Irish Thoracic Society

Annual Scientific Meeting 2024

Abstract Book

Irish Thoracic Society

14TH, 15TH and 16th NOVEMBER 2024
MILLENNIUM FORUM, DERRY

Welcome from the Local Organiser

Dear Colleagues,

It is our pleasure to welcome you to the 2024 Annual Scientific Meeting of the Irish Thoracic Society at the Millennium Forum in Derry. This year's program is designed to offer a comprehensive view of the latest developments in respiratory medicine through a rich variety of sessions, from specialist training and case study forums to thought-provoking guest lectures and poster presentations. We are excited to provide a

platform that not only promotes education and research but also encourages collaboration and meaningful connections across the respiratory healthcare community.

The meeting will commence on Thursday with our traditional **ITS Case Study Forum**, providing a stage for sharing complex case discussions and recognising outstanding contributions through the prize-giving ceremony. Friday will include parallel poster discussions, interactive sessions, and keynote lectures by renowned experts. We are honoured to feature **Professor Gisli Jenkins**, a research leader in Interstitial Lung Disease, who will delve into advancements in biomarkers for disease diagnosis and management, and **Dr. Alexander Mathioudakis**, who will share insights on altering the trajectory of COPD exacerbations.

Saturday's program promises to be equally stimulating, with a series of distinguished lectures addressing diverse topics, including **Dr. John Garvey**'s overview of sleep apnea management, **Professor Jacky Smith**'s innovative research on chronic cough mechanisms and therapies, **Dr. Kerri Johannson**'s, who has travelled from Calgary, Canada to speak with us on the exploration of hypersensitivity pneumonitis, and our very own Thorax editor and Northern Irelands expert on non-tuberculous mycobacterial infections and emerging therapeutic strategies, **Professor Cecilia O'Kane**.

We would like to extend a special welcome to the various forums and affiliate meetings. These sessions represent the collaborative spirit of our community and provide focused discussions on specific areas within respiratory care. Also a warm welcome also to the patient organisations and industry sponsors who have joined us in Derry this year.

We look forward to an inspiring and engaging three days and hope this event offers you opportunities for knowledge sharing, networking and celebration.

Warm regards,

Dr Nazia Chaudhuri

Consultant Respiratory Medicine &
Senior Clinical Lecturer, Altnagelvin Area Hospital,
University of Ulster.

Dr Martin Kelly

Consultant Respiratory Physician
Altnagelvin Area Hospital.

Local Organisers, ITS Annual Scientific Meeting 2024

Disclosure Statement

The following Abstract Book contains abstracts submitted for consideration for presentation in poster or oral form at the Irish Thoracic Society Annual Scientific Meeting 2024. Abstracts have been reviewed by the ITS Annual Scientific Meeting Faculty members and deemed suitable for acceptance.

Abstracts have been organised in the following categories:

Asthma, ILD, TB/CF/Infection/Covid-19, Integrated Care, Lung Cancer/Pleural/Surgery, General Respiratory 1, General Respiratory 2, COPD, Paediatrics.

Declarations

All authors were requested to include declarations in relation to funding and conflict of interests – these are included after each abstract.

The operational costs of the Irish Thoracic Society Annual Scientific Meeting 2024 are funded with the support of a number of commercial bodies.

Irish Thoracic Society Poster Review & Discussion

Friday 15th November 2024

1: Asthma

1.1 The Effectiveness of Educational Interventions on Asthma Management in Children in Primary care settings: Systematic Review of Randomised Control Trials

Alison Russell[1], Lisa Egan[1], Louise A Barry[2], Muhammad Tariq[1]
[1]MRHP, Portlaoise, Ireland. [2]University of Limerick, Limerick, Ireland

Background: When given appropriate education children as young as 10 years old have developed the skills to self-manage their asthma and children as young as 7 years have demonstrated growing independence in asthma self-management (1). Educational interventions are proven to achieve this in children (2). Past reviews of these interventions include community and school-based interventions(3)(4). Unfortunately, educational interventions delivered in these settings are not available in many countries, including Ireland. Therefore, it is vital to identify the most effective educational interventions that are currently available and contextually relevant to current service delivery in Ireland. **Aim:** This systematic review aims to summarise the results of the RCT's which explore the current educational interventions being offered to children with asthma, in hospitals, outpatient departments and general practice settings, to evaluate their impact on asthma management. **Methods**: A comprehensive systematic search of the literature was undertaken. This review included RCTs from 2012 to 2022, which were inclusive of children with asthma aged <18 years old. Data extraction was carried out using a modified Cochrane data extraction form. Study appraisal was conducted using Cochrane risk-of-bias tool, followed by a broad synthesis without meta-analysis. The provision of this review was registered with PRESPERO (CRD42023402469). **Results:** A review of 2,029 abstracts identified 89 full-text articles. Fourteen RCTs were identified and met inclusion criteria. The 14 RCTs were categorised into three types of educational interventions: face-to-face (n=5); group (n=4); resource-led patient educational interventions (n=5). In these selected studies, group and face-to-face interventions showed to have a greater impact on asthma management in their respective settings. Of the 14 studies, only five stated the use **of** child-friendly, age-appropriate material for educational interventions. None of these studies were carried out in a GP setting. Methodological rigour varied throughout. Measured outcomes varied throughout the studies, Asthma Control Test (ACT) (50%) and Quality of Life (QoL) (43%) scores were the most utilised outcome measures. Varied timeframes were allocated to measuring outcomes. Such inconsistencies precluded meta-analysis.**Conclusion:** Educational interventions are effective at improving asthma management in the paediatric cohort when performed in group or face-to-face sessions, particularly in a hospital setting. However, more research is required to probe further into the Irish and GP context, to uncover future opportunities to enhance asthma management within the paediatric population.
Keywords: Asthma, Paediatrics, Education, Self-manage **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.2 An assessment of compliance with biologic therapies for severe eosinophilic asthma

Ali Al-Mukhaizeem[1], Bernie O'Connor[1], Niamh Logan[1], Terrence O'Connor[1], David Curran[1]
[1]Mercy University Hospital, Cork, Ireland

Background: Mepolizumab and Benralizumab are biologic therapies used for severe eosinophilic asthma. This study aimed to examine patient compliance with biologic therapy at home. **Methods:** We used prescription collection rates from the pharmacy high-tech hub to measure compliance,

examining six months of retrospective data. Secondary endpoints included refill rates for preventer inhalers, corticosteroid courses, and hospitalizations for asthma exacerbations. **Results:** We assessed 15 males and 22 females, with 11 on benralizumab and 26 on mepolizumab. Nineteen patients were fully compliant, 12 were partially compliant, and 6 were non-compliant. Among fully compliant patients, only 58% collected a preventer inhaler monthly. For partially and non-compliant patients, 50% collected a preventer inhaler monthly. There were six hospitalizations for asthma exacerbations: five in non-compliant patients and one in a fully compliant patient. A total of 36 corticosteroid courses were prescribed over the 6 month period, the majority of these were prescribed to patients in the non-compliant (14) or partially compliant groups (13). **Conclusion:** Compliance with biologic therapy and preventer inhalers was low in patients with severe eosinophilic asthma at our institution. Further study is needed to understand the causes of poor compliance. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.3 An audit of acute asthma care in the Emergency Department

[1]Jayleigh Lim, [1]William Blake, [1]Nigel Salter

[1]St Vincent's University Hospital, Dublin, Ireland

Background: Ireland has one of the highest rates of asthma in the world. Over 19,000 people visit Emergency Departments (ED) annually with acute asthma. National guidelines have been established to highlight best evidence-based practices in emergency asthma care. **Methods**: We performed a retrospective search on the Maxims Electronic Patient Record system for adults presenting to St Vincent's University Hospital's (SVUH) ED with an acute asthma exacerbation. Documentations in the identified records were evaluated against national guidelines. **Results**: A total of 30 patients presenting to SVUH ED between 1st of February and 11th of March 2024 were included. Of the 33 attendances, 36.4% had their peak flow measured; 0% had their inhaler technique assessed; 15.2% had their triggers identified, and avoidance discussed; 3.03% had their concordance issued addressed; 0% had their psychosocial or other risk factors addressed; 3.03% was provided written information and an action plan; and 0% was advised to follow-up with their GP within the recommended timeframe. **Conclusions**: Our audit suggests gaps in current management of acute asthma in the ED. A quality improvement plan is underway, with a second audit cycle planned. **Keywords**: Asthma, Emergency Department **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest.

1.4 Can serum total IgE predict the severity of environmental allergies by the size of the Skin prick test wheel?

Fatima Shahbaz[1], Ahmad Sheikh[2,3,4]
[1]Royal College of Surgeons in Ireland, Dublin, Ireland. [2]Peterborough Regional Health Centre, Peterborough, Canada. [3]Queens University, Kingston, Canada. [4]Royal College of Physicians in Ireland, Dublin, Ireland

Background: Asthma, allergic rhinitis, and other respiratory illnesses can exacerbate IgE-mediated hypersensitivity reactions. This study aimed to assess the correlation between serum total IgE levels and the size of the wheel produced during skin prick testing for common allergens. **Methods:** In an Ontario respiratory clinic, a cohort of patients with asthma and allergic rhinitis was identified via retrospective chart review. Serum IgE levels and eosinophil counts were retrieved from electronic medical records. Skin prick test results for common allergens were reviewed and correlated using SPSS software. **Results:** Among 89 patients (42 females, 47 males). Median serum IgE was 490 kU/L (range 102-17,800 kU/L). Median age of 66 years (range 18-91). Mean FEV1 was

69.75%. Median eosinophil count was 0.5 $x10^9$/L (range 0-9.3 $x10^9$/L). IgE levels had a negative correlation with FEV1 (r = -0.138, p = 0.197) and a positive correlation with eosinophil count (r = +0.351, p = 0.001). A positive correlation was found between total IgE and birch tree skin wheel size (r = 0.219, p = 0.040). **Conclusion:** In this cohort, there was no statistically significant correlation between serum total IgE level and severity of skin-prick testing for 11/12 allergens except birch tree. **Affiliations:** I, Fatima Shahbaz, am a medical student at Royal College of Surgeons in Ireland. The second author is a respiratory physician at Peterborough Regional Hospital, Ontario, Canada.

Disclosures: 1. **Funding**: This study was not funded. I have not received any grants or honorarium to present this case. 2. **Conflict of Interest:** There is no conflict of interest for both authors. The second author sits on the advisory board committees of GSK. GSK has neither funded nor provided any support to conduct this audit. 3. **References**: Presented in this study have not been previously used in any of my publications.

1.5 Review Of Use Of Biologics In Children With Severe Asthma- A Single Centre Experience

Mairead Furlong[1], [1]Catherine Carrig, [1]Mary Devitt, [1]Basil Elnazir
[1]Children's Health Ireland, Dublin, Ireland

Background: Severe asthma is defined as asthma that is uncontrolled despite adherence with maximal optimised treatment with correct inhaler technique and management of contributory factors such as comorbidities and environment exposures, or that worsens when high dose treatment is reduced (1). Severe asthma in children accounts for less than 5% of all childhood asthma cases, yet it can cause frequent asthma attacks and hospital admissions, and its mortality is unacceptably high (2). Biologics is an innovative and highly targeted therapy that has been transforming the lives of many individuals with uncontrolled asthma symptoms. They work to reduce the frequency and severity of asthma exacerbations, improving the overall quality of life for patients and their families. The use of biologic therapy for severe asthma is in its early stages in paediatrics with CHI @ Tallaght administering biologic therapy for the first time in December 2021. **Method:** At each clinic visit to the respiratory department a patient's spirometry is performed and an asthma control test (ACT) is calculated using the ACT questionnaire. A detailed retrospective review of patient's healthcare records was conducted on all patients who have commenced biologic therapy under our care. Patient's spirometry, ACT and number of asthma exacerbations over a year prior to commencing biologic therapy was assessed. These markers were then reviewed at 3 monthly intervals post biologic treatment up to a 2 year period where applicable. **Results:** 10 patient's (7 males and 3 females) with severe asthma were reviewed with a mean age of 11.7 years. 80% of patients receiving biologics for severe asthma show a substantial reduction in their asthma control test, number of exacerbations and spirometry after 3 months. **Conclusion:** Biologic therapy can enhance the quality of life of children with severe asthma and reduce the burden of this chronic disease. However, it is not a one-size-fits-all treatment and consideration is required when determining a patient's eligibility for biologic therapy and selecting the correct biologic. Over the years to come, this service must continue to grow and evolve to serve this vulnerable population and continue to improve the lives of children with severe asthma. **Keywords:** Severe asthma, Biologic therapy **Conflict of Interest:** The authors declare no conflict of interest. **References:**

1. GINA Global Initiative for Asthma (2021) *Global Strategy for Asthma Management and Prevention* Available at: https://ginaasthma.org [Accessed on 9th August 2024]

2. Pijnenburg, M.W. and Fleming, L. (2020) Advances in understanding and reducing the burden of severe asthma in children. *The Lancet Respiratory Medicine, 8*(10), pp.1032-1044.

1.6 Patient satisfaction survey Letterkenny University Hospital Infusion (LUH) Unit for patients with severe asthma on Biologic treatments

Patricia McLaughlin[1], [1]Olga Mikulich
[1]Letterkenny University Hospital, Letterkenny, Ireland

Background: Infusion unit was relocated recently, so a patient satisfaction survey was carried out to highlight any deficiencies in care, so that corrective action if required be taken by the clinicians involved in the care for this cohort of patients **Methods**: A questionnaire was devised and sent to patients, who completed same anonymously. The questionnaire included details of location and surroundings, overall cleanliness and comfort, asthma control and current injection, quality of care, friendliness and compassion of staff and availability and convenience of appointment scheduling and comments or suggestions. **Results**: Three recurring themes were noted form the anonymous questionnaires received back. Positive feedback was noted for staff working in the infusion unit and location. Many patients commented on parking, expressing 'better parking needed', 'stress of finding parking for appointment' and 'only drawback to attending the unit is parking' **Conclusion**: Overall feedback was extremely positive for the current unit and location with patients expressing positive feedback for the care that they receive when attending the unit for their asthma biologic injections. Hospital management have been made aware that car parking has been raised as an issue by severe asthma patients attending the infusion unit for their biologic therapy. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.7 Adherence to Criteria to Continue Targeted Anti-IL5 Therapy in Severe Refractory Eosinophilic Asthma at 12 Months

[1]Patricia McLaughlin, [1]Olga Mikulich, [1]Mathew Rajan
[1]Letterkenny University Hospital, Letterkenny, Ireland

Background: An audit was carried out to examine aspects of the decision to continue Targeted Anti-IL5 therapy post 12 months of treatment in patients with a diagnosis of severe refractory eosinophilic asthma in Letterkenny University Hospital and to highlight any deficiencies so that corrective action if required may be taken by the clinicians. **Methods**: Criteria to measure against were selected from the HSE protocols on Benralizumab (Fasenra) and Mepolizumab (Nucala) for the treatment of severe refractory eosinophilic asthma. Patients were identified from records maintained by Ms Patricia McLaughlin, Advanced Nurse Practitioner. Data was collected from the medical record, Laboratory Information System and the iPMS (Hospital Information System). A Microsoft Excel Spreadsheet was devised for use in the audit. Questions were designed to determine if there was adherence to the selected HSE protocols. A pilot study was carried out and following this some small changes were made to the Microsoft Excel Data Collection Tool. Data was analysed by a Clinical Audit Facilitator using IBM SPSS Statistics v. 29 and Microsoft Excel. **Results**: The data demonstrated a significant reduction in the mean number of exacerbations requiring hospitalisation and/ or systemic corticosteroids at 12 months after commencing treatment. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.8 Sustainable care: what are the characteristics of people with asthma who successfully switch to low carbon inhaler devices?

Laura Piggott[1,2], Anna Francis[3], Andrew Cumella[3], Samantha Walker[3], Brian Kent[1,2], Grainne D'Ancona[4]

[1]Department of Respiratory Medicine, St James' Hospital, Dublin, Ireland. [2]School of Medicine, Trinity College Dublin, Dublin, Ireland. [3]Asthma + Lung UK - London (United Kingdom), Dublin, United Kingdom. [4]Severe Asthma Centre, Guy's and St Thomas' Hospitals, London, United Kingdom

Background: Inhalers are responsible for much of the carbon footprint of respiratory therapies, with metered Dose Inhalers (MDIs) causing greater carbon emissions than Dry Powder Inhalers (DPIs). For this reason, switching from MDIs to DPIs where feasible is a priority, however, little is known about what patient factors are associated with a successful or unsuccessful inhaler switch. **Methods:** Asthma+Lung UK asked people with a respiratory disease to complete a comprehensive online survey in 2023. Participants were asked if they had been offered the opportunity to switch to a DPI, and if so if it had been successful (continued new DPI). We compared demographic, economic and clinical factors between people with asthma who successfully switched versus those who experienced an unsuccessful switch (changed back to an MDI). **Results:** 9,960 people with asthma replied (77.9% female; age 59.9±13.0). 3,753 were offered a switch from MDI to DPI and 3,321 (88.5%) accepted. The change to DPI was successful in 2,126 (64% of switchers). Demographic and economic factors were not associated with a successful switch, however, unsuccessful switchers were more likely to have uncontrolled asthma (see table 1.). Awareness of the carbon impact of MDIs was not different between the two groups (70% vs 71.6%).Disclosures: **Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.9 Sustainable care: which people with asthma are offered a lower carbon inhaler device by clinicians and what stops them wanting to switch?

Dr Laura Piggott[1,2], Dr Anna Francis[3], Mr Andrew Cumella[3], Dr Samantha Walker[3], Professor Brian Kent[1,2], Ms Grainne D'Ancona[4]
[1]Department of Respiratory Medicine, St James' Hospital, Dublin, Ireland. [2]School of Medicine, Trinity College Dublin, Dublin, Ireland. [3]Asthma + Lung UK, London, United Kingdom. [4]4Severe Asthma Centre, Guy's and St Thomas' Hospitals, London, Ireland

Background: Most inhalers prescribed are metered dose inhalers (MDIs), however dry powder inhalers (DPIs) have a markedly lower global warming potential. Clinicians have been encouraged to offer patients switches to DPIs where feasible, but little is known about who has been offered a switch or why they decline. **Methods:** The 2023 Asthma+Lung UK online survey invited people with lung diseases to report upon aspects of their care. We compared the demographic, economic and clinical factors of respondents with asthma who had and who had not been offered a switch from MDI to DPI. **Results:** 9,960 people with asthma responded. 7,059 (70.9%) were on MDI therapy, of whom 3,753 (53.2%) had been offered a switch to DPI. There was no difference in gender, age, race, or income between those offered or not offered a switch, however people offered a DPI were more likely to have been aware of the carbon impact of inhalers (72% vs 53.2%*), to report uncontrolled asthma (61% vs 54.1%*), or required $\geq$2 courses oral corticosteroids (27.6% vs 21.6%*) all *p<0.001. 432 (11.5%) declined an inhaler change: 41% were happy with current inhalers, 30% questioned DPI efficacy and 24% feared disrupting routine. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.10 Accessibility, Usability and Utility of an app-based Digital Asthma Diary

Aoife Folliard[1], Thomas Antalffy[2]
[1]Mayo University Hospital, Castlebar, Ireland.
[2]Smart Respiratory, London, United Kingdom

Background: Peak Expiratory Flow (PEF) measurement is widely used in the home management of asthma, despite low compliance levels and high diary fabrication rates[1, 2]. Digital PEF measurement and recording has the potential for higher compliance and minimal data fabrication. **Methods**: 31 asthma patients managed by Mayo University Hospital were provided with an app and digital PEF meter to test the accessibility, usability and utility of an app-based digital asthma diary. The primary endpoint was the fill rates of asthma diaries. **Results**: Out of 31 patients sharing data with the clinic, 18 started taking regular readings - in line with the roughly 50% take-up rate at service evaluations elsewhere.During the typical 3-month period between secondary care visits, patients recorded weekly average (SD) 7.0 (1.2) PEF recordings, 4.8 (0.6) Symptom scores and similarly 4.8 (0.6) Reliever inhaler use recordings.Over 50% of patients found the digital diary more convenient than taking notes on paper and deemed the built-in Asthma Action Plans useful in self-management. **Conclusions**: Secondary care asthma patients broadly accept smartphone-based digital asthma diaries. The quantity and reliability of data recorded during 3 months are much superior to results documented with mechanical PEF meters. **Keywords** Digital asthma diary, PEF diary, **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.11 An increase in Peak Flow variability reflects T2 inflammation more than ACT or change in FEV1

Ciara Ottewill[1,2,3], Vincent Brennan[2,1], Patrick Kerr[1], Elaine MacHale[1], Garrett Greene[4], Richard W Costello[1,2]

[1]Department of Medicine, Royal College of Surgeons of Ireland, Dublin, Ireland. [2]Department of Respiratory Medicine, Beaumont Hospital, Dublin, Ireland. [3]HSE Communications, Dublin, Ireland. [4]School of Mathematics and Statistics, University College Dublin, Dublin, Ireland

Background: Asthma control is assessed by laboratory spirometry (LS) and by patient-reported outcomes(PROs). However, spirometry provides a point-in-time measure and self-reported questionnaires are biased by non-specific symptoms. We tested the hypothesis that daily PEF reflects changes in T2 inflammation better than LS or PROs. **Methods**: Post-hoc analysis of data from the INCA Sun study was performed. T2 status was determined by blood eosinophil (PBE) count and FeNO. Changes in spirometry from day 0 to day 30 were compared with the adjusted PEF variance. Asthma Control Test (ACT) was assessed at day 0 and day 30. **Results**: Ordinal logistic regressions, adjusting for age, BMI, gender & prior month's corticosteroid exposure demonstrated association of T2 status with PEF variability (OR 1.04, p<0.01, 95%CI 1.03-1.05). While ΔFEV1 was associated with higher T2 status, median values across categories did not reach a clinically meaningful 10% change in predicted FEV_1. Those with lower ACT were likely to be T2-low, though those whose ACT improved were more frequently T2-high (OR 1.12, p <0.01, 95% CI 1.119-1.127). **Conclusion:** T2 status correlates with PEF variability. Changes in ACT did not reflect T2 biomarkers nor measures of lung function. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.12 Impulse Oscillometry is a useful alternative to spirometry in assessing lung function in people with and without airways disease, particularly in those who struggle to perform spirometry

Sophie Ritchie[1,2], Orla Smith[1], Helen Doherty[1], Patrick Kerr[1], Ciara Ottewill[1,3,4], Richard W Costello[3,1]
[1]Department of Medicine, Royal College of Surgeons of Ireland, Dublin, Ireland. [2]Department of Medicine, University of Galway, Galway, Ireland. [3]Department of Respiratory Medicine, Beaumont Hospital, Dublin, Ireland. [4]HSE Communications, Dublin, Ireland

Background: Spirometry is a recommended test for patients with symptoms suggestive of asthma. However, it is technically challenging. This study investigated factors associated with patients failing to produce interpretable spirometry. **Methods**: We assessed the quality of spirometry among 52 community-based patients being assessed for asthma in a clinical trial. The quality of FeNO(fractional exhaled nitric oxide), PEF (peak flow) and IOS (oscillometry) maneuvers and their associated clinical characteristics were compared between patients with interpretable and uninterpretable spirometry. **Results:** Among 52 participants, 5(10%) had uninterpretable post-bronchodilator spirometry. All of these were female. Though not significant, these patients had a lower median FeNO than those who could perform spirometry (10 vs 22, p =0.084). There was no statistically significant in R_5, R_{5-20} or Ax between groups, either pre or post-bronchodilator, and all bar one patient had interpretable iOS. **Conclusion**: This study suggests around 10% of patients in this cohort produced uninterpretable spirometry results. Despite this, oscillometry proved useful, demonstrating no difference between groups. Reassuringly as patients with interpretable IOS, in the absence of interpretable spirometry, had an R_5 Z-score within normal values. All patients with uninterpretable spirometry were women, with trends suggesting lower FeNO than those with interpretable spirometry. **Disclosures:** **Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.13 Improving asthma care by implementing elements of the BTS (British Thoracic Society) asthma discharge bundle in the respiratory units in the Royal hospital, Belfast

[1]Claire Butler, [1]Sara Gordon, [1]Dawn Stirling, [1]Lorraine McKenna, [1]Roseanna Christie, [1]Laura McKendry
[1]Belfast Trust, Belfast, United Kingdom

Background: Admission to hospital with an acute asthma flare up is a serious and potentially life threatening event. We undertook a Quality Improvement (QI) project on the implementation of the BTS Asthma Bundle. Our aim was to improve nursing knowledge in assessing inhaler technique and improve confidence in providing assistance to correct issues with poor inhaler technique. **Method:** The QI group analysed Fishbone and Driver Diagrams and identified change initiatives. A programme for staff nurse training and supervision was developed. This was rolled out to all nurses on the respiratory units. An Asthma acronym was created to help improve and maintain asthma care awareness. We designed questionnaires to measure nursing confidence and knowledge and these were administered pre intervention and 4-6 weekly intervals post intervention. **Results:** Nursing inhaler confidence and knowledge improved, maintaining greater than 70% **Conclusion:** The project has led to improved nursing knowledge and confidence with assessing and supervising inhalers technique. Our future aim would be to review if the implementation of this project had an impact on hospital bed days and readmissions. **Keywords:** Asthma care, BTS discharge Bundle, staff confidence.
Disclosures: The authors declare that they have no conflict of interest

1.14 Digital assessment of lung function and ICS/LABA treatment among Irish Severe Asthma Centres – a service evaluation

[1]Ahmed Allami, [1]Orla Smith, [1]Elaine MacHale, [1]Grace O'Donnell, [1]Cara Gill, [1]Ciara Ottewill, [1]Richard W Costello
[1]Department of Medicine, RCSI University of Health Sciences, on behalf of the HSE Digital Living Lab, Dublin, Ireland

Background: Guidelines recommend asthma patients with elevated T2 biomarkers, with exacerbations, be considered for biologic treatment. In previous trials, we demonstrated, using digital monitoring of lung function and ICS/LABA use, that less than half patients have objective evidence of poor control or sufficient adherence. The feasibility of digital measurement of these parameters in practice is unknown. **Methods:** The HSE commissioned a real-world evaluation assessing parameters as part of an MDT work-up for poorly controlled patients. This is an evaluation of a service developed to manage digital aspects of patient set-up and engagement, with concurrent clinical decision software, displaying data to clinicians. Patients with uncontrolled asthma were referred by specialist clinicians. Patients were contacted, issued a digital peak-flow(PEF) meter and digital device specific for their inhaler. Patients were supported by the team to maximise treatment adherence and engage in PEF recording. **Results:** One hundred patients were evaluated. Ninety-two were prescribed GINA Step-4 or higher treatment. ICS/LABA adherence was > 60% in 70% of patients. 28% of patients were uncontrolled despite good adherence, 30% were uncontrolled with poor adherence. **Conclusion**: The data support digital monitoring of PEF and adherence to identify whether poor control reflects refractory disease or poor adherence. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.15 The use of Global Initiative for Asthma (GINA) and Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines in Primary Care.

Cherry Wynne[1], Abi Mani[1], Alison McAlister[1], Stanley D.W Miller[1,2,3]
[1]Respiratory Integrated Care, Dublin North Central, Dublin, Ireland. [2]Mater Misericordiae University Hospital, Dublin, Ireland. [3]School of Medicine, University College Dublin, Dublin, Ireland

Background: The Respiratory Integrated Care (RIC) nurse-led clinic in DNC accepts referrals of patients, with clinically confirmed Asthma or COPD, from General Practitioners (GP). This study explores the use of current GINA and GOLD guidelines in primary care.
Methods: Retrospective data from referrals (July 2023 to July 2024) were reviewed. Patients with a clinically confirmed diagnosis of COPD or Asthma were included. **Results:** 108 referrals met the criteria for this study (24 Asthma, 65 COPD, and 19 Asthma/COPD). Of the 24 patients with Asthma, 2 (8.3%) were on inhaled corticosteroid (ICS) /LABA maintenance and reliever therapy (MART), 15 (62.5%) were on a short acting bronchodilator (SABA). Of the 19 patients with Asthma and COPD, 1 (5.3%) was on MART, 13 (68.4%) were on SABA. Of the 65 patients with COPD, 43 (66.2%) were on a SABA, 10 (15.4%) were on long acting muscarinic antagonist/long acting beta agonist (LAMA/LABA), and 41 (63.1%) were on a LAMA/LABA and ICS combination (LAMA/LABA/ICS). Of these 41, 37 (90.2%) had eosinophil counts >100.
Conclusion: Results indicate a strong evidence of the use of GOLD guidelines and low incidence of patients on the GINA preferred pathway (MART). **Keywords:** Asthma, COPD **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.16 Impulse oscillometry: Tuning into the subtle frequencies of lung function.

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[1]Respiratory department, Beaumont Hospital, Dublin, Ireland

Background: Impulse oscillometry (IOS) is a diagnostic method for assessing airway obstruction by quantifying airway impedance through resistance and reactance, based on the Forced Oscillation Technique. Unlike spirometry, IOS is effort-independent, making it suitable for patients unable to perform forced expiratory manoeuvres. **Methods:** The primary objective was to assess the indications for IOS. The secondary objectives included evaluating the diagnostic value of IOS in identifying airway obstruction when spirometry results are normal and determining the accuracy of IOS interpretation. A single-centre audit included 13 asthma clinic patients (2022-2024). Data were anonymised in compliance with GDPR. **Results:** The median age was 49 years, with 77% female. Median FEV1 was 94%, and median BMI was 27 kg/m². Among patients, 38% had small airway obstruction, 23% had abnormal IOS, and 15% had borderline IOS. 33.3% with normal or poor quality spirometry had evidence of obstruction on IOS. 25% with a normal %PredFEF25-75 had evidence of obstruction on IOS. **Conclusions:** All patients had appropriate IOS indications. Future directions include standardising approaches, creating reference ranges through larger validation studies, and exploring the relationship between IOS and CT lung densitometry.**Disclosures:** Conflict of Interest: **The Authors declare that they have no conflict of interest.**

1.17 Comparing the Impact of Biological Treatment in Severe Asthmatics on Markers of Inflammation

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Background Severe asthma affects about 2-5% of asthmatics. Some severe asthmatics are treated with biological agents which target T2 inflammatory pathways. We carried out a study of 83 patients with severe asthma and compared those on biological agents to those not on biological agents. **Methods** Each patient had spirometry, completed an ACQ-7 questionnaire and had bronchoscopy with bronchoalveolar lavage. BAL cytokines and serum blood markers were also analysed. **Results** We found that those on biologics were older (P=0.02), more likely to be female and had significantly less blood eosinophils (P<0.0001). There were also differences in some BAL cytokine levels. Interestingly, CCL11 was significantly more elevated in those on biological agents (P=0.03). CCL11 has been identified as a potential biomarker for asthma severity and control.**Conclusion** Some differences in clinical features and cytokines were observed when severe asthmatics treated with biological agents were compared to severe asthmatics not on this treatment. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.18 Evidence of "Neutrophil Swarms" in Endobronchial Biopsies of Severe Asthmatics

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Background Endobronchial biopsies are now rarely used as a tool to assess asthma patients who may have difficulty controlling symptoms. However, endobronchial biopsies can potentially offer key information which may aid management. **Methods** 26 patients with severe asthma had endobronchial biopsies to assess for evidence of remodelling. Patients also had BAL fluid and serum markers analysed along with spirometry and an ACQ-7 questionnaire. **Results** Endobronchial biopsies were scored for reticular basement membrane (RBM) thickness and eosinophil and neutrophil counts. There was no difference in RBM thickness when groups were split as per asthma severity, treatment with biologics and sex. We found that neutrophil and eosinophil counts correlated to serum neutrophil and eosinophils respectively. 75% of patients on biological treatment had no eosinophils visible on analysis of the biopsies. We also observed clusters of neutrophils in some samples. We further explored this with immunofluorescence staining to establish if NETosis was occurring in these samples and found colocalisation of histone H3 and neutrophil elastase in some incidences. **Conclusion** Although, neutrophil swarms and even NETosis are not classically associated with asthma we have observed evidence of this in endobronchial biopsies from severe asthma patients. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.19 Burden of Atopy: Documentation of Atopic Dermatitis Prevalence in a Specialised Asthma Clinic

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Background: Asthma and Atopic Dermatitis share pathophysiological mechanisms. Ireland has among highest asthma rates worldwide[1]. 1-in-10 Irish adults experience atopic dermatitis[2]. Biologic therapies have revolutionised asthma and eczema, such as Dupilumab. **Methods:** We audited Asthma Clinic letters over 6-weeks, examining 71 letters. Recorded variables included documentation of skin status, ACQ-7(Asthma Control Questionnaires), Treatment, Eosinophils and Dermatology referrals.**Results:** We reviewed 71 letters (age $\bar{x}$ =50, 33 males, 38 females, aged 21-84 years). 100% of letters(n=71) recorded respiratory symptoms/examination. 94.4%(n=67) documented ACQ-7 score. 47.9%(n=34) referred to hay-fever presence/absence and/or sinusitis. 97.2%(n=69) documented eosinophil count. 15.5%(n=11) referred to eczema absence/presence. 9.9%(n=7) documented eczema presence. 57.8% (n=41) were on Biologics, including 15.5%(n=11) on Dupilimab, one patient had eczema pre-commencement which improved. There were no Dermatology referrals. **Discussion:** Respiratory symptoms were documented to high-standard. Only 15.5%(n=11) referred to atopic dermatitis presence/absence, versus 47.9% documenting hay fever/sinusitis presence/absence. 9.9% eczema prevalence is consistent with the Irish population, but less-than-expected in an Asthma clinic, potentially reflecting patients on Biologics or need for improved skin-status questioning to appreciate dual disease burden.

Disclosures: Conflict of Interest: The Authors declare that they have no conflict of interest**.**

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1.20 An audit of pneumococcal, influenza and covid vaccination among adult asthma patients.

[1]Art Kelleher, Respiratory, [1]Orlaith Shinners, [1]Grace O'Sullivan, [1]Fiona Arnott, [1]Des Murphy
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Background: HSE guidelines recommend annual influenza vaccination for all high risk adult patients including those with a chronic lung condition. These guidelines also recommend annual covid vaccination for this group along with annual pneumococcal vaccination with the PPV23 vaccine. The Global Initiative for Asthma 2024 report advises that patients with moderate to severe asthma should receive annual influenza vaccination, and should follow local guidelines regarding other vaccines including covid boosters and pneumococcal vaccines. Among our severe asthma cohort in CUH, we do not have data regarding uptake of these annual vaccines. We aimed to undertake an audit of vaccination status among adult asthma patients attending our designated asthma clinic using a simple self reporting audit tool. We also assessed vaccination uptake in a subgroup of patients on biologic therapy for asthma control. **Methods:** A five-question survey with "Yes/No" answers was provided to patients on arrival to their outpatient appointment. This survey asked patients if they were on a biologic therapy, and whether they had availed of annual covid, influenza, and pneumococcal vaccines.**Results:** This audit is currently in the final stages of data collection and full results will be available for the ITS conference. **Conclusions:** Dependent on above. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.21 Evaluation of a Quality Improvement Program for Asthma Care.

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Background: An ED audit in 2021 revealed that 7% of asthma patients received a referral to respiratory services upon discharge. This resulted in repeated attendances to ED/AMU. The goal was to establish a process for streamlining discharge care and provide patients with to review and investigations. **Methods:** Patients with asthma symptoms who attended GUH were invited to participate. Upon discharge all patients received a follow up phone call and education pack. Ethics committee approval was obtained. Clinical information was extracted from patient's charts prospectively. Outcome measures including exacerbation rates, education and patient satisfaction were explored. **Results:** 58 patients have been included in the QI Programme since June 2023, . The participants' average age was 37.8 years. All participants received asthma education, action plans, inhaler education, with the 31.4% who were smokers receiving smoking cessation advice. 35 patients have completed six-month follow-up. Two patients have been referred to the severe asthma service to commence anti-IL-5 therapy. Patients have reported increased understanding of their disease and overall satisfaction **Conclusion:** The implementation of the asthma QI programme demonstrates how focused interventions can enhance the quality of life for those living with asthma and lessen the demand on resources for inpatient services.

Disclosures: Conflict of Interest: The Authors declare that they have no conflict of interest.

1.22 Characterization of the role of human MIF in driving enhanced house dust mite-mediated trained immunity in vitro

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Background: Trained immunity (TI) describes a phenomenon by which innate immune cells acquire an immunological memory resulting in elevated levels of pro-inflammatory cytokines following exposure to secondary pathogenic stimuli. Trained responses can be harmful in the context of asthma as the surge in cytokine production can further drive exacerbations. Recent literature shows that increased expression of pro-inflammatory cytokine, macrophage migration inhibitory factor (MIF) enhances trained responses in macrophages from mice containing the high expressing human MIF polymorphism, in response to the allergen house dust mite (HDM). **Methods:** Bone marrow-derived macrophages (BMDMs) from humanized MIF mice with the low-expressing ($CATT_5$) or the high-expressing ($CATT_7$) promoter polymorphism or wild type (WT) controls, were HDM trained *in vitro*, prior to LPS exposure. Seahorse extracellular flux analysis and epigenetic inhibitors demonstrated altered cellular phenotypes.**Results:** HDM-trained $CATT_7$ BMDMs show significantly enhanced production of cytokines like IL-1b, IL-6, and TNFa in response to secondary insults with LPS in comparison to both $CATT_5$ and WT BMDMs. As well as having increased pro-inflammatory cytokine production, trained macrophages have altered metabolic and epigenetic phenotype post HDM-stimulation. **Conclusion:** High human MIF expression correlates to an enhanced HDM-induced trained response which may drive further more severe exacerbations in asthmatic patients. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.23 Acute asthma- optimising care for patients discharged directly from the Emergency Department

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Background: Asthma is too often managed as a disease of acute exacerbations with little attention to management between exacerbations when patients remain symptomatic and at risk of re-exacerbation [1]. We aimed to provide single maintenance and reliever therapy (MART) to appropriate patients discharged from the Emergency Department (ED) following an asthma exacerbation and ensure appropriate follow-up [2]. **Methods:** Clinicians discharging non-admitted patients directly from the ED refer electronically to the respiratory nursing team, who will review the patient in the ED or conduct a telephone consultation on the next working day. The asthma care bundle and the electronic patient record (EPR) were updated to include a prescription for MART. An approved procedure to dispense Symbicort ® from the ED to patients discharged out of hours was introduced. We compared outcomes from January – June 2022 and January-June 2024.**Results:** Sixty-seven percent of patients treated for acute asthma were discharged directly from the ED. The acute asthma care bundle usage increased by 35.5%. Specialist respiratory follow-up increased by 41%. Twenty-five symbicort inhalers were dispensed from the ED.**Conclusions:** This quality improvement initiative has allowed earlier optimisation of inhaled asthma therapies for patients discharged from the ED following acute exacerbation of asthma.

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Trademarks: Symbicort®, AstraZeneca

1.24 Enhanced diagnostic assessment in the integrated care setting to guide primary care management of asthma

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Background: Asthma is diagnosed based on symptoms and variable expiratory airflow limitation. Objective verification of asthma prior to starting treatment is recommended, as inhaled corticosteroids reduce sensitivity of spirometry.[1] Early diagnostic assessment avoids over treatment or unnecessary treatment of suspected asthma. **Methods:** We piloted an enhanced physiology testing program for GP spirometry requests by recording validated PROMS (mMRC, ACT scores), medications, adherence and blood eosinophils. 131 cases over 6 months were assessed. **Results:** 46 patients were referred to confirm a GP diagnosis of asthma; a further 15 had suspected airway disease, and 10 were referred with cough, wheeze or dyspnoea. Reversible airflow obstruction was demonstrated in only 14 (19.7%) individuals.Overall, 12 patients had spirometry confirmed asthma. 14 had spirometry and clinical assessment consistent with asthma/COPD overlap. Only 12 (46.2%) patients were on an appropriate ICS/LABA inhaler. Eight patients were on inhaled therapy not containing an ICS and three were on PRN SABA alone, contrary to GINA recommendations. Three were not on inhalers. Non-compliance or incorrect dosing was noted in five cases. **Conclusion:** Enhancing community-based spirometry by recording comprehensive clinical information provides primary care physicians with the core information required to adjust asthma management plans to guideline-directed standards in the community. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.25 Multidisciplinary Approach to Improving Patient Care in Patients Presenting with Acute Asthma in the Emergency Department.

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[1]Sligo University Hospital, Sligo, Ireland

Background Asthma is a chronic condition with patients frequently presenting to the Emergency Department (ED) with acute exacerbations. Effective asthma control and management can be enhanced through a multidisciplinary approach. A Quality Improvement Project was undertaken involving a clinical audit of patients attending the ED with acute asthma not requiring admission to hospital. **Methods:** Retrospective quantitative analysis was conducted in February 2023 from data collected on Integrated Patient Management System (iPMS) and ED Charts. Data was re-audited (May 2024) following the introduction of a new Acute Asthma Care Pathway. **Results**: February 2023 acute asthma presentations n=6, peak flow recorded 0%, inhaler technique checked 0%, follow up Respiratory team 0%, steroids administered 66%, bronchodilators administered 50%. Asthma pathway was introduced and data re-audited in May 2024. Acute asthma presentations n=4, peak flow recorded 75%,

inhaler technique checked 25%, steroids administered 100%, bronchodilators administered 100% , treated with asthma pathway 75%, referred to Respiratory ANP 75%. **Conclusion:** The introduction of an Asthma Pathway has standardised management of acute asthma in the ED, with timely follow up in the community by the Respiratory Advanced Nurse Practitioner. **Keywords:** Asthma, Emergency Department, Care pathway.
Disclosures: The authors declare that they have no conflict of interest

1.26 What is the impact of e-cigarette on asthma exacerbation in the adolescent population

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Background: E-cigarette use among the adolescent population is increasing worldwide, especially in youth having asthma. The studies have shown that the aerosols generated from an e-cigarette can act as a possible trigger for asthma and could exacerbate asthma symptoms. **Results**: About the primary outcome, asthma exacerbation, the data from seven included
studies were presented as narrative synthesis. Out of the seven included studies, six of them show statistically significant association, and one study shows a non-significant association between e-cigarette use and asthma exacerbation in the adolescent population. The
secondary outcome of six of the seven included studies also presented as narrative
synthesis. There was no data available for secondary analysis in one of the studies. **Methods**: The PICO Mnemonic (Population, Intervention, Comparison, and
Outcome) was used to form the review question. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used to conduct the review. Of thirty-
six potential studies identified, seven met the inclusion criteria. Quality appraisal of included studies was conducted using an evidence-based librarian appraisal checklist. Data were analyzed by narrative synthesis. **Conclusion:** E-cigarettes may have an impact on asthma exacerbation in the adolescent population. The result was consistent in six out of the seven included studies. However, all
the possible links between e-cigarette use and asthma exacerbation in the adolescent population are not fully understood, and there is a significant gap in the evidence-based, which highlights the need for more research in this area.

Disclosures: Conflict of Interest: The Authors declare that they have no conflict of interest.

1.27 Real world experience of adrenal insufficiency in patients receiving anti-IL-5 biologic therapy

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Background: Anti-interleukin (IL)-5 biologics are effective in the treatment of uncontrolled eosinophilic asthma, EGPA, or HES resulting in recurrent or chronic oral corticosteroid (OCS) treatment (1). For OCS-dependent patients, their ability to discontinue OCS post-initiation of biologics can be complicated by glucocorticoid-induced adrenal insufficiency (AI) (2), the risk of which increases with higher doses and longer OCS treatment durations (3). **Methods:** We completed a retrospective chart review of 54 patients with severe asthma, EGPA, or HES who received an anti-IL5/-IL5R between 2019 and 2022 to assess: 1) the burden of chronic OCS use; and 2) the prevalence of AI using the short synacthen test (SST). **Results:** 54 patients were identified, 44 (81%) of whom were OCS-dependent prior to anti-IL5/-IL5R commencement. 22 (50%) successfully discontinued, while 15 (27%) achieved a reduction in their maintenance OCS dose. 26

(48%) were investigated for AI via SST, with 20 (77%) achieving a peak serum cortisol rise of <450nmol/L, indicative of AI. 6 of these 20 (30%) have subsequently successfully discontinued OCS, while the remaining 14 (70%) remain OCS-dependent. **Conclusions:** AI is prevalent among this patient population, with the rate of AI in keeping with rates seen in similar studies from other European centers (4). Identification is critical to avoid adrenal crises.

Keywords: Asthma, EGPA, Hypereosinophilic syndrome, oral corticosteroids, adrenal insufficiency, anti-IL5/-IL5R monoclonal antibodies **Conflict of Interest:** The authors declare that they have no conflict of interest.

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1.28 Green inhaler prescribing is limited by lack of awareness among Irish clinicians

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Background: In Ireland, inhaled medications account for 4% of healthcare greenhouse gas (GHG) emissions, mostly due to the propellant (hydrofluroalkane) in metered dose inhalers (MDIs). Dry-powder inhalers (DPI) and soft mist inhalers (SMI) have significantly lower carbon footprint than MDIs. In 2019, MDIs accounted for 60% of prescribed inhalers nationally. **Methods:** We surveyed all medical, nursing and physiotherapy respiratory team members in our institution regarding awareness of the environmental impact of inhalers. **Results:** Of 35 respondents, 75% reported that environmental considerations would influence their inhaler prescribing, however, almost 40% were not aware that MDIs carry the greatest carbon footprint. While over 60% were aware that MDIs are mainly used in those with poor inspiratory effort, only 20% felt confident making an inhaler change themselves. **Discussion:** Our survey demonstrates a limited knowledge of green inhalers among prescribers. Education and accessible resources are urgently required to reduce the effect of inhaled medications on the environment. The Irish Doctors for the Environment have created a toolkit[1] to address this need. This will be incorporated into our medicines guide to establish Tallaght University Hospital as the first Irish tertiary institution to implement a sustainable inhaler prescribing policy. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.29 Early intervention with asthma education and easy access to care improve outcomes in adult asthma patients.

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Background: Acknowledging the need to enhance asthma control, decrease morbidity, and reduce healthcare costs has led to a growing emphasis on education and advice on asthma self-management. **Methods:** A nurse led clinic set up in Respiratory Integrated care to facilitate educational intervention to asthma patients presented to Tallaght University Hospital ED.

Clinic is focused on:

- Patient's symptom control and modifiable risk factor
- Disease process education and emergency exacerbation management
- Inhaler technique and adherence
- Refer to smoking cessation if needed

In Multi-disciplinary meeting, each individual case discussed for specialist input and optimisation of management if required. Discharge back to GP when patient is symptomatically stable.**Results:** Total 71 referrals received (Oct 2022-March 2023) among them 64 patient attended clinic. On first Clinic visit only 15 patient's demonstrated good inhaler technique and adherence with their prescribed inhalers. After education 30 patients were compliant with PEFR monitoring. PFT arranged for 55 patients for diagnostic confirmation. 10 patient's referred to smoking cessation. 8 patients referred to severe asthma clinic for advance treatment in asthma whereas 36 patients discharge to GP successfully. **Conclusion:** A structured, educational intervention can improve patient's inhaler technique and compliance helps in asthma control and may reduce the risk of future exacerbations.

Keywords: Asthma, Inhaler Technique

Disclosures: Conflict of Interest: The authors declare that they have no conflict of interest.

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1.30 The Impact of Microbiome Supplementation on Managing Asthma Exacerbations in Adults

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Background: The rising prevalence of asthma and the microbiome's role in immune modulation necessitate examining the effects of microbiome supplementation on adult asthma exacerbations. Asthma exacerbations significantly burden patients and healthcare systems, highlighting the need for preventive strategies. Investigating microbiome supplementation's potential in reducing exacerbations could lead to novel therapeutic approaches. **Methods:** A systematic review was conducted using MEDLINE, CINAHL, PubMed, and EMBASE databases from January 2019 to
February 2024.**Results:** The microbiome supplementation improved asthma control, lung function, and gastrointestinal health, suggesting a role for the gut-lung axis in asthma therapy. However, small sample sizes and inconsistencies across
studies necessitate cautious interpretation. **Conclusions:** Microbiome supplementation shows promise in asthma management, potentially enhancing traditional treatments. Further research with larger,

standardized studies is required to confirm these findings. **Keywords:** Asthma, microbiome supplementation, systematic review, gut-lung axis. **Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.31 Inhaler Usage and Environmental Impact: An Irish perspective on knowledge, attitudes and environmentally friendlier prescription practices.

Tom Farrell[1], Anthony Goodings[2], Casandra Carey[2], Sten Kajitani[2], Rayan ben Letaifa[2], Tamara Vagg[2,1], Desmond Murphy[2,1], Kevin Deasy[2,1], Hisham Ibrahim[2,1], Barry Plant[2,1]

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Background: Pressurised Metered Dose Inhalers (pMDIs) use hydrofluorocarbons (HFCs) with significant global warming potential. Alternative options exist with lower environmental impact, notably Dry Powder Inhalers (DPIs) **Methods**: Post a review of relevant literature, we designed an inhaler environmental impact survey for healthcare professionals involved in the prescription/recommendation of inhalers at Cork University Hospital. Following ethical approval this survey is ongoing electronically (Qualtric software). **Results**: Preliminary results (n=44: NCHDs 69%, Respiratory-nurse specialists 9%, Respiratory-Physiotherapists 18%%, Pharmacists 4%) demonstrate that 48% prescribe/recommend pMDIs most frequently. 31% reported being aware of the environmental impact of inhaler choice, with 5% regularly discussing this with patients. 18% felt that environmental impact of medical products was adequately covered in their training to date. With additional training 99% would be more likely to prescribe environmentally friendlier options. Barriers to change identified include effectiveness (21%), compliance (25%) and local/national guidelines (18%). After reading a vignette on different inhaler environmental impact, 95% reported this would influence their future decisions. 88% believe their patients would be open to using environmentally friendlier options.**Conclusion**: This study demonstrates: 1) the lack of knowledge regarding the environmental impact of inhalers and 2) the willingness to change approach with appropriate education.**Disclosures: Conflict of Interest:** The Authors declare that they have no conflict of interest.

1.32 Optimising the Formulary in a Tertiary Hospital to Reduce Greenhouse Gas Emissions from Inhalers

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Background: Metered dose inhalers (MDIs) contain powerful greenhouse gases (GHG). The most common propellant, HFA-134a, is a GHG 1400 times more potent than carbon dioxide (CO2). **Methods:** Emissions from inhalers dispensed at Tallaght University Hospital (TUH) in 2023 were audited. The quantity dispensed was retrieved from the dispensing software. Using published information, the emissions were calculated.In March 2024 TUH changed its preferred salbutamol MDI from Ventolin to Salamol, which has less propellant and lower emissions. Inhaler emissions were reaudited between 01/03/2024 and 31/07/2024 to assess this intervention and compared to the same period of 2023. **Results:** The baseline audit found that inhaler emissions were 109 tonnes of CO2 equivalents (CO2e) in 2023. MDIs represented 55% (n=4149) of inhalers dispensed but 97.8% of emissions (107t CO2e). Ventolin Evohalers produced 91.7t CO2e. Monthly

emissions for March to July were significantly lower in 2024 than in 2023 (p=0.048), despite the number of inhalers dispensed increasing from n=2997 to n=3250. Total emissions fell from 43.23t to 32.54t CO2e. Emissions from salbutamol inhalers fell from 37.12t to 23.71t CO2e. **Conclusions**: Changing the preferred salbutamol MDI inhaler from Ventolin to Salamol significantly reduced emissions.
Keywords: Inhalers, Carbon Emissions
Disclosures:Conflict of Interest: The Authors declare that they have no conflict of interest

Irish Thoracic Society Poster Review & Discussion

Friday 15th November 2024

2: Interstitial Lung Disease

2.1 Routine liver function test monitoring beyond 3 months of antifibrotic initiation can be symptom driven and reduce costs

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Background Nintedanib and pirfenidone are licensed for Interstitial Lung Disease (ILD). Risk of hepatic dysfunction- manufacturers advise monitoring of Liver function Tests (LFTs): nintedanib- monthly for 3 months then as clinically indicated, pirfenidone- monthly for 6 months, then 3-monthly. Current practice- monthly LFTs for 3 months then 3-monthly for both. Hypothesis: LFT monitoring >3 months commencement can be symptom-based, reducing patient burden and healthcare cost. **Methods** Retrospective stu dy using electronic data of ILD patients receiving nintedanib, +/- pirfenidone across WHSCT from December 2013. **Results** 120 patients involved, 3excluded. 95 received nintedanib, 51 received pirfenidone and 29 received both consecutively. 21/117 had LFT three times upper limit of normal (3xULN) (bilirubin, AST, ALT). 17/95 for nintedanib and 4/51 for pirfenidone. Nintedanib; 9/17 in <3months, 2/17 at 3-6months, 2/17 at 7-12 months and 4/17 >12months. Pirfenidone; 1/ 4 <3 months and 3/4 > 12months. 5/7 >12 months showed patients end of life (no prior

3xULN derangement – unlikely antifibrotic related). **Conclusion**: 47% of 3xULN derangement occurred < 3 months. 71% derangements >12 months were end of life (unlikely antifibrotic related). Therefore, LFT monitoring could be symptom driven after 3 months. **Keywords** ILD, nintedanib, pirfenidone, LFT, cost **Disclosures** The authors declare there is no conflict of interest.

2.2 Stakeholder Attitudes to a Potential National Registry for Interstitial Lung Disease

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Background: The purpose of this survey was to characterise patient & healthcare professional (HCP) attitudes to a potential national registry of interstitial lung disease (ILD). **Methods:** The survey was developed in collaboration with the Irish Lung Fibrosis Association (ILFA) Patient and Public Involvement Research Advisory Group and distributed electronically to ILFA members, specialist respiratory HCPs and ILFA's social media. Patients provided feedback on acceptability of collection of their data. HCPs provided feedback on potential utility of registry data. Responses were assessed on a 4-point scale (1 = very low; 4 = very high acceptability/utility). **Results:** 138 patients & 35 HCPs provided responses (in November 2023). Patients reported high acceptability for data collection [e.g. medical history/current health status (score 3.56/4), use of data for research (3.68/4)]. HCPs reported high utility for registry data [e.g. medical condition (3.85/4), disease impacts (3.67/4)]. Both groups reported concerns about data confidentiality, access and security. HCPs reported concerns about GDPR compliance and logistical aspects with long-term registry maintenance. **Conclusions:** The concept of a proposed national ILD registry & analysis of data is acceptable to patients and perceived as useful by HCPs. Keywords: interstitial lung disease, registry. **Disclosures:** The authors declare that they have no conflict of interest.

2.3 To evaluate the role of ATS/ERS/JRS/ALAT high resolution CT-Thorax imaging categories in selecting candidates for transbronchial lung cryobiopsy for undifferentiated interstitial lung disease

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Background: To assess if High-Resolution CT-Thorax (HRCT) imaging can predict utility of transbronchial lung cryobiopsy (TBLC) in impacting diagnosis of interstitial lung disease (ILD) that lacks confident diagnosis despite prior investigations. **Methods:** Retrospective study of 75 patients who underwent TBLC for undifferentiated ILD at a university hospital between 2017 and 2023. HRCT imaging was reviewed on patients and categorised as per their ATS/ERS/JRS/ALAT imaging pattern. Chart history/examination, pulmonary function tests, ILD blood-panel, previous bronchoscopy/bronchoalveolar lavage results and multi-disciplinary team meeting (MDM) discussion were assessed to determine the pre-TBLC diagnostic consensus. These were compared against post-TBLC MDM outcomes to confirm if TBLC altered diagnosis and management. **Results:** Diagnosis was changed in 44% (33/75) of cases post-TBLC. Significantly, TBLC altered the pre-TBLC diagnosis in 68.4% (13/19) in the indeterminate usual interstitial pneumonia (UIP) HRCT category, 41.9% (13/31) in alternative diagnosis, 30% (6/20) in probable UIP and 20% (1/5) in definite UIP categories. TBLC led to a confirmed post-MDM diagnosis in 81.3% of cases. **Conclusions:** TBLC is a really effective diagnostic tool in those with indeterminate UIP

and alternative diagnosis HRCT patterns. When UIP/IPF is felt likely (definite/probable UIP) on pre-TBLC HRCT, TBLC is less useful. **Conflict of interest:** Authors declare no conflicts of interest. **Keywords:** ILD, UIP, cryobiopsy, bronchoscopy

2.4 Risk factors for pneumothorax in patients with interstitial lung disease undergoing transbronchial lung cryobiopsy

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Background: Pneumothorax is a common and serious complication of transbronchial lung cryobiopsy (TBLC), however less is known about factors that predispose patients to this. 76 interstitial lung disease (ILD) patients underwent TBLC between 2017 and 2023 in our tertiary hospital. **Methods:** A retrospective review of patients who underwent TBLC for undifferentiated ILD. Patients had work-up including high-resolution computed-tomography of thorax, ILD bloods, bronchoalveolar lavage (BAL) and pulmonary function tests. All patients had a chest x-ray post-procedure. The above patient data was assessed to see what factors can predispose patients to pneumothorax. **Results:** 19 patients (25%) had a pneumothorax related to their procedure. 5 (6.6%) patients required chest drain insertion and 11 (14.5%) required overnight hospital admission. Significant risk factors for pneumothorax included eosinophilia on BAL (41.67%vs21.9%, p=<0.05), neutrophilia on BAL (37.9%vs17.0%, p=<0.05) and the presence of ground-glass opacities on imaging (38.7%vs15.4%, p=<0.05). The presence of pleura on the biopsy sample was also significant (42.9%vs16.9%, p=<0.01). Factors such as age, lymphocytic BAL, peripheral eosinophilia and fibrosis or bronchiectasis on imaging weren't significant predictors of pneumothorax. **Discussion:** Evidence of acute inflammation on pre-TBLC work-up was a significant risk factor for pneumothorax during this procedure in ILD patients. **Conflicts of interest:** Authors declare no conflicts of interest **Keywords:** ILD, UIP, cryobiopsy, bronchoscopy, pneumothorax

2.5 Effectiveness of a Tailored Pulmonary Rehabilitation programme for patients with Interstitial Lung Disease.

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Background: The National Institute of Health and Clinical Excellence (NICE) states that pulmonary rehabilitation (PR) programmes should be designed specifically for Idiopathic Pulmonary Fibrosis (IPF). We describe the interim results of a PR program designed for patients with Interstitial Lung Diseases (ILD). **Methods**: : PR comprised a 6 week out-patient exercise and multidisciplinary education program delivered by respiratory physiotherapist and ILD specialist nurse. The following outcome measures were assessed pre and post PR: Medical Research Council dyspnoea scale (MRC), USCD breathlessness questionnaire (USCD), 6 minute walk test distance (6MW) , hospital anxiety/depression score (HAD), King's Brief ILD (KBILD) questionnaire. Baseline characteristics are presented as mean with standard deviation (SD) and percentage for continuous and categorical data respectively. Paired t tests were used to compare outcomes before and after PR. **Results**: Interim analysis of the first 19 patients (12 male and 7 female) recruited who completed the programme. 7 patients -IPF, 6 connective tissue related ILD, 4 non-specific interstitial pneumonia, 2CPFE. Mean: age (+/- SD) 71.8, FVC % 79.2 (SD 27.5), FEV % 77 (SD 24.5), DLCO 36.3 (SD 11.5), MRC 3.0 (SD 1.05) , KBILD total 50.2 (SD 7.35) USCD 61.1 (SD 25.5), HAD Dep 7.3 (SD 3.19) Anxiety 5.4 (SD 4.64). After PR mean change of 13m (6%) in 6MW test. **Conclusion**: Due to small patient numbers there was no statistical difference

between any measured parameters, there was a trend towards improvement in breathless, anxiety and psychological domains on the quality of life questionnaire. **Conflict of Interest:** The authors declare that they have no conflict of interest. **Disclosures:** There are no disclosures.

2.6 Induced pluripotent stem cell (iPSC)-derived fibroblasts for the study of Systemic Sclerosis (SSc)

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Background: Systemic Sclerosis (SSc) is a rare autoimmune disease, mainly affecting the skin. 40% of SSc patients develop Interstitial Lung Disease (SSc-ILD), a disease with higher mortality risk. The mechanisms underlaying this transition are unknown. **Objective:** Using peripheral blood Induced Pluripotent Stem Cells (iPSCs) differentiated into fibroblasts, we aim to identify differences between SSc and SSc-ILD fibroblasts. **Methods**: Peripheral blood-derived mononuclear cells from one patient with SSc, one with SSc-ILD and a healthy control were reprogrammed into iPSCs and differentiated into fibroblasts. Total RNA was collected on day 3/6 and at subsequent passages. Cells were characterized using qRT-PCR. **Results**: The iPSCs were successfully transformed into fibroblasts. The two SSc/SSc-ILD cell lines showed significant fibroblasts markers (Col1A1, Vimentin, S100A4) from differentiation day 6. At p4 both cells showed similar levels of Vimentin and S100A4 expression, but differences in COL1A1 and CXCL12 mRNA expression. Sirius Red staining confirmed the difference in collagen. **Conclusions**: We successfully transformed blood-derived mononuclear cells from patients with SSc and SSc-ILD into fibroblasts. SSc and SSc-ILD fibroblasts may have some key behavioural and physiological differences which could help explain the ***progression to SSc-ILD.*** Further work is required to characterise the cells' $TGF\beta_1$ response and disease specific behaviour.
Conflicts of interest: Authors declare no conflicts of interest

2.7 Systemic Sclerosis – Role of the pulmonary microenvironment to drive SSc to SSc-ILD transition

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Background: A common complication in Systemic Sclerosis (SSc) is the development of interstitial lung disease (SSc-ILD). However, the ***progression from SSc to SSc-ILD is not well understood***. We aimed to systematically review and identify soluble mediators in bronchoalveolar lavage fluid that differentiate patients with SSc-ILD, SSc without ILD (SSc) or healthy controls (HC) through a systematic review. **Methods**: Two databases (Web of Sci, PubMed, 2000-24) were screened. The study protocol was registered with Prospero

(CRD42024556636). Data were meta-analysed using Cochrane's RevMan. STRING and G:Profiler tools were used for network/functional analyses.

Results: Screening identified 20 publications for inclusion; 12 were qualitatively synthesized and four meta-analysed. Meta analysis showed IL-8 was higher in SSc-ILD vs HC (SMD 1.29, $p < 0.001$, $I^2 = 38\%$). Data for SSc-ILD and SSc were found for seven mediators, six of which (***HE4, BTG, PF4, ECP, MPO and MMP-9***) were significantly increased in SSc-ILD compared to SSc. Enrichment analyses linked these mediators to immune/stress responses, IL-1/IL-26 signalling and lung fibrosis. **Conclusions**: The identified panel of pro-inflammatory and pro-fibrotic mediators, significantly different between SSc and SSc-ILD, emphasizes the importance of the pulmonary microenvironment in the development of SSc-ILD and could be further diagnostically and therapeutically explored. **Disclosures:Conflicts of interest:** Authors declare no conflicts of interest.

2.8 Human epididymis protein 4 (HE4) in the pulmonary microenvironment: A window into fibrosis

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Background: Human epididymis protein 4 (HE4) is a secretory protease inhibitor produced by epithelial cells and a biomarker in cancer and recently in fibrosis. HE4 activates fibroblasts and high levels are associated with poor lung function. However, epithelial cell supernatant with HE4 knockdown appears pro-fibrotic, suggesting a regulatory role for HE4. **Aim:** To understand the function of HE4 in the pulmonary microenvironment through characterisation of the epithelial cell supernatant with HE4 knockdown injured epithelial cells. **Methods:** 16HBE14o- cells were treated with siHE4 RNA and lack of HE4 confirmed by ELISA. Cells were exposed to hypoxia ($1\%O_2$, 6h) and normoxia and supernatants collected. Supernatants (n=3 independent experiments) were pooled and subjected to the Proteome Profiler (R&D Systems). Relative cytokine concentrations were then assessed using ImageJ and selected candidates confirmed by ELISA and scRNAseq. **Results:** The absence of HE4 in hypoxia injury increased the profibrotic mediators TNF-alpha, GM-CSF, CXCL-12, IL-6 and CCL-3. Using ELISA, we confirmed significantly increased expression of TNF-alpha, IL-6 and CXCL-12. Single cell RNAseq analysis confirmed epithelial and fibroblast (CxCl12) expression.**Conclusion:** The upregulation of profibrotic cytokines in the absence of HE4 in hypoxic conditions suggests a regulatory and wider immunosuppressant role of HE4 in pulmonary fibrosis. **Conflicts of interest:** Authors declare no conflicts of interest

2.9 Interstitial Lung Disease in Rheumatoid Arthritis: Radiological Insights from a Prospective Study

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Background: This ongoing prospective study aims to better understand the incidence of interstitial lung disease (ILD) in newly diagnosed rheumatoid arthritis (RA), including associated risks and underlying pathophysiological pathways. **Methods:** Among 67 recruited patients, we focused primarily on radiological findings from a total of 54 patients who underwent comprehensive evaluations, including bronchoscopy, radiological assessments, and serial pulmonary function tests (PFTs). Data collection and patient recruitment are ongoing, allowing for an expanding dataset over time. **Results:** Preliminary findings indicate that out of the 54 patients assessed radiologically, 4 patients (7.4%) exhibited usual interstitial pneumonia (UIP), 1 patient (1.9%) presented with nonspecific interstitial pneumonia (NSIP), and 17 patients (31.5%) were identified with interstitial lung abnormalities (ILA). An additional 18 patients (33.3%) demonstrated other abnormalities, such as emphysema and pulmonary nodules, while 14 patients (25.9%) displayed normal radiological findings. **Conclusion:** These findings emphasise the significance of detailed radiological evaluation in newly diagnosed, treatment-naive RA patients. To further elucidate the incidence and characteristics of ILD, our study plans to investigate and to better understand the underlying pathways involved in the development of ILD in RA, ultimately enhancing patient care and outcomes. **Conflicts of interest:** Authors declare no conflicts of interest

2.10 Perceptions and practises in antifibrotic (AF) counselling for idiopathic pulmonary fibrosis (IPF) by healthcare professionals (HCP) in the Northern Ireland interstitial lung disease (NI-ILD) network

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Background: AF initiation in IPF should be performed as a shared decision discussion. **Methods:** Sought to ascertain perception and practises of prescribing AF for IPF in HCP of the NI-ILD network. **Results:** Of 25 members that counselled on benefits and risks of AF, 100% counselled about side effects, 88% frequency, 88% reduced lung function decline and 82% dose of medication. 60% counselled about AF improving quality of life, 62% proven in clinical trials and 50% worsening quality of life. 40% counselled that AF prolong survival and 16% prevent acute exacerbations. Of 22 members that counselled regarding reductions in lung function decline, 27% quantified as 50% decline, 9% as 10% and 73% did not quantify. Of 10 members that counselled that AF prolonged survival, 20% quantified as 3-4 years, 10% 2-3 years and 70% did not quantify. **Conclusion:** A high burden of information is given to patients about AF side effects as oppose to benefits of AF therapy such as prolongation of survival and prevention of acute exacerbations. This may tip the balance towards greater risks than benefits of therapy and warrants further exploration and education.
Disclosures: Conflict of Interest: The authors declare that they have no conflict of interest.

2.11 Expanding the Interstitial Lung Disease (ILD) Nursing Service in the Western Health and Social Care Trust: Evaluating the Impact

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Background: Idiopathic pulmonary fibrosis (IPF) affects over 1,200 people in Northern Ireland (NI) (1), the highest IPF prevalence rate in the UK(2). The Western Health and Social

Care Trust (WHSCT) NI, consists of two respiratory hospitals geographically located 50 miles apart. The southern sector of the trust , has suffered from inequalities of access to care for IPF due to lack of access to specialist ILD nursing care, a key standard of the NICE IPF guidelines. (3)We present an evaluation of the expansion of specialist ILD nurse provision. **Methods:** Data captured clinic attendance from 2017 -2024 & patient satisfaction questionnaire using likert scale & open ended questions was administered in the newly established specialist nurse clinic. **Results:** Patients attendances increased by 288% from 249 in 2018-2019 to 717 in 2023-2024. Oxygen assessments showed a continued rise up until May 2024. Anti-fibrotic prescribing within the WHSCT has also increased by 100% from 2019. Patients feedback, highlighted the pivotal role of the ILD nurse. ***''First class service, fantastic support for client and carer''.*** **Conclusion:** Expansion of Specialist ILD nurse service, has reduced health inequalities and improved timely access to best supportive care, oxygen assessments and counselling for patients on anti-fibrotic therapies.**Conflict of Interest:** The authors have no conflict of interest.

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2.12 A 10-year retrospective analysis of transbronchial lung cryobiopsy in the diagnosis of interstitial lung disease.

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Background: Treatment and prognosis of interstitial lung disease (ILD) vary significantly depending on the underlying pathology meaning that histological diagnosis is crucial. Transbronchial lung cryobiopsy (TBLC) is a means of obtaining tissue samples for histological analysis. It is an alternative to conventional transbronchial lung biopsy (TBLB) and surgical lung biopsy (SLB). TBLC diagnostic yield has been demonstrated to be in excess of 70% making it an attractive first line option considering the mortality risk associated with SLB. We aim to present findings from a 10-year analysis of TBLC at our institution. **Methods:** A 10-year retrospective analysis of TBLC is currently being undertaken at Cork University Hospital. Patient medical records, pathology, and imaging are being reviewed to determine the types of complications most frequently encountered and the impact of cryobiopsy on final diagnosis. **Results:** Results will be completed in full prior to the ITS conference. Preliminary results indicate low frequency of complications with minor bleeding being the most common complication and pneumothorax a rare complication. Only 1 patient death in the 90 days post cryobiopsy has so far been identified. **Keywords:** Interstitial Lung Disease, Cryobiopsy, Transbronchial Lung Cryobiopsy **Conflict of Interest:** The authors declare that they have no conflict of interest.

2.13 Dapagliflozin in Idiopathic Pulmonary Fibrosis: Investigating its effect on fibrosis and inflammation

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Background: Idiopathic pulmonary fibrosis (IPF) affects approximately 3 million people globally with 1300 cases in Northern Ireland. Lung injury leads to release of pro-inflammatory and fibrogenic mediators which activate fibroblasts leading to poor lung function. Dapagliflozin reduces inflammation in airway epithelial cells, but its effectiveness in controlling IPF fibroblasts is unknown. **Aim:** To investigate the direct effect of Dapagliflozin on inflammation and collagen deposition from lung fibroblasts from patients with active IPF and age/sex-matched controls (HC). **Methods**: Primary fibroblasts were exposed to hypoxia (6h, 1%O_2) and normoxia in the presence and absence of TGFβ_1 (5ng/mL) and Dapagliflozin (0–10μM). Release of inflammatory IL-6/8 (ELISA), and ECM (Picrosirius Red) were determined.

Results: Collagen deposition and IL-6 release (pg/mL) peaked 48h after TGFβ1 stimulation. Hypoxia generally delayed the response. Dapagliflozin dose-dependently reduced TGFβ_1-induced collagen from HC (hypoxia, normoxia) and IPF fibroblasts (normoxia). IL-6 release was reduced by Dapagliflozin pretreatment (normoxia), IL-8 remained unaffected. **Conclusions**: In this first study investigating the direct effect of Dapagliflozin on pulmonary fibroblasts, while higher sample numbers are required, our data suggest that Dapagliflozin may slow down pulmonary fibrosis in IPF. **Disclosures: Funding:** CA was funded by BALR/Pulmonary Fibrosis-Northern Ireland. **Conflict of Interest:** The authors declare no conflict of interest.

2.14 Tolerability Of Antifibrotic Medications In Patients With Fibrotic Diseases.

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Background This chart review assesses the tolerability of antifibrotic medications in patients with fibrotic diseases such as idiopathic pulmonary fibrosis and interstitial lung diseases. Antifibrotic medications, primarily nintedanib and pirfenidone are crucial in slowing down disease progression but are often associated with negative side effects which can impact on adherence and overall treatment outcomes.
Methods The study retrospectively reviewed medical records of one hundred patients receiving antifibrotic therapy from 2016 to 2024 focusing on incidence of side effects, dose adjustments, changes and discontinuation of medications and also looked at time from start of treatment to death where applicable.
Results Side effects had a huge impact on this patient population. A significant percentage reported side effects resulting in dose reductions, temporary cessation of therapy, medication switches between nintedanib and pirfenidone and in some cases discontinuation of treatment due to intolerability. **Conclusions** The findings highlight the need for personalized nursing care and support of these patients and the role patient education plays in mitigating and managing adverse effects and improving treatment outcomes. The results provide valuable insights into real-world tolerability and the importance of ongoing monitoring and supportive care for these patients. **Conflict of Interest:** The authors declare no conflict of interest.

2.15 Aberrant lipid metabolism drives pulmonary fibrosis

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Background: Lipid homeostasis is important in the lung as 90% of surfactant is lipid. We hypothesise that aberrant lipid metabolism contributes to the fibrotic niche in IPF. **Methods:** We performed lipidomic analysis on lung tissue from human IPF,bleomycin,silica and *Abcg1*-/- mice. We exposed IPF fibroblasts to oxidised and unoxidised PC and CE lipids, measuring expression of fibrotic markers. **Results:** There was increased lipid content in IPF (p=0.03), bleomycin (p=0.06), silica (P=0.02) and *Abcg1*-/- mice (p<0.001) lung tissue. Specific increases were noted in 16:0 and 20:4 containing lipids; these lipids were chosen for IPF fibroblast exposure. ACTA2 and Col1a1 expression were upregulated in IPF fibroblasts following exposure to saturated PC 16:0 (p<0.001) and CE 16:0 (p<0.01) and there was no change after unsaturated PC 20:4 (p=ns) and CE 20:4 (p=ns). When PC 20:4 and CE 20:4 are oxidised they upregulate ACTA2 and Col1a1 expression (p<0.01). This effect is reduced, but not neutralised, by co-treatment with CD36 receptor blocker. **Conclusion:** We have shown that total lipid increases in IPF and hypothesise that unsaturated lipid becomes oxidized and this in turn drives production of pro-fibrotic cytokines. This may be a crucial hit in driving uncheckered fibrosis seen in IPF. **Conflict of Interest:** The authors declare no conflict of interest.

2.16 Real World Data on Antifibrotic Prescribing Practices and impact of ILD MDM on prescribing patterns in SHSCT.

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Background: Interstitial Lung Disease (ILD) is an umbrella term used for respiratory diseases that cause lung fibrosis. Lung damage from ILDs is often irreversible, worsening over time with a 3-5 year prognosis if untreated. There are two antifibrotic treatments available (Pirfenidone and Nintedanib). They are high cost, with funding approval requirements, blood monitoring and possible side effects. To ensure fair and equitable access, patients are discussed at ILD MDM (team includes Respiratory Physicians, Radiologists, Rheumatologists, Specialist ILD Pharmacist, Nurse and Dietician). **Method:** A review of workload, prescribing practices and patterns was carried out using the SHSCT ILD database. **Results:** The ILD MDM reviewed 28 patients in 2014, increasing to 280 patients in 2023 (1345 patients discussed since 2014). 20% of patients discussed are prescribed an antifibrotic. 53 patients commenced antifibrotics in the past 12 months. 76% of patients were prescribed Nintedanib in June 2022 (IPF, FVC range 50-80%) which reduced to 42% in June 2024 with the availability of generic Pirfenidone. 100% of patients commenced on antifibrotics receive medication review and counselling by the ILD Pharmacist, with follow up by the ILD Nurse Specialist and Pharmacist. **Conclusion:** This review demonstrates a growing demand for the expertise of the ILD MDM, requirements for antifibrotics and specialist practitioners. **Keywords:** Interstitial Lung Disease, Pirfenidone, Nintedanib, Pulmonary Fibrosis **Funding:** No funding was received for this review. **Conflict of Interest:** No conflicts of interest exist.

2.17 Management and follow-up of Birt-Hogg-Dube Syndrome in a rare lung disease clinic

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Background: Birt-Hogg-Dube Syndrome (BHDS) is a rare disorder of the Folliculin-gene involving systems including the lungs, skin and kidneys. Respiratory involvement is characterised by cysts and spontaneous pneumothorax. Other manifestations include renal cell carcinoma (30% risk), and various skin disorders. Through patients in our rare lung disease clinic, we aim to characterise the clinical manifestations and follow-up required for these patients.**Methods:** Patients with BHDS in our Rare Lung Disease clinic were recruited and their charts, management plans and previous investigations reviewed. **Results:** Screening is performed on index-case's families, including genetic testing, pulmonary function testing, HRCT-Chest and MRI-kidneys. Two families were found through this method. One index patient came to our attention following multiple pneumothoraces since age 14, requiring three surgeries. It was then revealed his daughter had a pneumothorax at the age of 14 requiring VATS-pleurectomy. He has 12 identifiable first-degree relatives presently being tested for BHDS. Another family recruited consists of a proband and two brothers undergoing testing.**Discussion:** BHDS is a rare genetic disorder with respiratory, dermatological and oncological/renal involvement. These patients require regular follow-up imaging and family screening. It should be considered in patients with unexplained lung cysts, or families with multiple members suffering from pneumothorax.**Conflict of interests:** Authors declare no conflict of interests

2.18 A retrospective review of clinical characteristics, diagnostic investigations, treatments, and outcomes for patients with Granulomatous Lymphocytic Interstitial Lung Disease at St James Hospital.

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Background: Granulomatous Lymphocytic Interstitial Lung Disease (GLILD) is a rare but severe complication of Common Variable Immunodeficiency (CVID). This study reviewed the clinical characteristics, diagnostic investigations, treatments, and outcomes of GLILD patients at St James Hospital. **Methods:** A retrospective chart review was conducted on all patients with a known GLILD. **Results:** The cohort included nine patients (seven males, two females) with an average age of 42.5 years, all diagnosed with CVID. Four patients had a history of immune thrombocytopenic purpura (ITP) or autoimmune haemolytic anaemia (AIHA), or both. Organomegaly was present in eight patients. All patients underwent CT thorax and baseline spirometry. Bronchoscopy was performed in five cases, yielding diagnostic results in three, while one non-diagnostic case required video-assisted thoracoscopic surgery. Treatment varied: four patients were managed expectantly, one declined treatment, one received rituximab alone, and three were treated with steroids and rituximab. The average pre-treatment DLCO was 57.25%, with a 15% improvement post-treatment. All cases were co-managed by respiratory and immunology specialists. **Discussion:** Diagnostic investigations were consistent but treatment approaches varied. These findings highlight the need for a consensus on treatment and closer collaboration between respiratory and immunology specialists to ensure optimal care for GLILD patients in Ireland. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.19 Screening for Cardiac Sarcoid

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Background: It is estimated that 20-25% of systemic sarcoidosis patients have clinically silent cardiac involvement, with ~ 5-10% having clinically overt cardiac involvement. Baseline ECG in all sarcoidosis patients is recommended. We aim to identify clinical features that may identify patients at risk. **Methods:** Screening ECGs were done for all patients attending clinic. Baseline demographics, Scadding CXR stage at presentation, presence of Erythema Nodosum (EN), pulmonary function testing & need for treatment were collected. ECG were stratified as high, intermediate & normal. We assessed the relationship of clinical characteristics to stratified ECG cohorts. **Results:** We offered screening ECG to 301 patients, 91% attended screening (4% mortality, 5% DNA). 42.5% had normal ECGs. Average age of cohort was 57.7 (SD 13.1), with 57% male & a treatment rate of 50.6%. Patients with high risk ECGs were older, more likely to have fibrotic disease & greater impairment in lung function. Those with clinically overt cardiac involvement were younger, had lesser fibrotic disease (OR 0.63 p 0.66) but greater airflow limitation & were more likely male (OR 6.51 p 0.08). 44% of these patients had intermediate ECGs on screening. Majority in intermediate group (n33) reported fatigue & palpitations. **Conclusion:** Screening ECG although recommended only makes severe cardiac involvement unlikely in just over 40%. It generates the consideration of further imaging & investigations given majority patients report symptoms compatible with cardiac involvement. Our data suggested that the male gender and airflow limitation was associated with cardiac sarcoidosis. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.20 Effectiveness of a combined CTD-ILD service:3 years experience at a large tertiary care centre in Ireland

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Background: Multi-disciplinary connective tissue disease-interstitial lung disease (CTD-ILD) clinics can potentially improve outcomes. Mater Misericordiae University Hospital initiated this service in 2021 and we present a service evaluation over a 3 year period. **Methods:** Retrospective analysis of the CTD-ILD clinic data over 3 years (April 2021-April 2024) was carried out through the Hospital's electronic record keeping system.We analysed clinical diagnosis, patient demographics, therapeutic management and mortality in our cohort. **Results:** A total of 36 patients were seen. All patients had evidence of pulmonary fibrosis reported on their high resolution computerised tomography (HRCT) chest.Smoking, female gender and high BMI were identified as risk factors. Of the 36 patients, 8 had rheumatoid arthritis (RA-ILD) and the remaining 28 had other forms of CTD. A total of 5 patients presented with respiratory failure and required intensive treatment unit admission. All of them received IV methylprednisolone, Cyclophosphamide and Rituximab and survived.4 patients are on anti fibrotics,whereas the remaining patients are maintained on immunosuppression.2/36 patients died over the 3 year period and were referred to the palliative care team for end of life care. **Conclusion:** Dedicated CTD-ILD service,not only improves diagnostic accuracy but also has a substantial impact on the clinical therapeutics.**Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.21 Pulmonary Rehabilitation can be delivered successfully and safely in Interstitial Lung Disease via both in person and virtual classes

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Background: Pulmonary rehabilitation is a mainstay in the treatment of respiratory disease including Interstitial Lung Disease (ILD). During the COVID pandemic we began delivering this remotely. Patients referred to pulmonary rehabilitation are now offered a choice of attending in person or remote classes. We sought to explore whether there were differences in the "take up" of offered places, the completion rates, safety and the patient experience between the two groups.**Methods:** Audit of patient data between January 2023 and August 2024, including numbers referred, patient preference and engagement with pulmonary rehabilitation, and outcome data.**Results:** Since the beginning of 2023, 25 accepted and attended in person and 22 accepted and attended virtually. Some declined the opportunity for various reasons. We noted very little difference in the numbers who completed the programme virtually versus in person. Similarly, improvements seen in 6MWT and 1 Minute Sit to Stand at the end of the programme were consistent between the two groups. No adverse events occurred in either group. Feedback from all patients has been very positive. Lack of remote broadband connectivity and IT skills remain a barrier to the uptake of remote PR. **Conclusions:** Pulmonary rehabilitation appears safe and effective in both groups. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.22 Improving ILD patient access to community palliative care through multidisciplinary team working.

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Background: Interstitial lung disease (ILD) is often progressive and associated with an increasing symptom burden and high mortality rates. Palliative care can improve the quality of life by reducing symptoms and aligning end-of-life care with patient wishes. Early involvement of palliative care has shown benefits, including preferred location of death. Since 2021, our centre has introduced an ILD Palliative Care multidisciplinary team (MDT) meeting, and in 2023, combined ILD and Palliative Care clinics were initiated. **Methods**: A retrospective audit was performed on prospectively collected data on deceased patients within the ILD service, who died between 01/06/2021 to 01/07/2024. The audit evaluated the impact of the ILD Palliative Care MDT and combined clinics on referral rates to community palliative care services and the proportion of patients dying at home or in hospice. **Results:** Of 79 deceased patients, the proportion dying at home or in hospice increased yearly: 38% (2021), 40% (2022), 48% (2023), and 50% (2024). Referrals to community palliative care services rose from 40% (2022) to 71% (2024) after the introduction of combined clinics. **Conclusion:** The ILD Palliative Care MDT and combined clinics have significantly increased community palliative care referrals and supported more patients dying at home or in hospice. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.23 Interactions between Immunomodulatory Fibroblasts and T Cells regulate lung damage responses in viral and fibrotic lung injury

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Background: Pulmonary fibroblasts respond to environmental signals triggered by injury or infections, shaping subsequent lung responses. Fibroblasts contribute to tissue repair or inflammation and fibrosis. We hypothesise that dysregulated response to viral infection renders the lung more susceptible to fibrosis. **Methods:** We performed RNA-sequencing on sorted lung fibroblasts isolated from naïve and influenza virus (IAV) infected mice (primary/re-challenge). To examine chronicity of damage responses, IAV induced transcriptional alterations were compared to bleomycin induced lung injury (fibrosis/resolution). Phenotype/location of injury altered fibroblasts and immune cells was determined using flow cytometry and immunohistochemistry. Translational relevance of key genes was assessed using human idiopathic pulmonary fibrosis (IPF) fibroblasts. **Results:** Damage-responsive fibroblasts were elevated in both models, while bleomycin injury upregulated MHCII+ fibroblasts. Additionally, the immunomodulatory molecule, podoplanin, was localised near lung immune cell infiltrates (T/B cells). Following IAV re-infection, genes involved in T cell communication were upregulated in lung fibroblasts. Interestingly, these genes remained elevated during the remodelling phase of bleomycin injury, suggesting ongoing communication between fibroblasts and T cells. Strikingly, CD274+ IPF fibroblasts had reduced levels of interferon response genes, indicating blunted ant-viral responses. **Conclusions:** Previous viral infection alters subsequent fibroblast responses influencing fibrosis development and may contribute to IPF pathogenesis. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.24 Evaluation of ^{68}Ga-FAPI (Fibroblast-Activation Protein-Inhibitors) PET/CT in patients with Interstitial Lung Disease

Dr Shane O'Brien[1], Dr Rionagh Lynch[1], Dr Thomas Butler[1], Dr Khaled Musameh[1], Dr Michelle Armstrong[1], Dr Armin Atzinger[2], Professor Torsten Kuwert[2], Professor Patrick D Mitchell[1], Professor Seamas C Donnelly[1]
[1]Tallaght University Hospital & Trinity College Dublin, Dublin, Ireland. [2]Erlangen University Hospital, Erlangen, Germany

Background: ^{68}Ga-FAPI PET/CT is a promising imaging modality which displays activated fibroblasts. (1) We aim to outline the utility of ^{68}Ga-FAPI-46-PET/CT imaging in Interstitial Lung Disease using the following four cases.

Case Series

1. Case one describes a 34 year-old male diagnosed with pulmonary sarcoidosis and associated fibrosis. Despite treatment with corticosteroids ^{68}Ga-FAPI-46-PET/CT detected intense FAPI uptake in the lung parenchyma (Figure 1). After the addition antifibrotic therapy for 3 months, a repeat ^{68}Ga-FAPI-46-PET/CT showed a dramatic reduction in FAPI signal (Fig 2).
2. Case two, a 35 year-old male, with active pulmonary sarcoidosis, ^{68}Ga-FAPI-46-PET/CT imaging revealed intensive FAPI uptake (Figure 3).
3. Case three outlines a 50 year old female with post COVID upper zone pulmonary fibrotic changes on CT thorax however ^{68}Ga-FAPI-46-PET/CT demonstrated no fibroblast activity within the lung

parenchyma which corresponded to her clinical resolution (Figure 4).

4. Case four, a 57 year-old male with longstanding chronic pulmonary sarcoidosis with associated stable fibrosis, ^{68}Ga-FAPI-46-PET/CT demonstrated no significant uptake in keeping with his clinical status of burnt out sarcoidosis. (Figure 5)

Conclusion: ^{68}Ga-FAPI PET/CT has great potential value for evaluating activity in sarcoidosis and interstitial lung diseases and monitoring therapeutic response as outlined above. ^{68}Ga-FAPI-46-PET/CT offers clinicians a non-invasive method to visualize and quantify fibroblast expression in the lung and has great potential value for early identification of patients at risk of progressive pulmonary fibrosis.
Conflict of Interest: The authors declare that they have no conflicts of interest.

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2.25 Characteristics of Diffuse Cystic Lung Diseases in a National Referral Centre

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Background: Diffuse cystic lung diseases (DCLD) are defined by the presence of multiple, irregular, thin-walled cysts within the pulmonary parenchyma. The knowledge of DCLD has increased due to widespread availability of HRCT. Despite this, the diagnosis of DCLD can be a challenge. **Methods**: This was a single centre retrospective observational study of patients referred to the National Rare Lung Disease Clinic (RLDC) from its initiation in March 2019 to the end of December 2023. Data was collected from the inhouse electronic database (Clinical Portal) **Results:** 217 patients were referred to the RLDC during the study period. There was a mean of 39 ± 20 new referrals seen per year. 145 patients ultimately carried a diagnosis of DCLD. The mean age of this cohort was 53 ±15 years. 22% (n=32) were male and 14% (n=18) were smokers. The most common DCLDs seen in our clinic were Lymphangioleiomyomatosis (36%, n=53) Birt-Hogg-Dubé Syndrome (35%, n=51), Pulmonary Langerhans Cell Histiocytosis (7%, n=10) and Lymphocytic Interstitial Pneumonia (7%, n=10). 1 patient had a diagnosis of Congenital Pulmonary Airway Malformation. Pneumothorax is a common presentation in 32% (n=46). The mean FEV1/FVC (%) was 58±29 and DLCO predicted (%) was 56±36. **Conclusion**: Our study highlights the importance of access to specialist services to accurately characterise DCLD and its mimics, particularly those which can be screened, may be progressive or have malignant potential. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

2.26 The combined Rheumatology-Respiratory Clinic Cork University Hospital – an Audit

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Background: The combined rheumatology-respiratory clinic (CRRC) in Cork University Hospital (CUH) has been in operation for many years. Patients with the rarer connective tissue diseases (CTD) who have lung involvement are seen in this clinic. Combined clinics have been shown to have substantial diagnostic and therapeutic impacts on the management of

patients with interstitial lung disease (ILD). The aim of this audit was to clarify the clinic population demographics, diagnoses and treatments of those patients. **Methods**: We reviewed the lists of patients attending the combined rheumatology-respiratory clinic in Cork University Hospital from the previous year (June 2023- June 2024). From clinic letters (to which the authors have regular access to), a compilation of demographic data, clinical diagnoses (both rheumatological and respiratory) and anti-fibrotic medication use amongst the patients with a diagnosis of ILD was made. Basic statistics were performed to analyse the data **Results**: Seventy-one (71) patients (42 female, 29 male) with an average age of 64.2 years (range 26-89) attended the CRRC in the year June 2023-2024. Eighteen (18) patients have a diagnosis of rheumatoid arthritis (RA), 11 with systemic sclerosis/scleroderma, 10 with Sjogren's, 4 with systemic lupus erythematosus (SLE), 5 with Raynaud's/Anti-synthetase syndrome, 6 with CREST syndrome and 5 with dermatomyositis associated ILD. There were 9 patients with an undifferentiated CTD. ILD was the most common respiratory diagnosis with 41 patients documented. Of these ILD patients, 6 were currently on anti-fibrotic therapy with another 2 patients previously trialled on same. Eight (8) patients did not have a definite unifying diagnosis. There were 2 patients with a documented diagnosis of pulmonary hypertension. **Conclusion**: A multidisciplinary environment is recommended by international ILD guidelines. In CUH, this combined service results in achieving diagnosis and treatment for challenging disease processes. Future audit and investigation is required to determine if more patients are eligible for anti-fibrotic therapy. **Keywords**: Rheumatology, interstitial lung disease, combined clinic, connective tissue disease **Conflict of Interest:** The authors declare that they have no conflict of interest

Irish Thoracic Society Poster Review and Discussion

Friday 15th November 2024

3. TB, Cystic Fibrosis, Infection

3.1 Biochemical Classification of Pleural Effusions: Are We Doing It Light?

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Background: Light's criteria classify pleural effusions as transudates or exudates, guiding investigation and management. In practice, required biochemical tests to determine Light's criteria are not always requested and limited data is used to approximate. **Methods**: Pleural fluid specimens in SJH cytology laboratory from 2019 to 2023 were included. Serum and fluid protein and LDH were recorded and Light's criteria determined. Congruency between Fluid/Serum LDH Ratio (F/SLR) and Fluid LDH/ULN Serum LDH Ratio (F/ULR) was examined. **Results**: 297/1203 (25%) specimens had all data to assess Light's criteria. Light's criteria require one criterion of three be fulfilled to classify an exudative; thus, 506/1203 (42%) had sufficient data to classify the effusion. Of 906 specimens with incomplete data, serum LDH was most frequently missing (78%). F/ULR is sometimes presumed to reflect likelihood of F/SLR meeting Light's criteria to classify an exudate. In 297 specimens, Light's classification based upon F/ULR and F/SLR was incongruent in 50/297 (17%), with 38/297 (13%) classified as exudates based upon F/SLR but not F/ULR.**Conclusions**: Less than half of pleural fluid specimens had sufficient data available for classification. Using F/ULR as a surrogate for F/SLR risks misclassification. **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.2 What is the Impact of the use of Preventative Care Bundles in Non-Ventilator Associated Hospital-Acquired

Pneumonia in Hospitalised Adult Patients?

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Background: Non-Ventilator Associated Hospital-Acquired Pneumonia **(**NV-HAP) is an avoidable condition. It can lead to mortality, increased length of stay and additional cost to both the health system and the patient. Preventative care bundles have been used to decrease incidences of VAP, but fewer study examine the impact of care bundles on NV-HAP (Quinn *et al*., 2014). **Methods:** A systematic review of studies was conducted to examine the impact of preventative care bundles on incidence of NV-HAP in hospitalised adult patients. The PRISMA guidelines were used to maintain the standard of the SR. **Results:** The six studies in this review demonstrated a decrease in incidence of NV-HAP where a preventative care bundle was adopted. Adherence to care bundles was identified as a major contributing factor to the decrease in incidence of NV-HAP. Nurses and healthcare providers play a significant role in bundle implementation. Mortality rates also decreased where care bundles were implemented. **Conclusion:** The use of preventative care bundles is an effective method of decreasing incidence of NV-HAP. Mortality rates also decrease when a bundle is implemented, and additional costs are prevented. Adherence to care bundles is essential for optimal results and nurses and healthcare providers contribute to this. **Keywords**: Pneumonia. **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.3 Anti-Pseudomonas aeruginosa biofilm activity of peptidyl-arginine deiminases

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Background: *Pseudomonas aeruginosa* (PA) causes chronic lung infections in 80% of cystic fibrosis adults. PA biofilm encases bacteria in an intrinsically antibiotic resistant matrix, and with increasing incidence of antibiotic resistance, novel anti-biofilm anti-microbials are required. We previously demonstrated that peptidyl-arginine deiminases (PADs) participate in neutrophil intraphagosomal killing of PA. This study explores the anti-biofilm properties of exogenous PADs. **Methods:** Bactericidal, citrullination, and biofilm inhibition properties of active PAD2, PAD4 and control PAD6 (incapable of catalytic citrullination) against PA (PAO1) were assessed by CFU enumeration, western blot, crystal violet biofilm staining and RT-qPCR, respectively. **Results:** PAD2, PAD4, and PAD6 (2.5nM) reduced PA biofilm formation to 42.0±8.0%, 53.7±13.3%, and 55.9±14.0%, respectively (n=5, p<0.0001). PAD influence on quorum sensing genes (*lasR*, *lasI*, *rhlR*, *rhlI*, and *mvfR*) was evaluated. In non-citrullination promoting conditions, PAD2, PAD4 (20nM) and PAD6 (100nM) reduced PA survival to 50.3±6.7% (n=3, p=0.0006), 43.4±2.0% (p=0.0005), and 34.5±5.9% (p<0.0001), respectively. **Conclusions:** PADs possess anti-biofilm/bactericidal properties against PA, independent of citrullination. This supports further research into the therapeutic use of PADs for PA infection in cystic fibrosis. **Keywords:** Pseudomonas aeruginosa, Peptidyl-arginine deiminases.
Disclosures: Conflict of Interest: The authors declare they have no conflict of interest. **Funding:** IRC (GOIPG/2023/3100).

3.4 Examining the role of bronchoscopy in the investigation and management of Pneumocystis jirovecii (PJP) infection in HIV patients – a five year retrospective analysis

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[1]St. James's Hospital, Dublin, Ireland

Background: Bronchoscopy is frequently requested to look for evidence of Pneumocystis jirovecii (PJP) infection in at-risk immunosuppressed individuals, particularly HIV patients. **Methods**: We looked at all bronchoscopies performed for bronchial washings or bronchoalveolar lavage on patients with HIV in St. James's Hospital over a five year period from 2019-2023. We examined the incidence of PJP infection in this population as related to their baseline characteristics, comorbidities, and virologic control, and how diagnosis of PJP infection via bronchoscopy impacted their clinical management. **Results**: 66 bronchoscopies were performed on 57 individual patients (28% female) over the five year period. PJP was detected in 12 (18%) and other pathogens detected in 29 (44%) patients. All cases of PJP were associated with a CD4 count of <200 cells/microliter. In 7 (58%) of detected cases radiological appearances were typical for PJP infection. There were 3 procedure-related adverse events (4%). In no cases was the clinical management changed as a result of bronchoscopy being performed. **Conclusions**: In our population the use of bronchoscopy to detect PJP infection did not change overall management in any cases. This raises questions regarding the utility of performing bronchoscopy in this patient cohort. **Keywords**: Pneumocystis jirovecii (PJP). **Disclosures:** None. **Conflict of Interest:** The authors declare they have no conflict of interest.

3.5 Hospitalised influenza: Patterns pre- & post-pandemic in a district general hospital

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Background: Influenza is often serious with complications & significant mortality. Pandemic COVID-19 obliterated other winter viral infections. Clinicians felt pattern of influenza after pandemic was different with more complications. **Methods:** Admissions with primary/secondary diagnosis of influenza identified, 2018-19 & 2022-23. Forty patients selected from each group & compared. **Results:** In 2018-19, 88 admissions, compared with 162, 2022-23. Latter cohort older (median (IQR) 76 (69-82) v 64 (52.5-71.2) yrs), longer length of stay (median (IQR) 8.5 (7-17.2) v 6 (2-12.2) days) & more likely to be nursing home residents (5 v 1). Sex ratio different – 16F:24M (18/19) v 24F:16M (22/23). More H3 (10 v 1) & less H1N1 (16 v 24). Admission (1 year) mortality rates higher – 7 (12) v 1 (4). More had COPD (19 v 11), bronchiectasis (6 v 1), asthma (7 v 4), ever smoked (28 v 21), hypertension (22 v 10) & dementia (9 v 2). Other common comorbidities similar. There was more respiratory failure (17 v 9) & delirium (3 v 1); complications otherwise similar. More DNACPR (12 v 1) & requiring rehab (5 v 3). **Conclusion:** Reasons for differences unclear – a feature of older cohort, more severe disease, different virus subtype or an influence of pandemic on the population? **Conflict of Interest:** The authors declare they have no conflict of interest.

3.6 An Audit of Aspergillus Species Isolated from Bronchoalveolar Lavage Specimens Acquired via Flexible Bronchoscopies Performed in a Tertiary Hospital's Bronchoscopy Unit.

[c]Sophie Gregg, [1]Lorraine Thong, [1]David Breen, [1]Martin Cormican
[1]Galway University Hospital, Galway, Ireland

Background: There was an increase in isolation of *Aspergillus spp.* from Bronchoalveolar Lavage (BAL) specimens in 2023. This increase was speculated to be due to contamination of the samples. The objective of this audit was to collate clinical and laboratory details to investigate this observation.

Methods: All BAL samples from the bronchoscopy suite, which isolated *Aspergillus spp.* for a two-year period (2022-2023) were reviewed. Patients' clinical, radiological, and laboratory results were collated and reviewed. **Results:** There were 8 versus 22 BAL specimens that isolated *Aspergillus spp.* in 2022 and 2023 respectively. In 2022, 2 patients were diagnosis with aspergillus-related lung disease while 4 were diagnosed in 2023. Diagnoses were made by respiratory or infectious disease physicians. **Intervention:** Air sampling and environmental screening samples from bronchoscopy suite and laboratory did not isolate *Aspergillus spp.* A review of the bronchoscopy unit revealed a dusty air vent in the bronchoscopy decontamination room. It was noted that the window in the corridor where BAL specimens were handled and left for collection was occasionally open. **Conclusion:** The increased isolation of *Aspergillus spp.* was likely related to environmental contamination. Several recommendations have been put in place to rectify this problem. **Conflict of Interest:** The authors declare they have no conflict of interest.

3.7 The Public Health Impact of Vaccination with the Adjuvanted RSVPreF3 Vaccine in Irish Older Adults

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Background Respiratory Syncytial Virus (RSV) is a common respiratory virus that causes acute respiratory illness (ARI) in all ages. Older adults are at increased risk of severe disease associated with RSV. **Methods** A static Markov model was developed to evaluate the public health impact of RSVPreF3 OA adjuvanted vaccine on adults aged ≥60 in Ireland. Comparing no-vaccination to a single RSV vaccine dose over a three-year time-horizon, the model estimated RSV-ARI cases, deaths, and healthcare resource utilisation. Data inputs were based on systematic literature reviews, supplemented by the best available data when local information was lacking. **Results** RSV vaccination is estimated to prevent a total of 64,109 RSV-ARI cases, 27,398 General Practitioner appointments and 4,804 hospitalisations across the three-year time horizon. Assuming 90% vaccine uptake, to prevent one ARI the number needed to vaccinate (NNV) is 15; NNV to prevent a General Practioner appointment is 35 and to prevent a hospitalisation is 200.**Conclusions** Results demonstrate the potential public health benefits and reduction in healthcare utilisation from RSV vaccination. The preliminary results are based on the most recently published data, uncertainty around the estimates may be reduced by the availability of additional data. **Keywords** RSV, vaccination, public health **Funding** GSK **Disclosures** GlaxoSmithKline Biologicals SA funded this study/research (GSK study identifier: 222752) and was involved in all stages of study/research conduct, including analysis of the data. GlaxoSmithKline Biologicals SA also took in charge all costs associated with the development and publication of this abstract. **Conflicts of interest:** All authors are GSK employees and hold financial equities in GSK. Business & Decision Life Sciences Medical Communication Service Center c/o GSK provided editorial support."

3.8 Future is Here: Improving CURB65 calculation, documentation and appropriate antibiotic prescribing in Community Acquired Pneumonia through electronic SMART-TOOL. A two-cycle audit.

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Background: CURB65 predicts severity and mortality from community-acquired

pneumonia(CAP). Therefore, British Thoracic Society guidelines, from which local antibiotic guidelines are derived, are based on CURB65 score. 2023 National Confidential Enquiry into Patient Outcome & Death(NCEPOD) established only 26.6% patients with CAP had CURB65 score documented and only 77.1% were prescribed appropriate antibiotics[1]. This audit aims to improve CURB65 score calculation, documentation and, therefore, appropriate antibiotic prescribing. **Methods:** Only 29% of 1st cycle audit patients admitted with CAP, between 13/03/2024–02/04/2024 to Lagan Valley Hospital, had CURB65 score documented re-demonstrating NCEPOD findings. Thus, SMART-TOOL CURB65-calculator was created. Typing '.CURB65calculator' automatically inserts calculator into the electronic clerk-in; admitting doctor populates it generating CURB65 score. Medical admissions between 28/06/2024–31/07/2024 Lagan Valley Hospital diagnosed with CAP/pneumonia/bronchopneumonia by admitting doctor were then re-audited; 2nd cycle. Patients diagnosed with aspiration pneumonia/hospital-acquired pneumonia were excluded.

Results: 14 patients in 1st cycle met inclusion criteria; 12 in 2nd cycle. Following CURB65-Calculator introduction, CURB65 score documentation improved from 29% to 75%. Appropriate antibiotic prescribing improved from 21% to 91.67%. **Conclusion:** Electronic CURB65-calculator improves ease and accuracy of CURB65 calculation and documentation, improving severity and mortality prediction. It subsequently improves accuracy of appropriate antibiotic prescription.

Conflict of Interest: The author declares that they have no conflict of interest. **Funding**: none allocated.

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A review of the care provided to adults presenting to hospital with a diagnosis of community-acquired pneumonia.

Topic Proposed by the British Thoracic Society and Intensive Care Society Cohort: 1st October 2021 to 31st December 2021 inclusive

3.9 Return of the MAC ! A retrospective review of recurrent Mycobacterium avium complex infection over 16 years in St James Hospital.

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Background: Mycobacterium avium complex (MAC) infection is clinically challenging. Treatment involves multiple drugs administered for prolonged duration. When treated, culture conversion rate is 60%, and recurrence rate 50%. We reviewed recurrent MAC cases over 16 years. **Methods:** Irish Mycobacterial Reference Laboratory (IMRL) records were used to identify patients from whom at least two MAC isolates were cultured from January 2007 to December 2022, and chart review conducted for 20 patients. **Results:** 901 MAC isolates were identified. 551 isolates were from 138 patients with at least two recurrent isolates, of whom 37 attended SJH. Of 20 patients randomly selected, 14 (70%) were female with median age 61.6. 4/20 (20%) had a co-existent HIV diagnosis (all male). Of 16 non-HIV cases (14 female), 13 (81%) had underlying bronchiectasis with average FACED score 3. 13/20 (65%) received MAC-specific therapy, of whom 7 (54%) achieved initial culture conversion. Treatment was stopped prematurely in 5 (38%) due to adverse effects. At the time of recurrent positive isolate, 15/20 (75%) had persistent infection; 5/20 (25%) had symptomatic relapse.

Conclusion: A third of recurrent isolates occurred after initial culture conversion, but recurrent culture positivity did not correlate with symptomatic relapse in the majority. **Conflict of Interest:** The author declares that they have no conflict of interest.

3.10 Predictors of Outcomes in Community Acquired Pneumonia

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Antrim Area Hospital, Antrim, United Kingdom

Background: Community-acquired pneumonia (CAP) has a huge impact on healthcare systems. Scoring systems such as CURB-65 have been used to estimate mortality and help determine treatment. We aim to assess admission variables outside CURB 65 that could predict outcome measures. **Methods**: We recorded the incidence of inpatient CAP within the Northern Health and Social Care Trust throughout 2018. We collected baseline demography, relevant past medical history including anticoagulation; CXR evaluation; admission investigations including platelets, CRP, Glucose, Neutrophil Lymphocyte Ratio(NLR) and Neutrophil to Lymphocyte and Platelet ratio(N/LP); and outcomes. **Results**: During the study period 2008 index cases were identified. Accepting 22% of all CAP are admitted this represents a burden of ~ 1900 cases per 100,000 population per year. Baseline characteristics: mean age 71.9 (SD 15.4), 48% male (n 961), median length of stay 6 days (IQR 3-11), with 19.3% treated with anticoagulation pre-admission. The mortality rate was 12.3%, with readmission within 30 days 15.5% and 90 days 31.2%. Mortality correlated with sodium (0.48), admin CRP (0.49) and max CRP (0.116) [All $p < 0.05$]. We also found correlation with NLR and N/LP, however theses were not statistically significant. **Conclusion:** Mortality rates within out trust was similar to that of previous studies done in England. Correlation of mortality with admission variables using CURB 65 can be valuable but other biochemical values may help guide treatment. **Conflict of Interest:** The authors declare that they have no conflict of interest.

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3.11 Light in the MIST: Evaluating the Efficacy of a Reduced-Dose Intrapleural Thrombolysis Protocol in Pleural Infections: A Comparative Quality Improvement Study

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Background: The MIST2 trial demonstrated that intrapleural thrombolysis significantly improved outcomes for patients with pleural infections using a full-dose regimen. This study evaluates the effectiveness of a reduced-dose protocol, hypothesizing it could achieve similar clinical benefits while minimizing adverse effects and lowering resource use.**Methods:** In this prospective study, conducted from October to December 2023, we treated four patients with persistent pleural infections unresponsive to initial management. The modified MIST

protocol involved once-daily administration of Alteplase 10 mg and Dornase alfa 5 mg. The primary endpoints included radiographic and clinical improvement, need for thoracic surgery, and occurrence of side effects. We compared outcomes with a historical cohort treated with the standard twice-daily dosing. **Results:** All patients in the reduced-dose group exhibited radiographic improvement or resolution, with no significant adverse effects. One patient required surgical intervention. The average hospital stay was 18.5 days, significantly shorter than the 25.1 days observed in the full-dose cohort. **Conclusions:** The reduced-dose protocol appears to be as effective as the standard regimen, offering potential advantages in safety, ease of administration, and cost-effectiveness. Larger studies are necessary to confirm these preliminary findings. **Keywords:** Pleural infection, intrapleural thrombolysis, MIST protocol, quality improvement **Disclosures:** None **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.12 A retrospective analysis of five years of culture positive pleural fluid isolates in a tertiary referral centre

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Background: The bacteriology of pleural infection is complex. Positive pleural fluid culture may reflect true pleural infection or sample contamination. **Methods**: We performed a retrospective analysis of all culture positive pleural fluid samples received in a tertiary referral centre over a five year period from 2019-2023. We looked at culture isolates as they related to fluid characteristics, method of sampling, duration of intercostal drainage, and outcomes. **Results**: 160 positive culture isolates were analysed from 143 individual patients (27% female). Staphylococcus species were most commonly isolated (43%). 33% of positive samples were polymicrobial. 50% of positive cultures were sampled >72 hours after chest drain insertion. Streptococcus and Mycobacterium species were far more likely to be isolated when samples were sent within 72 hours of the pleural procedure (89% each) than later. Conversely, pathogens isolated when sampled >72 hours post-procedure were more likely to represent contaminants, such as Candida (49%) and Enterococcus (73%) species. The risk of secondary drain infection was significantly less for Seldinger (31%) than for surgical drains (58%) (p=0.0017). **Conclusions**: A substantial proportion of positive pleural fluid culture is likely related to contamination or secondary infection, though there was no significant difference in morbidity or mortality between these groups. **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.13 Invasive aspergillosis with Covid-19 in intensive care - a retrospective cohort study

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Background - Invasive pulmonary aspergillosis(IPA) is a known opportunistic infection with a high in-hospital mortality and corticosteroids as therapy for COVID-19 could increase the risk of IPA. **Methods -** In this retrospective cohort study, we aimed to assess the association of IPA and corticosteroids in ventilated COVID positive patients from March 2020 to April 2022 in two ICUs. Data collected includes use of corticosteroids, anti-fungals, IPA screening and corresponding imaging. Data was analysed for IPA incidence and ICU mortality between corticosteroid negative(CS -) and corticosteroid positive (CS +) cohorts. **Results -** 64 patients were included - mean age was

55.8(SD 14.4, SEM 1.8) and 67.1% were male. 53(82.8%) received corticosteroids. The incidence of IPA was significantly lower in CS - patients vs CS + patients (0% vs 45.2%, p value 0.0063) and this was statistically significant. The ICU mortality was 14.6% vs 30.4% in patients who did not test positive vs tested positive for IPA respectively (p value 0.13) **Conclusions** - While corticosteroids are beneficial in managing COVID-19, evidence shows an association between corticosteroids and testing positive for IPA. **Keywords** COVID-19, Aspergillosis **Conflict of Interest:** The authors declare that they have no conflict of interest

3.14 The importance of ARDS patient stratification prior to MSC-based therapy: and the notable impact of MSC-licensing

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Background: Clinical trials investigating the potential of mesenchymal stromal cells (MSCs) in the treatment of acute respiratory distress syndrome (ARDS), have shown underwhelming results; with <50% of patients responding to treatment. MSCs are an alternative option for the treatment of ARDS, due to their immunomodulatory and cytoprotective capacity in response to inflammatory stimuli. ARDS-phenotyping shows that patients can be stratified into hypo- and hyper-inflammatory sub-groups; with $ARDS_{Hyper}$ having augmented levels of inflammation. We hypothesised that MSCs may be more efficacious in the treatment of $ARDS_{Hyper}$, due to the known impact of inflammatory signals on MSC-activation/licensing. **Methods:** MSCs were exposed to 20% ARDS patient serum, or healthy control, for 24hrs; before replacing the media with serum-free media. The MSC-secretome was then screened *in vitro* and *in vivo*. **Results:** Hyper-licensed MSCs had the capacity to significantly reduce lung permeability. This was assessed in CALU-3 lung epithelial cells through the execution of a TEER assay as a functional readout of barrier integrity *in vitro*. This was further confirmed in a pre-clinical model of acute lung inflammation, through the use of Evan's Blue permeability dye. **Conclusion:** Hyper-licensed MSCs show enhanced therapeutic efficacy; highlighting the importance of MSC-licensing, and the need for patient stratification. **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.15 Intensive Care nurses experiences of end of life care during the Covid-19 pandemic: a descriptive qualitative study.

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Background: Intensive Care Nurses play a vital role in providing end-of-life care. The Covid-19 pandemic has profoundly and unprecedentedly affected end-of-life care. With the dramatic rise in patients requiring Intensive Care supports, frontline Intensive Care Nurses faced various challenges during this period. **Methods:** Semi-structured interviews were conducted with twelve staff nurses working in an Intensive Care Unit from a teaching hospital in the North West of Ireland. The data was subsequently analysed using Braun and Clarke's reflective thematic analysis. The study employed a descriptive qualitative design. **Results:** A total of four core themes were identified; Family matters, We are all in this together... or are we?, Moral Compass and Dignity in dying. **Conclusions:** The findings highlight the value and significance of family presence during end-of-life and the effect being present has on the grieving process. Nurses demonstrated their willingness and motivation to aid in "a good death" but indicated

a strong need for teamwork within the multidisciplinary team to achieve this. It is clear from this study that restrictions around end-of-life care during the Covid-19 pandemic had an emotional effect on staff and how they delivered end-of-life care during this period. **Key words:** Critical Care, end-of-life, Covid-19 pandemic. **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.16 Factors predicting failure to wean from oxygen post discharge following Covid-19 infection.

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Background. Following presentation with covid-19 infection in 2020, we tracked a cohort of patients who had significant COVID pneumonitis on CT scanning, survived the infection, but required oxygen at discharge. We aimed to determine factors contributing to weaning off oxygen within one year compared to those requiring longer-term oxygen. **Methods.** Nineteen patients were followed for duration of oxygen therapy post discharge. Baseline characteristics were determined from chart review, and patients weaned within one year compared to those unable to wean using chi-squared analysis. **Results.** Twelve patients still require oxygen therapy (9 female; mean age 67.5 years; mean inpatient stay 8.6 weeks). Seven patients were able to wean from oxygen within one year (2 female; mean age 65.7 years; mean inpatient stay 6.5 weeks). No significant difference seen in background non-respiratory illnesses, including ischaemic heart disease or diabetes. Statistically significant differences included current smokers/ patients with COPD/female patients less likely to wean. ($p<0.05$). **Conclusions.** In our cohort of patients surviving covid-19 infection in the pre-vaccination era and requiring oxygen therapy at discharge, pre-existing smoking related lung disease and female sex were negative predictors of subsequent ability to wean from oxygen.

Keywords. Covid-19, Oxygen. **Disclosures.** No conflict of interest.

3.17 Use of Cardiovascular Risk Scores in Adult Populations with Cystic Fibrosis

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Background: Advancements in Cystic Fibrosis (CF) therapy have increased the life expectancy of people with CF (PwCF). An emerging challenge is the potential increased risk of cardiovascular disease (CVD) **Methods:** We calculated the SCORE2, SCORE2-DM and WHO CVD risk scores of PwCF aged ≥40 attending our service between 2019 and 2023. **Results:** 77 PwCF were included. Of the 26 with CF-related diabetes (CFRD), SCORE2-Diabetes classified 46.2% as low-risk, 46.2% as moderate-risk, and 7.6% as high-risk. Of the 51 without CFRD, SCORE2 classified 78.4% as low-to-moderate-risk and 21.6% as high-risk. Using the WHO risk chart, 63.6% were green-risk, 24.7% were yellow-risk, 10.4% were orange-risk, and 1.3% were red-risk. ESC recommends targeting LDL-C <2.6mmol/L in moderate-risk patients and <1.8mmol/L in high-risk patients. WHO recommends pharmacotherapy in red-risk patients and in established diabetes. LDL-C was ≥2.6mmol/L in 31.2%, and ≥1.8mmol/L in 72.7% of our cohort.

Conclusions: Further research into the most suitable risk score and treatment target in PwCF is warranted. A significant proportion of our cohort would be candidates for lipid-lowering therapy. Statin initiation is challenging in PwCF due to potential co-existing liver disease and polypharmacy. **Keywords**: Cardiovascular risk, Cystic Fibrosis **Disclosures: Conflict of**

Interest: The authors declare that they have no conflict of interest.

3.18 Role of Nurse Prescribing in Adult Cystic Fibrosis Service

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Background: Nurse prescribing is an expanded nursing role that is in place in the Republic of Ireland since 2007. Nurse prescribing has multiple benefits. It allows the patient to have quicker and more effective access to medication. Allows nurses to better use their skills and enhances nursing care. Disease management including treatment and prevention of exacerbations, optimising and coordinating patient care are key aspects in a CNSp role. Prescribing allows CNSp's to further fulfil these aspects. The inclusion of nurse prescribers within teams promotes an environment whereby doctors and nurses can openly question and discuss prescribing decisions (Bradley, et al 2007). The RNPs in the Cystic Fibrosis Unit in Beaumont Hospital are part of a multidisciplinary team that is a tightly-knit unit and works collaboratively to care for their patients. Each team member contributes their particular expertise to each individuals care. Working together as a team in prescribing will improve efficiency, reduce error rates and it will foster critical thinking and professional development. **Methods:** An audit was completed over a seven week period. **Results:** Nurses prescribed 77% of all prescriptions in that time. There was a 0% error rate. **Conclusion**: Nurse prescribing contributes to individualised, quality-orientated and evidenced based to improve patient outcomes. **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest.

3.19 A Retrospective Audit of Nephrology Referral Practice Among Inpatients with Cystic Fibrosis.

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[1]St Vincent's University Hospital, Dublin, Ireland

Background: People with Cystic Fibrosis (PwCF) have risk factors for acute kidney injury (AKI). NICE 2019 guidelines outline criteria for referral to nephrology. We aimed to quantify the incidence of AKI and compliance these guidelines in PwCF. **Methods:** A modified version of NICE 2019 guidelines was applied.[1] We set a standard that all patients with AKI and all patients on renal replacement therapy (RRT) or with a kidney transplant should be referred for nephrology consultation within 24 hours. PwCF admitted between October 2023 and December 2023 were screened. If indicated, it was determined whether nephrology consultation was obtained through formal nephrology consultation in the medical charts or documentation of phone advice. **Results:** 65 patient admissions were included. Eight cases met the criteria for referral. Five (62.5%) were referred within 24 hours, two were referred after 24 hours (25%), and one was not referred (12.5%).**Conclusions:** Compliance to standards in this audit was good. It is suspected based on anecdotal experience that in some cases phone advice from nephrology was received but not documented. This could be a focus for quality improvement. To improve compliance a 'cheat sheet' listing criteria for referral to nephrology will be displayed on the CF ward. **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest.

3.20 Determining the impact of co-colonisation on lung function in children with cystic fibrosis.

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Background: Chronic pulmonary infection with *Pseudomonas aeruginosa* (PA) is associated with poor clinical outcomes in patients with cystic fibrosis (CF). We aimed to investigate the impact of microorganisms, frequently co-colonising with PA, on lung function in children with CF. **Methods:** A retrospective analysis was performed on data from 40 patients (946 samples of respiratory secretions), aged 2 to 19 years old, over 4 years to identify the microorganisms with the highest rates of co-colonisation. Mann-Whitney U test was applied to compare lung function (FEV_1% predicted) based on colonisation status. **Results:** Of 13 identified microorganisms, 3 accounted for the majority of co-colonising infections with PA. *Staphylococcus aureus* (SA) was the most common co-coloniser with PA (44%). These patients had a lower median FEV_1 compared to those with PA alone ($p=0.0294$). *Candida* spp. and *Aspergillus* spp. were the next most common co-colonisers. While colonisation with either fungus alone significantly reduced lung function ($p < 0.05$), co-colonisation with PA did not further reduce FEV1 beyond PA colonisation alone. **Conclusions:** Co-colonisation patterns may impact clinical outcomes in CF patients. These findings, if reproduced in a larger cohort, may influence antimicrobial selections going forward. **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest.

3.21 Prevalence of Dysglycemia in People with Cystic Fibrosis: A Retrospective Analysis St. Vincent's University Hospital

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Background: Cystic fibrosis-related diabetes (CFRD) and dysglycemia are common complications in people with Cystic Fibrosis (CF) [1]. Dysglycemia includes impaired fasting glucose (IFG), impaired glucose tolerance (IGT), reactive hypoglycemia, and new-onset diabetes. This study assesses the prevalence of these conditions in 121 people with CF who underwent oral glucose tolerance testing (OGTT) at the National Referral Centre for Adult CF over the last 12 months. **Methods:** Retrospective analysis conducted on 121 people with CF who underwent OGTT between June 2023 and July 2024. Parameters included fasting glucose, 2-hour post-glucose levels, Hba1C, presence of known and new-onset diabetes. IFG, IGT and diabetes were defined using WHO criteria. Isolated IFG was identified as elevated fasting glucose without concurrent IGT, reactive hypoglycemia, or diabetes [2].**Results:** Of 121 people tested, 6 (5%) had isolated IFG, 17 (14%) had IGT, 3 (2.5%) had new diabetes, and 3 (2.5%) had known diabetes, 62 (51%) had normal glucose and 30 (25%) experienced reactive hypoglycemia. Mean fasting glucose was 5.2 mmol/L (SD 0.7), mean 2-hour post-glucose was 5.6 mmol/L (SD 2.2), and mean Hba1C was 36.5 (SD 4.3).**Conclusions:** Dysglycemia is prevalent in people with CF, emphasizing the need for regular monitoring and early intervention. **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest.

3.22 The impact of CFTR modulator therapy on neutrophil CD39 expression and extracellular ATP release

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Background: Purinergic receptor activation by extracellular ATP (eATP) contributes to cystic fibrosis (CF) pathogenesis, with P2X7 receptor (P2X7R) activation increasing IL-1β production. Ectonucleoside triphosphate diphosphohydrolase 1 (CD39) regulates eATP and P2X7R signalling. This study explores the *in vivo* impact of CFTR modulator therapy elexacaftor/tezacaftor/ivacaftor (ETI) on neutrophil CD39 expression. **Methods:** eATP levels in the sputum of 32 patients were measured using bioluminescence before and after 3 or 12 months of ETI therapy. Neutrophil CD39 membrane expression was measured by flow cytometry. **Results:** A correlation between elevated eATP levels and neutrophil counts in CF sputum ($p<0.0001$) was recorded. CF neutrophils released significantly more ATP than healthy control cells ($p<0.001$). Percentage of circulating CD39+ neutrophils in CF was significantly reduced ($p=0.0033$). Cleavage of CD39 by serine proteases increased soluble CD39 in plasma ($p<0.0066$) and BAL samples.Post-ETI treatment, percentage CD39+ neutrophils increased ($p=0.0002$), resulting in reduced eATP release ($p<0.0001$) and reduced sputum eATP at 3 and 12 months ($p<0.0001$).**Conclusion:** ETI therapy indirectly restores CD39 expression. Data highlight CD39 analogues as promising alternative treatments for patients ineligible for ETI **Keywords:** eATP**;** CD39; P2X7R; ETI therapy **Funding:** US Cystic Fibrosis Foundation (REEVES23I0)**Conflict of Interest:** The authors declare that they have no conflict of interest.

3.23 Managing Bone Health in Cystic Fibrosis: A Retrospective Review of DXA Scan Practices in a Model 4 Hospital

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Background : Significant improvements in life expectancy for Cystic Fibrosis (CF) patients means long-term complications such as CF-related bone disease (CFBD) - characterised by low bone mineral density (BMD) and increased fracture risk - may increase in prevalence. **Methods :** We retrospectively audited CF patients from our specialist unit against European and Cystic Fibrosis Foundation guidelines. We reviewed DXA scans (from 2018 to 2023), risk factors for CFBD, fracture history and bone health medications. **Results:** Of 127 CF patients (mean age 31.9yrs[16-73 yrs]), 61(48%) were taking vitamin D+/-calcium supplements. Twelve (12/127; 9.4%) patients had documented fractures, with one fragility fracture. 110/127 (87%) CF patients had a DXA scan within the audit period. 67 scans were repeated too early, and 22 scans were completed outside the recommended timeframe. Of 122 patients aged <50 years, 106 were scanned during the study period. 55/106 (52%) had Z-scores ≥-1.0 (normal BMD), 37/106 (35%) had scores of <-1.0 to ≥ -2.0, and 14/106 (13%) had scores <-2.0. **Conclusion**: We found high levels of BMD screening and calcium/Vitamin D supplementation, but notable discrepancies in timing of scans compared to guidelines. Prevalence of CFBD was low. Revision of bone health guidelines, particularly in younger CF patients may be warranted. **Conflict of Interest:** The authors declare that they have no conflict of interest.

3.24 Clinical audit of annual sputum surveillance and screening for non-tuberculosis mycobacterium infection in people with cystic fibrosis.

[1]Holly Logan, [1]Ciara Casey, [1]Trevor Nicholson, [1]Edward McKone, [1]Charles Gallagher, [1]Suzanne Carter
[1]St Vincent's University Hospital, Dublin, Ireland

Background: Based on guidelines for Cystic Fibrosis (CF), surveillance for Pseudomonas Aeruginosa and annual screening with sputum culture for non-tuberculous mycobacterium should be carried out. We audited consecutive CF annual review records to assess compliance with the standard of care. **Methods**: We reviewed sputum results for the preceding 12 months for each person with CF (PwCF) attending annual review. We collated demographic and microbiological data. **Results**: 96 PwCF attended annual review and 55(57%) had sputum sent on the day. In the year preceding, inclusive of annual review date, sputum for Non-Tuberculosis Mycobacterium culture was sent in 78(81%). Non-Tuberculosis Mycobacterium was cultured in 3(3%). 75(78%) patients had a history of Pseudomonas Aeruginosa, 34(35%) within the last 2 years. Azithromycin was prescribed for 40(43%) overall and for 19(61%) of patients with history of Pseudomonas Aeruginosa in the previous 2 years. 3 PwCF had a contraindication to Azithromycin, so were excluded. **Conclusions**: Annual sputum induction is suggested for PwCF and would increase ability for surveillance of colonisation and facilitate expediting need for eradication or prophylactic therapy. **Keywords**: Cystic Fibrosis, Non-tuberculous mycobacterium. **Conflict of Interest**: The authors declare that they have no conflict of interest

References: 1. Burgel PR et al; Standards for the care of people with cystic fibrosis (CF); recognising and addressing CF health issues. Journal of Cystic Fibrosis. 2024 Mar;23(2):187-202. doi: 10.1016/j.jcf.2024.01.005. Epub 2024 Jan 16. PMID: 38233247.

Irish Thoracic Society Poster Review & Discussion

Friday November 15th 2024

4: Integrated Care

4.1 The role of lung ultrasound in detecting lung pathologies: An ICU physiotherapy service report.

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[1]Tallaght University Hospital, Dublin, Ireland

Background: The use of diagnostic lung ultrasound to examine the pleura, lung parenchyma and diaphragm by physiotherapists is an emerging area (Hansell et al, 2021).It can be used in assessment and patient monitoring for physiotherapists, evaluation of treatment effect and information gained if useful can be shared to the wider MDT. The aim of this study was to record the role of LUS in detecting lung abnormalities and its impact on patients' physiotherapy management **Methods:**Four physiotherapists in TUH underwent FUSIC lung ultrasound training under supervision.We completed a prospective observational study of all patients who received a lung ultrasound scan over a 5 month period **Results:**120 LUS scans were performed in total over the 5 month period. Lung pathologies detected (n=98) included pleural effusions (n=78), lung consolidation (n=88) and diaphragm dysfunction (n=29. 35 scans led to a change in physiotherapy treatment selection.17 scans were discussed with the ICU medical team largely in relation to the presence and size of pleural effusions. **Conclusion:** LUS can differentially diagnose key pathologies which can enable appropriate treatment selection by physiotherapists. Real-time images for the pleura, lungs and diaphragm of a patient can also provide valuable information to our ICU medical colleagues. **Conflict of Interest**: The authors declare that they have no conflict of interest.

4.2 Physiotherapy Assistant Activity in the ICU.

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Tallaght University Hospital, Dublin, Ireland

Background: This project aimed to capture an overview of the types of patients seen and the interventions provided by the physiotherapy assistant (PTA) working in TUH ICU over a 1-month period. **Methodology:** A data collection tool was created to capture patient demographics and types of interventions provided by the PTA. 1-month of data collection was analyzed using Microsoft Excel.**Results:** 180 patient interactions were captured. 72% were male, the mean patient age was 62. The mean time spent with patients was 26mins. The average GCS of patients was 13. The PTA provided diverse interventions to patients requiring varying levels of respiratory support.**Conclusions:** PTA availability in ICU increases capacity to provide rehabilitation in the ICU, providing 75 additional therapy sessions over a 1-month period. The PTA can treat critically unwell patients. 95 sessions were co-treatments which otherwise needed an additional physiotherapist in place of the PTA. 9 sessions were undertaken in place of a physiotherapist. This increases capacity for rehab and provision of more specialist treatments. As per the National Census Report of ICU workforce survey of HSCPs, TUH is the only hospital with access to PTA availability. The above data is invaluable in defining PTA's role in ICU. **Conflict of Interest**: The authors declare that they have no conflict of interest.

4.3 A survey of providers' perceptions of behaviour change interventions for physical activity in people with chronic respiratory disease

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Background: Physical activity (PA) in chronic respiratory disease (CRD) may be influenced by behaviour change interventions. The aim of this study was to explore providers perceptions of behaviour change interventions for PA in people with CRD in the Republic of Ireland. **Methods**: Between November 2023 and April 2024, a cross-sectional, anonymous, survey was distributed online (via Qualtrics) to providers of PA programmes (n=150) via relevant gatekeepers and social media. Findings were described and summarized using frequencies, percentages and means. **Results**: One hundred and seven surveys were completed (n=107/150, 71.33% response rate). Most respondents reported that they incorporate behaviour change interventions into PA programmes for CRD (n=93/106, 87.74%). Interventions perceived as most effective (i.e. very effective, somewhat effective) were encouragement (n=81/84, 96.43%), education (n=80/84, 95.24%) and goal-setting (79/84, 94.05%) with incentivisation perceived as least effective (n=35/84, 41.66%). Less than half of respondents (44.91%; n= 53/118) have received training regarding behaviour change interventions for PA. **Conclusion**: In the Republic of Ireland, behaviour change interventions such as encouragement, education and goal-setting are perceived to effectively influence behaviour by providers of PA programmes for people with CRD. Future research to address providers training is required. **Key words:** physical activity, behaviour change interventions **Conflict of Interest**: The authors declare that they have no conflict of interest

4.4 Physiotherapy-led Bronchiectasis Clinic, Tallaght University Hospital: Service Implementation & Evaluation

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Background: In Tallaght University Hospital, a physiotherapy-led bronchiectasis clinic was previously in place on an ad-hoc basis however

the service lapsed in 2022. A significant number of referrals accrued. The aim of this service development was to establish a regular service which facilitates comprehensive self-management plans including airway clearance techniques, exercise and Pulmonary Rehabilitation that is supported by best practice guidelines with an overarching aim of reducing the impact of cough and reduce the risk of exacerbations. Objectives of the service audit included: review number and source of referrals, treatment provided, evaluate follow-up pathways and assist with future service development. **Methods:** A bronchiectasis-specific waitlist was established. Appointments were provided to patients and referrals were generated to community services. A comprehensive database was created to collate and interpret the data. **Results:** 26 patients were referred to the service during January-August 2023, of which 77% attended. 85% were referred from Respiratory clinics. All patient were provided with self-management plans. 80% were referred to community support or exercise groups. **Conclusion:** A regular physiotherapy-led bronchiectasis service was established. Further consideration of follow-up appointments to assess patients compliance with their self-management plan may be beneficial. Further service-evaluation is recommended to review re-admission rates of adults who attended the clinic.

4.5 Interagency community exercise classes for COPD reduce healthcare utilisation

[1]Maeve Sorohan, [1]Ciara Feeney, [1]Eimear Ward, [1]Catherine Sevin, [1]Vincent Brennan
[1]HSE, Dublin, Ireland

Background: An interagency partnership involving the HSE and Dublin City Council launched Maintenance Pulmonary Rehabilitation (PR) to support clients with Chronic Obstructive Pulmonary Disease (COPD) to maintain levels of physical activity and health outcomes post completion of traditional PR. Fitness instructors undertake specific training on chronic disease to ensure exercise intensity is safe and effective. **Methods:** Review of clinical notes and interviews with 10 clients compared exacerbation rates, measured by unplanned visits to GP/hospital with respiratory symptoms, in the 12 months pre/post commencing. **Results:** 26% reduction in GP presentations with exacerbations of COPD; with total GP visits falling across the group from 34 to 25 visits. Hospital admissions dropped from 7 to 0 which lead to a significant cost benefit to the already burdened acute hospital system. **Conclusion:** The benefits of traditional PR are well researched but short-lived. Continuing exercise after PR is the client's responsibility but part of the health professional's role is to assist in behaviour change. This review shows that the availability of bespoke community exercise classes can reduce healthcare utilisation by bridging the gap between the medical model and self - management. **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.6 Introducing Advance Care Planning into Pulmonary Rehabilitation

Maeve Sorohan[1], Ciara Feeney[1], Eimear Ward[1], CNSp Catherine Sevin[1], Vincent Brennan[1,2]
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Background: Advance care planning (ACP) is a process of communication between healthcare professionals and patients exploring values and goals of future healthcare choices. This review evaluates patient's satisfaction following the introduction of ACP to Pulmonary Rehabilitation (PR). **Methods:** ACP was identified as a gap in the self-management programme. Clinical staff engaged professional development training opportunities to enhance learning and develop skills to deliver education. A multimodal programme was developed to introduce the concept. Satisfaction survey was developed to evaluate patients' response. **Results:** PR group of 22 patients; 20 attended ACP. 13 satisfaction surveys returned.

Literacy reported as barrier for some. 57% of respondents have previously considered ACP. 14% having a previous discussion with healthcare worker. One patient preferred an individual session. Other feedback recorded: "Realised so much more to arrange"; "helpful"; "opened mind". **Conclusion:** Patients were open to exploring ACP in PR despite the session being often the preliminary discussion on ACP. Group sessions maximise limited resources and patients were satisfied with this approach. Health literacy is a key area to increase accessibility. Key stakeholders need to be engaged to continue the process throughout the healthcare journey. **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.7 Levels Of Social Connectedness Amongst Patients Attending Pulmonary Rehabilitation And Maintenance Exercise Groups- A Review

Eimear Ward[1], Maeve Sorohan[1], Ciara Feeney[1], Catherine Sevin[1], Vincent Brennan[2]

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Background: Loneliness is well documented in Chronic Obstructive Pulmonary Disease patients. Evidence suggests patients experience "belonging" at Pulmonary Rehabilitation (PR). The aim of this review is to assess levels of social connectedness in PR and maintenance exercise groups (MEG). **Methods:** Patients meeting standard PR referral criteria assessed April-June 2024 were included. Standard pre and post-assessments included self-completion of the social connectedness scale (SCS). PR duration: 6-8 weeks. Patients attending 2 MEG completed the SCS. Descriptive statistics were used. **Results:** Maximum score for SCS is 48, the highest level of social connectedness. 18 patients completed the SCS pre and post PR. 5 patients increased and 5 patients decreased their scores. 2 patient scores were unchanged. 6 patients did not complete PR. 4 of these patients had scores </=28 pre-PR. 24 patients completed the SCS in the MEG. 19 had scores >/= 40. **Conclusions:** Limitations include sample size and absence of an MCID or cut-off scores/ranges for SCS. Lower pre-PR scores were associated with those that didn't complete PR and required increased social support/referral. No link between pre and post PR results was identified. High scores in the MEG warrants further analysis. **Disclosures:** Authors declare no conflict of interest.

4.8 A community pulmonary rehabilitation programme for patients with high oxygen demands

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Introduction: Patients with severe respiratory disease require supplemental oxygen during exercise to improve peripheral muscle oxygen delivery and exertional dyspnoea. The purpose of this study was to investigate the feasibility and effects of providing a community Pulmonary Rehabilitation programme (PRP) to patients with high oxygen demands. **Methods**: Two patients were identified as having high oxygen needs (>4 l per minute (LPM)) at assessment. Risk assessments was conducted and two high-flow oxygen concentrators were sourced to provide one patient with 15LPM on exertion. The other utilised liquid oxygen at 9-12LPM. Data collection along with class and

education schedules were agreed. Descriptive statistics analysed results. **Results**: Attendance rate was high (92%). Positive clinical outcomes were achieved. Patients reported overall health benefits and high satisfaction levels. **Conclusion**: Results showed a clear benefit in providing PRP for this cohort. Attendance was higher than reported for standard PR programmes. There was an increase in functional capacity which has also been shown to be a predictor of mortality. Confidence in disease management and anxiety improved. While the ratio of staffing is higher than standard PRPs, this novel class for those with high health utilisation costs is worthwhile. **Conflict of Interest:** Authors declare no conflict of interest.

4.9 Investigating strength in patients completing pulmonary rehabilitation programme – improved results for patients with sarcopenia

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Background: Musculature changes in patients with chronic respiratory disease often result in a decrease in strength. This has an impact on dyspnoea and community integration. Sarcopenia causes further deterioration in this cohort. Use of dynamometry is not a standard part of care for patients attending a pulmonary rehabilitation programme (PRP). The purpose of this study was to investigate the effects of a PRP on grip strength. **Methods:** Grip strength was measured using a hand grip dynamometer as part of their pre and post PRP assessments. Sarcopenia was defined as grip strength <16kg for females and <27kg for males. Descriptive statistics analysed results. **Results:** Of 79 patients who completed PR strength assessments, 61% improved and 21% dis-improved. Thirty-one patients were identified as sarcopenic. Female sarcopenia group grip strength increased significantly 14.3 SD (1.75)kg to 17.15 (5.1)kg. Male sarcopenia group grip strength increased significantly 21.7kg SD(3.62)kg to 23.6kg SD (1.98)kg. **Conclusion:** Improvements in strength were demonstrated particularly in patients with sarcopenia. Access to PRPs for sarcopenic patients assists in managing this condition. Further integration could occur with our dietetic colleagues in PR examining increased focus on oral intake. **Conflict of Interest:** Authors declare no conflict of interest.

4.10 The prevalence of sarcopenia in a sub-acute respiratory rehabilitation inpatient unit

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Background: Sarcopenia is the progressive loss of skeletal muscle mass, strength, and function. It is associated with numerous adverse outcomes, including increased risk of falls, hospitalisation, and mortality[1]. Sarcopenia and respiratory disease have many shared risk factors, including physical inactivity and poor nutrition. **Methods:** Sarcopenia risk was screened for using the SARC-F questionnaire. Participants who screened positive for risk of sarcopenia had their hand grip strength (HGS) assessed via hand-grip dynamometry, and their appendicular skeletal muscle mass assessed via bioelectrical impedance analysis. Calf-circumference was measured as a secondary marker of muscle mass. Sarcopenia was

diagnosed based on EWGSOP2[1] criteria. Risk of malnutrition was evaluated using the MUST tool. **Results:** 26 participants took part in the study. 84.6% were at risk of sarcopenia based on SARC-F score. 23.1% had probable sarcopenia (low HGS in the absence of low muscle mass), and 15.4% had confirmed sarcopenia (low HGS and low muscle mass). All participants with confirmed sarcopenia were at high risk of malnutrition ($p<0.01$). **Conclusion:** A combined total of 38.5% of participants had probable or confirmed sarcopenia, putting them at an increased risk of adverse outcomes. **Keywords:** sarcopenia, respiratory disease, nutrition **Disclosures:** The authors declare that they have no conflict of interest

4.11 Sharing is Caring - Hospital and Community Integrated Pulmonary Rehab

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Background: Acute and community respiratory services deliver Pulmonary Rehabilitation (PR) in North Tipperary. The hospital based PR has been established for 14 years. With the introduction of community PR, and GP referrals, there was an uneven volume of referrals, and duplication, between both waiting lists. A pilot integrated PR was completed in early 2024. **Methodology**: Integrating hospital and community PR programmes was approved by the governing Respiratory Consultants and management. Integrated meetings and planning ensued. An electronic shared folder was created and waiting lists amalgamated. Resources were pooled so higher numbers of patients could attend safely and efficiently. A temporary pathway to the hospital Oxygen Clinic was established.**Results:** 38 participants completed PR in the Church at Nenagh Hospital, where otherwise numbers would have been lower. Classes were delivered by acute and community staff. Pooling staff meant leave was covered, and classes not cancelled. Prompt access to oxygen assessment and prescription. **Conclusion:** Pooling resources, enabled us to provide a successful integrated PR programme. Higher volumes enrolled, waiting times reduced, and access improved. Integrated PR continues, and has inspired us to formalise pathways for oxygen assessments. **Keywords:** Pulmonary Rehabilitation, Integration. **Disclosures:** The authors declare that they have no conflict of interest.

4.12 A Review of Prescribed Unsupervised Walking Exercise Programmes in Pulmonary Rehabilitation; a Service Development

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Background: The British Thoracic Society (BTS) recommends pulmonary rehabilitation (PR) programmes include a third session of prescribed exercise, which can be unsupervised. In Tallaght University Hospital, supervised PR classes are provided twice-weekly. The aim of this project was to implement a plan for prescribed, unsupervised walking programmes. Objectives include reviewing the programmes and their impact on six-minute walk test (6MWT), COPD Assessment Tool (CAT) and modified medical research council (mMRC). **Methods:** Ten participants undergoing PR were selected to complete the programme. Based on their initial 6MWT, participants were prescribed a walking programme with a weekly goal and progressed gradually. 6MWT, CAT and mMRC

were recorded at weeks zero and eight. **Results:** Four of the ten selected participants completed the programme. One participant reached the Minimal Clinically Important Difference (MCID) in the 6MWT, three in the CAT and one in the MmRC. **Conclusions:** Initial results suggest this is an effective option to meet guidelines. Limitations include the low number of participants in this study and time restraints. Therefore, further investigation into different forms of unsupervised exercise in this population is warranted. **Keywords:** Unsupervised exercise, pulmonary rehabilitation, COPD **Disclosure: Conflict of Interest:** The authors declare that they have no conflict of interest.

4.13 Patient, process and cost outcomes following the roll-out of a Community Pulmonary Rehabilitation Programme in HSE Mid-West region: A service and economic evaluation

Sarah Cunneen[1], Máire Curran[1], Brian Fitzgibbon[1], Rachel McNamara[2], Sinéad Donohue[2], Aidan O'Brien[3], Brian Casserly[3], Josie Dillon[1], Patricia O'Rourke[1]

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Background: Ireland has one of the highest rates of admissions for Chronic Obstructive Pulmonary Disease (COPD) in the OECD[1]. Pulmonary rehabilitation (PR) plays a crucial role in the management of individuals with COPD and is associated with reduced hospital admissions and improved patient outcomes. **Aim/Methods:** The aim of this service evaluation is to demonstrate how the community PR service in HSE Mid-West is meeting its objectives with regards to patient, process and cost outcomes. A retrospective pre-post intervention study design was adopted to compare admission rates among enrolees diagnosed with COPD in the 12 months before and after PR intervention. Secondary outcomes included exercise tolerance, quality of life measures and costs. **Results:** Outcome data for all 111 PR enrolees in 2022 diagnosed with COPD were included in the evaluation. Demographics and engagement data, as well as pre-post admission and secondary outcome data are currently being evaluated. Full results will be available in September 2024. **Conclusions:** The results of this evaluation will demonstrate how the community PR programme in HSE Mid-West is meeting its aims; and will inform resource planning decisions for the HSE Chronic Disease Management Programme locally.**Keywords** Pulmonary Rehabilitation, Chronic Disease Management, Health Service Improvement **Disclosures** The authors declare that they have no conflict of interest **Reference:**
[1]National Patient Safety Office, Department of Health. National Healthcare Quality Reporting System Report 2023. Ireland: www.gov.ie: 2023

4.14. Pulmonary Rehabilitation outcomes analysis – Does class location or referral source impact patient outcomes?

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Background: Community pulmonary rehabilitation (PR) takes place in four venues across North Tipperary and East Limerick. Referrals are accepted from Respiratory Consultants (RC) and General Practitioners (GP). **Methods:** A retrospective service evaluation was undertaken to compare six PR groups (n=117) from 2023 and 2024. Two groups from site A (n=35), two from Site B (n=54) and two from Site C (n=28). The referral

source in Site A was RC only, and in Sites B and C, GP referrals were also accepted. **Results:** Gender and age profiles were similar across all groups with an average age of 69 years. Overall patients attending Site A had the greatest improvement, most notably in their Incremental Shuttle Walk Test. They mobilised on average 107m further on post assessment, compared to Site B (63.2m) and Site C (59.44m). When analysis was undertaken within groups B and C, it was discovered that patients referred by GPs had a lower exercise capacity to begin with and subsequently showed the greatest improvement in their Incremental Shuttle Walk Test. **Conclusion:** Patients attending Site A had the best clinical outcomes following PR. Patients referred by GPs improved more than patients referred by RCs in sites B and C. **Disclosure:** The authors declare that they have no conflict of interest.

4.15 Clinical time saved by reducing duplication of patients attending outpatient oxygen assessment and review (OAR) clinics in Tallaght University Hospital (TUH) and Peamount Healthcare (PH)

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Background. Physiotherapist-led OAR clinics in TUH and PH care for patients requiring home oxygen. There is cross-over between sites; sharing consultants and geographical areas. This project aimed to identify patient duplication across clinics, to agree on care, and minimise future duplication; saving clinical time. **Methods.** Between August 2023 and 2024, clinicians running OAR clinics in TUH and PH conducted a six-monthly teleconference to validate waiting lists and agree on care. All patients on OAR waiting lists were screened, care was assigned to one site, with duplicates removed. One OAR appointment requires 65 minutes.**Results.** Twenty-seven duplicates existed in August 2023. Of 27; 10 died, TUH accepted 14, and PH accepted 3. Fourteen duplicates existed in January 2024. Of 14; 4 patients died, TUH accepted 9, and PH accepted 1. Thirteen duplicates existed in August 2024. Of 13; TUH accepted 7, and PH accepted 6. TUH saved 10 appointments/10.8 hours, with 30 appointments/32.5 hours saved in PH. **Conclusions.** A teleconference was sufficient to identify duplication, agree on patient care, and save clinical time. Duplication has reduced, but is still occurring. Teleconference frequency increased to quarterly in response. **Keywords.** Oxygen, physiotherapy. **Disclosures.** The authors declare that they have no conflict of interest.

4.16 Start and Finish: A 6 month review of uptake and completion barriers to Pulmonary Rehabilitation in Respiratory Integrated Care Dublin North Central and Dublin North West

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Background: A review of data in Respiratory Integrated Care (RIC) PR Dublin North Central (DNC) and Dublin North West (DNW) revealed a promising comparison of 47% uptake, and a dropout of 43% for the same period, on par with systematic review findings. In an attempt to further understand this issue we examined the characteristics and reasons for drop-out. **Method**: Data of patients who did not complete PR was analysed from the RIC PR Database for DNC and DNW over 6 months, between January 2024 and June 2024. **Results**: 34 patients (43%) dropped out of PR from a total of 80 patients. 14 (41%) patients dropped out due to exacerbation of respiratory illness while 11 (32%) patients

dropped out due to complications of co-morbidities. Majority of the patients who dropped out (67%) had COPD Stage E. **Conclusion:** Our findings identify that patients with Stage E COPD and co-morbidities are at higher risk of not completing PR. This highlights that those referring to PR ensure patients are medically optimised, and co-morbidities that may affect PR participation should be taken into account at the time of referral and assessment. Further research into strategies to improve completion for these patient groups are deemed necessary. **Disclosures.** The authors declare that they have no conflict of interest.

4.17. Share your screen: A Virtual Pulmonary Rehabilitation Collaboration in CHO9

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Background: Virtual Pulmonary Rehabilitation (VPR) provides a viable alternative choice for those patients who are not able to attend face to face Pulmonary Rehabilitation (PR). With staff shortages in Respiratory Integrated Care (RIC) delivering face to face and virtual programmes is taxing. In an attempt to alleviate this burden a VPR programme shared by CHO9 staff and patients was trialled. **Method**: A shared drive was established for CHO9 Clinical Specialist Physiotherapists (CSP). Outcome measures, data collection, exercise progression, class and education schedules were agreed. Patients referred for VPR were assessed and enrolled by the CSP in their RIC area. Classes were delivered virtually twice a week on a rota basis. **Results**: 11 patients were assessed and enrolled in VPR between February and August 2024. 7 patients completed the programme. Positive clinical outcomes were achieved. Patients agreed that they enjoyed the variety of physiotherapists and would recommend the programme to others. All CSP agreed that sharing the delivery of VPR was efficient and effective. **Conclusion:** This test of change reduced the workload of delivering simultaneous face to face and virtual programmes whilst patients received a beneficial programme that they were satisfied with. **Disclosures.** The authors declare that they have no conflict of interest.

4.18. Therapeutic Harmonica Programme: Preliminary Findings

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Background: Chronic Obstructive Pulmonary Disease is a common, preventable lung condition characterized by progressive symptoms such as breathlessness, cough, and sputum production, primarily caused by tobacco exposure. Pulmonary rehabilitation (PR) is crucial in managing COPD, and music therapy within PR programs has been recognized by the World Health Organization for enhancing outcomes. The Therapeutic Harmonica Programme was developed to further improve PR benefits. **Methods:** Pre and post intervention outcomes consisted of peak inspiratory and expiratory flow rates and total Airflow by combining both PEFR +PIFR, and a disease specific Quality of Life using the SGRQ-C. MCID for PEFR = 25L/min or 12% ,and for the SGRQ-C =4). Excel was used for calculations and graphs. **Results:** Out of fourteen patients, twelve completed the programme (7m:5f) with an average age of 69. Total Airflow improved by 62L/min [(pre 505 (±1667); post 567(±192)], PEFR improved

by 36L/min (±54) [pre 270(±102); post 306 (±124)], PIF improved by 25Lmin (±22) [pre 235(±68); post 261(±72)] and the SGRQ-C improved by 7 (±6) points [pre 43 (±12; post 36(±11)]. Minimal clinical important differences in PEFR and the SGRQ-C were apparent. **Conclusion:** An improvement in airflow can have a positive impact on symptoms and may help decrease exacerbation rate by improving inhaled medication deposition. **Disclosures.** The authors declare that they have no conflict of interest.

4.19. Physiotherapy Role in the Pre Lung Transplant Clinic at the Irish National Heart and Lung Transplant Centre

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[1]Mater Misericordiae University Hospital, Dublin, Ireland

Background: Mater Misericordiae University Hospital is the National Lung Transplant Unit in Ireland, established in 2010. Prior to 2021 there was no outpatient physiotherapy input to pre transplant patients. In 2021, a trial of virtual pulmonary rehabilitation for patients on active transplant list was completed. Only 6 patients completed this programme in a 6 month period. **Methods:** To increase patient catchment, in 2022, we completed a pilot of physiotherapy attending transplant assessment clinic started. This programme is now being run as part of our standard of care with Physiotherapy attendance at each pre transplant assessment clinic. Assessment includes oxygen assessment (6MWT), updates to current prescriptions as well as exercise education and prescription. Attendance at this clinic has aided in managing the risk for many of our patients as well as supporting in the MDT decision making on the suitability for transplant. **Results**: On average 6 patients are seen per clinic per week, with on average 60% updates to oxygen prescription and 90% education on exercise and onward referrals. This enhanced holistic approach to patient management aids in optimising the service for those in attendance ensuring gold standard care. Patient satisfaction survey 2023 also showed 92% of patient found physiotherapy attendance to be strongly beneficial in understanding oxygen therapy and exercise provision. **Disclosures:** None **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.20 Re-organisation of Respiratory Outpatient Department in a District General Hospital

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Background: Respiratory Outpatient Department (OPD) was reorganised before and during the COVID pandemic to improve waiting times. This involved repeated revalidation of waiting lists by a Respiratory consultant, pre-ordering investigations and redirection of patients to sub specialist areas within the Respiratory Department. The aim of this study was to assess current referral patterns and see if further reorganisation is needed. **Methods:** Number and category of referrals (Red Flag, Urgent and Routine) was recorded over 8 weeks in 2023. Outpatient waiting times were also reviewed from 2018 to 2024. **Results:** 336 referrals were received over 8 weeks, 52 (15%) of which were Red Flag and 75 (22%) were sleep related. Patients with potential sleep apnoea were referred directly for sleep investigations. Waiting times for Respiratory appointments have reduced from

133 weeks for routine referrals in 2018 to 32 weeks May 2024 and from 115 weeks for urgent referrals in 2018 to 12 weeks. Red flag targets were always met. **Conclusion:** Re-organisation of OPD services has resulted in a significant reduction in the waiting times. Further development of sleep pathway is a priority for the future. **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.21 Dublin North West Respiratory Integrated Care – A Year in Review

Johanna O' Callaghan[1,2], Sarra Khogali[1,2], Isra Hussein[1,2], Abirami Subramaniam[1,2]

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Background: The National Clinical Care Programme for Respiratory was introduced in 2016 to support GP's in diagnosing and managing patients with COPD and/or Asthma. The Respiratory team consists of a Consultant, 1 ANP, 2.5 CNSp's and 3.5 Physiotherapists. **Methods:** Data was collected retrospectively on discharges from the service between January and December 2023, with patients excluded who did not attend follow-up appointments, died and those exclusively seen in the respiratory physiotherapy clinic. **Results:** Data was available for 65 patients, with the number of appointments attended ranging from 1 to 4 (mean = 2.3). Referrals received were from GP's (70.8%), hospital Respiratory team (27.7%) and Cardiology Team (1.5%). Diagnosis changes occurred in 15.4%, while 12.3% received an additional new diagnosis. Four cases (6%) were discussed at the hospital-based Radiology MDM. Inhaled/oral treatment changes were made for 58% and 85% had clinically meaningful improvements in symptom scores. Only 51% had documentation of receiving a self-management action plan. Among current smokers, 50% agreed to local cessation service referral. Additionally, 18.5% of patients required onward referral to other HCP's. **Conclusion:** This service supports the principles of integrated care, disease prevention, and self-care outlined in the report "Preventing Chronic Disease: Defining the Problem". **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.22 Outcomes following Transfer of the Oxygen Service of Assessment & Review to the Community in the Western Trust, N Ireland

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[1]Western Health and Social Care Trust, Derry, Ireland

Background: The Western Health Social Care Trust (WHSCT) delivery of the Home Oxygen Service of Assessment and Review (HOSAR) transitioned from acute service delivery into the Community in May 2016. **Method:** The annual data of patient throughput in the HOSAR community service from May 2016 to May 2024 was reviewed to ascertain the outcomes of the service since moving to the CRT. **Results:** The community HOSAR service has delivered care to 6394 patients since 2016 with an average of 799.25 patients assessed and reviewed annually. This is an annual increase of 515 patients since May 2016. 2021 saw a peak in the numbers with 1065 being assessed as a result of the covid pandemic. The current waiting list is 239 as of 31/7/24. **Conclusion:** Delivering the HOSAR service in the Community setting improves accessibility for patients and supports the model of chronic disease management in long term

respiratory conditions. It has proved successful in relieving pressure in our acute sector, therefore providing our respiratory nurse specialists with the time to concentrate on their more acute role. **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.23 Enhancing Respiratory Integrated Care: The Critical Value of Radiology

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Background: Radiology diagnostics provision is currently not within the ICPCD framework. CT thorax scan is frequently ordered as a diagnostic tool following respiratory assessment and this is being facilitated for our Respiratory Integrated Care (RIC) service via our alignment with Connolly Hospital. **Method:** This is a retrospective review of NIMIS and RIC clinic letters, evaluating CT thorax orders over a 12-month period in 2023. Significant respiratory findings were defined as presence of emphysema, bronchiectasis, interstitial lung disease or suspicious nodules. **Results**: A total of **81** CT Thorax scans were ordered, with **63%** showing significant findings of either one or co-existing; emphysema (43%), bronchiectasis (21%), interstitial lung disease (5%) and suspicious nodules (24%), as defined as per Fleischner guidelines, radiologist reporting and correlation with clinical background. Only **10%** of the scans were reported as normal. Additionally, **27%** of the imaging revealed incidental findings that influenced treatment decisions. **Conclusion:** Access to CT imaging is invaluable in confirming diagnoses and providing appropriate, targeted treatment for patients. The merging of healthcare facilities improves service accessibility within the community and enhances patient management outside the hospital setting. Successful integration and expansion of diagnostic imaging would greatly benefit patients and support cost-effective care in the community. **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.24 Setting up a virtual ward service at University Hospital Limerick to serve the community catchment area of Mid-West Community Healthcare

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Background: A virtual ward (VW) service facilitates patients to receive hospital level care, monitoring and treatment in the comfort of their own homes, monitored 24/7 in a central hub in an acute hospital. A VW was established at University Hospital Limerick (UHL) in July 2024 for respiratory and cardiology patient cohorts initially. **Methods:** Implementation involved:

1. View VW Model: NHS Norfolk & Norwich Hospital visit August 2023.
2. Digital Solution: Part of National Procurement Evaluation Group for technical solution.
3. Second Pilot Site: St. Vincent's University Hospital joined December 2023.
4. Infrastructure & Equipment: Establishment and equipping of virtual hub in UHL.
5. Staffing and Training: 14 nursing staff and one administrative post, supported by pre-existing respiratory consultant, ANP/CNS and eHealth digital support. VW curriculum development, training and education of staff.

6. Patient selection: National and local documents to support COPD & Bronchiectasis patient cohorts in initial roll out.

Results: VW "go-live" since July 2024 to decrease in-hospital bed stays/admission avoidance, and enhancing patient outcomes/experiences.

Conclusion: UHL is one of two pilot sites in the Irish Healthcare system to implement this innovative model of hospital level care, with clear objectives including pathway expansion, workforce retention strategies, and sharing proof of concept of the innovative work undertaken. **Keywords**: Respiratory, Digital Health, Technology and Transformation eHealth, Virtual Wards
Acknowledgements: HSE National Strategic Programmes Office, HSE eHealth Office, National Clinical Programme Respiratory, VW National PEG, LIG/Subgroups, ULHG multidisciplinary team members inputs, VW staff, Respiratory, Cardiology and General Medicine Teams UHL, Mid-West Community Healthcare, St. Vincent's University Hospital.**Disclosures:** The authors declare that they have no conflict of interest.

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4.25 Oxygen prescription compliance in a large Irish hospital – a quality improvement project

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St. Vincent's University Hospital, Dublin, Ireland

Background: Patients are often prescribed oxygen inappropriately, if at all, which is not in accordance with BTS/ITS guidelines. Oxygen is often not considered a "drug" or given the same consideration. We endeavoured to improve oxygen prescribing through simple interventions. **Method:** We asked three questions;

(1) Is oxygen prescribed in Kardex?

(2) Is there target saturations set in Kardex?

(3) Are the target saturations listed in admission note?

Data (n=40) was collected daily over a 1-week period from medical patients in E.D. on oxygen at admission. We then carried out several interventions including information sessions at NCHD teaching and circulation of an oxygen prescribing leaflet. The data was then collected again over a 1-week period in the same manner . **Results:** The pre-intervention group results demonstrated very poor compliance with oxygen prescribing. Post intervention prescribing improved from 2.5->45% (Q1), 2.5->40% (Q2) and 15->60% (Q3). The most notable improvement was seen with the number of people being prescribed oxygen in the Kardex **Conclusion:** We carried out simple interventions to raise awareness of the importance of oxygen prescription and consequences of not doing so. This resulted in significant improvements which will benefit patients. No disclosures declared. **Conflict of Interest:** The authors declare that they have no conflict of interest.

4.26 Improving Asthma and COPD services at Sligo University Hospital: Respiratory ANP Clinic

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Background: The Respiratory Advanced Nurse Practitioner (ANP) clinic aims to improve access to specialist respiratory services for patients not previously attending respiratory services with COPD and asthma. The ANP clinic held at the Benbulbin Chronic Disease Management Hub, offers follow-up review of patients with known or suspected COPD and asthma who attend the Emergency Department (ED) or those admitted who are not under Respiratory team. **Methods:** Retrospective quantitative analysis was conducted January 2023 to June 2024 from data collected on Integrated Patient Management System (iPMS) and internal respiratory database. **Results:** 268 patients attended the ANP Clinic, new (n=184), review (n=84), rapid access review (n=31), new diagnosis (n=59). Referrals were primarily from Respiratory Clinical Nurse Specialist (n=67) and ED (n=58). Interventions included change in medications (n=124), pulmonary function tests (n=136). Patient outcomes included review appointments (n=105), referral to the consultant clinic (n=14), discharged back to GP (n=102). **Conclusions:** Respiratory ANP Clinic significantly improved access and integration of services for COPD and Asthma patients. By capturing previously undiagnosed individuals and providing rapid access reviews, the clinic optimised patient management in line with National Clinical Programme Respiratory. **Keywords:** Advanced practice, COPD, asthma. **Disclosures:** The authors declares that they have no conflict of interest.

4.27 The Implementation and Evaluation of a Specialist Respiratory Speech and Language Therapy (SLT) Clinic in Tallaght University Hospital (TUH)

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Background: The need for SLT provision in upper airway disorders is identified within international professional guidelines. Specifically, recently published European Respiratory Society guidelines on the diagnosis and treatment of chronic cough state:

• in patients who report upper airway symptoms, fibreoptic laryngoscopy should be performed;

• a trial of nonpharmacological cough control, speech and language therapy intervention should occur

This study and clinic evolved from the fact that there was no Respiratory SLT service for patients attending TUH out-patient service, despite international guidelines recommending same. The respiratory SLT service see patients with symptoms of cough and breathlessness, thought to be associated with laryngeal disorders such as cough hypersensitivity, and inducible laryngeal obstruction (ILO). **Methods:** Referral criteria and pathway were developed for the clinic and outcome measures were collated. **Results:** To date, 35 patients have been referred to the Specialist Respiratory SLT service. A laryngeal nasendoscopy exam has been completed on all patients who have attended the clinic. **Conclusions:** This is the first Specialist Respiratory SLT clinic to be trialled and successfully implemented in TUH with a positive impact on patient care. **Keywords:** Speech and Language Therapy (SLT) **Disclosures:** The authors declare that they have no conflict of interest.

4.28 Impact of Digital Health on the Patient-Provider Relationship in Respiratory Secondary Care Settings: a mixed methods systematic review from Innovative Health Initiative

DRAGON/CONNECT Clinical Research Collaboration (CRC) project.

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Background: Digital healthcare influences the patient-provider relationship. We systematically reviewed the evidence on the impact in respiratory secondary care settings. **Methods:** Seven databases were searched in November 2023. 38 volunteers from European Lung Foundation, DRAGON and CONNECT CRC undertook duplicate screening and data extraction of included studies. Analysis was thematic. **Results**: Of 116 included studies, 32 explicitly explored the patient-provider relationship. Existing frameworks for patient-provider relationships (Ridd) proved only partially applicable. ***Trust*** was foundational and depended on providers' beliefs about the technology. This was obstructed if clinicians expressed fear and scepticism. Care via digital technology was demonstrated through monitoring of patients, which created an emotional presence, making patients feel "***taken care of*"**. ***Connection*** between the provider/patient was enhanced if communication was seamless. Burdensome technology was found to create a disconnect due to disengagement. ***Shared decision-making*** enhanced by self-monitoring devices changed the relationship dynamics and created a more ***equal patient-doctor relationship,*** through improved self-efficacy, and empowerment. **Conclusion:** Digital care is widely used post-Covid, however, the impact on the patient-provider relationship is still under-researched. Seamless connection and strategies to increase trust (both in the technology and in clinician support) are important considerations for strengthening the patient-provider relationship.

Key Words: Respiratory, Digital Health, Patient-Provider Relationship (secondary care)**Disclosures:** The authors declare that they have no conflict of interest

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4.29 How useful is Spirometry in detecting lung function abnormalities in respiratory patients attending an integrated care hub? An audit review of

community based respiratory diagnostic services linked to Connolly Hospital.

Marufa Akter Momo[1,2,3], Catherine Devine[1,3], Megan McGrane[1,3], Darryll O'Hara[1,3], Anna Maria O'Brien[1,3], Tanya Byrne Pratt[2], Abirami Subramaniam[1,3], Aisling McGowan[1,3]
[1]Connolly Hospital, Dublin, Ireland. [2]Atlantic Technological University, Sligo, Ireland. [3]Dublin North West Integrated Care Centre, Cuan Aoibheann, St Mary's Hospital Campus, Phoenix Park, Dublin, Ireland

Background: An integrated care hub full pulmonary function laboratory linked to Connolly hospital opened in July 2023. Spirometry with Bronchodilator response are the only diagnostic tests recorded by the HSE as part of the Asthma and COPD programme pathways (Health Service Executive, 2022). Performing full lung function testing (PFTs) is well established in acute settings, as the additional tests minimise the risk of missed or delayed diagnosis of lung diseases (Bailey, 2012). **Methods:** We conducted a retrospective clinical audit on a cohort of 390 patients attending the service between July 2023 and February 2024. After quality checks, 274 patients were included (table 1), minimum tests performed: Spirometry, Bronchodilator response, DLCO, Lung volumes, FeNO. 161/272 (58%) had normal spirometry, 11/161 (6.8%) = positive BDR

Results (table 2): 49.1% of the test group had at least one abnormal diagnostic test result:

- 18.4% abnormal DLCO
- 14.3% abnormal lung volumes.
- 34.4% elevated FeNO levels.

Conclusion: The study suggests that relying solely on spirometry and BDR for lung function assessment in respiratory patients is insufficient, highlighting the need for a broader range of full lung function tests in the community setting.**Keywords:** Asthma, COPD, Integrated care hub, Lung function tests. **Conflict of Interest:** The authors declare that they have no conflict of interest.
Corresponding Author: Marufa Akter Momo

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4.30 Evaluation of Direct GP Access Spirometry in the Galway City Integrated Care Hub

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[1]Department of Respiratory Medicine, Galway University Hospital, Galway, Ireland. [2]Department of Respiratory Medicine, Galway University Hospital, Galway, Galway, Ireland. [3]Department of Respiratory Physiology, GUH, Galway, Ireland. [4]Galway City Integrated Care Hub, CHO2, Galway, Ireland. [5]University of Galway, Galway, Ireland

Background: GP Access to spirometry is integral to the Enhanced Community Care programme in Ireland. Timely access to spirometry is essential for accurate diagnosis and effective treatment of obstructive airways disease. This study reviews current practices, challenges, and outcomes of direct GP access to spirometry. **Methods:** A retrospective analysis was conducted on direct spirometry referrals

from GPs in the Galway City Integrated Care Hub catchment area. Data was collected on referral patterns, waiting times and test outcomes. **Results:** Over 15-months, since service commencement, 221 patients completed direct access spirometry. The average wait time from referral to spirometry was 54 days. Adequate spirometry technique was observed in 85% of cases. 135 (61%) tests were normal, with 67 (30%) showing an obstructive pattern . Among the 56 with fixed airflow obstruction, 28(50%) were classified as GOLD 1, 23 (41%) as GOLD 2, and 5 (9%) as GOLD 3, with no GOLD 4 cases. **Conclusions:** Direct GP access spirometry is an effective pathway for diagnosing obstructive airways disease. Acknowledging the high proportion of normal tests, further GP engagement is essential to ensure appropriate referrals thereby reducing wait times.
Keywords: GP direct access Spirometry
Disclosure: The authors declare no conflict of interest

Irish Thoracic Society Poster Review & Discussion

Friday 15th November 2024

5: Lung Cancer/Pleural/Surgery

5.1 Perceived efficacy of lymphadenectomy in pulmonary metastasectomy – A Multicentre Thoracic Consultant's view

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Background: Lymph node involvement is one of the important prognostic factors in malignancy and there is a debate about lymphadenectomy in secondary lung cancer (metastases). We aim to review the current evidence and the perception of thoracic surgeons across worldwide centres regarding lymphadenectomy in pulmonary metastasectomy **Methods:** A cross-sectional study was performed with a study population consisting of Thoracic Consultants working across centres worldwide. Likert scale format and open-ended questioning were used to gather perceptions on current practice in the management of lymph nodes in pulmonary metastasectomy and their perception of how management may evolve. **Results:** 68 out of 200 Consultants (34%) completed the survey. 21.9% of them routinely do lymphadenectomy. 47.5% do lymphadenectomy for prognostic reasons. 25.5% believe that there is a survival benefit and a decrease in recurrence after lymphadenectomy. 42.2% believe that with the evolution in immunotherapy, endobronchial ablation, and stereotactic ablative radiotherapy (SABR), the number of patients requiring surgical metastasectomy will decrease. **Conclusion:** There is no strong evidence about the benefit of lymphadenectomy in pulmonary metastasectomy and its impacts on survival or recurrence. Best practice would be guided by randomised control trial. **Keywords:** pulmonary metastasectomy, lymph node dissection, thoracic surgery.
Conflict of Interest: The authors declare that they have no conflict of interest.

5.2 Endo-bronchial Ultrasound Audit At University Hospital Limerick

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Background: Endo-bronchial ultrasound guided trans-bronchial needle aspiration (EBUS-TBNA) is a key diagnostic tool for sampling enlarged mediastinal and hilar lymph nodes, with a sensitivity for diagnosing malignancy quoted at 88 to 100%. This audit aimed to evaluate if the EBUS yield in University Hospital Limerick (UHL) aligns with national and international standards. **Methods**: Fifty-nine samples were taken from February to October

2023. We assessed if the EBUS tissue was sufficient for diagnosis, classifying the procedure as successful if it yielded adequate lymph node tissue. Samples deemed "insufficient" or "scanty" on pathology reports were considered unsuccessful. The standard for comparison for our audit was British Thoracic Society Quality Standards for Flexible Bronchoscopy 2014. **Results**: Of 139 lymph node samples, 100 (71.94%) were adequate. Forty-six of the fifty-nine (77.97%) EBUS procedures yielded sufficient tissue for diagnosis. 26% of the total EBUS procedures resulted in lung cancer diagnosis and the rest of 74% were benign. **Conclusions:** Diagnostic yield rate of EBUS-TBNA in UHL was 77.97%, compared to the BTS standard of 88% for staging lung cancer. Training is necessary to improve diagnostic yields and sensitivity in detecting intra and extra-pulmonary pathology. **Keywords**: EBUS, sensitivity, lymph node, diagnosis Disclosures: None **Conflict of Interest:** The authors declare that they have no conflict of interest.

Reference: Quality standards https://www.brit-thoracic.org.uk/quality-improvement/quality-standards/flexible-bronchoscopy

5.3 Flexible Bronchoscopy and Endobronchial Ultrasound (EBUS) – Review of a single centre experience

[1]Helen Close, [1]Therese Scullion

[1]Altnagelvin Hospital, Derry, United Kingdom

Background Bronchoscopy is essential in evaluating suspected lung cancer. EBUS is another primary diagnostic tool, facilitating cancer diagnosis, staging and identifying causes of intrathoracic lymphadenopathy. Robust audit is vital for ensuring safe and effective diagnostic practices. **Methods** Retrospective data from a single respiratory centre collected from June 2023 - June 2024 compared to national standards by British Thoracic Society (BTS).[1] Standards; the safe use of flexible bronchoscopy, diagnostic accuracy of endobronchial biopsy (>85%), and diagnostic sensitivity for EBUS-TBNA (>88%). **Results** Total of 98 bronchoscopies and 136 EBUS. More cancer diagnoses made via EBUS-TBNA than endobronchial biopsy. 60% diagnoses made via endobronchial biopsy were small cell carcinoma. 24% of EBUS-TBNA showed granuloma, thus essential in diagnoses of sarcoidosis. Our data aligned with BTS standards;

1. No serious adverse events (0%)

2. Visible endobronchial lesions in 10% of Bronchoscopy performed; 90% diagnostic rate.

3. EBUS-TBNA diagnostic sensitivity ; 92%.

Conclusion Our practice aligns with BTS standards, ensuring high diagnostic accuracy and patient safety. EBUS has key role in diagnosis of cancer and non-malignant causes of intra-thoracic lymphadenopathy. **Conflict of Interest:** The authors declare that they have no conflict of interest.

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5.4 First Time Adequacy Rates of Lung Cancer Molecular and PD-L1 Testing at a Tertiary Teaching Hospital

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Background: Integrating targeted cancer therapies for the management of lung cancer and pleural malignancies is particularly relevant. Repeat procedures for the determination of lung cancer molecular profiles are common and use significant resources. Understanding the first time adequacy rates for the various diagnostic modalities employed will help guide clinical decision making for lung cancer diagnostic approaches, permitting earlier targeted therapy for patients diagnosed with lung cancer. **Methods**: We conducted a one-month point prevalence audit of the positivity rate of the initial assessment of molecular biomarkers, including PD-L1 expression and genetic rearrangements, at a national centre of excellence for rapid access lung cancer diagnosis in Beaumont Hospital. **Results:** A total of 77 lung cancer cases were identified during the one-month assessment period. 62 underwent a procedure for diagnosis, bronchoscopic procedures were utilised in 43% of cases, 43% underwent CT-guided biopsy, and 14% via surgical biopsy. The overall positivity rate for first-time biomarker testing in eligible cases (excluding benign tissue) was 62.50%. The mean number of endobronchial passes required to achieve this positivity rate was 4, while the mean number of CT-guided or surgical biopsy cores needed was 3.625. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.5 Is PET-CT essential prior to mediastinal staging of lung cancer with EBUS

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[1]St James's Hospital, Dublin, Ireland

Background : Lung cancer is the fourth most common cancer in Ireland, with over 2500 new cases diagnosed annually**.** In our centre, patients often undergo EBUS prior to PET-CT. We hypothesise that mediastinal staging should not be delayed until PET-CT is completed and proceeding without this imaging modality does not result in unnecessary duplication of procedures. **Methods:** Data on patients who underwent an EBUS in 2023 were collated and categorised based on timing of their PET-CT and need for repeat procedure. **Results**: In 2023, 459 EBUS procedures were performed. 56%(n=258) of cases were done for new diagnosis of lung cancer. In 95 patients who had EBUS prior to PET, 15(16%) of those required repeat EBUS, 7(7%) for repeat mediastinal staging based on PET-CT, the remaining 8(8%) for further molecular analysis. Only 1 case resulted in an upstaging in the final staging. 128 patients had PET prior to EBUS. 32 were upstaged by PET-CT compared to final histological diagnosis as confirmed by EBUS, giving PET-CT a false positive rate of 25% in this cohort. **Conclusion:** While PET-CT is in the diagnostic algorithm in lung cancer, mediastinal staging and tissue sampling should not be postponed if access is delayed. **Conflict of Interest:** The authors declare that they have no conflict of interest.

5.6 Point prevalence Audit of Squamous cell lung cancer at a tertiary lung cancer centre

[1]Joshua Olaniyi, [1]Connie Takacs, [1]Salomy P Mathew, [1]Careline G Kirubakaran, [1]Ross K Morgan, [1]Daniel J Ryan, [1]Emmet O Brien, [1]Imran Sulaiman

[1]Respiratory Department, Beaumont Hospital, Beaumont, Dublin, Ireland

Background: Lung cancer is divided into small cell and the more common non-small cell lung cancer (NSCLC). Within NSCLC adenocarcinoma makes up the majority of cases while squamous cell lung cancer (SqCC) makes up 20-30%. **Methods**: A retrospective 1 month audit was carried out at Beaumont Hospital where a total of 49 lung cancers were identified. Of these 34 (69%) were NSCLC and 8 (23.5%) were SqCC. SqCC patients were predominantly

female (62.5%) with a mean+SD age of 66.75+/-12.73. Additionally 5 (62%) were stage 2 and above, whilst 50% had advanced nodal or metastatic disease. Six (75%) were diagnosed by CT Guided biopsy and 2 (25%) via EBUS. However 2 (25%) needed repeat procedures due to insufficient sampling. For treatment, 3 (37.5%) underwent surgery, 3 (37.5%) received radiotherapy, whilst 2 (25%) received chemotherapy alone. **Conclusion:** The prevalence of SqCC in an Irish based lung cancer centre appears similar to that of international reports. The majority of patients were female and diagnosed via percutaneous biopsy. Although SqCC may not be prevalent it is difficult to treat and presents at a later stage. Diagnostic algorithms and multidisciplinary meetings play a significant role in ensuring early diagnosis and treatment. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.7 Pleural Predictions: Navigating The Diagnosis, Management And Prognosis Of Malignant Pleural Effusions

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Background: Malignant pleural effusion (MPE) complicate 15% of solid cancers. We sought to review approach to MPE in our centre. **Methods:** Pleural fluid specimens received in the SJH Cytology laboratory from 1st January 2021 to 31st December 2023 were included. Positive cytology results were reviewed and adequacy of cell block for ancillary testing for NSCLCa MPE assessed. Chart review of MPE cases in 2023 was performed. **Results:** 184/723 (24%) pleural fluid specimens yielded positive cytology – 45% NSCLCa (adenocarcinoma), 20% gynaecological malignancy, 14% breast malignancy, 10% upper GI malignancy, 11% other. Where commented upon in cytology report, 54% and 43% of NSCLCa pleural fluid specimens provided a cell block adequate for PDL1 and molecular analyses, respectively. Of 35 MPE case charts reviewed, 69% underwent drain insertion, 26% thoracocentesis, and 6% VATS as first intervention. Of 26 patients who survived >28 days, 16 (62%) required further intervention. 63% underwent drain insertion, 13% thoracocentesis, 6% VATS and 19% IPC insertion as second intervention. Median survival post MPE diagnosis was 46 days. **Conclusion:** In practice, pleural fluid specimens are adequate for ancillary testing in approximately half of lung adenocarcinoma MPEs. In SJH, MPE management relies heavily upon chest drain insertion. **Conflict of Interest:** The authors declare that they have no conflict of interest.

5.8. Is there still a role for bronchial washings and brushings in the diagnosis of lung cancer?

[1]Cara M Gill, [1]Donal O'Malley, [1]Siti Amanina Azman, [1]Alaa Bakheet, [1]Eimear Murphy, [1]Muhammad [1]Kashif Rana, [1]Susan C Foley, [1]Mark P Rogan
[1]University Hospital Waterford, Waterford, Ireland

Background: Lung cancer is the leading cause of cancer mortality in Ireland[1]. With the advent of targeted cancer therapies, bronchoscopists must ensure they obtain sufficient tumour cells for histological analysis for accurate molecular testing. Bronchial washings (BW), bronchial brushings (BB), endobronchial biopsy (EBx), transbronchial biopsy (TBx) and lymph node sampling (TBNA) can all be obtained during a single procedure. **Aims:** The primary aim of this study was to assess the accuracy of BW and BB alone to complete lung cancer diagnosis **Methods:** We undertook a retrospective review of all new patients seen in the lung cancer clinic over a consecutive 12 month period. A 'complete diagnosis' was defined as patients who had full molecular subtyping available from BB and BW alone. **Results:** 66% of patients (n=41) who had a diagnosis of lung cancer made from bronchoscopy did not have visible endobronchial tumour or mucosal abnormalities. All of these patients had BB and BW taken at bronchoscopy. A complete diagnosis was achieved from BB and BW alone in only 4% of patients (n=2). **Conclusion:** BB and BW can assist in diagnosing lung cancer. With the advent of molecular therapy, they alone are rarely enough to obtain a complete diagnosis for patients. **Conflict of Interest:** The authors declare that they have no conflict of interest.

5.9. A review of bronchoscopy practices in a tertiary referral centre

Wen Yan Low[1], Mayssan Salman[1], Margaret Higgins[1], Olivia Goltsis[2], Orla O'Carroll[1]

[1]St. Vincent's University Hospital, Dublin, Ireland. [2]University College Dublin, Dublin, Ireland

Background: The bronchoscopy service in our centre is well established but procedural data recorded replicates gastroenterology endoscopy standards. In anticipation of the upcoming National Bronchoscopy Quality Improvement Programme (NBQIP), and in keeping with British Thoracic Society guidelines, we evaluated our practices to identify opportunities for improvement. **Methods:** This was a single-centre retrospective review of all bronchoscopies performed in 2023 and cancellations between October to December 2023. Data were collected from the electronic systems – EndoRAAD and NetDiver. **Results:** 552 bronchoscopies were performed. 50.2% of cases were female, ages ranging 19-92 years. The average procedure time was 26.5±12.4 minutes. Indications included abnormal chest x-ray (35.5%), haemoptysis (19.2%), and mass (17.8%). Midazolam and fentanyl were administered in 98% and 95% of cases with median dosages of 4 milligrams and 50 micrograms respectively. Topical lignocaine 4% use was recorded in 108 cases. Only 19 biopsies were recorded despite 237 EBUS-TBNA performed. 79% (n=15) were diagnostic and suitable for further molecular testing. Between October to December 2023, 48 bronchoscopies were cancelled with 14.5% (n=7) due to pending CT scans. Cancellations are not routinely recorded. **Conclusion:** Data recorded replicating gastroenterology standards do not fully address bronchoscopy needs. This highlights the benefit of NBQIP going forward. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.10 A 5-Year Real-Life Experience of a Tertiary Hospital with a Pleural Service with Indwelling Pleural Catheters for Malignant Pleural Effusion.

Mohammed Mitha[1], Lorraine Thong[2], Donna Langan[2], Helen Mulryan[2], David Breen[2]

[1]Prince Mshiyeni Memorial Hospital, Durban, South Africa. [2]Galway University Hospital, Galway, Ireland

Background: Indwelling pleural catheters (IPC) have been shown to be effective in improving symptoms in patients with malignant pleural effusion (MPE). We aim to report our 5-year real-life experience with IPC for patients with MPE from a hospital with the first established dedicated pleural service in the Republic of Ireland. **Methodology:** This is a retrospective, single-centre study based in a tertiary hospital. All patients who had IPC inserted by the pleural service from 1st of January 2019 until 31 December 2023 (5-year period) were included in this study. Patients' clinical details and histology results were acquired via the hospital's electronic medical record **Results:** There were 55 patients who had IPC insertion performed during the 5-year period. Almost all patients (n=54, 98.2%) reported symptom improvement following IPC insertion. Complication rates were low at 10.9% (n=6). Following IPC insertion, pleurodesis was achieved in 21 (47.8 %) patients. The mean and median time to pleurodesis in all patients were 115.5 days and 94 days respectively. **Conclusion:** IPC is a safe procedure with low complication rates when performed by trained physicians. The additional support of a dedicated pleural service will maximize the benefits of IPC while reducing the complication rates. **Conflict of Interest:** The authors declare that they have no conflict of interest.

5.11 Resectable Pulmonary Carcinoid Tumours: Insights and Outcomes from a Single-Centre Review

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[1]St James's Hospital, Dulbin, Ireland

Background: Pulmonary carcinoid tumours are rare, neuroendocrine tumours accounting for 1-2% of lung malignancies. Subtypes include typical (TC) and atypical (AC). The gold standard treatment for localised pulmonary carcinoid tumours is surgical resection. This retrospective review examines the characteristics, histopathology, and management of this select patient cohort. **Methods:** 191 patients underwent surgical resection in our institution from January 2010 - April 2024. Data reviewed included patient demographics, histopathology, stage and treatment received. STATA was used to perform summary statistics, survival and logistic regression analysis. **Results:** Average patient age was 55 years with 80% TC and 20% AC. 70% were stage 1 with 10% N1 and 18% N2 disease. Lymph node metastasis occurred most frequently at station 7 (33%). Logistic regression evaluated factors influencing recurrence - histology (p=0.037) was statistically significant; N2 disease (p=0.321) and size (p=0.613) were not. Metastatic disease presented most commonly in liver (58%) with a mean time to presentation of 38 months. Logistic regression showed no significant difference in recurrence for patients receiving chemotherapy (p=0.112), when considering histology as a confounder. 5-year survival analysis demonstrated an overall survival rate of 96.3% - 98.7% for TCs and 87.9% for AC's. **Conclusions:** Surgical resection remains the mainstay of treatment for pulmonary carcinoid tumours with an excellent overall 5-year survival rate of 96.3% at our institution. **Conflict of Interest:** The authors declare that they have no conflict of interest **References:**

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5.12 GP Direct Access to Low dose CT scan in the Southern Trust - experience and outcomes in Lung Cancer

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[1]Southern Trust, Craigavon, United Kingdom

Background: The GP Direct Access to Low dose CT scan pilot initially started in the Southern Trust in October 2020. It is now an established service. The new diagnostic pathway was the first to be introduced in Northern Ireland for suspect lung cancer patients. **Methods**: Data has been collected to assess its use and outcomes. From October 2020 to October 2023 there were 3403 referrals received and 2952 scans were completed, with numbers increasing each year. **Results:** 2020-2022 data - 1034 scans completed during this time period. Results showed 60% no significant abnormality, 12% required further follow-up, 18% had another lung condition identified, 12% had another condition identified (not lung) and

3.7% were highly suspicious of cancer. Of the 39 scans that were highly suspicious of cancer, 19 patients had a confirmed diagnosis of cancer, 14 patients had lung cancer and 5 patients were diagnosed with other types of cancer: Metastatic colonic carcinoma; Hodgkins Lymphoma (x2); Renal cancer and Oesophageal cancer. The remaining patients (20) were diagnosed with other lung conditions. **Conclusion:** We believe this is an important and valuable service allowing prompt referral for investigation and ultimately early diagnosis of lung cancer in the Southern Trust. **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest

5.13 From Referral to resolution: Evaluating Surgical Outcomes in Patients referred to Rapid Access Lung Clinic, Mid-West Regional hospital, Ireland

[1]Hira Gul, [1]Zahra Almaa, [1]Muhammad Mohsin Zahoor, [1]Saad Bin-Ejaz, [1]Rosemarie Murphy, [1]Junaid Zafar Sheikh, [1]Aidan O'Brien
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Background: Lung cancer is the leading cause of mortality all over the world. The objective of our study is to evaluate the number of patients referred to rapid Access Lung Clinic (RALC) in Limerick who ultimately underwent lung surgery, assessing the efficiency and outcomes of referral processes. **Methods:** A retrospective study was conducted on patients referred to RALC over the period of 13 months, ranging from 1st March 2023 to 31st march 2024. Data was collected on referral reasons, diagnostic procedures and surgical interventions. The primary outcome was the number of patients who proceeded to the lung surgery following their initial referral. **Results:** During the given time period, 702 new referrals were sent to RALC, University Hospital Limerick, out of these 370 patients underwent bronchoscopies and 146 patients had diagnostic bronchoscopies. 128 of these had primary lung malignancies and 18 had metastatic results from other cancers. Out of 128 patients having primary lung malignancies, 44 (34.37%) patients were referred for and underwent surgical treatment. Of the patients who underwent surgery, 21 (47.72%) were adenocarcinomas, 6 (13.6%) were Squamous cell cancers, 5 (11.36%) patients were carcinoid tumors, 5 patients (11.36%) were Non-Small Cell Lung Cancers (NSCLC), 2 patients (4.5%) were small cell cancers (SCLC) and remaining 6% (1 patient each) had large cell cancer, Mesothelioma and Basaloid carcinoma. The mean time from the date of cancer diagnosis to surgery was 83 days (ranging from 16 days to 150 days) **Conclusion:** The study highlights the effectiveness of RALC in Limerick in facilitating timely and successful surgical interventions for patients requiring lung surgery. The early referral for surgery improves survival rate, leading to improved patient outcomes and further studies are recommended to continue optimizing referral protocols and surgical care in clinical settings. **Disclosures:** The study was not funded and the authors declare that they have no conflict of interest. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.14 Lung Cancer Resection: Is there a role for perioperative inflammatory indexes?

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Background: Perioperative inflammatory indexes can give valuable insights into immune response in patients undergoing lung cancer resection. Dissemination and evasion of tumour cells, impaired cellular immunity and elevated cytokines, due to surgical stress, can make way to recurrence, metastasis and negatively impact immunotherapy response. Inflammatory indexes can be used as a prognostic tools to predict clinical outcomes. These include Lymphocyte: Monocyte ratio, Systemic Inflammatory Response Index (SIRI) and Systemic Inflammatory Index (SII). Elevated pre-adjuvant treatment values predict poor overall survival in

patients with NSCLC, as well as their predictive value in nodal disease and tumour size. **Methods:** Three timepoints; baseline, 1st follow up (2-4 days post-operatively) and 2nd follow up (6-8 weeks post-operatively) for 40 patients were collected. **Results:** Results of our patient cohort show that post-operative complications or nodal disease were not linked with elevated baseline inflammatory indexes. However, raised baseline LMR (p=0.0016), SII (p=0.0042) and SIRI (p=0.0042) were significant to predict tumour size. 52% SIRI and 40% of SII were elevated at baseline. 71% of SII and 57% of SIRI remain elevated 6-9 weeks post-operatively. **Conclusions**: Immune markers remain elevated 6-9 weeks post-operatively, showing on-going dysregulation of immune response. **Conflict of Interest:** The authors declare that they have no conflict of interest

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5.15 Navigation Bronchoscopy In Modern Lung Cancer Diagnostics – An Analysis Of Demographic Factors And Specimen Adequacy For Pdl-1 And Molecular Markers

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Purpose: Electromagnetic navigational bronchoscopy (ENB) is an effective method of sampling high-risk peripheral pulmonary lesions. This study assessed demographic factors and sample sufficiency in ENB performed in a single centre over an 18-month period. **Methods:** Navigational bronchoscopies performed on Medtronic Illumisite™ navigation platform from July 2022 - February 2024 were included. Data collection included lesion site/size, diagnostic yield and sufficiency for ancillary studies. 31 patients were identified, and all patients underwent CT imaging within 60 days of the procedure. **Results:** 74.1% (n=23) of patients underwent ENB for suspected primary lung cancer. Of 31 procedures, the majority were in the upper lobes (61.29%, n=19), with 35.48% (n=11) of lesions in the right upper lobe. 48% of lesions were <2 cm, with 12% of lesions >4 cm. Median nodule size was 2.7 cm maximal diameter. 18 samples (58.06%) were positive for malignancy. 4/31 samples (12.90%) that were negative for malignancy underwent no further investigation following MDM discussion, proceeding with CT surveillance and are deemed true negatives. 5 samples (16.12%) negative for malignancy were subsequently diagnosed with cancer. Sensitivity is calculated at 78.26% with an overall diagnostic accuracy of 81.48%. PDL-1 was sufficient in 93.33% of cases (n=14) of positive malignant samples 77.7% of samples were sufficient for full mutational analysis. An analysis of improvement in diagnostic accuracy revealed a significant improvement between period 1 (Jul22-Mar23) and period 2 (Apr23-Feb24); sensitivity 63.65% vs 91.67% and diagnostic accuracy 66.67% vs 93.33%.

Discussion: ENB provides adequate material for complete molecular diagnosis in patients with non-small cell lung cancer. With appropriate training ENB provides an effective alternative to transthoracic lung biopsy. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.16 The Importance Of Cervical Lymph Node Sampling In The Diagnostic Algorithm Of Lung Cancer

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Introduction: The application of neck ultrasound (NUS) and cervical lymph node sampling (CLNS) is widely reported in the diagnosis of malignancy, sarcoidosis and tuberculosis. There is limited data on the impact of this procedure when performed by respiratory physicians in the diagnostic algorithm for lung cancer. **Objective:** A single-centre study of all malignant NUS and CLNS procedures performed by a respiratory physician 5 years, to assess the number of interventions required to reach a final diagnosis, and sample sufficiency for ancillary studies. **Methods:** A search of laboratory records identified 33 samples positive for malignancy performed by the interventional respiratory unit from Nov 2019 – Nov 2023. 66.6% (n =22) of patients had fine needle aspiration (FNA) alone with 9 (27.2%) combined core needle biopsy (CNB) and FNA, and 2 (6.0%) CNB only. **Results:** In 19/33 patients (57.5%), CLNS was the first investigation. Of the 14/33 patients who had previous investigations, 3/14 (21.4%) patients had previously negative sampling and CLNS provided the diagnosis of malignancy. The remaining 11 patients were upstaged from the previous procedures. Ancillary studies were indicated in 16 cases, of which 68.75% had sufficient tissue for PDL-1 testing and 81.25% achieved molecular marker analysis. In patients with insufficient material, repeat sampling was performed by FNA (n=1), CNB (n=1), EBUS (n=2), with one patient declining further investigation. **Discussion:** Neck ultrasound and cervical lymph node sampling provided the diagnosis with a single investigation in 57.5% of patients in this cohort, with a further 33.3% of patients in whom more invasive procedures could have been avoided if NUS was performed as the initial investigation. Our data shows that CLNS performed by respiratory physicians provides adequate information to guide treatment decisions. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.17 Perioperative lung cancer: To D-dimer or not to D-dimer that is the question?

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Background: Elevated D-dimers have long been used as a non-specific diagnostic tool to predict clotting (pulmonary embolism and deep vein thrombosis). Cross-linked fibrin is also linked with tumour cell angiogenesis and invasion. Elevated preoperative D-dimer (>500ng/mL) is associated with tumour stage, nodal involvement and is a prognostic indicator for recurrence and metastasis. D-dimer testing can be used as an adjunct to cancer screening and as a indicator of recurrence, Elevated levels are associated with a poor overall survival and an increased mortality risk, regardless of stage. **Methods:** D-dimer for 40 patients were collected at baseline, 1st follow up (2-4 days post-operatively) and 2nd follow up (6-8 weeks post-operatively) from patients undergoing lung cancer resection. STATA was used to evaluate statistical relevance of elevated d-dimers. **Results:** 50% of patients had an elevated pre-operative D-Dimer. Elevated baseline D-dimer (>500ng/mL) positively correlated with nodal disease (p=0.032) and size (p=0.003). 97% of patients had a D-dimer of >500ng/mL after 6-9 weeks. **Conclusion:** Elevated preoperative D-dimers are associated with tumour size and nodal involvement in our patient cohort. Elevated d-dimers were noted up to 9 weeks post-operatively in the majority of

patients. **Conflict of Interest:** The authors declare that they have no conflict of interest

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5.18 Pleural pathology in a North Dublin Cohort: Experience of a Tertiary pleural service.

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Background: Accurate clinical, biochemical and cytological data is vital in the understanding of downstream molecular analysis of patients with pleural effusion. **Methods:** We prospectively recruited individuals who presented with a pleural effusion between May 2023 to July 2024. Information on demographics, clinical characteristics, radiological appearance, pleural biochemistry, cytology and further management were collected. **Results:** Eighty-eight patients in total were recruited: 23 (26%) malignant pleural effusion (MPE), 17 (19%) pleural infections, 22 (25%) other benign pathologies, 18 (21%) cytologically negative malignant pleural effusion (CNMPE) and 8 (9%) unclassified to date. In those with pleural infection septations were significantly higher while pleural fluid culture only yielded a pathogenic organism in 18% of cases. Pleural diaphragmatic nodularity, large size on ultrasound and pleural thickening was statistically more prevalent in MPE. Pleural thickness and nodularity elsewhere were not significantly different between the groups. Interestingly, of all cohort survival was worse in the cytologically negative malignant pleural effusion. **Conclusion:** This study provides information on the pleural pathology presenting to a tertiary hospital in Dublin, Ireland. It also highlights inadequacies in current diagnostics namely pleural culture and cytology. Diagnostics may be improved by the application of molecular methods, particularly in those too frail for invasive investigations. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.19 Intrapleural Streptokinase Comparison with Normal Saline in Complicated Parapneumonic Effusions and Empyema

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Background: Empyema thoracis is characterized by pus in the pleural space due to a bacterial infection. Treatment included

observation, therapeutic pleural drainage, intercostal drain insertion, pleural fibrinolytics, medical pleuroscopy with adhesiolysis, and open drainage. **Methods:** A one-year RCT at Shaikh Zayed Hospital's pulmonology ward in Lahore included 60 eligible patients, divided into two groups. Group A received ultrasonography-guided 10-28 Fr chest tube insertion and 50 ml normal saline every 12 hours for three days. Group B received 10-28 Fr chest tubes and six doses of 250,000 IU streptokinase in 50 ml normal saline at 12-hour intervals over three days. **Results:** In Group A, 15 patients exhibited 25% resolution on chest radiographs, 5 patients showed 50% resolution, and 5 patients achieved 100% resolution. In Group B, 3 patients had a 25% resolution, 9 patients achieved a 75% resolution, and 15 patients achieved a 100% resolution. The overall success rate in group A was 33.3%, while that in Group B was 80%. **Conclusion:** The study concluded that intrapleural streptokinase effectively treated empyema and complicated parapneumonic effusions. **Conflicts of Interest:** The Authors declare they have no conflict of interest.

5.20 Outcomes of the Ambulatory Pleural Clinic in a DGH

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Background: The Respiratory Ambulatory Hub, Altnagelvin Hospital opened in 2021 and operates one session weekly for pleural procedures. **Methods:** This Retrospective study reviewed the pleural clinic activity from February 2023 - February 2024. **Results:** 75 patients attended (45 Male, 30 Female). Mean age 67 years (range 18-92 years). Referrals originated from A/E department 12 (16%), Respiratory Physicians 24 (32%), GPs 15 (20%), Acute Medical Unit 10 (13%), Oncologists 8 (10%). 84% were referred with pleural effusions on Chest X-Ray or CT. Other reasons included post Empyema 3 (4%), Pneumothorax 3(4%), Shortness of breath 2 (2.6%) Post Pneumonectomy, Chest pain, Haemoptysis 1.3%. 72 (96%) patients had thoracic ultrasound 36 and 50% had at least one pleural aspiration. Negative for malignancy in 55.5%, 19.4% had Atypia, and 25% metastatic cancer. Repeat pleural procedures were required in 34 (45%) patients- ranging from 1 repeat ultrasound to one patient having 4 repeat aspirations. Other activity in the clinic included review of 3 (4%) patients who had developed complications post lung biopsy, review of patient with indwelling pleural catheter and post lung surgical review. A patient satisfaction survey confirmed 100% positive comments. **Conclusion:** This study shows the pleural clinic is efficient and effective. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.21 Discordant Exudates: A Clinical Conundrum

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Background: Light's criteria is a cornerstone in pleural effusion work-up. Diagnostic uncertainty arises where only one criterion is met –"discordant exudate". We determined the proportion of discordant exudates treated in our centre and assessed utility of Serum/Fluid Protein Gradient and Fluid LDH to improve classification. **Methods:** Pleural fluid samples over 5 years were collated. Clinical case review was performed establishing the clinical classification for discordant exudates. **Results**: Of 1203 samples,297(25%) had sufficient data. 33(11%) were discordant exudates. 11/33(33%) were clinical transudates, and 22/33(67%)clinical exudates. The most common aetiology of clinical transudates was heart failure(n=8/11; 73%) and malignancy in clinical exudates(n=12/22;55%). Most clinical transudates were classified exudative based on Fluid/Serum Protein Ratio(7/11;64%). The

majority of clinical exudates were classified exudative based on Fluid/Serum LDH Ratio or Fluid LDH/ULN LDH Ratio(13/22;59%). 8/11(73%) and 10/11(91%) of clinical transudates were correctly reclassified based on application of SFPG and fLDH. However,10/22(45%) and 13/22(59%) of clinical exudates were incorrectly reclassified as transudates. **Conclusions**: While SPFG and fLDH improved classification accuracy of clinical transudates, a substantial number of clinical exudates were incorrectly reclassified. Caution should be exercised when applying these criteria. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.22 Overview of Pleural Effusion Sampling Practices in a level 4 hospital and adherence to BTS Pleural Disease Guidelines

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Background: Unilateral pleural effusions are commonly encountered in clinical practice for which pleural fluid sampling is required to establish a diagnosis. **Methods:** Retrospective review of pleural effusion sampling practice in our institution against BTS Pleural Disease Best Practice Guidelines 2023. HIPE coding was used to identify patients with a primary diagnosis of pleural effusion from April 2023 - November 2023. **Results:** 48.5% of the effusions during this time period were adequately sampled. 20 %(n=7) had positive cytology. 11% (n=4) had positive microbiology. 68 %(n=12) of the patients had chest drains inserted. 18% (n=7) did not have chest x-rays performed within 24 hours of their pleural intervention. 5% (n=2) had complications requiring intervention post pleural procedure. 2% (n=1) developed re expansion pulmonary oedema post pleural fluid drainage.74 %(n=28) of the pleural procedures were performed by the respiratory team. **Conclusion:** This suggests adherence to BTS guidelines at our institution is suboptimal. An increased awareness of the recommended sampling as per guidelines is required in to fully investigate pleural effusions and to minimise repeated invasive investigations. We have created a pleural fluid sampling checklist to improve adherence to guidelines. We plan for this sampling checklist that will be attached to the US machine. **Conflict of Interest:** The authors declare that they have no conflict of interest.

5.23 "Benign" Pleural Effusions are associated with significant morbidity and mortality

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Background: Malignant pleural effusion is recognised to have a short prognosis. Recent data has shown that benign effusions are also associated with poor outcomes. **Methods:** We obtained all pleural fluid cytology reports at Tallaght University Hospital from January 2022 to January 2023. A final diagnosis was determined for all cases and outcomes were analysed including length of stay (LOS) and mortality. **Results:** Pleural fluid cytological assessment was performed on 129 samples of which 18 were confirmed malignant and 26 were determined to be malignant based on further investigations. Of 85 patients with benign pleural effusions (mean (SD) age 86.5 (14.1) years, 30 female), infection (n=36) and congestive cardiac failure (CCF) (n=18) were the most common diagnoses. Length of stay was highly variable (median [IQR] 19 [9-41] days) with only three outpatient procedures performed. At 12 months follow up, 25% of patients had died. CCF accounted for 21% of benign effusions overall, but 66% of deaths at 18 months. Of patients with parapneumonic effusion, 25% had died by 18 months. **Conclusions:** Irrespective of the underlying cause, the presence of a pleural

effusion is associated with high morbidity and excess mortality. Presence of pleural effusion should alert clinicians to potential poor prognosis. **Conflict of Interest:** The authors declare that they have no conflict of interest

5.24 Enhancing Patient Care Through Portable Handheld Ultrasound: A Direct Comparison Between Handheld and Standard Ultrasound

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[1]Cavan General Hospital, Cavan, Ireland

Background: Ultrasound is becoming more popular in recent years to improve healthcare. With newer technology, ultrasound is getting more affordable and portable. This project aims to enhance patient care through the evaluation and implementation of portable hand-held ultrasound in clinical practice, focusing on lung examinations. Its validity in identifying key findings was tested via direct comparison to standard high end ultrasound. **Methods:** Images from 20 various cases were recorded by a single operator using both portable hand-held and standard ultrasound in a single setting. The images were then assessed by various experienced clinical sonographers from respiratory to intensive care clinicians, nationally and internationally. The portable handheld ultrasound used was mid-range, affordable and without subscription but with wide functionalities. **Results:** Overall, the majority of the assessors agreed that compared to standard ultrasound, the quality of portable ultrasound is lower. However, all agreed that portable handheld ultrasound is non-inferior when it comes to making relevant clinical decisions. **Conclusion:** This project shows that portable handheld ultrasound can be used in clinical settings without compromising clinical decisions. Further evaluation with direct comparison of various types of handheld ultrasound on different organs will further provide input on its validity to enhance patient care. **Conflict of Interest:** The authors declare that they have no conflict of interest.

5.25 Lymphocytic Pleural Effusions: Aetiology And Frequency In University Hospital Limerick

Junaid Zafar Sheikh[1], Zahra Almaa[1], Muhammad Ammar Iqbal[1], Nyyren Zaffar[2], Aidan O'Brien[1]

[1]University Hospital Limerick, Limerick, Ireland. [2]Portiuncula University Hospital, Portiuncula, Ireland

Background: Lymphocyte-predominant pleural effusions frequently appear in pleural fluid analyses. Diagnosing these effusions usually involves clinical evaluation, imaging, and thoracentesis. Despite thorough investigation, 15-30% of these effusions remain idiopathic. The most common causes are tuberculosis (TB) and malignancy, but other potential causes include rheumatoid arthritis, chylothorax, yellow nail syndrome, sarcoidosis, and uremia. Given the diverse differential diagnoses, a thorough understanding is essential. **Methods:** We defined lymphocyte-predominant pleural effusion as an exudative effusion with lymphocytes constituting over 50% of the total white cell count. We retrospectively reviewed patients from University Hospital Limerick who had US-guided thoracentesis between July 7, 2024, and July 7, 2024. **Results:** Out of 76 patients who underwent US-guided thoracentesis, 17 had transudative effusions and were excluded. Of the 59 patients with exudative effusions, 39 had lymphocytic pleural effusions: 16 were malignant, 2 had empyema, and 21 were nonspecific. **Conclusion:** Lymphocytic pleural effusions are common and often nonspecific. These cases require diligent follow-up, including repeat thoracentesis and imaging every 3 months initially, then every 6 months, as nonspecific effusions reveal diagnosis upon later investigations. **Conflict of Interest:** The authors declare that they have no conflict of interes

5.26 Pneumothorax management in a tertiary centre in Ireland

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[1]Tallaght University Hospital, Dublin, Ireland

Background: Conservative management of primary spontaneous pneumothorax (PSP) is successful in 85% of patients in a selected population and may reduce the risk of PTx recurrence at 12 months (1). **Methods:** All pneumothorax identified on chest x-ray in patients attending the emergency department from January 2021 to May 2022 were identified by screening radiology reports. Medical charts were reviewed to assess management of PSP. **Results:** Of 66 pneumothorax identified, 22 were PSP. Four conservatively managed patients (n=7) were admitted for a median [IQR] of 2 [2 – 2.5] days. All had <20% (Collin's method) pneumothorax, median [IQR] 11.25% [9.1 – 13.4]. None of those conservatively managed required an acute intervention. All others underwent a procedure (seldinger, n = 12, needle aspiration n = 1, surgery n = 2). One patient had clinical signs of tension but all others had stable vital signs at presentation. LOS was median [IQR] 4 [2 – 9] days for those admitted and PSP accounted for 104 hospital bed days. **Conclusion:** Development of PSP management pathways in the ED with appropriate pleural service follow-up may reduce the rate of procedural intervention and hospital days. **Conflict of Interest:** The authors declare that they have no conflict of interest

Irish Thoracic Society Poster Review and Discussion

Friday 15th November 2024

6: General Respiratory 1

6.1 The use of domiciliary Non Invasive Ventilation in a District General Hospital

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Background: Domiciliary NIV was commenced in this District General Hospital (DGH) in 2001. The aim of this study was to assess the numbers of patients on home NIV in 2023 and compare with data from 2009 and 2016. **Methods:** All data on patients on the NIV database was reviewed. Age at commencement of NIV, reason for commencement and duration of treatment were recorded. This data was compared to data from 2016. **Results:** By December 2023, 214 patients had commenced home NIV, compared to 91 in 2016 and 38 in 2009. The biggest increase in numbers of people on domiciliary NIV in 2023was between the ages 50-80. Thirty one patients commenced NIV in this age group in 2016 and 160 in 2023. Most patients (58%) in 2023 are on NIV because of COPD/Obstructive sleep apnoea (OSA)/obesity hypoventilation syndrome (OHS) overlap. **Conclusions:** The number of patients on NIV has increased significantly in this DGH. The biggest increase is in the patients with COPD/OSA/OHS overlap. This number is expected to continue to increase due to increasing levels of obesity. **Conflict of Interest:** The authors declare that they have no conflict of interest. **Disclosures:** There are no disclosures.

6.2 An analysis of care needs of patients with Duschenne Muscular Dystrophy

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Background: Duchenne Muscular Dystrophy (DMD) is an inherited progressive, ultimately fatal disease of skeletal muscle wasting with cardiomyopathy and respiratory muscle failure. Recent advances in cardiomyopathy management and non-invasive ventilation have improved survival. A multidisciplinary clinic, including respiratory, cardiology and neurology, has been established in Beaumont Hospital to care for these, following transition from paediatrics. **Methods**: A retrospective chart review was undertaken of all patients attending the specialist DMD clinic. Data collected on respiratory, cardiac and neurological status, medications, mobility and swallow deficits. **Results:** Forty patients with DMD attend the service. Data on 39 was available for analysis. All are male, with a median age of 22.3years (range 17.4-36.9). 58% of patients require assisted ventilation, wearing NIV from 5-20h/day, 71% have cough-assist devices, while 15% require mouth-piece ventilation. 92% of patients have cardiac disease. 48% continue on steroid maintenance therapy with a range of regimens. **Conclusions**: Our service analysis highlights the complexity of patients with DMD. Cardiac disease is extremely prevalent, and over half of patients require assisted ventilation. As respiratory and cardiac failure are the most common causes of death in this population, our analysis highlighting the importance of a multi-disciplinary review to best manage these diseases concurrently. **Conflict of Interest:** The authors declare that they have no conflict of interest.

6.3 Review Of Palliative Care Needs Of Lung Transplant Candidates And Recipients At The Mater Misericordiae University Hospital: A Service Evaluation

Mark Ward[1], Laura Monghan[1], Elaine Deane[1], Karen Ryan[1,2,3], Mairead Doherty[1,2], Michelle Murray[1,3], Brenda O'Connor[1,2,3]
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Background: Patients with advanced lung failure including patients on the active lung transplant list and post-transplant patients experience significant symptoms necessitating palliative care support. We sought to review symptoms, medications and palliative care input in these patients at end of life. **Methods**: Retrospective review of patients who died under transplant team from 01/01/2022 - 31/12/2023. Data collected using UK National Audit of Care at the End of Life. Demographics, symptoms, medication use and palliative care input during final admission were recorded. Descriptive statistics were generated. **Results**: N = 23 (13 pre-transplant, 10 post-transplant). Mean age 56 years (range 30-75). Most prevalent symptoms: dyspnoea (91%), agitation (55%), pain (48%), cough (45%). Pre-transplant patients had higher mean daily opioid requirement in last 72 hours compared to those post-transplant (136.78mg versus 42.64mg). Opioid dose increased by 452% in pre-transplant and 952% in post-transplant across last 72 hours. Mean midazolam dose on day of death was higher in pre-transplant patients versus post-transplant (44.0mg versus 31.38mg). **Conclusions**:

- Patients with advanced lung failure have high symptom burden at end of life
- Medication needs increase substantially in last 72 hours

- All team members involved with advanced lung failure patients need education on symptom management as they differ to other pathologies.

Key words: Lung transplant; Palliative care
Conflict of Interest: The authors declare that they have no conflict of interest

6.4 Mesenchymal stromal cells attenuate immunotolerance in a model of sepsis-induced acute lung injury

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Background: Sepsis-induced acute respiratory distress syndrome (ARDS) is a secondary lung disease arising from an initial infection. Approximately 40% of sepsis patients are re-hospitalised due to an aberrant host response and increased vulnerability to subsequent infections. Commonly termed 'immunotolerance', the immune response shifts toward a refractory state, leading to immune dysfunction and impaired pathogen clearance. Mesenchymal stromal cells (MSCs) are an attractive potential therapy for ARDS, renowned for their capacity to promote resolution of inflammation and enhance repair. **Methods:** A sepsis-induced acute lung injury (ALI) preclinical model was used to investigate the role of immunotolerance in ARDS. C57BL/6 mice received 2mg/kg of LPS intratracheally followed by a single dose of hBM-MSC intravenously after 4hrs. To determine the level of immunotolerance in LPS-ALI mice, bone marrow-derived macrophage (BMDM) functionality was also investigated. **Results:** We have demonstrated that LPS-ALI mice have increased pro-inflammatory cytokines TNFα and IL-6 in the bronchoalveolar lavage fluid and MSCs significantly reduced these markers. To investigate the impact of ALI on macrophage functionality, BMDMs isolated from mice after LPS challenge demonstrated an immunotolerant phenotype in response to LPS restimulation *ex vivo*. **Conclusions:** MSCs modulate the inflammatory response associated with acute lung injury, demonstrating their potential therapeutic role to attenuate immunotolerance in a preclinical model of ALI. **Conflict of Interest**: The authors declare that they have no conflict of interest

6.5 A Systematic Review of the Contribution of Small Animal Ex vivo Lung Perfusion Models to Lung Transplantation Research

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Background: Lung transplantation (LTX) has been limited worldwide due to viable donor shortage. Extensive research has been carried out using ex-vivo lung perfusion (EVLP) in attempt to address this issue. This systematic review sought to assess the role of small animal models in EVLP research focusing primarily on re-perfusion injury (RPI). **Methods:** Using a predefined pro forma, a strategic literature search was performed extracting all relevant data from included studies. Qualitative synthesis using thematic analysis was used to present key effect measures. Methodology quality, bias risk, and certainty assessment was performed using the Modified Downs and Black Checklist and a GRADE-CERQual approach. **Results:** In total, 13 studies comprising of 10 rat-based and

three murine-based DCD models met inclusion criteria. All included studies investigated RPI, either as a primary or secondary outcome, exploring alternative EVLP protocol variables, potential inflammatory and proteomic RPI markers, and novel RPI targeted therapies. **Conclusions:** The rat model was found to be the most established and contributing small animal EVLPresearch platform. Collective findings of these studies all appear promising in mitigating RPI incidence and improving LTx success. **Keywords:** Lung Transplant; Ex-vivo lung perfusion.**Conflict of Interest**: The authors declare that they have no conflict of interest **Funding**: This study was non-funded.

6.6 Ex-Vivo Lung Perfused Porcine Lungs as a Surgical Research Tool

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Background: Ex-vivo lung perfusion (EVLP) has been widely used as a tool to increase the donor pool of marginal lungs for lung transplant. Current research is carried out on animal models such as porcine animal models for pharmaceutical purposes and to study lung function post EVLP. To date surgical research using EVLP lungs has been scarce. **Methods:** Two 20kg porcine models were assessed for viability using the Toronto EVLP Protocol. Hourly blood gas analysis, airway pressure, volumes, peripheral vascular resistance, and dynamic compliance of the lungs were assessed over 24 hours. The lungs were perfused with a high glucose, electrolyte enriched media. They were ventilated at recommended Toronto EVLP airway pressures (0.7mL/kg). **Results:** Blood gas analysis showed increasing lactate from 0.8-12 between the two porcine lungs. Pulmonary vascular resistance increased as expected over the course of 24 hours from 1029-2623dyns/cm^3. Airway pressures and volumes remained consistent throughout the EVLP. Dynamic compliance of the lungs decreased over the 24 hours and varied between 4-6cmH2O. **Conclusions:** EVLP Porcine models can be used as a surgical research tool due to their stability in small volume studies over a period of 24 hours. **Keywords:** Lung Transplant, EVLP, Regenerative Medicine. **Disclosures:** **Funding:** This research was supported by grant P1-06 from CURAM. **Conflict of Interest**: The authors declare that they have no conflict of interest.

6.7 Re-Audit of Non-Invasive Ventilation (NIV) Practice in a Level 3 Hospital

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Background: BTS guidelines state that NIV should be given in appropriate clinical areas by trained staff using optimal settings[1]. An audit performed last year revealed suboptimal BTS adherence and NIV quality in our hospital, hence a NIV pathway was introduced. This re-audit assessed for improvement post intervention. **Methods:** A retrospective review of 11 patients, identified using HIPE coding, admitted to Wexford General Hospital with Type 2 respiratory failure (T2RF) whom received NIV from July to December 2023. **Results:** Average age was 69. 64% had COPD. 31% were on LTOT pre-admission and 55% had NIV prior. Initial audit average age was 67, 84% had COPD, 27% were on LTOT and 38% had NIV prior. In both groups, all patients had T2RF requiring NIV on initial gas. 92% had chest X-ray before NIV. Ceiling of care documentation improved from 38% to 91%. NIV checklist completion decreased to 60% from 69%. Average initial pressures were the same (IPAP 15, EPAP 5). All patients had repeat ABG's; 55% within one hour versus 61.5% in

the initial audit. Setting adjustment remained suboptimal with inappropriate adjustments in 64% compared to 54%. However, over-all outcomes were improved with acidosis resolution rate of 100% versus 77%. **Conclusion:** BTS guidelines adherence improved but remains suboptimal. Checklist completion rates decreased by 9%, nevertheless, the 53% improvement in ceiling of care documentation has significant clinical implications. Further NIV education is needed, particularly on setting adjustment. Education sessions are planned with a re-audit to follow. **Keywords:** Type 2 respiratory failure (T2RF), Non-Invasive ventilation (NIV).

Disclosures: Funding: This audit did not receive any funding. **Conflict of Interest:** The authors declare that they have no conflict of interest. **Audit number**: A23CLIN397

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2. Adults BG for the VM of AHRF in. Ventilatory-Management-of-Ahrf-1. 2016;71(April):4–44.

6.8 Non-Invasive Ventilation Teaching Initiative (QIP)

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Background: Non-invasive ventilation (NIV) is increasingly used in hospitals to treat acute decompensated type II respiratory failure (T2RF). During undergraduate training, there is little emphasis on the practical aspects of NIV, resulting in inappropriate prescription and incorrect use. **Methods:** A series of NIV teaching sessions was trialled at the SWAH in order to familiarize staff with the British Thoracic Society (BTS) guidelines, indications and contraindications, escalation and de-escalation, and troubleshooting issues. Each session included a theoretical section, case discussions, and hands on experience with NIV machines. Participation was open to both medical and nursing staff together in a novel approach to facilitate open discussion and understanding between the various grades involved with NIV delivery. The session was delivered monthly over a period of six months. Good attendance was noted across all grades with presence from other hospitals within the trust. Attendees filled out a self-assessment form prior to and following their NIV teaching session. **Results:** This self assessment showed an increase in understanding and confidence across all aspects of NIV administration. As a result of this trial, NIV teaching has been added to the list of teaching sessions included in the induction timetable for new trainees at the hospital. **Conflict of Interest:** The authors declare that they have no conflict of interest.

6.9 A Quality Improvement Project Improving the delivery of Non-Invasive Ventilation in patients with Acute Hypercapnic Respiratory Failure

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Background: Acute hypercapnic respiratory failure (AHRF) complicates approximately 20% of acute exacerbations of COPD. It signals advanced disease, prognosis and future hospitalisations. Management of AHRF is variable as highlighted in NCEPODs report 2017. Several concerns were raised in the BTS NIV Audit 2019 including staffing levels, inadequate monitoring and lack of confidence.

Quality Improvement helps service delivery and patient outcomes in AHRF. **Methods:** Using BTS NIV audit tool 2019 as a guideline, we audited our own practice to improve patient safety and service development. 25 patients were identified over one month period, with 14 included in our data analysis based on inclusion criteria. Data was collected manually and retrospectively. We performed a survey on our current registrars asking about their confidence in managing AHRF and NIV. **Results:** 90% of trainees felt they needed more training in managing AHRF, with 63% saying they lacked confidence. In 64% of cases it took over 4 hours before the patient was reviewed by a respiratory physician and 21% required over 14 days in hospital. **Conclusions:** Improvement in training will help delivery of NIV. Staffing levels and ongoing pressures within our NHS remain an issue. Our new flowchart has significantly improved outcomes. **Conflict of Interest:** The authors declare that they have no conflict of interest.

6.10 PRO-SIM: Acute NIV Simulation Education for Internal Medicine Trainees

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Background: Troubleshooting acute NIV is a commonly encountered problem by medical registrars. IMTs are at a critical progression stage where simulation training is mandatory. Whilst simulation courses have become mainstay in Northern Ireland, none at present focus on acute NIV. **Methods:** A pilot simulation course was developed with the aim of developing technical and non-technical skills in the management of acute NIV using realistic scenarios combined with a novel learning tool. A pre- and post-course questionnaire was completed by each candidate using a Likert scale (1 to 5 - 1 = highly disagree; 5 = highly agree) for 3 domains - clinical indications, NIV practicalities, and communication. A pilot course was delivered to 8 IMTs on 03/06/2024 at Ulster Hospital Sim Suite. 100% of participants found the course helpful. Mean scores were significantly higher in the post-course questionnaire in all domains, especially in trainee's confidence in managing acute NIV in patients with restrictive lung disease (2.57 to 4.50), practicalities of NIV circuit set-up (1.57 to 4.75), and communicating to patients (2.57 to 4.88). **Results:** This pilot demonstrated feasibility of delivering an acute NIV simulation course and shows promising results for improving the knowledge and technical ability of acute NIV management for future medical registrars. **Conflict of Interest:** The authors declare that they have no conflict of interest.

6.11 Evaluation of High Flow Nasal Oxygen Therapy in Acute Respiratory Failure

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Background: High Flow Nasal Oxygen (HFNO) therapy has shown significant benefits in managing acute respiratory failure, including improved oxygenation and reduced intubation rates compared to conventional oxygen therapy. Despite its potential, the utilisation of HFNO remains under explored. **Methods:** We conducted a prospective study involving patients who were initiated on HFNO over a one-week period. Data was collected on arterial blood gases (ABG) results prior to starting HFNO, HFNO settings including temperature and flow, and whether oxygen was formally prescribed and target saturations were documented. We compared the patients' actual oxygen saturations with the documented targets and guideline-recommended target saturations. Additionally, we reviewed the clinical reasons for initiating HFNO and assessed whether clear escalation plans were documented. We also evaluated the alignment of hospital practices with established clinical guidelines **Results:** Preliminary findings suggest the majority of patients were started on HFNO for various reasons. There is variability

in adherence to target O2 saturations and documentation of escalation plans. These findings indicate potential areas for improvement in the use of HFNO. **Conclusion:** While HFNO shows promise in managing acute respiratory failure in an Irish setting, our findings highlight the need for better adherence to prescription guidelines and improved documentation practices.

Conflict of Interest: The authors declare that they have no conflict of interest.

6.12 High flow nasal cannula (HFNC) oxygen usage in Naas General Hospital

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Background: HNFC has gained popularity as an early intervention in a wide variety of acute areas as an efficient means of respiratory support alongside conventional oxygen and non-invasive ventilation. Since the recent pandemic there has been growing confidence in the application of these devices, which have clear advantages in improving ventilation and oxygenation in the appropriate patients, however thus far as there is only limited evidence to support its use and further robust evidence is required(1). **Method:** HIPE data was examined for the year 2019 and 2023 for patients using HFNC via the AIRVO device, in order to examine the usage pre and post COVID pandemic. **Results:** In 2019, 207 patients were treated with HFNC compared to 328 patients in 2023. **Conclusion:** In this current review we observed 50 % increase in the usage of HFNC pre and post COVID pandemic. The audit requires further study to understand where this modality is being utilised, for which conditions and local recommendations made to guide its use in line with ERS guidelines (1). **Key Words:** High flow nasal Cannula (HFNC), AIRVO, COVID. **Disclosure:** We declare that we have no conflict of interest nor have received any grant from agencies in the public or commercial to fund this poster. **Conflict of Interest:** The authors declare that they have no conflict of interest. **References;**

(1) European Respiratory Journal 2022 59: 2101574; **DOI:** 10.1183/13993003.01574-2021

6.13 Non-invasive ventilation for acute hypercapnic respiratory failure, a quality improvement project

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Background: The use of non-invasive ventilation (NIV) in the treatment acute respiratory failure has proven to limit the need of intubation, duration of hospital admission and mortality[1]. The smart aim was to increase the percentage compliance with NIV Standards of Care* from 0% to 100% by July 2025 in patients presenting with hypercapnic respiratory failure due to AECOPD in MUH. **Methods:** Following on our previous QI project the NIV prescription sticker was used to standardise NIV prescription and documentation. Monthly data was collected on 10 charts, and the focus was on NIV prescription/documentation on the medical notes, timings of ABGs, escalation plan, and respiratory team referral. **Results**: Ten charts were randomly selected to assess compliance with NIV standards of care. 100% were appropriately prescribed NIV. 57% of patients had documented NIV prescription. None of the patient had escalation and resuscitation plan documented. One out of the ten patients had their repeat ABG carried out within the first hour of NIV initiation. A respiratory consultant reviewed 85% of the patients and .71 % had

respiratory follow up arranged on discharge. **Conclusion:** The overall result highlights gaps in standard of NIV therapy in our cohort. Ongoing NIV education on the use of NIV prescription sticker and monitoring of NIV will be provided. Change ideas will focus on improving NIV prescription compliance and timely ABGs and documentation of escalation/resuscitation plans.

Conflict of interest: All authors declare they have no conflict of interest.

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Abbreviations: NIV: Non- Invasive Ventilation/ AHRF: Acute hypercapnic respiratory failure

6.14 Respiratory care in Motor Neuron Disease (MND): a GUH service review

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Background: NICE guidelines recommend Non Invasive-Ventilation (NIV)discussion with MND patients soon after the diagnosis or once respiratory function declines and to consider NIV trial if the clinical picture or the parameters of pulmonary function test indicate. **Methods**: In Galway University Hospital patients diagnosed with MND are routinely followed up in a neurology MDT clinic every 3 months. A new pathway was developed to facilitate those requiring respiratory assessment. Patients with respiratory symptoms and/or reduced SNIP/peak cough flow were referred directly to the respiratory clinic by the neuro physiotherapist. Each patient underwent a comprehensive assessment. The assessments were performed by a multidisciplinary team, including respiratory physician, respiratory physiotherapists and respiratory physiologists. **Results:** Findings revealed that 82% of the patients referred met the criteria for NIV initiation due to signs and symptoms of hypoventilation. Patients who met the criteria for NIV commenced NIV the same day as their appointment. Time from referral to NIV initiation was 15(10–28) days. Earlyintervention with NIV is associated with improved symptom management, reduced hospital admissions, and enhanced patient comfort. **Conclusion:** This study underscores the importance of timely NIV assessment in MND patients, demonstrating the efficacy of a multidisciplinary approach in line with evidence-based guidelines to optimize patient outcomes. **Conflict of Interest**:The authors have no declarations or disclosure to make

6.15 Assessing the role of Computed Tomography Pulmonary Angiograms and biomarkers in diagnosing right heart strain related to acute pulmonary embolisms

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Background: To assess whether Computed Tomography Pulmonary Angiogram (CTPA), troponin and NT-pro-BNP predict evidence of right heart strain (RHS) in patients with acute pulmonary embolism (PE) when compared with transthoracic echocardiography (TTE). **Methods:** 656 patients had CTPAs performed over 6 months at a tertiary university hospital. Studies positive for PE were then separated into those with and without reported CTPA evidence of RHS. TTE, troponin-T, NT-pro-BNP and D-Dimer were assessed and potential relationships explored. **Results:** 128 (19.5%) studies were

positive for acute PE. 25 patients with RHS on CTPA had TTEs, with 16 showing evidence of RHS. 39 patients with PEs and no CTPA-reported RHS had TTEs, with 7 suggesting RHS. CTPAs showed a 69.6% sensitivity and 78.0% specificity in predicting RHS. NT-pro-BNP (cut-off 300pg/ml) and troponin-T (cut-off 34ng/L) showed higher sensitivity, 92.9% and 75% respectively, and lower specificity, 33.3% and 58% respectively, than CTPA. 329/658 (50%) had an alternative explanation for symptoms on CTPA, meaning only 30.5% of patients had no explanation for symptoms. **Conclusions:** CTPAs don't show reliable sensitivity and specificity in predicting RHS. Patients diagnosed with PE should get TTE regardless of whether RHS is evident on CTPA or not. **Keywords:** PE, CTPA, right heart strain, TTE **Conflicts of interest:** The authors have no conflicts of interest

6.16 Computed Tomography Pulmonary Angiography (CTPA) pre-test probability and outcomes in University Hospital Waterford

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Background: The purpose of this study was to conduct an audit against best clinical practice guidelines on computed tomography pulmonary angiography (CTPA) at University Hospital Waterford (UHW). The primary objective was to assess the adequacy of clinical details provided in the patient history. Secondary objectives were to assess scan outcomes. **Methods:** A retrospective review of all CTPAs performed across March/April, 2024, at UHW was conducted. CTPA requests were assessed for use of pre-test scoring tools as per National Institute for Health and Care Excellence Guidelines. CTPA reports were reviewed for secondary outcomes of this study. **Results:** A total of 220 CTPAs were reviewed. Pre-test validated scoring systems were documented in only 39% of cases. 11% of scans were positive for pulmonary emboli (PE). 194 scans documented non-PE findings with further investigations recommended in 17% of cases. **Conclusion:** In spite of the guidelines on the use of validated pre-test scoring systems, these were documented in less than half of cases. This study also demonstrated the low rate of positive studies for PE (11%) (guidance from The Royal College of Radiologists target of 15-37%), as well as significant rate of follow-on investigations. This serves to underpin the importance of appropriate referrals. **Conflicts of interest:** The authors have no conflicts of interest

6.17 Pulmonary hypertension in Hereditary Haemorrhagic Telangiectasia:Clinical characteristics and treatment patterns in Ireland

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Background: Pulmonary Hypertension (PH) is a serious complication of Haemorrhagic Telangiectasia (HHT) To define the clinical characteristics, treatment patterns and outcomes of patients with HHT referred to the Irish National PH Unit (NPHU) between 2010 and 2022. **Methods**: Patients with HHT and PH referred to the NPHU between 2010 and 2022 were included in this retrospective study. **Results:** Of the 9 HHT patients referred to the NPHU during this study period, 8 were diagnosed with PH. 7 were diagnosed with group 1 PAH and 1 was diagnosed with Group 5 PH. Five patients had a family history of HHT and genetic mutations were identified in 75%; 5 mutations in the ACVRL-1 gene and 1 in the endoglin gene. The median age at PH diagnosis was 56 years and the median pulmonary arterial pressure at diagnosis was 48mmHg. 7 subjects were treated with PH specific therapies. 4

patients were deceased at the end of the study period, with a median duration of 3 years between PH diagnosis and death. **Conclusion:** PH in HHT is frequently multifactorial and is associated with a high morbidity and mortality. We outline the clinical and treatment characteristics of this cohort in this single centre study. **Conflicts of interest:** The authors have no conflicts of interest.

6.18 Real-World journey of patients with suspected Pulmonary Hypertension: insights from the Irish National Pulmonary Hypertension Unit

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Background: Pulmonary Hypertension (PH) is an uncommon, chronic, progressive, debilitating and life shortening condition characterized by raised pulmonary arterial pressures. It may be classified into 5 groups based on similar patho-physiology, clinical characteristics and response to treatment. Group 1 PH or Pulmonary Arterial Hypertension (PAH) and Group 4 PH or Chronic Thrombo-embolic Pulmonary Hypertension (CTEPH) have evidence based treatment options available. **Methods:** Retrospective, observational study of all patients with suspected PH referred to the Irish National Pulmonary Hypertension Unit, between January and December 2023. **Results:** Of 97 suspected PH patients (mean ± SD age 62±18 years, female gender 69%), 30% had PAH, 14% had CTEPH, 28% had PH associated with left heart disease, 10% had PH associated with lung disease and or hypoxia, 1% had PH with unclear or multifactorial mechanisms and 16% had no evidence of PH. The mean waiting time from referral to clinic appointment was 130 days. PH specific targeted therapy was offered to 36% of patients. **Conclusions:** In this study there was a significant delay in reviewing new referrals. A minority of new patients reviewed were offered PH therapy. An additional triaging service by the PH physicians could address this inefficiency. **Conflicts of interest:** The authors have no conflicts of interest

6.19 Correcting haemoglobin in DLCO testing: The Importance of correcting DLCO for Hb in haematopoietic cell transplant patients

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Background: Patients who attend haematology departments in the work-up for hematopoietic cell transplants are subject to the Hematopoietic Cell Transplant Comorbidity- Index (HCT-CI) which predicts post-transplant morbidity and mortality. DLCO measurement is required during this process and is influenced by the patient's serum haemoglobin levels. This project examined the effect of using point-of-care techniques to measure haemoglobin and the impact of using an accurate live haemoglobin reading as part of DLCO reporting. **Method:** DLCO measurements were taken from a group of 40 pre-transplant patients before and after inputting measured haemoglobin levels and compared the results. A further test group of 19 post-transplant patients were examined using the same methods to compare pre and post correction DLCO. A paired t-test was carried out to examine the significance of inputting correct haemoglobin in both test groups. **Results**: DLCO when corrected for Hb was higher in the pre-transplant group and this was statistically significant (p = 0.0001). There was no significant difference seen in the post-transplant group (p = 0.36061). **Conclusion:** The clinical utility of the HCT-CI tool can be improved when DLCO is reported

corrected. This study indicates that pre-transplant patients will benefit from routine correction of their DCLO for Hb. **Conflicts of interest:** The authors have no conflicts of interest

6.20 Introduction of Improved Quality Assurance Practices in a Pulmonary Physiology Department

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Background: We investigated quality assurance within the department over a 6 month period (July-Dec 2023). A retrospective pulmonary function data analysis of 1798 adult patients between 18-95yr was captured using an excel spreadsheet. A new grading system was introduced for assessing repeatability of technically acceptable manoeuvres during testing. The parameters for grading were: Spirometry FEV1, FVC and DLCO. We assessed the percentage of Spirometry where the variability of measurements was less than 150ml and DLCO manoeuvres where within 10% for both trials. Agreed KPI of >90% for Spirometry and 85% for Diffusion Capacity. **Results**: Spirometry: 1798 adult patients had Spirometry testing completed with a 89% (A) quality mark. Over 6 months, on average 89% of measurements met the repeatability criteria of 150ml. The final 3 months at least 91% of measurements met the criteria. Diffusing Capacity: 1798 patients attempted a DLCO gas exchange test with a 83% (A) quality mark. Over 6 months, on average 83% of measurement met the criteria Vin/VC >85%. For the final 2 months 88% met the criteria. **Conclusion:** This quality assurance initiative demonstrates we are reaching our KPI targets. QA is a key component for Physiologists working in a Pulmonary Physiology Department. **Conflicts of interest:** The authors have no conflicts of interest

6.21 Inspiratory flow volume loop abnormalities: in the eye of the beholder

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Aim: Measure inter-rater agreement of respiratory physicians interpreting inspiratory flow loops (iFVL).
Background: The inspiratory limb of spirometry can reveal upper airway obstruction and functional abnormalities including inducible laryngeal obstruction. 2005 ATS guidelines recommend using MIF50%/MEF50% to identify inspiratory obstruction, a value not typically reported. Visual criteria for abnormal iFVLs include presence of a plateau, oscillations, or a biphasic shape within the inspiratory limb, all prone to variable interpretation. **Methods:** 334 spirometry tests over a three-month period were retrospectively selected. Spirometry values, clinical details and original report were redacted. iFVLs were reviewed by 3 independent physicians, coding iFVLs normal/abnormal based on visual inspection alone. Inter-rater agreement was measured using Krippendorf's alpha in the *irr* package in R. Where ≥2/3 assessors coded any iFVL as abnormal, the original clinical report was reviewed.
Results: Inter-rater agreement across 324 included cases was weak (alpha=0.455). 64 cases met 2/3 consensus as abnormal (of which 50% met full 3/3 consensus as abnormal). Of the 64 cases, 12% were formally reported abnormal. 19% of cases were officially reported abnormal in the full consensus cohort. **Conclusions:** Interpretation of iFVL is prone to significant variability. Better diagnostic approaches are needed to improve reproducibility and reliability of interpretation.
Conflicts of interest: The authors have no conflicts of interest

6.22 The Prevalence of Abnormal Pulmonary Function Tests among Potential Liver Transplant Patients

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Background: Pulmonary abnormalities are common among liver disease patients due to liver disease itself, co-morbidities etc. Pre-operative Pulmonary Function Tests are useful for identification of potential complications of impaired respiratory function. **Methodology:** Transplanted patients from 2017-2023 and 2024 waiting list patients were included, data from their Pulmonary Function Tests pre-transplant were evaluated. Patients with poor technique were excluded. **Results:** 58 patients were included with a mean age of 51.17 ± 11.9 years. 52% of patients had a smoking history. 40% of patients had abnormalities with 91% of those having no prior diagnosis of pulmonary impairment. 38% of patients had ascites/Hepatic Hydrothorax which appeared to be linked with pulmonary abnormality and higher MELD (Model for End Stage Liver Disease) scores. Length of Stay appeared to inversely correlate with FEV1/FVC. Air trapping/hyperinflation was found in 5% of patients of which 67% had preserved spirometry. **Conclusion:** Pre-operative Pulmonary Function Tests have high utility in identifying abnormal lung function among liver transplant patients **Funding:** Undertaken as an Audit in St. Vincent's University Hospital **Conflict of Interest:** This author declares there is no conflict of Interest **Keywords**: Liver Transplant, Pulmonary function, Ascites **Abbreviations:** Model for End Stage Liver Disease (MELD)

Irish Thoracic Society Poster Review and Discussion

Friday 15th November 2024

7. General Respiratory 2

7.1 Evaluation of the Role and Functionality of the Virtual Sleep Clinic in Galway University Hospitals

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Background: Virtual sleep clinics have been shown to be effective in reducing healthcare burden and increasing cost-effectiveness. This study is aimed at assessing how effective the virtual sleep clinic run in Galway University Hospitals is with regards to assessing and discharging patients. **Methods:** A list of patients who attended the virtual sleep clinic was compiled over two months from April 2024 until June 2024. The hospital's electronic healthcare record system (Evolve) was used to review the outcome of the consultations. The patients were categorised into new patients, discharged patients, and patients for further follow-up. **Results:** A total of 199 patients were included in this study. 102 patients (51%) were discharged from the service. We reviewed 35 (18%) new patients, of which 24 of those were discharged. **Conclusion:** This study shows that our virtual sleep clinic is effective at discharging stable patients on established treatment. It allows us to assess and discharge new patients who do not meet criteria for moderate obstructive sleep apnoea on sleep studies. This highlights the potential for virtual sleep clinics to reduce burden and costs on the service. **Keywords:** Sleep medicine, virtual clinics
Disclosures: Conflicts of Interest: The authors declare that they have no conflict of interest.

7.2 Managing Sleep Apnoea in the face of an Obesity Epidemic

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Background: OSA affects an estimated 1.5 million adults in the UK, 85% of whom are undiagnosed.In the Northern Trust demand for diagnostic services is outstripping capacity, resulting in diagnostic and treatment delays.We aimed to review referral pathways to optimise management. **Methods:** We evaluated 876 Overnight Oximetry reports between 1st June 2021 and 31st May 2023, collecting baseline demographics, BMI, Epworth score, number of desaturations per hour and collar size. Sleep disordered breathing was stratified into normal, mild, moderate and severe.The relationship of classifications were interrogated with regards to age, gender, Epworth score and BMI. **Results:** Referrals increased by 124% from 2022 to the mid-point of 2024.Urgent referrals increased from 6% in 2019, to 28% in 2023.Review of referrals indicate a lack of understanding of urgent criteria and a need for addressing comorbidities in primary care. We found that Epworth scales were not a sensitive, reliable markers of severity as higher Epworth scores trend with more severe disease, however 10% of this population were normal. **Conclusion:** A strong dose response was found between increasing BMI and OSA severity, suggesting a "straight to testing" approach may be beneficial with BMI > 40.Based on this evidence we have formulated an action plan that could reduce current waiting times by 1.5 years.
Disclosures: Conflicts of Interest: The authors declare that they have no conflict of interest.

7.3 Strategies to Address Increasing Demand for Sleep Clinic Appointments

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Background: Obstructive sleep apnoea (OSA) is estimated to affect up to 1 billion people globally and sleep centres are dealing with ever increasing numbers of patients. High demand for outpatient clinic appointments in Peamount Healthcare was further impacted by a 2023 initiative using home sleep studies and virtual consultations to fast-track treatment. Additionally, there was no clear discharge route for patients for patients on continuous positive airway pressure treatment (CPAP) for their OSA. **Methods:** The last clinic letters for all patients booked between August 2023 and September 2024 were reviewed by a sleep physiologist or respiratory cANP in advance of their appointments. Patients on CPAP treatment for >2 years who were compliant with treatment were discharged with department contact details given for future patient initiated follow up if required. Patients who did not specifically require a face to face appointment were moved to a new virtual follow-up clinic. **Results:** Out of 1,374 patients, 297 were discharged, 117 were moved to the virtual CPAP clinic, 28 to a respiratory clinic, and 8 admitted for review. This totalled 450 patients, representing 32.75% of all bookings for this time period.
Conclusions: Effective discharge routes from the sleep clinic and the introduction of a virtual clinic reduced the number of face to face follow-up appointments by a third, freeing up clinic capacity for patients needing more critical review. **Keywords**: OSA, CPAP, Sleep clinic
Disclosures: **Conflict of Interest:** The authors declare that they have no conflict of interest

7.4 What is the Impact of Telemedicine-Based Interventions on Adherence to Continues Positive Airway Pressure (CPAP) Therapy in Adults with Obstructive Sleep Apnoea?

Karolina Glomba[1], Bridget Murray[2]

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Background: Obstructive Sleep Apnoea (OSA) is affecting about 4% of adults in middle age, leading to higher risk of developing cardiovascular diseases. Continues Positive Airway Pressure (CPAP) is the effective treatment for OSA affected by non-adherence. Use of telemedicine to monitor adherence to CPAP therapy increased in recent years. **Methods:** PICO framework was used. CINAHL, MEDLINE and EMBASE databases were searched between October 2023 and January 2024 with 480 papers identified, 282 screened and 7 included in Systematic Review. Quality appraisal was performed with The Evidence-Based Librarian Critical Appraisal Checklist (EBL). Narrative analysis and meta-analysis were used. **Results:** Telemedicine (TM) and Usual Care (UC) groups achieved good adherence to CPAP therapy with no statistically significant difference. Both groups achieved reduction in daytime symptoms. Two studies analysed healthcare time and cost of delivery showing the cost effectiveness of telemedicine-based intervention. **Conclusions:** Telemedicine-based interventions with phone/videocall consultation and follow up is same effective as the traditional face-to-face consultation and follow up to establish good adherence to CPAP therapy in OSA patients. Patients who achieved satisfactory adherence to CPAP therapy showed reduction in daytime somnolence symptoms. The cost reduction is mainly related to room rental and transportation. **Disclosures: Conflicts of Interest:** The authors declare that they have no conflict of interest.

7.5 Barriers to successful home pulse oximetry in a paediatric respiratory centre: A patient survey

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Background: Home pulse oximetry is typically the first line investigation for sleep disordered breathing (SDB) in children. These home-based studies are reliant on parents correctly applying a sensor beginning the study, potentially contributing to technically inadequate, non-diagnostic studies. **Methods:** A sample of non-diagnostic studies and non-arrivals were selected from February to June 2024 at UHL. Parents/guardians were contacted with a structured survey. Questions focused on non-attendance, subjective issues with the process and sought opinions on proposed improvements. **Results:** Thirty two patients from the 'failed study' cohort and 16 from the 'DNA cohort' were contacted. Of the latter, 3 had a previous failed study and received both surveys. The response rate was 27 of 48 surveyed (56%). Non-attendance was attributed to non-receipt of an appointment letter for 60% (6/10). For failed studies, issues included sensors either falling off/loosening 35% (7/20) or being difficult to secure 30% (6/20). Of proposed changes, 80% (16/20) identified the provision of an instructional video would be useful. **Conclusions:** This survey of parents/guardians highlighted challenges contributing to failed studies, with equipment issues prevalent. There is scope to improve study success rates by addressing technical difficulties with sensors and provision of additional parental information. **Disclosures: Conflicts of Interest:** The authors declare that they have no conflict of interest.

7.6 The Impact Of OSA On The St James' Hospital Respiratory Outpatients Referral Burden

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Background: Obstructive sleep apnoea (OSA) is a highly prevalent but underdiagnosed condition.The prevalence of OSA in Ireland is unknown, but international data indicate that at least 4% of the adult population have OSA. Most of these patients will need to be managed by respiratory clinicians, but we have little data on the workload OSA referrals impose on Irish chest clinics.**Method:** We performed a prospective assessment of non-cancer respiratory referrals in a large teaching hospital sent via the Healthlink primary care referral portal during the months of May and July 2024, and categorised them by referral indication and location. **Results:** 301 patients were referred. 40% had OSA as the indication for referral. Other indications included chronic cough (15%), asthma (7%), COPD (7%) and TB (7%). Of the 121 referrals where the indication was OSA, 46% were female with an average age of 51 years and 53% were male with an average age of 46 years. 17% were from outside our catchment; 25% were marked as urgent. **Conclusion:** OSA is the most common indication for referral to respiratory clinics from primary care, and the burden it places on respiratory clinic workloads should be considered in service design and workforce planning. **Disclosures:** Conflicts of Interest: The authors declare that they have no conflict of interest.

7.7 Evaluate the use of the Sleep and Ventilation Clinic Electronic Proforma

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Background: The development of specialist outpatient clinics prompted the need for concise, accurate and appropriately detailed correspondence. An electronic proforma, including prompts for healthcare professionals to complete, helps capture important sleep and NIV therapy parameters in real-time. **Methods:** Data from a random sample of 80 sleep clinic letters was recorded from before and after development of this proforma. Inclusion criteria included patients with sleep-related breathing disorders attending Sleep Clinic, UHG. **Results:** Prior to using the proforma, only 32.5% of letters contained key data such as the index apnoea-hypopnea index (AHI). 95% of patients were treated with a device, 15% of letters inadequately documented the device used. 63% of letters recorded device settings and 30% documented the patient's current Epworth Sleepiness Score (ESS). After implementing the proforma, 82.5% of letters contained the index AHI. 92.5% of patients were treated with a device, 100% of letters documented the device used. 91% of letters recorded device settings and 82.5% reported the patient's current ESS. **Conclusions:** Use of the electronic proforma significantly improved documentation of key sleep therapy parameters. We recommend its use in outpatient settings to capture and record key therapy data. **Keywords:** Electronic Proforma **Disclosures:** The authors declare no conflict of interest

7.8 Using Epworth Sleepiness Scores To Determine If REM-Predominant Obstructive Sleep Apnoea Patients Experience Less Daytime Sleepiness Than Non-REM Obstructive Sleep Apnoea Patients.

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Background: The Epworth Sleepiness Score (ESS) assesses daytime sleepiness. Obstructive Sleep Apnea (OSA) is defined as recurrent upper airway obstruction, significant enough to cause sleep fragmentation and daytime sleepiness. OSA can occur in Rapid Eye Movement (REM) and non-REM (NREM) sleep stages. However, due to chemical changes in the neurotransmission pathways of motor neurons in the upper airway, REM sleep provides a greater propensity for upper airway collapse. The aim of this study is to determine if REM-predominant OSA patients experience less daytime sleepiness than NREM OSA patients. **Methods**: The study included 120 patients: 60 REM-predominant OSA and 60 NREM OSA, with similar apnea-hypopnea-index (AHI) values. A two-tailed t-test was used to determine if REM-predominant OSA patients are less sleepy (using ESS) than NREM OSA patients. **Results**: Following analysis of Polysomnography reports and medical records, 100 patients met inclusion criteria for this study. The t-test indicates no statistical significance in sleepiness symptoms of REM-predominant and NREM OSA patients. **Conclusions**: This study demonstrated that REM-predominant and NREM OSA patients experience minor variations in levels of daytime sleepiness. **Keywords:** Epworth, sleepiness, OSA, REM-predominant OSA. **Disclosures: Conflicts of Interest:** The authors declare that they have no conflict of interest.

7.9 Does weight and weight loss influence sleep position?

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Background: Obesity is a serious condition often resulting in sleep-related breathing conditions. Despite this, there is minimal research investigating how weight affects sleep position and whether weight loss alters sleep position, in turn affecting the presence of obstructive sleep apnoea (OSA). **Methods:** This single-centre retrospective database study evaluated the impact of bariatric surgery-related weight loss on the sleeping position of 147 participants. Comparisons were made using pre-operative sleep study and repeat study six months post-operatively. **Results:** Of 147 patients, 74.66% were female, with a mean age of 51.25±7.2 years. Patients spent more time supine post-operatively than pre-operatively (38% vs 36.12%, $p < 0.05$), while 8.5% of patients had no significant change (≤1%) in time supine. BMI did not correlate with time supine ($p = 0.162$) (mean pre-operative BMI 49.7±8 vs post-operative 35.4±7.2). Similarly, there was no relationship between change in sleeping position and change in Apnoeic-Hypopnoa Index (AHI) post-surgical weight loss ($p = 0.716$), despite significant improvement in mean AHI post-operatively (43±27.3 vs 13.9±13.3). **Conclusions:** Patients are more likely to increase their time asleep supine following weight loss surgery. However, time spent supine has no correlation to BMI or change in AHI. **Keywords:** Obesity, sleep position, sleep-related breathing disorders **Disclosures:** The authors declare they have no conflict of interest.

7.10. The link between Obesity and Nocturnal Hypoxaemia

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Background: Obesity is considered the main causative factor in obesity-hypoventilation syndrome (OHS). It follows that with increasing Body Mass Index (BMI), evidence of nocturnal hypoxaemia would emerge strongly. We set out to uncover this relationship. **Methods:** We undertook a retrospective analysis of 770 patients awaiting bariatric surgery with BMIs ranging between 35-77kg/m 2 . Variables measured included BMI, average and lowest oxygen saturations (SpO2), the length of time with oxygen saturations less than 90% (T90), and bicarbonate levels. **Results:** Using Spearman's correlation analysis, increasing BMI led to

lower average SpO2 (r= -0.285), lower lowest SpO2 (r= -0.393), higher T90 (r= 0.419), and an increase in
bicarbonate levels (r= 0.246). Separating the group into cohorts of BMI 35-45, 45-60, and >60 kg/m2, the
analysis once again revealed worsening average SpO2 (93.4% v 92.6% v 92.6%), worsening lowest SpO2
(82.1% v 77.4% v 71%), and higher T90 values (8.4% v 10.9% v 23.8%) with increasing
BMI. The average age and sex breakdown between the groups were similar; mean age 47 (standard deviation of 10.4 years) and 79% female. **Conclusions:** There is a relationship between
increasing BMI and nocturnal hypoxemia but the correlation is weak and other factors may also explain
the development of OHS. **Keywords:** Obesity Hypoventilation Syndrome, Nocturnal Hypoxaemia
Conflicts of Interest: The authors declare that they have no conflicts of interest.

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"Prevalence of Sleep Disordered Breathing in an Ambulatory Bariatric

Population" – I.J. Meurling et al, Irish Medical Journal 114 (6), 379

7.11 Sleep Disordered Breathing in Ireland, a study of the current National diagnostic and treatment capacity

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Background: Sleep-disordered breathing is a syndrome characterized by frequent episodes of obstructed breathing during sleep, associated with oxygen desaturation .There is currently no national data available both on the prevalence of sleep apnoea and the diagnostic capacity available in the Republic of Ireland. The aim for this survey is to quantify the sleep diagnostics and treatment capacity currently available in Ireland. **Methods:** Questionnaires administered to27 Consultant respiratory –sleep physician in 35 laboratories (21public-14 private). 22(81%)completed the questionnaire (15public-7private). We gathered data from the HSE regarding individual patient numbers with CPAP contracts, and from the device suppliers regarding individual patient numbers with CPAP contracts with covered by the DPS. **Results:** Average referrals to respiratory department that are sleep related=49.3%. Average number of referrals 144/month, full PSGs 358/month. Limited inpatient PG 125/month. Home sleep studies 752/month. Total 14,820
studies/year. The total number of patients on treatment for sleep apnoea covered by HSE has increased from5,328 to 13,413 (152%) from 2019 to2014. The total number of patients on therapy for sleep apnoea covered by the DPS is16,299 from 2019to 2024. **Conclusion:** Diagnostic access for sleep disordered breathing has increased, access to therapy has increased but there is still a gap to be addressed. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

7.12 Does Obstructive Sleep Apnoea Resolution Account for Improvements in Patients' Quality of Life Post Bariatric Surgery?

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Background: Bariatric surgery benefits include weight loss, obstructive sleep apnoea (OSA) remission, and comorbidity resolution. Both bariatric surgery and OSA remission improve patients' quality-of-life (QOL). It is unclear whether improvements in quality-of-life post-bariatric surgery are independent of OSA

resolution. **Methods:** A retrospective review of 386 bariatric surgical patients attending the Bon Secours Hospital Cork between 2008-2023 was conducted. Data collected included age, gender, Body Mass Index (BMI), Apnoea-Hypopnoea Index (AHI), and percentage weight loss. The Becks Depression Index (BDI), the Hospital Anxiety and Depression Score (HADS) and OSA status were recorded pre-operatively and post-operatively. **Results:** Of a total of 386 patients, 79% were female, the mean (standard deviation) age was 46 (10.9). The mean percentage BMI lost was 63% (+/- 4.2) at 24 months. QOL improved significantly post-operatively; BDI ($p<0.05$), HADS ($p<0.05$). This was irrespective of the presence of OSA pre-operatively (HADS: $p>0.05$, BDI: $p>0.05$) and whether their OSA had resolved or persisted post-surgery; BDI ($p>0.05$), HADS ($p>0.05$). The presence or absence of Positive Airway Pressure (PAP) did not influence BDI changes either pre- or post-surgery; $p>0.05$. **Conclusion:** Improvements in quality-of-life post-bariatric surgery are independent of OSA resolution. **Keywords:** Obstructive Sleep Apnoea, Bariatric Surgery, Quality-of-Life. **Disclosures:** Conflict of Interest: The authors declare that they have no conflict of interest.

7.13 Prevalence of COPD-OSA Overlap Syndrome in Mayo University Hospital

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Background: Overlap Syndrome (OS) describes to co-existence of Obstructive Sleep Apnoea (OSA) and Chronic Obstructive Pulmonary Disease (COPD). Reported prevalence of OS ranges from 10-65% (1-3). Patients often experience more profound nocturnal desaturations compared to those with OSA or COPD alone. The subsequent hypoxia and systemic inflammation increase exacerbation and cardiovascular disease risk, thereby increasing OS-associated mortality (4). Our goal was to determine the prevalence of OS in Mayo University Hospital (MUH) and analyse clinical characteristics associated with OS. **Methods:** Retrospective data was collected between January 2013 and December 2023. Patients diagnosed with moderate to severe OSA (AHI>15) by limited sleep study (LSS) were included in the analysis. Charts and PFT reports were reviewed to confirm a coexisting diagnosis of COPD. **Results:** In total, 506 patients underwent LSS, 224 confirmed moderate-to-severe OSA. Patient cohort was predominantly male (n=166,74%) with elevated BMI ($M=39.5 kgs/m^2$, $SD=8.4$). They were divided into 3 groups; Group1, OS confirmed (n=56,25%), Group2, OS not confirmed (n=130,58%), and Group3, OSA only (n=38,17%). In Group 1, mean FEV_1 was 64.9%, GOLD Stage 2 COPD. Group 2 smokers (n=19) were highlighted as high-risk OS. **Conclusion:** The results show prevalence of 25%, confirmed OS within MUH cohort. It is crucial for clinicians to diligently evaluate high-risk patients for OS as treatment reduces symptoms, exacerbations, and improves quality of life. **Keywords:** COPD-OSA Overlap Syndrome, Obstructive Sleep Apnoea, Chronic Obstructive Pulmonary Disease
Disclosures: The authors declare that they have no conflict of interest

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7.14 A Systematic Review of the Contribution of Large Animal Ex Vivo Lung Perfusion Models to Lung Transplantation Research, Development, and Clinical Practice.

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Background: A significant challenge to lung transplantation (LTx) practice is the limited number of viable donor lungs. The introduction of ex vivo lung perfusion (EVLP) has proved effective in countering this challenge. This systematic review sought to illicit the contribution of large animal models to EVLP development and application in LTx. **Methods:** Using a predefined pro forma, a strategic literature search was performed. All relevant data was extracted from included studies. Qualitative synthesis using thematic analysis was used to present key effect measures. Methodology quality and bias risk was assessed using the Modified Downs and Black Checklist. Certainty assessment was conducted using the GRADE-CERQual approach. **Results:** In total, 30 studies met predefined inclusion criteria. Identified animal models included porcine, ovine, rabbit, and canine. Key themes included EVLP as a reconditioning platform, EVLP protocol optimisation, and novel EVLP applications. **Conclusions:** The porcine model was found to be the most established EVLP research platform contributing to EVLP protocol optimisation, and overall LTx clinical outcomes. Furthermore, the porcine model holds potential to further expand the role of EVLP. **Keywords:** Lung transplantation; Ex vivo lung perfusion; Large animal model. **Funding:** This study was non-funded. **Conflict of Interest:** The authors declare no conflict of interest.

7.15 Smoking status and Nicotine Replacement Therapy documentation on admission notes in Midland Regional Hospital Tullamore (MRHT)February-April 2024 (Theme: MRHT, smoking-free campus)

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Background: To promote the culture of Midland Regional Hospital Tullamore as a smoking-free campus. Assess the documentation of smoking status in admission notes, measure the current practice regarding offering Nicotine Replacement Therapy for current smokers and raise healthcare providers' awareness of smoking-free campus practice. Criteria: The Midland Regional Hospital Tullamore Tobacco-free campus Policy was relaunched in February 2024. What this means: ‘in line with the HSE policy employees, patients/service users, visitors and any other parties cannot smoke tobacco products, - cigarettes or vape anywhere on this campus’. Standard: 100%. All admission notes to all wards should include an entry of the smoking status of all patients. All patients who

are currently smoking should be offered Nicotine Replacement Therapy on admission with clear documentation of the same. **Methodology:** Data was collected prospectively from a 99 patient notes. **Results:** 99 patients' notes were reviewd. The percentage of smoking status documentation was found to be **52.5%,** while the percentage of documentation of Nicotine Replacement Therapy offered was **0 %** across all the hospital wards. **Interventions:** MRHT smoking-free campus posters and voice reminders are displayed across all hospital entrances. A poster was presented as part of Clinical Audit Awareness Week. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

7.16 An Audit of Patients Smoking Status following Admission to Tallaght University Hospital (TUH)

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Background: The most recent Healthy Ireland Survey in 2023 reported that 18% of the population are current smokers. The National Stop Smoking Guidelines (No. 28) were published in January 2022, these guidelines recommend that all healthcare professionals routinely ASK people about their smoking, ADVISE them to stop and ACT by providing or arranging safe and effective support. It also sets out the recommended behavioural and pharmacological supports for smokers. **Methods:** A chart review was conducted on patients admitted into TUH over a 10 day period in October 2023, to assess if these recommendations were being delivered. Charts were reviewed to determine if smoking status was recorded. If smoking status was recorded, a series of related questions were generated to assess the patients smoking history. **Results**: Of 177 charts reviewed 84% had a smoking status documented, 26% of whom were current smokers. This is higher than the population level of 18% reported in the Healthy Ireland Survey in 2023. Of those documented as smoking an intervention was only recorded for 16%. **Conclusion:** Results from the review show that TUH are meeting the standards 84% of the time, documenting the smoking status of patients, however NRT and smoking cessation services are underutilised. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

7.17 Overview of Nicotine Replacement Therapy Prescribing in a Level 4 Hospital

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Background: Acute hospital admission is an opportunity to begin smoking cessation advice and nicotine replacement therapy. Medically admitted patients are often not prescribed nicotine replacement therapy in accordance with BTS guidelines on tobacco dependency. **Methods:** The audit was performed prospectively; data was gathered daily in the emergency department capturing medically admitted patients (within 3 days of their admission) who had a smoking history documented. The sample size was 30 patients. We believed that this sample size would be large enough to allow us to successfully assess the levels of compliance and then make a valid comparison with a post intervention audit group. **Results:** 3 %(n=1) of the patients had nicotine replacement therapy prescribed during this time period. 0% (n=0) of the patients had a documented conversation on smoking cessation, nicotine replacement therapy or refusal of same in their admission note. **Conclusion:** This suggests adherence to BTS guidelines on tobacco dependency at our institution is suboptimal. An increased awareness of nicotine replacement therapy prescribing is needed for NCHDs at our institution. We have started interventions to improve this with information sessions at NCHD teaching and circulation of a nicotine replacement therapy prescribing

leaflets. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

7.18 Pilot simulation roll out for medical SHO training in critical care medicine.

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Background. The RCPI OPTIMISE report [(1)] has recommended re-structuring of Basic Specialty Training in Ireland including an emphasis on simulation being rolled out by each hub as part of core medical training. The critical care department in Beaumont hospital set up simulation teaching scenarios as a pilot for medical SHOs in two critical care areas. Our aim was to assess the benefit of simulation in trainees' confidence in managing these scenarios. **Methods.** Hands-on scenarios focused on sepsis and upper gastrointestinal bleed. Trainees gave feedback on confidence pre and post scenario in managing hypotension, tachycardia, rapidly deteriorating patients in sepsis and bleeding, and in escalating to medical registrar and intensive care department. **Results.** Significant improvement was seen in confidence managing hypotension, tachycardia and rapidly deteriorating patients. All trainees felt confident escalating to medical registrar and intensive care post these training sessions. 91.4% of trainees found simulation useful/very useful for learning and found this a superior method of learning. **Conclusions.** This pilot programme was well received by trainees and significantly increased their confidence in managing these scenarios. Future scenarios we will roll out include haemoptysis, respiratory failure and massive pulmonary embolism.
Keywords. Critical care, simulation.
Disclosures. No conflict of interest.

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7.19 A qualitative study to assess current knowledge of procedural sedation among healthcare workers undertaking bronchoscopy to identify and address gaps in current practice

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Background: Bronchoscopy is a commonly-performed procedure using conscious sedation by respiratory physicians in Ireland. Education for Irish respiratory trainees is largely experiential and centre-dependent in this area. Current international guidelines suggest that non-anaesthesiology practitioners administering moderate sedation should complete a formal training program. We aimed to assess the knowledge and education background of healthcare workers involved in the administration of conscious sedation during bronchoscopy in a tertiary hospital. **Methods:** A multiple-choice questionnaire was created to assess knowledge in the safe administration and pharmacodynamics of sedative agents, and the rescue of patients who experience a deeper-than-intended level of sedation. All clinical staff working in the bronchoscopy unit were invited to participate. **Results:** 21 participants completed the questionnaire, including respiratory consultants, registrars and bronchoscopy nurses. The mean score of participants completing the questionnaire was 52.4%. 19% of participants (n=4) had undergone previous formal education in safe sedation. 100% of participants (n=21) indicated that a structured education program with a focus on

simulation-based training would be beneficial. **Conclusions:** Our study demonstrates a potential knowledge gap in the safe administration of sedation and highlights the need for the development of a formalised education program with a potential focus on simulation-based learning to address this. **Conflict of Interest:** The authors declare that they have no conflict of interest.

7.20 Single-use flexible bronchoscopy with the Boston Scientific® EXALT™ Model B – a single centre experience

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Background: Single-use flexible bronchoscopes (SUFBs) are being utilised at an increasing rate and gained favour during the COVID-19 pandemic as a potential barrier to infection transmission. This study aimed to assess the Boston Scientific® EXALT™ Model's performance in our tertiary care centre. **Methods:** After ethical approval, we prospectively collected data on bronchoscopies performed with the Boston Scientific® EXALT™ Model. Data included patient demographics, procedure details (location, indication, SUFB size, procedure, complications), and user satisfaction. **Results:** From 2021 to 2024, 82 procedures were performed with the Exalt bronchoscope. Three endoscopists were included with experience ranging from 1 – 20 years, of these two were right-handed. There were 37 female patients (45%). The 2.8 model was used in 64 (78%) cases while the 2.2 model was used in 19 (23%). Malignancy was the most common indication while others included infection and haemoptysis. Locations included endoscopy (91.5%), ICU (2.4%), and theatre (6.1%). One patient was COVID positive. The most commonly performed procedure (n) was airway inspection (61) while bronchoalveolar lavage (56), brushings (8), endobronchial (18) and transbronchial (3) biopsies, cryobiopsies (2), electrocautery (4), and argon plasma coagulation (8) were among others. The average user satisfaction rating (rated from 1 – 5 in ascending order of satisfaction) was 4.7 [5 (68); 4 (7); 3 (2); 2 (3); 1 (2)]. The most common reason for user dissatisfaction was difficulty passing tools through the working channel (n = 4). No case required conversion from single use to reusable bronchoscope. One case required conversion to a smaller SUFB in order to achieve a smaller angle. Two cases required replacement with another SUFB due to image failure. There were no bronchoscope-related complications. **Conclusion:** Our study has shown a wide range of application, high level of user satisfaction and low rate of complications with the use of this particular SUFB. **Conflict of Interest:** The authors declare that they have no conflict of interest.

7.21 An Evaluation of User Satisfaction and Technical Complications of Ambu® aScope 5™ in a Quaternary Referral Centre Bronchoscopy Unit

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Background: Single-use flexible bronchoscopes (SUFBs) are advantageous over reusable bronchoscopes including portability and cost effectiveness, and potentially reduced infection transmission. We reviewed the performance of Ambu® aScope™ 5 Broncho in our institution. **Methods**: Data was collected prospectively on procedures performed with the Ambu® aScope 5™ in our centre. Data included patient demographics, procedure details (location, indication, SUFB size, procedures, complications), user satisfaction and demographics. **Results**: 98 (42 female, 56 male) procedures were performed with the Ambu® aScope™ 5, all in the endoscopy suite. Various

sized models (n) were used - 2.7/1.2 (3); 4.2/2.2 (4); 5/2.2 (60); 5.6/2.8 (31). Infection was the leading indication while others included malignancy, haemoptysis, sarcoidosis. The most common procedure (n) was airway inspection (98); bronchoalveolar lavage (84), brushings (3), endobronchial biopsies (5), transbronchial needle aspiration (1), and argon plasma coagulation (1) were among others. Average user satisfaction rating (1 – 5) was 4.8 [5 (85); 4 (9); 3 (1); 2 (3); 1 (0)]. The most common reason for user dissatisfaction was suction (n = 3). Conversion to reusable bronchoscope was not required in any case. There were no patient-related complications. **Conclusion**: Within this cohort of patients, the Ambu® aScope 5™ was safe and versatile with a high level of user satisfaction. **Keywords:** single use flexible bronchoscope, bronchoscopy, interventional pulmonology **Disclosures:** Professor Marcus Kennedy has received speaker fees from Pentax Medical, Boston Scientific and The Surgical Company. He has served as a key opinion leader for The Surgical Company and on advisory boards for Boston Scientific and AMBU Endoscopy.

Irish Thoracic Society Poster Review and Discussion

Friday 15th November 2024

8. COPD

8.1 An audit of long-term non-invasive ventilation initiation in patients with COPD

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Background: Long-term non-invasive ventilation (NIV) can reduce hospital readmissions and exacerbation rates in selected COPD patients. 2019 ERS and 2020 ATS guidelines recommend initiating long-term NIV in COPD patients with “stable hypercapnia”. **Methods**: We performed a retrospective audit of patients with an acute COPD exacerbation with T2RF admitted to the NIV unit in St Vincent’s Hospital between December'2023 and March'2024, to assess long-term NIV assessment practices. Charts were reviewed to confirm “stable” blood gas assessment, documentation of decision-making, and long-term NIV prescriptions initiated by discharge. **Results**: 12 patients (16 admissions) were included. Five (41.7%) were prescribed long-term NIV whilst inpatient. Two (28.6%) were referred to community hubs for follow-up regarding NIV. There was no documentation among the remaining five (41.7%) regarding inpatient consideration of NIV or outpatient follow-up. Three (25%) had preceding admissions requiring NIV, of which only one (33.3%) was commenced on long-term NIV. **Conclusions**: Only a minority of patients admitted with an acute COPD exacerbation requiring NIV were initiated on long-term NIV, including those with recurrent admissions. Decision-making and clinical practice was poorly documented and variable, suggesting the

need for more standardized operating procedures. **Keywords**: NIV, COPD
Disclosures: The authors declare that they have no conflict of interest.

8.2 Community Acute Respiratory Excellence Virtual Ward an overview of how the Respiratory Integrated Care team in Co Donegal developed an alternative to the hospital centric pathway focusing on treatable traits

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Background: CARE Community Virtual Ward as an alternative to the hospital centric pathway for individuals with Chronic Obstructive Pulmonary Disease (COPD). **Methods:** Using design thinking the team redesigned existing approach to integrated care for COPD management, by utilising bespoke technology and a dashboard indicating respiratory compromise and/or deterioration in real time to inform clinical decision making. **Results:** This person centred approach focuses on education and self-management has improved **CARE Virtual Ward** offers the following:

- Remote monitoring in real-time, enabling early intervention and reducing exacerbations.
- Tailored treatment plans improve disease management and quality of life.
- CARE Virtual Ward has ensured that geography is no longer a barrier to COPD Outreach in Co Donegal. Patients requiring hospitalisation are discussed and monitored with supported discharge as soon as is appropriate using the virtual ward to support COPD Outreach to the entire county.
- This is a cost effective model of care – offering alternative virtual pathway to hospital centric model of the past.
- Efficient resource management – has improved integration of care –Hospital and community teams work together - The county is divided into networks Respiratory teams ensure most appropriate clinician provides care for the patient as close to their home as possible.

Disclosures: The authors declare that they have no conflict of interest.

8.3 Evaluating the benefits of family screening in severe AATD

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Background: Alpha-1 antitrypsin deficiency (AATD) is a genetic disorder that can manifest as lung, liver and rarely skin disease. Smoking is a major risk factor in lung disease onset and severity. This study aimed to investigate family screening benefits in severe AATD and to demonstrate smoking impact on the lungs. **Methods:** Participants on the Irish National AATD Registry completed a questionnaire on demographic information, including smoking and occupational history. Pulmonary Function Tests (PFT) at diagnosis and Computed Tomography (CT) reports were collected to evaluate lung function impairment and structural damage, respectively. **Results:** Of the participants (n=261), 36.4% were detected by family screening. Individuals in the family screening cohort had less severe obstruction on spirometry and less likely to have radiographic emphysema. A significant difference in FEV1% predicted was found between ever-smokers and never-smokers (p=0.00001). The odds ratio (OR) of having either emphysema (p=0.00001) or combined emphysema-bronchiectasis (p=0.00001) was significantly raised in ever-smokers. Mean age at death(n=44) was 70 in never-smokers compared to 61 in

ever-smokers (p=0.0221). **Conclusion:** Early identification of at-risk individuals with severe AATD through family screening would allow smoking cessation interventions, and lead to less lung disease in this highly susceptible population. **Disclosures: Conflict of Interest:** The authors declare that they have no conflict of interest.

8.4 Osteoporosis Assessment in COPD/ACOS Patients: A Retrospective Audit of DEXA and FRAX Usage in Peamount and Tallaght University Hospitals

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Background: Patients with Chronic Obstructive Pulmonary Disease (COPD) and Asthma-COPD Overlap Syndrome (ACOS) are at an elevated risk of osteoporosis, exacerbated by factors such as corticosteroid use, physical inactivity, and vitamin D deficiency. Despite established guidelines recommending osteoporosis assessment and management, adherence to these protocols in clinical practice remains unclear. **Methods**: We conducted a retrospective review of 40 patients diagnosed with COPD/ACOS across Peamount Hospital and Tallaght University Hospital. Data on demographics, corticosteroid use, vitamin D deficiency, calcium supplementation, history of fractures, and DXA scan results were collected. The use of the FRAX tool for fracture risk assessment and pharmacological treatments were also evaluated. **Results**: The mean patient age was 70 years. Inhaled corticosteroids were used by 80% of patients, with 62.5% having received oral steroids. Vitamin D deficiency was noted in 37.5%, and 50% were on calcium and vitamin D supplements. Only 30% had a DXA scan within the last five years, and none had FRAX tool assessments. Pharmacological treatment was suboptimal, with only 25% receiving appropriate therapy. **Conclusions**: Osteoporosis assessment and management in COPD/ACOS patients are inadequate, with significant gaps in guideline adherence. Systematic implementation of screening tools and treatment protocols is crucial. **Disclosures:** The authors declare that they have no conflict of interest.

8.5 Alcohol screening in pulmonary rehabilitation

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Background: The pulmonary rehabilitation (PR) team were starting to notice a trend with patients unable to attend the pulmonary rehabilitation programme due to alcohol consumption. **Aims & Objectives:** 1.To screen all patients for alcohol use during their initial PR assessment. **Method**: 61 patients were screened for alcohol use using the AUDIT-C tool as part of their PR initial assessment between January and July 2024. AUDIT-C Tool is recommended by the HSE Making Every Contact Count. **Results:** 55 patients were deemed to be in the low risk category, scoring 0-7 on the AUDIT-C tool. 6 (10%) of patients were scored in the increased risk/ possible dependence category. In the increased risk/possible dependence category, 83% of these patients did not complete the programme. In comparison, in the low risk category 29% did not complete. **Conclusion:** 90% of patients screened for alcohol use were scored in the low risk category. In the increased risk/possible dependence category there is a trend towards non-completion of PR. However, the sample size is very small and further data collection is needed in order to identify a definite trend. **Keywords:** AUDIT-C tool,

pulmonary rehabilitation **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.6 Emphysema without airflow obstruction: COPD or not COPD? That is the question.

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Background: Visually-defined emphysema on CT imaging (VDE) is often equated to COPD, though the benefit of inhaled therapies in COPD has only been proven in individuals with airflow obstruction (AFO). We sought to determine the clinical phenotype of patients with non-obstructive spirometry but visually-defined emphysema (VDE), attending an Enhanced Community Care Spirometry service. **Methods:** Data from the CHO6 GP-spirometry service from 01/05/2023 to 30/04/2024 was reviewed. Inclusion required CT imaging within 5-years. Only patients with a GP query of COPD were included (excluding asthma/ACOS). Demographics, spirometry, clinical data and GP-initiated inhaled pharmacotherapy were compared on the presence/absence of AFO and VDE. **Results:** Of 340 patients tested, 35 met the inclusion criteria. 55% of patients with VDE did not demonstrate AFO. VDE without AFO demonstrated similar spirometry data, mMRC and CAT scores, prevalence of BEC >300/uL and exacerbation-like episodes in 12 months compared to patients without either. 63% of individuals with VDE without AFO were receiving daily inhaled pharmacotherapy. **Conclusion:** VDE without AFO is phenotypically similar to non-obstructed non-emphysematous individuals and is likely a common finding. There is a lack of evidence on the effectiveness of inhaled therapies in this cohort, yet frequently prescribed. Further evidence is needed. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.7 Impact of a COPD Outreach Program on Patient Admissions and Bed Days: A Retrospective Analysis

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Background: Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of morbidity and hospitalisations, significantly straining healthcare resources. This study evaluates the effectiveness of a COPD Outreach Program in reducing patient admissions and bed days during and after its implementation. **Methods**: A retrospective cohort study was conducted on 38 COPD patients who completed the outreach program. Data was collected for pre-, during, and post-program. Statistical analyses included paired t-tests and repeated measures ANOVA, with effect sizes calculated using Cohen's d and partial eta squared. **Results**: Admissions decreased from 1.68 pre-program to 0.37 during the program ($p < 0.0001$, Cohen's $d = 1.46$). Post-program admissions increased to 0.71, remaining lower than pre-program levels. Bed days dropped from 10.39 to 3.08 during the program ($p < 0.0001$), increasing to 5.39 post-program. ANOVA showed significant differences across periods (admissions: $F = 19.49$, $p < 0.0001$, $\eta^2 = 0.26$; bed days: $F = 4.65$, $p = 0.0115$, $\eta^2 = 0.077$). **Conclusions**: The Outreach Program reduced admissions by 78% and bed days by 70%, demonstrating a strong impact on healthcare utilisation. The program's suspension due to staff shortages led to a 92% and 75% increase in admissions and bed days, respectively, underscoring the value of continued outreach efforts. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.8 Exploring exacerbations and current health trends in severe Alpha-1 antitrypsin deficiency (AATD)

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Background: AATD and particularly the severe ZZ phenotype is associated with obstructive lung disease and an increased risk of exacerbations. Exacerbations of AATD are suspected to differ from usual COPD, but precisely how is not clear. Exacerbations are classified based on patient reported change in symptoms or definitive events. We evaluated the frequency and severity of exacerbations in this cohort and explore characteristics of frequent exacerbators. **Methods**: This is a prospective national registry study of ZZ individuals with an FEV1/FVC ratio < 0.7 and/or emphysema on CT. A baseline survey was performed to establish baseline clinical information. Monthly surveys will establish any change in symptoms which could be suggestive of an exacerbation. **Results**: 50 patients are enrolled to date and will be followed for 12 months – data collection is ongoing. Median FEV1 % is 53% and DLCO 50%. A large proportion of patients had combined emphysema and bronchiectasis which together are associated with increased exacerbations. We note a high symptom burden with daily dyspnoea reported in 100% of patients. Early monthly data suggests a large burden of increased symptoms suggesting under-reported exacerbations. **Conclusion:** Exacerbations are frequent with a prolonged recovery and detrimental impact on quality of life. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.9 HSE-Change-Guide to Spark funding: Accessing digital CBT to improve Breathlessness and Anxiety in COPD Patients

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Background: Valuable knowledge was gained participating in change-experiential-programme which included the HSE-Change-guide, Community-Of-Practice, quality improvement learning and reflective practice. The journey of applying this knowledge &skills in clinical practice arose while attending the ERS in Milan, seeing a digital-interactive-course-CBT which would benefit COPD patients with symptoms of breathlessness and anxiety. A journey of an integrated Community-Of-Practice, getting Spark-funding, designing a study to evaluate the impact of this digital-CBT access. **Methodology:** Embracing HSE-Change-Guide:**People-&-Culture:**Shared information with Respiratory-team. SPARK-Fusion-funding required collaboration with organisations outside of HSE. Partners;Mayo-Sports-Partnership, Sláintecare-Healthy-Communities-and-Integrated-Development,Self-Management-Co-Coordinator, Mayo-Library-HQ &ALONE. **People's-Needs- Defining-Change:** Community-Of-Practice common purpose of well-being;Accessing digital CBT to reduce symptom burden. **Define:** Outlined project roles and expectations. Successful SPARK-funding. **Design:** Patient Journey-Map, and Quasi-RTC. **Deliver:** Roll-out July2024. Ethical approval. **Results:** As a direct result of completing the HSE-Change-Guide plus exposure to Community-Of-Practice in action, a digital solution will be trialled to reduce a burden of COPD symptoms of breathlessness and anxiety, a problem experienced in each Respiratory Integrated Care

Chronic Disease HUB. **Conclusion:** Promoting the HSE-Change-Guide plus exposure to Communities-of-Practice in action it gives confidence to frontline staff to pursue and access solutions to problem-solve, therefore benefiting patients and by association integrated/acute/community care. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.10 Implementation of the Chronic Obstructive Pulmonary Disease (COPD) bundle into the South West Acute Hospital (SWAH).

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Background: COPD affects approximately one in four individuals. Studies consistently link acute exacerbations of COPD resulting in hospitalisations to higher mortality rates. Immediate period post discharge is highly influential on these rates. The COPD discharge bundle was designed to gather evidence-based practice into one organised document to maximise post discharge care.The COPD bundle was introduced into SWAH as part of a Quality Improvement (QI) project in January 2022. The aim was to increase incidence of patients discharged with the COPD bundle to 60%.**Methods**: The bundle was implemented into the SWAH using QI methodology focusing on the Plan, do study act cycle. The proportion of patients being discharged is consistently analysed and new interventions incorporated accordingly. **Results**: Data analysis shows progressive increase in proportion of patients discharged with the COPD bundle with a median of 43%. The exponential point (March 2023) correlates with a small sample size therefore has been removed from the trend. A plateau was reached in August 2023 prompting PDSA 2. **Discussion**: The bundle has been increasingly used in practice with the target of 60% being reached in January 2023. The project is still ongoing and we hope to increase and maintain implementation of the bundle. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.11 Home NIV Prescription In COPD Patients With Chronic Stable Hypercapnia-A Comparison Of Current Practices With ERS Guidelines In University Hospital Limerick

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Background: Chronic obstructive pulmonary disease can cause hypercapnic failure, significantly increasing mortality rates and the economic burden of the disease due to greater risk for hospitalisation and rapid deterioration. The European Respiratory Society recommends long-term home non-invasive ventilation (LTH-NIV) for patients with chronic stable hypercapnic COPD, based on evidence suggesting improvements in health-related quality of life, dyspnoea, exercise tolerance, along with potential reductions in mortality and hospitalizations. **Method:** This study evaluated the compliance with ERS recommendations in COPD patients with chronic hypercapnia at the time of hospital discharge. **Results:** We assessed 10 patients admitted to UHL between January to February 2024, with IECOPD having chronic stable hypercapnia at time of discharge that is defined as pH >7.3, pCO2 >6 kPa, HCO3 >30mEq/L found in ABGs assessment on two separate occasions at least 4 weeks apart. We examined whether these patients received respiratory consultation and LTH-NIV upon discharge as per ERS guidelines. Seven out of 10 patients (70%) were discharged without receiving respiratory consultation and LTH-NIV. **Conclusion:** Our findings indicate that 70% of COPD patients with chronic stable hypercapnia were discharged without LTH-NIV,

highlighting a gap in the implementation of ERS guidelines, suggesting rigorous awareness campaign is required among medical team regarding management of COPD. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.12 Understanding COPD mortality in Cork University Hospital 2022-2023. HIPE vs Reality

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Background: Chronic Obstructive Pulmonary Disease (COPD) accounts for 3% of deaths worldwide. In Irish hospitals deaths from all causes are coded [1]and reported centrally to the National Office of Clinical Audit (NOCA). **Methods:** To compare actual HIPE coded, NOCA reported COPD mortality at Cork University Hospital between January 2022 and December 2023, with an expert panel review by Senior Consultant Respiratory Physicians (n=4) of medical notes/electronic records/post-mortem results in the same cohort, to determine levels of concordance. Relevant to physician assessment, we did not characterise a death from a definitive 'Pneumonia" as a primary diagnosis of death from COPD exacerbation. **Results:** NOCA reported a total number of n=59 deaths from COPD exacerbation over the two-year period. Expert panel review suggested that 34% (n=20/59) met this criteria and of those who did not 66% (n=39/59), 54% were diagnosed with pneumonia (n=21/39). In 42% of cases (n=25/59), COPD was a co-morbidity rather than a principle cause of death. A definite COPD diagnosis could not be established in 24% of cases (n=14/59). **Conclusions:** Significant discrepancies in COPD mortality rates exist between national statistical reporting mechanisms and expert panel review, with the potential to misinform healthcare planning strategies. **Keywords:** COPD, mortality. **Conflict of Interest:** The authors declare that they have no conflict of interest. **References:** OECD (2023), Health at a Glance 2023: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/7a7afb35-en.

8.13 Feedback on General Practitioner's Early Experiences of Enhanced Community Care for Asthma and COPD in Ireland: A Roadmap To Continuous Improvement

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Background: Facilitating community Chronic Disease Management (CDM) has become a priority in Ireland. Enhanced Community Care (ECC) began roll-out nationally in 2022 providing some GPs with community access to respiratory diagnostics, pulmonary rehabilitation, nurse-led and consultant clinics for CDM of asthma and COPD. **Methods**: GPs were surveyed on the perceived impact and effectiveness of CDM and ECC, as well and the current barriers to optimising asthma/COPD in primary care. **Results**: 40 GPs completed the survey. 88% had access to the ECC. 57% of those believe that the referral criteria has been well communicated to GPs. 82% and 18% of GPs with access to ECC perceived the care to be "superior" or "similar" to hospital outpatients, respectively.98% with access to CNS-led clinics rated them as similar/higher quality than hospital outpatients. 95% preferred a model of timely community-review and optimisation over 1-2 visits followed by discharge, to traditional hospital OPD with repeating follow-up. The most commonly identified barrier to effective

COPD/asthma care for GPs was confusion over the growing variety of inhalers.
Conclusions: ECC has been well received by GPs. Feedback helps identify high-yield areas-of-need for continuous improvement, and areas of focus for GP continuous professional development in CDM. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.14 Severe COPD in a Young Population

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Background: COPD carries significant burden of morbidity and mortality; it is a leading causes of death in the UK and the second leading cause of hospital admissions. 1,2 We looked at a subset of younger patients with severe COPD. **Methods:** This was a retrospective observational study, recording data on patients under 60years old, with severe COPD, attending secondary care in a single respiratory centre over 12 months. Demographic details as well as key clinical findings were recorded. Univariate analysis was performed. **Results:** 38 patients, 50% female, median age 56years. Median FEV1 was 48%predicted. Only 13.6% of those patients with alpha1-antitripsin levels measured were deficient. Peripheral eosinophilia was present in only 9% of patients. 35% required long term oxygen therapy (LTOT) and 47% had evidence of hypercapnic respiratory failure. Patients with a low or normal BMI were more likely than patients with a high BMI to have hypercapnic respiratory failure (OR 1.3 95%CI 0.34-4.93 p-value 0.69) or to require LTOT (OR 1.63 95%CI 0.42-6.3 p-value 0.47). **Conclusion:** Our results reflect high burden of disease on young cohort of patients. Interestingly, low/normal BMI associated with need for LTOT and hypercapnic respiratory failure, this could warrant further research in bigger population groups. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.15 COPD Outreach Toolkit to Support Admission Avoidance in COPD

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Background: Exacerbations of COPD often necessitate prolonged hospital admissions, which have been shown to be costly to COPD patients' quality of life and the health service. COPD Outreach programmes provide an admission avoidance service for such patients. However, this is not always feasible due to lack of information regarding the exacerbation phenotype.. Point-of-care testing (POCT) may provide a solution to further support the management of COPD exacerbations in the home setting. **Methods:** In Galway, we trialled POCT at home, specifically the HemoCue© WBC DIFF and Afinion CRP analyser, alongside transcutaneous CO2 monitoring, to better assess and phenotype COPD exacerbations and to determine if home management could be safely provided. **Results:** Over threemonths, the COPD Outreach team has trialled these POCTs to improve the assessment of COPD patients, with many exacerbations being safely managed in the home environment. Furthermore, transcutaneous CO2 monitoring, in conjunction with clinical presentation, has been instrumental in identifying patients who require further inpatient assessment for type 2 respiratory failure. **Conclusions:** The HemoCue© WBC DIFF POCT, Afinion CRP, and transcutaneous CO2 monitoring are valuable tools that guide the treatment of COPD exacerbations within a community setting, allowing the COPD outreach to safely manage patients in their own homes **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.16 Enhanced diagnostic assessment in the integrated care setting to guide primary care management of COPD

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Background: COPD is a common, treatable illness, often managed entirely in the primary care setting. There is a potential significant economic benefit of early diagnosis and treatment of COPD.[1] **Methods**: We piloted an enhanced physiology testing program for GP spirometry requests, by recording validated PROMS (mMRC, CAT scores), medication and exacerbation history, and blood eosinophils. 131 cases over six months were assessed. 56 patients were referred to confirm a GP-diagnosis of COPD; 16 had spirometry-defined COPD (GOLD airflow stage 1/2/3 n= 6/7/3 respectively), with three in GOLD-2023 Category A, eight in Category B and three in Category E. Symptom scores were not available for two patients. **Results:** Five patients were suitable for long acting bronchodilator monotherapy, 10 for LABA/LAMA and one for ICS/LABA/LAMA.[2] At time of testing, three (19%) were on appropriate inhalers. Three patients were on SABA PRN where a regular bronchodilator was indicated, and three were not on any inhalers. Seven patients were on ICS without a clear indication, including one patient on two separate ICS/LABAs. **Conclusion:** Enhancing community-based spirometry by recording clinical information can deliver a comprehensive physiologist-led assessment, and can provide primary care physicians with the information required to institute guideline-directed COPD management plans in the community. **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.17 The effectiveness of discharge care bundles on reducing hospital readmissions in COPD; a systematic review.

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Background: COPD discharge care bundles are endorsed by international guidelines as a useful tool, which could impact readmission rates, but true effectiveness is unknown[1]. This systematic review of randomised controlled trials aims at cultivating a more robust evidence base on a frequently utilised tool and is the first SR with this primary focus. The primary outcome of this SR is to quantify the impact COPD discharge bundles have on hospital readmission rate with secondary outcomes including health related quality of life and mortality at 1 year. **Methods:** Literature searches were undertaken on electronic databases using text words related to Chronic Obstructive Pulmonary Disease and MeSH terms. PRISMA- P was utilised in the development of an unpublished protocol with prospective registration on PROSPERO. **Results:** Results from this review include 500 participants in all RCTs found relating to this research question. Sample sizes were adequate and representative of men and women with mixed severity of COPD. There was high heterogeneity in the composition of discharge bundles across included studies. **Conclusion:** In essence, this SR yielded little evidence that discharge bundles affect readmission rates for people with COPD. There is a commensurate need for high-quality research in this area. **Disclosure**: The authors declare they have no conflict of interest.
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8.18 Thoracic imaging in COPD: diagnostic usefulness and adherence to GOLD guidelines in a severe COPD cohort

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Background: While chest CT is not classically part of the COPD diagnostic workup, cross sectional imaging provides insight into structural and pathophysiologic abnormalities, leading to greater understanding of disease severity and prognosis, and allowing exploration of strategies such as lung volume reduction surgery or endobronchial valve placement. **Methods**: GOLD recommends that CT is considered in patients with persistent exacerbations, symptoms out of proportion to airflow limitation, FEV1 <45% with hyperinflation and gas trapping and those who meet lung cancer screening criteria.[1] 54 patients with spirometry-confirmed COPD attended the severe COPD clinic over 12 months, in GOLD severity groups 1 (n=10), 2 (n=16), 3 (n=23) and 4 (n=5). 62% were in GOLD Category E. 45 patients met criteria for CT; 37 had imaging available, although 14 scans were >2 years old. Significant findings included emphysema (28), pulmonary nodules (17), coronary artery disease (16), infection (13), bronchiectasis (7), osteoporotic fractures (5), mediastinal lymphadenopathy (4), pleural plaques (3), cancer (1) and fibrosis (1).**Results**: Chest CT is useful for detection of pulmonary disease and also for co-morbidities impacting all-cause mortality in this population. CT should be considered in those with a significant smoking history, ongoing symptoms despite optimal management or those with high risk characteristics. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

8.19 COPD Virtual Care: A paradigm shift away from hospital care to patient-centred care

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Background: Chronic Obstructive Pulmonary Disease (COPD) is a heterogeneous lung condition causing persistent, progressive airflow obstruction. It is the most common disease-specific cause of adult emergency hospital admissions in Ireland[1]. Virtual wards (VW) are a promising solution to optimize care for COPD patients [2]. The VW aligns with the Slaintecare vision of delivering one universal health service, providing right care, in the right place, at the right time[3] for COPD patients. **Methods**: This study explores the feasibility and effectiveness of a COPD-VW pathway, expanding the existing Outreach service to include remote patient monitoring for acute exacerbation via MyPatientSpace. The VW MDT provides comprehensive patient care. It alleviates inpatient bed strain, improves patient flow, and reduces patients awaiting admission in the Emergency Department. **Results**: COPD-VW has provided 30 care episodes since launching-April 2024. The average length of stay (LOS) is 7.6 days, 35.5% improvement on LOS compared to the national average [5] . The HIPE data report (2024) estimates costings €8179 per COPD hospital stay. This pilot to date has saved 205.4 days. **Conclusions**: Findings from this study will provide valuable insights into the potential benefits of a COPD VW and inform future efforts to scale and embed this innovative care model. **Conflicts of Interest:** The authors declare that they have no conflicts of interest.

8.20 Characterizing Bronchiectasis in Alpha-1 Antitrypsin Deficiency: Insights from the National AATD Registry

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Background: Bronchiectasis is an early and recognized complication of alpha-1 antitrypsin deficiency (AATD), yet its prevalence and clinical impact remain poorly understood. The etiology of bronchiectasis is heterogeneous, driven by a vicious cycle of airway inflammation, structural damage, and impaired bacterial clearance. Novel precision medicine approaches emphasize phenotyping bronchiectasis clinically, radiologically, biochemically, and microbiologically to personalize treatment. This study aims to further investigate the characteristics of bronchiectasis in patients with AATD. **Methods**: We evaluated a total of 604 patients with AATD enrolled in the National AATD Registry. Bronchiectasis severity was assessed through radiologic findings (number of lobes involved), clinical markers (mMRC, CAT, and SGRQ scores), exacerbation history, and lung function tests. Sputum microbiological growth and biochemical markers, including MBL, immunoglobulin levels, and ABPA status were also analysed. **Results**: Preliminary data show a higher prevalence of bronchiectasis in ZZ phenotype of AATD (75%) compared to MZ and SZ phenotypes. Ongoing analysis will explore correlations with exacerbation frequency, severity of bronchiectasis and patient reported outcome measures in the ZZ AATD cohort. **Conclusions**: Further research into the clinical and biochemical correlates of bronchiectasis in AATD is needed to develop personalized management strategies and ultimately improve patient outcomes. **Conflicts of Interest:** There are no conflicts of interest.

8.21 The Irish Null Cohort: A Case Series

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Background: Alpha-1 antitrypsin deficiency (AATD) is a genetic condition caused by a spectrum of SERPINA1 gene mutations, resulting in insufficient levels of a protective protein, alpha1 antitrypsin (AAT). The degree of AAT deficiency confers varying risks of emphysema and liver disease[1]. The Null genotype (Q0) refers to a subgroup of rare SERPINA1 mutations, which cause comp lete absence of AAT protein production and confer the highest risk of pulmonary damage1.

Case Series: This novel case series examines the clinical presentations and disease trajectories of an Irish cohort of patients with rare null phenotypes. Considering the autosomal co-dominant nature of inheritance of AATD, we compared the heterozygotic pheno types M-Null, Z-Null and the exceedingly rare Null-Null. This cohort provides a significant diagnostic challenge, present earlier with higher symptom burden, deteriorate rapidly with pathological stressors, and struggle to recover lung function post insults. We also demonstrate the geographical prevalence of several null mutations, including Q0porto, Q0dublin and Q0bolton. **Conclusions**: Early recognition of rare phenotypes is key to timely intervention. Accurate genetic diagnosis depends on increased awareness, utilisation of multiple collaborative d iagnostic techniques and expert interpretation[2]. While exciting novel therapies loom on the horizon, hinting at the dawn of precision medicine, the absence of government funding of existing treatments (which have been shown to have significant benefit in this niche population[3]) remains a significant barrier in Ireland.

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8.22 Indications for flexible bronchoscopy and safety of procedure in COPD patients

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Background: Flexible bronchoscopy is an essential diagnostic and therapeutic procedure. However, the risk of complications, particularly in patients with chronic obstructive pulmonary disease (COPD), must be carefully considered. The 2013 BTS guidelines highlight an increased risk of complications, including pneumonia, respiratory failure, and desaturation in patients with severe COPD. **Methods:** We conducted a retrospective analysis of 97 patients scheduled for flexible bronchoscopy at Beaumont Hospital between April and May 2024. Data collected included the indication for bronchoscopy, presence of COPD, FEV1 values, and comorbidities. **Results:** Between the 97 patients, a total of 15 indications for bronchoscopy were identified. COPD was present in 21 (22%) of patients, with mean age 67.8+/-11SD and FEV1 (% predicted) 72+/-15SD. Two patients classified as having severe COPD (FEV1 <50%). The most common indications for bronchoscopy in this COPD cohort was for investigating an infectious etiology (59%), hemoptysis (14%), and parenchymal mass or lesion on imaging (14%). **Conclusions:** In an audit of an Irish Bronchoscopy unit, up to 22% of patients have a diagnosis of COPD with a <5% prevalence of severe COPD. Importantly, severe COPD patients require stringent consideration to ensure safety and appropriateness. Further studies are recommended to optimize decision-making in this high-risk group.**Conflicts of Interest:** The authors declare no conflicts of interest

8.23 Audit of Assessing Compliance to COPD Acute Treatment Bundle against the Irish Thoracic Society Guidelines

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Background: Exacerbations of chronic obstructive pulmonary disease (AECOPD) are a cause of increased morbidity, mortality, and reduced health status[1]. Standardized AECOPD treatment improves patient care and shortens hospital stays. We sought to determine compliance with the Irish thoracic society COPD acute management bundle2 in Mayo University Hospital. **Methods:** Retrospective and prospective data was collected for patients admitted with AECOPD from Feb 2023 to Feb 2024. Data collected included review of electronic discharge summary, medical records, chest x-ray reports and laboratory results. **Results:** 46 patients had a confirmed diagnosis of AECOPD and were included in the analysis. 100% of the patients received oxygen therapy with SpO2 maintained at 88-92%. ABG was done for 50% of patients. 80.43% received bronchodilators within 30 minutes of presentation. Prednisolone

was administered within 2 hours in 76.09%, CXR was reviewed within 2 hours in 69.57%, and antibiotics were administered within 4 hours of presentation in 69.57%. 8.70% were considered for COPD outreach and 45.65% were referred to the respiratory team within 24 hours of presentation. **Conclusion:** The data shows 100% compliance with oxygen therapy and 70-80% compliance with bronchodilator, corticosteroid administration, and CXR reviews. However, there was poor compliance with regards to timely referral to respiratory team and COPD outreach. Timely reviews by respiratory teams could improve follow-up plans and reduce readmission rates. **Keywords:** COPD, acute exacerbation, treatment bundle, guideline adherence, patient outcomes **Disclosures:** The authors declare no conflict of interest.

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8.24 What is the impact of long-term oral N-acetylcysteine use on lung function in COPD patients?

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Background: Oxidative stress is a contributing factor in Chronic Obstructive Pulmonary Disease (COPD) progression and lung function decline. N-acetylcysteine is an anti-oxidant and its properties suggest that it can play an important role in reducing oxidative stress. A systematic review was undertaken to determine the impact of long-term oral N-acetylcysteine use on lung function in adults with COPD. **Methods**: A database search was conducted to source all relevant studies, inclusive of CINAHL, Medline, Embase and The Cochrane library. 231 records were found, six randomised controlled trials passed the inclusion and exclusion criteria and were included in the systematic review. The primary outcome measured was lung function assessed by spirometry. The secondary outcomes measured were frequency of exacerbations, hospital admission rates and quality of life. **Results**: Two studies reported an improvement in lung function post N-acetylcysteine, the other four did not. Exacerbation frequencies were found to be reduced in four studies. N-acetylcysteine was found to have no impact on hospital admission rates and quality of life. **Conclusion**: N-acetylcysteine is ineffective in improving lung function in all COPD patients however it can help in reducing the frequency of exacerbations. **Keywords:** COPD, Lung function, N-acetylcysteine **Disclosure:** The author declares that they have no conflict of interest.

8.25 The Impact Of Biological Sex On Response To Pulmonary Rehabilitation In COPD

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Background: Chronic obstructive pulmonary disease (COPD) may affect men and women differently, with women reporting more symptoms and anxiety/depression for the same degree of physiological impairment. Pulmonary rehabilitation (PR) has been shown to improve outcomes in COPD both in terms of symptom burden, and exercise tolerance. It has not been definitively established where these differences

are linked to different responses to PR in males and females. **Methods:** To assess the differential impact of PR on the sexes in COPD, we examined baseline and post-PR changes in exercise capacity (incremental shuttle test, six minute walk test), and symptom burden (COPD Assessment Test (CAT), Hospital Anxiety and Depression Scale (HADS)) between males and female taking part in an outpatient PR programme. **Results:** Patients with COPD attending outpatient PR in our centre between 2016 and 2024 were included. The baseline walk test distance and CAT score were similar between the sexes. Similarly, no significant difference was noted in degree of change in important physiological and symptom-based PR outcomes between males and females. **Conclusion:** Despite variation in disease manifestations between male and female patients with COPD, PR outcomes between the sexes were equivalent. **Funding**: No external funding was received **Conflict of Interest**: The authors declare no conflict of interest

8.26 Relevance of Group C & D in COPD Classification Post-GOLD 2023 Guidelines

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Background: The GOLD 2023 guidelines combined Groups C and D into a single category E, suggesting similar treatment strategies. However, distinctions between C and D might still be clinically relevant, especially concerning symptom burden and exacerbation risk. **Methods:** We retrospectively analysed pulmonary function tests (PFTs) from 35 patients conducted over three months at the Cork South City Respiratory Integrated Care Hub. Data analysis was performed using Microsoft Excel and paired sample T-tests. PFTs with poor technique, missing DLCO, lung volumes, MMRC scores, or exacerbation history were excluded. **Results:** Age, gender, and certain lung function parameters (RV%, RV/TLC %, and TLC %) did not differ significantly across GOLD stages ($p > 0.05$). However, MMRC, exacerbations, post-bronchodilator FEV1 %, and DLCO% corrected showed significant differences between stages ($p < 0.05$). Regarding smoking history, the distribution of active smokers was similar across all groups, with no significant difference ($p = 0.71$). Groups A and D had slightly higher proportions of active smokers compared to B and C, but without a clear correlation to disease severity. **Conclusion:** Despite the GOLD 2023 guidelines, significant clinical differences in MMRC scores, exacerbations, and post-bronchodilator FEV1 % suggest that Groups C and D still offer relevant insights for COPD management. These distinctions, combined with the consistent smoking history across groups, justify tailored treatment approaches that might be lost in a broader category E. **Keywords**: COPD, airway disease, GOLD guidelines
Disclosures: Nothing to declare.

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8.27 Patient reported experience of the Community Respiratory Service Integrated Care Programme for Chronic Disease (ICPCD)

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Background : Both the WHO and HSE have identified patient centred care as key priorities in the design and delivery of healthcare As part of the ICPCD, Community Respiratory clinics aim to provide Multi-disciplinary optimal care for COPD and Asthma patients as close to their home as possible. An evaluation was conducted to ascertain if the service is meeting the needs of the patient population. This evaluation sought to outline the patient's experience of attending a community based, Respiratory Clinic and ensure that the care provided is of a high standard and is effective. The evaluation also aimed to highlight any modifiable factors that could be improved We also sought to assess whether patients confidence in disease self-management improved following service intervention and has improved patients own experience of living with a chronic respiratory disease. **Methods**: A Patient Reported Experience Measure (PREM) questionnaire designed by IQVIA, provides a measure of patient experience as reported by the patient themselves was posted to patients attending the service from Jan 2023 to June 2024. 150 PREMs were sent. The anonymous responses were collated and analyzed to extract the data.

Results

- 40% Response rate (58/150 Pts)
- 100% respondents extremely happy with the service
- 100% respondents reported that they would prefer to continue to have their appointments in a community setting

Conclusion: Reviewing the service provided ensures the service is patient focused; leading to better outcomes through higher levels of patient engagement and patient satisfaction. **Keywords** ICPCD Integrated Care Programme for Chronic Disease, PREMS ,COPD (Chronic Obstructive Pulmonary Disease), Asthma **Disclosures** There was no funding received for this study **Conflict of Interest-** The authors declare that they have no conflict of interest.

8.28 Voices from the Frontline: Harnessing Focus Groups to Shape COPD Virtual Care Ward Innovations

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Background: The integration of digital health technology in chronic obstructive pulmonary disease (COPD) management presents a unique opportunity to enhance patient care. Focus groups involving COPD patients are instrumental in shaping new services that resonate with the patients' needs and preferences. Engaging directly with patients allows for a deeper understanding of their

experiences, challenges, and expectations regarding digital health solutions. As one participant remarked, "*The technology I'd manage but being able to be in my garden in the sunshine would be amazing*". By fostering an open dialogue, focus groups create a platform for patients to express their concerns and wishes. This collaborative approach ensures that new services are not only clinically effective but also user-friendly and relevant. Another participant in the group commented, *"all about your condition is spoken out loud for everyone to hear"* following a recent Accident and Emergency presentation, "*to share our stories, helps you see these problems for us"* which in turn allows practical solutions. **Results:** Moreover, focus groups can identify gaps in existing services and highlight features that matter most to patients. For instance, feedback on usability can lead to the design of more intuitive interfaces, enhancing patient adherence and engagement. In a recent mHealth App Usability Questionnaire, a respondent scored 7/10 for "The information in the app was well organized, so I could easily find the information I needed."**Conclusion:** Ultimately, incorporating patient voices through focus groups fosters a patient-centered approach in developing digital health technologies for COPD management. This not only improves the design and implementation of services but also empowers patients, making them active participants in their health journey. By prioritising their insights, healthcare providers can ensure that new services effectively address the unique challenges faced by COPD patients, leading to improved, cost effective outcomes, hospital avoidance and a better quality of life. **Conflict of Interest-** The authors declare that they have no conflict of interest.

8.29 Adherence with COPD Guidelines in the Management of Patients Attending a Respiratory Advanced Nurse Practitioner Outpatient Clinic.

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Background: Chronic obstructive pulmonary disease (COPD) is a progressive, life-threating lung disease and represents a major burden to individuals, societies and healthcare services throughout the world. The Irish Thoracic Society estimates that almost 500,000 people aged 40 years and over in Ireland could have COPD, of whom over 200,000 have moderate or severe disease and only half are likely to be diagnosed. It is ranked as the third leading cause of death globally by the World Health Organisation, and the fourth leading cause of death in Ireland. **Methods:** Diagnosis and management of COPD remains one the primary reasons for referral to the Respiratory Advanced Nurse Practitioner (RANP) outpatient clinic. A retrospective audit was carried out of patients that attended the clinic over a six month period with a diagnosis of COPD in order to evaluate concordance with international best practice as determined by the GOLD guidelines. A chart review was conducted and information gathered on i) diagnosis and assessment, ii) non-pharmacological management and iii) pharmacological management. **Results:** Study outcomes were interpreted to assess if decisions about the care of individual patients demonstrated explicit and judicious use of evidence based guidelines for the diagnosis and management of COPD. Overall results demonstrated that patients attending the clinic received care in line with the guidelines and highlighted areas for improvement including staging of disease, Alpha 1 antitrypsin status and assessment tools. **Conflict of Interest-** The authors declare that they have no conflict of interest.

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8.30 An Update from the National Alpha-1 Antitrypsin Deficiency Targeted Detection Programme

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Background: Alpha-1 antitrypsin deficiency (AATD) is a genetic disorder that causes lung, liver, and skin disease. This is caused by a mutation of the SERPINA1 gene, which codes for alpha-1 antitrypsin, an important protease inhibitor. The most common harmful mutation is Z (Glu342Lys, rs28929474) (carried by 1 in 25 Irish people (1)). International guidelines advocate screening all chronic obstructive pulmonary disease (COPD), poorly-controlled asthma, and cryptogenic liver disease patients, and first degree relatives of known AATD patients. **Methods:** >25,000 individuals have been tested following WHO, American Thoracic Society (ATS) and European Respiratory Society (ERS) guidelines, in a national targeted detection programme (TDP). AAT quantification is performed by turbidimetry, while phenotyping is by isoelectric focusing. Rare and novel mutations are identified by SERPINA1 gene sequencing. **Results:** We have identified 449 ZZ, 515 SZ, 146 SS, 4,911 MZ, 2,392 MS, and over 200 individuals with rare clinically-significant phenotypes (e.g. IZ, FZ, IS, Z/Mmalton). A total of 25 different SERPINA1 mutations have been detected. A number of novel and ultra-rare SERPINA1 mutations have also been identified, including 5 different Null (Q0) mutations. **Conclusions**: Our results demonstrate the high prevalence of AATD in Ireland and the efficacy of a TDP. Advantages following a diagnosis include lung and liver surveillance, specific treatments, family screening, rapid smoking cessation, and mitigation of occupational exposures **Conflict of Interest:** The authors declare that they have no conflict of interest.

8.31 Enhanced Identification and Stratification of Patients with COPD in General Practice

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Background: COPD accounts for a greater number hospitalisations in Ireland than that for cardiovascular & non-lung cancer cases combined[1]. Ireland has the 4th highest hospitalisation rate for COPD among selected OECD countries[2]. Whilst COPD is not curable, it is treatable & early diagnosis and treatment helps to improve patient outcomes.[3] **Methods:** Using a bespoke digital platform, via a non-promotional service funded by GlaxoSmithKline (Ireland) Ltd, accurate identification and stratification of COPD patients was completed based on data points such as internal practice coding and/or prescribed medication. Identified patients were then verified through GP chart

review. **Results:** 75 GP practices participated with 5,498 patients noted as having a prior coded diagnosis of COPD. An additional 4,469 patients were identified and confirmed for diagnostic coding based on clinical data. 2,064 patients were reviewed in service nurse clinics. 55% of patients received ≥1 pharmacological interventions and 94% of patients received ≥1 non-pharmacological interventions. **Conclusions:** The work presented here demonstrates the clinical benefit of proactive case finding & coding to support register formation. Clinically risk stratifying patients to prioritise review based on disease markers supports the HSE's Enhanced Community Care directive & the proactive recall & management will help avoid unnecessary acute hospital admissions. **Keywords:** COPD, clinical stratification, coding, disease register.**Disclosures:** Funding – This service was funded by GlaxoSmithKline (Ireland) developed by IQVIA, IQVIA Interface & delivered as a Healthcare Support Service (as defined in the IPHA code) by IQVIA & IQVIA Interface **Conflict of Interest** – The authors declare that they have no conflict of interest.

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8.32 Optimizing Outcomes For Those With Chronic Respiratory Disease: Detecting Frailty In The Respiratory OPD

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Background: Frailty is a treatable trait of relevance to people with various chronic respiratory diseases, especially those with severe COPD[1]. This has been recognised in the 2024 GOLD report and within recent ERS (European Respiratory Society) guidelines[1]. This study evaluated the prevalence of frailty among patients attending the respiratory OPD (outpatient department) in a tertiary hospital. **Methods:** A cross-sectional study was conducted in respiratory clinics over a two-week period. Patients aged ≥65 years were screened for frailty using the Clinical Frailty Scale (CFS). A CFS score was assigned to each patient by an assessing doctor on the respiratory team. Frailty was defined as those having a CFS score of ≥5. **Results:** In total, 25 patients were included in the study. Frailty (CFS score of ≥5) was identified in 56% of patients assessed, with 12% of patients being identified as having a CFS score of 7 (severely frail) or higher. Frailty hadn't previously been diagnosed by the respiratory team in those patients. **Conclusion:** This study highlights a high prevalence of frailty among patients in the respiratory OPD. Implementing systematic frailty screening amongst over 65s using the CFS can improve early identification of such patients, potentially enhancing management and clinical outcomes. **Conflict of interest:** The authors declare that they have no conflict of interest.

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Irish Thoracic Society Poster Review and Discussion

Friday 15th November 2024

9. Paediatrics

9.1 Digital chest drainage systems reduce hospital length of stay and number of chest x-rays performed in a paediatric population: a systematic review and meta-analysis

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Background: Pulmonary resection is commonly performed as curative treatment for congenital lung lesions. A plethora of high-quality studies have shown improved outcomes with digital chest drainage systems compared to traditional water-seal systems in adults. By contrast, there is a paucity of research with children and therefore uncertainty in post-operative chest drain management in paediatrics. **Methods:** A systematic review and meta-analysis was conducted to assess the effect of digital chest drainage systems in paediatric patients after pulmonary resection. Data sources included PubMed, Cochrane Central Register of Controlled Trials, EMBASE, and SCOPUS, with information from January 2007 to July 2024. Three observational studies with 74 patients were included. **Results:** There was a statistically significant reduction in hospital length of stay ($p = <0.01$) and number of chest x-rays performed ($p = <0.0001$) in the digital group compared to the traditional group. Although a reduction in chest tube duration was seen in the digital group, this was not statistically significant ($p = 0.262$). There were no significant differences in development of pulmonary complications between groups ($p = 0.839$). **Conclusion:** The use of digital chest drainage systems demonstrated a shortened hospital length of stay and quantity of chest x-rays performed in this study cohort. **Keywords:** pulmonary resection, digital, chest drain, paediatric **Funding:** There was no funding support for this study. **Conflict of interest:** The authors declare that they have no conflict of interest.

9.2 Gender and Sexualities: Associations with smoking and e-cigarette use in young adults in the Growing Up in Ireland Cohort '98 study

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Background There is evidence of higher smoking in sexual minorities but little knowledge of their e-cigarette use. Little is known of smoking or e-cigarette use as regards transgender status. We examine gender and sexualities associations with ever and current-smoking and e-cigarette use. **Methods** We use data from 5,190, 20 year-olds from Wave 4 of *Growing Up in Ireland* Cohort '98 reporting gender, transgender and sexual orientation, ever- and current-smoking and e-cigarette use. Analyses were performed using SPSS v27. **Results** 11.6% (n=591) of 20-year-olds reported being gay, lesbian, bisexual, or questioning (LGBQ); 0.5% (n=27) reported being transgender. No significant differences in smoking were found between males and females, but females were significantly less likely to be ever- (OR 0.59, CI:0.53,0.66) or current (OR 0.60, CI:0.51,0.71) e-cigarette users. No transgender differences were reported for smoking or e-cigarette use. LGBQ respondents were significantly more likely to be current smokers (OR 1.49, CI:1.25,1.77) and ever e-cigarette users (OR 1.26, CI:1.06,1.50). **Conclusion** We confirm raised prevalence of smoking and e-cigarette use in LGBQ and report higher e-cigarette prevalence in cisgender males.

It is recommended that policy and cessation initiatives reflect these risks. Being transgender appears not to be a risk but numbers are very small. **Conflict of Interest:** The authors declare that they have no conflict of interest.
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Permissions: Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

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9.3 Self-harm and the prevalence of smoking, e-cigarette and dual use - data from Growing Up in Ireland Cohort '98

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Background Self-harm behaviours occur all over the world and are most prevalent in age groups 15–34 years[1]. Self-harm behaviours include cutting or burning their skin, punching or hitting or poisoning themselves with tablets or toxic chemicals[2]. Patterns of self-harm are heterogeneous in type, frequency, and severity[3] with evidence of increased smoking prevalence [4]. We examine smoking and e-cigarette use in those who self-harm. **Methods** We use data from 5,190, 20 year-olds from Wave 4 of *Growing Up in Ireland* Child Cohort who reported self-harming, and also ever- and current smoking and e-cigarette use. Analyses were performed using SPSS v27. **Results** 7.6% (n=384) of 20-year-olds report self-harming, of whom 58.6% (n=225) are female. Those who report self-harming are significantly more likely to report ever-smoking (84% vs 73%), current smoking (49% vs 37%), ever e-cigarette use (60% vs 47%), and dual use (18% vs 13%). They are also more likely to report higher current e-cigarette use but N/S.
Conclusion Smoking continues to decrease in the general population, but it remains a serious health threat, especially for some vulnerable groups. It is important to identify those at special risk and to provide tailored policy interventions and appropriate smoking and nicotine cessation services.

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9.4 Idiopathic Pulmonary Haemosiderosis and diagnostic challenges in the paediatric patient

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Background: Idiopathic pulmonary hemosiderosis (IPH) is a rare disease, and is characterized by recurrent episodes of haemoptysis, iron deficiency anaemia and pulmonary infiltrates on chest imaging. Recurrent pulmonary haemorrhage can lead to deposition of haemosiderin in the lungs and subsequent fibrosis after repeated episodes of alveolar haemorrhage.

Case Description: Two-year-old male presented with intermittent haemoptysis, breathing difficulties and anaemia. Haemoglobin on presentation was 3g/l, requiring blood transfusion. CXR showed patchy lower lobe infiltrates. Extensive infective, auto immune and radiological work up performed at that time. Nil infectious cause found. Auto-immune workup was positive for pANCA and Anti-MPO antibodies. Haemoglobinopathy screen consistent with sickle cell trait. CT thorax showed right side extensive ground glass opacification. Appearances suspicious for diffuse primary pulmonary haemosiderosis. Patient treated with steroids and hydroxychloroquine due to worsening symptoms and oxygen requirement. Patient had excellent response with complete resolution of symptoms until representation at 15 years of age with new haemoptysis and anaemia. CT thorax now showing ground glass opacification predominantly in the lower lobes, but with diffuse parenchymal abnormality and numerous parenchymal cysts. **Conclusion**: IPH is a diagnosis of exclusion. Here, we describe a patient with an original diagnosis of IPH but now requiring further evaluation with lung biopsy to ascertain aetiology of his haemoptysis, and therefore guide treatment options going forward. **Conflict of Interests**: The authors declare that they have no conflict of interest.