity and quality of kidney disease research assessing health outcomes that used routinely collected primary care data in UK adult patients. It will highlight the under and over-researched kidney diseases and health outcomes. It has the potential to help proportionate funding allocation in kidney disease research and generate recommendations for better use of such data in kidney disease research in the UK.

### Prize-giving to the winners of the “Three-Minute Thesis (3-MT)” presentations



(From left to right): Professor Marina Anderson (Head of Lancaster Medical School) and Dr Ganesh Paul (SFP winner).



(From left to right): Professor Marina Anderson (Head of LMS) and Dr Pallavi Patel (ACF winner).

### Highly commended ACF: Dr Samantha Moore – Academic Clinical Fellow – Lancashire Teaching Hospitals NHS Foundation Trust

**Title:** Investigating heart-rate variability during a spaceflight analogue mission in a green-space setting.

Heart rate variability (HRV) provides an index of the influence of the parasympathetic and sympathetic nervous systems. It can be measured non-invasively and help determine the impact of interventions on the autonomic nervous system. Lower HRV has been associated with a reduced stress tolerance and poorer decision-making.

HRV has long been established in monitoring astronauts during spaceflight to assess responses to physiological stress and adaptation to short- and long-duration missions in reduced gravity. Recent work during spaceflight analogue missions has also investigated HRV during exercise training programmes in the Mohave desert.

Spending time in nature has been shown to improve HRV when compared to urban settings. One hypothesis is that exposure to green spaces may ameliorate the stress response; providing a possible intervention for individuals exposed to high-stress environments. These findings will have implications for astronauts, ultra-endurance athletes, and patients undergoing major surgery.

Previous investigations of HRV in analogue and extra-terrestrial astronauts have been in settings without the influence of green space, such as deserts, the Concordia station in Antarctica, and aboard the International Space Station. This study aims to use wearable technology to evaluate HRV changes during a 14-day analogue mission on a remote Scottish island.

### Dr Iona Lyell – Academic Clinical Fellow – UK Health Security Agency (UKSA)

**Title:** Screening for latent tuberculosis infection (LTBI) in asylum seeker accommodation settings in the North West – an exploratory evaluation protocol.

The use of contingency accommodation (primarily hotels) to house asylum seekers has increased substantially in England in recent years. The individuals housed in these settings are often at higher risk of infectious disease including tuberculosis (TB). Guidance recommends that people aged 16-35 arriving from a country with high TB incidence should be tested and treated for latent TB infection (LTBI). However, it has been recognised that there may be variation in the way that local health systems approach the aim of providing screening for LTBI in these populations, with opportunities for shared learning.

The aims of this project include: 1) summarise models used to facilitate screening for LTBI in asylum seeker setting in the North West; 2) describe system enablers and barriers for these models including funding considerations; 3) summarise outcomes of screening undertaken; 4) generate recommendations and identify areas for future work. The project aims, objectives and methods will be shared with stakeholders including members of the North West TB control board for feedback and comment. An initial scoping survey is planned to efficiently gather key information and contacts. Data will also be collected via qualitative interview and

document gathering. Attempts will be made to understand quantitative data availability and data will be requested on population denominators and screening outcomes, with recognition there may be limitations on availability. Results will be presented to NW stakeholders and recommendations co-created to maximise system learning. These results will be shared nationally, and recommendations for future work made.

### ACF winner: Dr Kathryn Newell – Academic Clinical Fellow, Lancaster University

**Title:** What was the impact of the first part of the SARS-CoV-2 pandemic on routine childhood MMR uptake in Morecambe Bay?

**Objectives:** The study objective was to examine trends in routine measles, mumps, and rubella (MMR) vaccination uptake for children registered at GP surgeries within the Morecambe Bay area, from April 2019 until September 2021.

**Methods:** A quantitative, observational study using the quarterly COVER data (Cover of Vaccination Evaluated Rapidly) to observe trends in routine childhood MMR vaccination at 24 months and five years of age within the former Morecambe Bay CCG. Time series plots were generated for each vaccination group (first MMR dose [MMR1] by 24 months of age; MMR1 by five years of age; both MMR doses by five years of age) for each GP surgery, and analysed to create a narrative description for each location and vaccination group.

**Results:** Four of the 31 GP surgeries consistently met the 95% target for MMR1 by 24 months or five years of age during the study, whilst no GP surgery consistently achieved 95% uptake for completed MMR vaccination by five years of age. Decline in MMR1 uptake by 24 months was most frequently seen in the early stages of the pandemic (January –March 2020). GP surgeries within the Lancashire Upper Tier Local Authority had lower MMR uptake compared to those in the Cumbria Upper Tier Local Authority. Two Lancashire GP surgeries demonstrated persistent declines in uptake below 90% during 2020, which were not recovered by the end of the study.

**Conclusions:** This study demonstrated GP surgeries within Morecambe Bay CCG continued to provide routine MMR vaccinations to CYP during the pandemic.

### Dr Phoebe Sharratt – Academic Clinical Fellow, Lancaster University

**Title:** Too many tools, too little time: Identification of palliative care needs for patients with frailty.

**Background:** The result of a combination of ageing and comorbidity, frailty is increasingly prevalent in high-income countries. Affected individuals are at higher risk of the adverse effects of stressor events (e.g., a fall or chest infection) including prolonged recovery, loss of independence and increased morbidity and mortality. Evidence reveals that people with frailty have palliative care needs, such as pain, fatigue and psychological distress, but have less access to palliative care than younger adults. Understanding how best to identify these needs may improve access to palliative care

for this group. Multiple palliative care needs identification and prognostication tools are available for clinicians, however evidence regarding their use in the context of frailty is conflicting. Simplifying identification by using an existing tool, for example the comprehensive geriatric assessment, may improve palliative care needs identification and subsequent delivery of care for frail individuals.

**Current Evidence:** A scoping review of recent literature reveals a handful of records addressing the question of whether comprehensive geriatric assessment can be used to identify palliative care needs. These studies were of low quality, indicating a need for more rigorous research in the area.

**Next steps:** Patient and public groups are interested in how best to identify palliative care needs for frail individuals. Future research would benefit from considering how current tools, such as the comprehensive geriatric assessment could expand their evidence base to align with this research priority.

### Dr Conor O'Neill – Academic Clinical Fellow, Manchester University NHS Foundation Trust

There has been increasing focus on the rise in poor adolescent mental health across the United Kingdom in recent years. With the most recent statistics from NHS England confirming that the rates of mental disorder in 7-16-year-olds is currently 1 in 6, and 1 in 4 in 17–19-year-olds, there is an impetus to better understand what the mechanisms underpinning this phenomenon are.

Adolescence is a transitional period that is integral to emotional, social, and psychological development. Our development is hugely influenced by the social, cultural, and economic realities we inhabit. Therefore, the relationship between adolescent mental health and the local communities is one worth researching to assess what makes up a good community environment for adolescent mental health and what does not. To do this, we will undertake an ethnographic approach to qualitative research with a plan to use interviews and focus groups of adolescents who encounter health services in the North-West of England to gain insight into the factors that impact on adolescent mental health, focusing on social, cultural and economic contexts.

With research aimed at identifying themes that can highlight directions for future research as well as detect potential risk and protective factors that exist within our communities, there is potential for this research to have impact in the policy and research at local, regional, and national institutions. We hope in turn this can ensure more focused and impactful public health practice and allow for better outcomes for adolescent mental health rates.

### ACF winner (academic): Dr Pallavi Patel – Academic Clinical Fellow

**Title:** How to build a Child-Friendly City: Lessons for Liverpool in overcoming barriers to the UNICEF Child-Friendly City programme.

Children's health and wellbeing is impacted by a range of wider health determinants. The UNICEF Child-Friendly City

(CFC) initiative aims to enable local authorities to embed children's rights within local policy. The initiative is centred on the UN Convention on the Rights of the Child. By centring children's rights, CFC programmes can give children and young people (CYP) a voice in relevant decisions locally, including around health. This study aims to identify challenges encountered by professionals in developing CFC strategies, and solutions identified.

Semi-structured interviews were carried out with professionals involved in developing United Kingdom CFC programmes. Thematic analysis was used to explore experiences of participants. CYP raised concerns regarding lack of mental health support, poor access to outdoor spaces, and harassment in public areas. CFC teams worked with Public Health and partners to address these priorities. Participants aimed to create a culture of centring children's rights within local authorities and partner organisations. Challenges included resource constraints, negotiation, and changing political landscapes. Public and voluntary sector, business, and academic partnerships were valuable in achieving CFC goals. Participation for CYP was facilitated by CFC teams. UNICEF training was valuable in achieving organisational culture change.

The CFC programme can be used by local decision makers and health services to engage partners in children's rights, facilitate children's participation in policymaking and service design, and create culture change. Child health and wellbeing can therefore be supported at a local level. Recommendations are made for CFC teams and UNICEF in order to best utilise the programme.

### SFP winner: Dr Ganesh Paul – Specialised Foundation Programme, UHMBT

**Title:** Evaluating e-learning in Infectious Diseases Undergraduate Teaching

**Background:** Undergraduate infectious diseases (ID) teaching is highly variable with only a few specialised centres in the United Kingdom. Learning about ID can be a challenge due to increases in medical knowledge, pathogen discovery, novel laboratory techniques and new therapeutics and resistance mechanisms. E-learning is an effective and flexible method of meeting educational needs.

#### Aims:

1. Assess undergraduate students' perspectives towards current ID teaching
2. Design an e-learning package and capture feedback

**Methods:** Clinical year undergraduate medical students were invited to complete a survey on current ID teaching. These were then processed using thematic content analysis with computer-assisted qualitative data analysis software. A Xerte package on pneumonia was then made available to students with feedback analysed.

**Results:** 32 students completed the initial survey. Thematic analysis revealed that students largely enjoyed their lecture-based ID teaching but felt formal teaching was too sparse and would welcome an e-learning package covering common presentations and high-yield topics. All students opted to be sent a link to the Xerte package. Students spent an average

of 67 minutes working through the package. Analysis of feedback showed that students found the e-learning beneficial and enjoyed the multimedia components, annotated diagrams and integrated quizzes. All students rated the package 9 out of 10 or higher. All students stated they would recommend the e-learning to peers and would engage with further packages on other topics.

**Conclusion:** ID is a visual speciality that lends itself well to e-learning. Undergraduate students regard e-learning as an excellent accompaniment to in-person teaching.

## RECENT AND FUTURE DEVELOPMENTS IN ACADEMIC CLINICAL TRAINING IN LANCASTER

Lancaster Medical School hosts ACF posts in several clinical specialities, including general practice, palliative care, anaesthetics, paediatrics, public health, and neurology. Lancaster University has recently welcomed four academic clinical fellows. They are Dr Pallavi Patel, Dr Connor O'Neill (ACFs in Paediatrics), Dr Samantha Moore and Dr Samuel Owens (ACFs in Anaesthetics).

Recruitment details of academic clinical fellowship (ACF) are available via the HENW website [https://www.nwpgmd.nhs.uk/acf\\_ataglance](https://www.nwpgmd.nhs.uk/acf_ataglance). Applications for ACF posts typically open in early October, close in early November, and programmes start in August of the following year.

Recruitment details for academic clinical lectureships (ACL) are available on the Lancaster University job vacancies website <https://hr-jobs.lancs.ac.uk/vacancies.aspx?type=6&cat=236>.<sup>3</sup>

Specialised foundation programme (SFP) recruitments are managed by the UK Foundation Programme Office <https://foundationprogramme.nhs.uk/programmes/2-year-foundation-programme/specialised-foundation-programme/>. The SFP applications typically open earlier in September and close in late September.<sup>4</sup>

Interested candidates are welcome to contact Lancaster ICAT lead Dr Amy Gadoud and ICAT project officer Beth Whittaker. Candidates can also get in touch via Twitter-<https://twitter.com/lancastericat>.

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