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MEETING ABSTRACTS

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Poster Session 1: Asthma & Sleep Disorders

1.1 Clinical accuracy and risk of harm in asthma related content on TikTok

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Background: The use of social media in healthcare poses a risk of misinformation. This is partly due to large volumes of unverified content. We evaluated content related to asthma management on TikTok, specifically its adherence to guidelines and its potential for harm.
Methods: We searched the term "asthma" and filtered results by number of likes. We excluded duplicates, videos in languages other than English and videos not pertaining to the management of asthma.
Results: The top 100 videos had a combined like count of 9,375,467. 33% of content was generated by healthcare professionals. The videos were aimed towards patients with asthma (90%), parents of children with asthma (5%), medical professionals (4%) and medical students (1%). Advice related to homeopathic remedies (28%), medical therapies (20%), environmental exposures (20%), home modifications (12%), inhaler technique (12%), diet (12%), vaping (9%), breathing techniques (8%), smoking (6%), symptom monitoring (4%) and exercise (4%). Only 29% followed guidelines, while 25% was considered potentially harmful. Sponsored videos accounted for 4%.
Conclusion: The majority of information related to asthma on TikTok was not guideline driven. A significant proportion was potentially harmful. Medical practitioners should be aware of this and educate patients on the risks of unregulated, non-evidence-based information.

Keywords: Asthma, TikTok, Social media

Disclosures:

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

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1.2 The role of FENO in the diagnosis of asthma

Harisanjiv Rajendram[1], Daniela Dias[1], Oisin O'Connell[1], Niamh Lawlor[1], Regina Cristovao, Liam Doherty[1]

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Background: Many asthmatic patients display type 2 inflammation and an upregulation of nitric oxide (NO) release into airway. This is reflected by an increase in fractional exhaled nitric oxide (FeNO). Hence, FeNO may be a quantitative, non-invasive, useful, and safe surrogate measure of assessing asthma. An elevated FeNO level signals active eosinophilic airway inflammation and may suggest a diagnosis of asthma and a response to steroids.
Aim: To review the usefulness of FeNO measurements in the diagnosis and management of asthma.
Methods: A single centre cohort study of patients attending the Pulmonary Function Test Laboratory from August 2021 to July 2023. Each subject had FeNO, and spirometry with reversibility testing carried out.
Results: 71 patients (39 females), mean age 35 (8-73) years, were analysed. An elevated FeNO (>25ppb) was seen in 33 (46%) subjects. In this group, only 52% had corresponding high bronchodilator reversibility. Conversely, 12 (17%) subjects had low FeNO levels but had significant improvement post bronchodilation. FeNO levels had no correlation with the severity of bronchodilator reversibility.
Conclusion: The measurement of FeNO helps in the diagnosis of asthma and suggests responsiveness to steroids. However, a low FeNO does not exclude asthma and should not replace reversibility testing.

Keywords: Asthma, fractional exhaled nitric oxide (FeNO), IgE, type 2 inflammation

Disclosures:

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

1.3 Patients' Attitudes towards Medical Research in the Severe Asthma Clinic in Cork University Hospital

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Department of Respiratory Medicine, Cork University Hospital, Cork.

Background: Asthma research has led to significant advances in understanding disease pathogenesis and subsequent treatment. The severe asthma clinic in CUH is involved in multiple asthma clinical trials. The aim of this survey was to assess patients' attitudes to research, their willingness to partake in research including clinical trials and to determine any barriers which may prevent engagement.
Methods: An exploratory, closed ended, Likert and dichotomous survey questionnaire was distributed over 3 months to patients attending the Severe Asthma Clinic in C.U.H.
Results: All patients' felt research was an important part of medical care. The vast majority of outcomes demonstrated a positive attitude towards research with a majority happy to partake in research if they were asked
Conclusion: This survey demonstrated that patients understood the value of clinical research. It is promising that a majority of patients attending the severe asthma clinic are happy to partake in clinical research.
Conflict of Interest: The authors declare that they have no conflict of interest.

1.4 Children's Asthma Pack – A Patient Centred Initiative For A Family Friendly Asthma Education Resource

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Children's Health Ireland at Tallaght, Dublin, Ireland.

Background: Education is a core component of effective self management programmes for children with asthma (1). Respiratory nurse specialists at CHI@Tallaght provide asthma education on average to 1000 children and families annually. The Children's Asthma Pack (CAP), provides an innovative education approach to improve parental confidence in managing their child's asthma in the community.
Methods: CAP, a user friendly designed A5 wallet containing standardised asthma resources.These included asthma information booklet, inhaler technique leaflets and QR video codes, personalized asthma action plan, and parent feedback survey. CAP is given to all patients

with asthma diagnosis within the hospital setting. Follow up telephone consultation arranged for those not reviewed by a respiratory nurse.
Results: CAP given to all inpatients with asthma diagnosis and attending asthma nurse led clinics. Feedback survey shows 80 percent of parents confident in managing their child's asthma since receiving CAP. 100 percent of parents found CAP easy to follow.
Conclusions: Improved access to asthma information and support, with an increased parental confidence in managing their child's asthma. Plans to digitilise CAP to increase accessibility to families and healthcare professionals are in order.

Keywords: Asthma education.

Disclosures: Asthma Society of Ireland resources**.**

Funding: SPARK awarded funding for printing.

Conflict of Interest: The authors declare no conflict of interest.

References:
Global Initiative for Asthma. 2022. GINA Report, Global Strategy for Asthma Management and Prevention. https://ginasthma.org

1.5 MSC secretome prevents apoptosis in a model of allergen-induced airway epithelial damage; a role for MIF stimulation of the protective factor VEGF

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Background: Mesenchymal stromal cells (MSCs) are bone marrow-derived cells that are renowned for their cytoprotective abilities. The impact of the macrophage migration inhibitory factor (MIF) CATT polymorphism on MSC licensing is undocumented. In asthma, inhalation of house dust mite (HDM) damages the airway epithelium. Vascular endothelial growth factor (VEGF) plays a pivotal role in the repair and maintenance of airway epithelial integrity.
Methods: Human bone-marrow derived MSCs were licensed with $CATT_7$ MIF monocyte supernatants to examine the therapeutic effects of MIF-MSC conditioned media (CM).
Results: MIF-MSCs secreted elevated VEGF, which significantly enhanced bronchial epithelial wound healing. MIF-MSC CM provided epithelial protection from HDM-induced apoptosis *in vitro*. These cytoprotective effects were MIF-dependent, as protection was blocked with the addition of the MIF inhibitor SCD-19. Furthermore, the cytoprotective efficacy of $CATT_7$-MIF licensed MSC CM was also demonstrated when administered intranasally after HDM challenge *in vivo.*
Conclusion: This study demonstrates the therapeutic efficacy of human MIF-licensed MSC CM, where increased levels of MSC-derived VEGF facilitated epithelial protection and repair *in vitro* and *in vivo*.

Disclosures:

Funding: This study was funded by Irish Research Council ((RCLA/2017/288).

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

1.6 Development of Severe Asthma Clinic in Galway University Hospitals

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The authors declare they have no conflict of Interest

Background: Difficult to treat/ Severe Asthma patients make up 24% of Asthma patients (GINA 2019).These patients were followed up in GUH in general respiratory clinics for their Asthma. With newer treatments available and the requirement for monitoring to acquire these drugs, a need was identified for a Specialist Asthma clinic.
Methods: In mid-2022, a difficult to treat/ severe asthma clinic was established to treat patients with difficult to treat/ severe asthma. A patient referral process was developed with criteria for referral to the Specialist Asthma clinic.
Results: Patients referred are assessed over 3 consecutive visits to complete a comprehensive work-up. Using an Asthma Proforma, patients are assessed and information on their management is collected. Following a Consultant devised algorithm, 3 consultations are scheduled comprising of Inhaler technique, medication adherence, Pulmonary Function Tests, Fractional Exhaled Nitric Acid and screening for comorbidities. As part of their 3rd visit, a plan is devised. This could be their asthma is controlled after monitoring and no further intervention is required at this stage or referral for biologic therapy or other disciplinary input if deemed suitable.
Conclusion: Patients on Biologic therapy continue to be monitored at this clinic with shared care with referring Consultant. Stable Asthma patients not requiring biologic treatment are referred back to the care of their referring Doctor with a management plan in place.

1.7 High levels of human Macrophage migration inhibitory factor (MIF) potentiate Mesenchymal stromal cell (MSC) efficacy in a murine model of allergic asthma

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Human mesenchymal stromal cells (MSCs) rely on specific inflammatory disease microenvironments in order to carry out their anti-inflammatory actions *in vivo*. One of the barriers to the success of MSC therapy is the inability to identify potential responders. Macrophage migration inhibitory factor (MIF) has been identified to play a pivotal role in the pathogenesis of several inflammatory disorders including asthma. Our previous work has demonstrated a dominant role of MIF allelic variants through the use of humanised mice with either high- ($CATT_7$) or low- ($CATT_5$) expressing MIF promoter polymorphisms with the high expressing $CATT_7$ mice exhibiting a more severe asthma phenotype. In this study we sought to investigate the efficacy of MSCs in high vs low hMIF environments using humanised mice in a house dust mite (HDM) model of allergic asthma. Intravenously infused human bone marrow-derived MSCs significantly attenuated airway inflammation in high MIF expressing $CATT_7$ mice by reducing the number of eosinophils and levels of IL-4, IL-5, and IL-13 in the bronchoalveolar lavage (BAL) fluid. MSCs also had a significant effect on airway remodelling in the $CATT_7$ mice with reduced sub-epithelial collagen deposition and goblet cell hyperplasia. Little to no effects of MSC administration were observed in the low MIF expressing mice or wildtype controls. Differences in efficacy correlated with retention as MSCs appear to be retained longer in the lungs of CATT

$_7$ mice compared to $CATT_5$ or wildtypes. These data contributes to a broader understanding on how disease microenvironments can affect MSC therapeutic efficacy and identifies MIF as a potential biomarker for MSC success.

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

1.8 Immunoglobulin Deficiency in an Irish Asthma Clinic

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Background: The presence of an immunoglobulin deficiency in an asthma patient can increase the burden of the disease, leading to poorer asthma control. (1)
The aim of this study was to determine the frequency of immunoglobulin testing in an Irish adult population attending an asthma clinic and to determine if any correlation between the presence of immunodeficiency and overall asthma control.
Methods: This is a retrospective study of one hundred patients attending the Asthma clinic in Cork University Hospital.
Immunoglobulin deficiency (ID) was defined as an IgG, IgA or IgM reading or an IgG subclass result below the internationally accepted range.
Data analysis was performed by way of T-test to ascertain significance, if any, between the ID group and the total population.
Results: In the ID group, 9 of 11 (81%) subjects had an ACQ of >1.5 compared with 35 of 53 (66%) in the Non-ID group. The average ACQ in the ID group was 2.93 vs 2.59 in the Non-ID group, however this did not meet statistical significance. Patients in the ID group had a lower average FEV1 at 66.4% compared to the Non-ID group (77.6%) and the No-Data Group (86.6%).
Conclusion: Patients with low/deficient immunoglobulin levels have poorer overall asthma control evidenced by higher average ACQ scores and lower average FEV1 compared with the overall population.

Keywords: asthma, immunoglobulin deficiency, FEV1, ACQ

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

Corresponding Author: Peter G Leahy

References

1. Efficacy of immunoglobulin replacement therapy and azithromycin in severe asthma with antibody deficiency. Allergol. Int. 2020, 69, 215–222

1.9 Severe Asthma Service Naas General Hospital

Barbara Loughman[1], Christine Hogan[1], Olivia Lee[1], Elizabeth Kohn[1], Catherine Callan[1], Al Gammal Amani[1].

[1]Naas General Hospital

Background: Severe Asthma can be defined as asthma that remains uncontrolled despite maximal therapy and treatment of contributory factors or that deteriorates once high dose treatment is decreased (1). According to GINA (2022) patients with severe asthma should have their phenotype assessed and be considered for biologic therapy. Biologic therapy targets specific inflammatory pathways to reduce asthma exacerbations, improves lung function, reduces use of oral corticosteroid and therefore improves quality of life.
Methods: A severe asthma clinic was set up in Naas Hospital in 2018 to facilitate the assessment and administration of biologic therapy. The aim of this clinic was to ensure severe asthma patients had timely, convenient access to this service. A retrospective review was carried to measure the effectiveness of biologic therapy on severe asthma patients, n= 10. This was done by auditing Asthma Control tests (ACT's), number of exacerbations and use of oral corticosteroids pre and post therapy.
Results: The results showed significant improvements in ACT's, admission rates decreased by 75%, ED presentations decreased by 100%, GP presentations decreased by 45% and use of oral corticosteroids decreased by 86% after patients commenced biologic therapy.
Conclusion: The severe asthma clinic has proved itself to be an effective and quality assured service. The service has ensured patients receive prompt assessment and subsequent access to biologic therapy when required. Although there was a small cohort of patients in this audit the results are impressive and significant.

References: 1. Global Initiative for Asthma (2022) Gina Global Strategy for Asthma Management and Prevention 2022 Report.

1.10 A retrospective analysis of referrals and outcome measures of the influence of Fractional Exhaled Nitric Oxide Testing (FeNO) in the support of an asthma diagnosis

O'Donnell M[1,2] , Casey D[1], O'Riordan U[1], Bowen B[1] , Vairamani P[1], Varghese P.[1], Ahern M[1], Osbourne M[1], Noonan C[1], Meade C[1], O'Regan H[1] Carvalho J[1], Paulos V[1], Murphy J[1], Gomez F[1,2]

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Background: Fractional exhaled nitric oxide testing (FeNO) is surrogate biomarker of airway eosinophil inflammation in allergic asthma and rhinitis. Ireland has one of the highest rate of asthma worldwide.
Objective: To evaluate patients with query asthma and determine clinical and physiologic characteristics of patients with high FeNO.
Methods: A retrospective analysis of patients who attended for spirometry to the Respiratory Integrated Care hub and also had FeNO completed. Smoking history, exacerbation history, inhaled corticosteroids use, mean eosinophils were reviewed, as well as airflow variability and spirometry results. A diagnosis of asthma was made on the basis of having a pretest diagnosis of asthma, airway reversibility, and either raised eosinophils (>0.3) or FeNO >30.
Results: Out of 119 patients, 17 (14.3%) fulfilled the criteria for a diagnosis of asthma. Those with high FeNO had statistically significant airflow variability, smoking, and raised eosinophils. ($p < 0.05$). Of the 17 diagnosed, 4 did not have a raised FeNO. These 4 were all current smokers. Of the 17 diagnosed, 17 (100%) had airway reversibility, 10 (58.8%) had high eosinophils, and 13 (76.4%) had high FeNO.
Conclusions: In patients with suspected asthma, FeNO was found to be high in 76% compared 100% with airway responsiveness and 59% with high eosinophils.

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

1.11 The Introduction of Improved Quality Assurance Practices in a Sleep Laboratory

[1]Rachel Anglin, [1]Mark Traynor, [1]John Garvey, [1,2]Silke Ryan

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

Background: The quality assurance (QA) programme was updated in the Sleep Laboratory in SVUH.
Methods: New equipment with HD video has improved the quality of sleep analysis. A suite of departmental guides were developed aiding staff to reach similar decisions when analysing sleep data. An inter-scorer variability quality control (QC) check of all cardiorespiratory analysis is completed monthly for all staff (*figure 1*). Funding was secured to subscribe to the AASM Inter-Scorer Reliability (ISR) programme[1] allowing monthly comparisons of the Physiologist's polysomnography analysis with the global average (*figure 2*). Existing processes were streamlined and communication improved to enhance service delivery and quality. Written instructions were developed for all tasks. Guidelines, based on international standards, and training records were updated for both sleep equipment and analysis. Interesting sleep studies are reviewed and discussed regularly by the team.
Results: Every aspect of Physiologist's work in the Sleep Laboratory has been significantly improved since the introduction of the updated QA programme (*figures 1 and 2*).
Conclusion: Improving the quality of sleep diagnostics is varied and complex. A QA programme should form a core process in all Sleep Laboratories.

Keywords: Quality Assurance, Sleep analysis, Physiologist, training

Disclosures: The authors have no disclosures or conflicts of interest to disclose

References:
1. Sleep ISR: Inter-Scorer Reliability Assessment System (aasm.org)

Figure 1 QC check of cardiorespiratory analysis

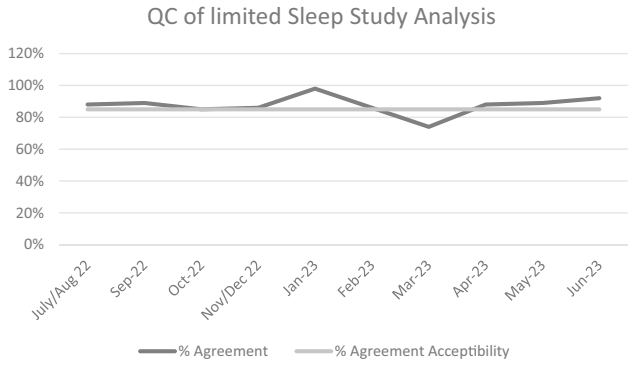
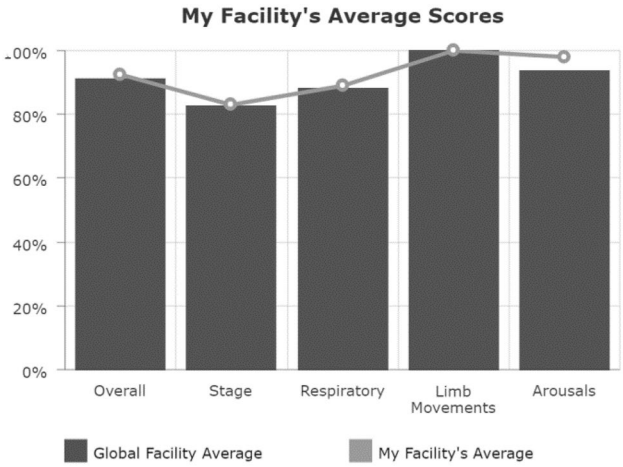


Figure 2 AASM ISR report on SVUH sleep lab analysis quality May 2023



1.12 The impact of Multiple Sleep Latency Testing (MSLT) as an additional diagnostic tool to assess central disorders of hypersomnia at Connolly Hospital Sleep Disorders Unit

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Background: Central disorders of hypersomnolence are encountered episodically at sleep clinic and require a highly skilled MSLT investigation as well as tailored therapy. In July 2021, MSLT was added to the established sleep service. We summarise the population of patients assessed to date.

Methods: In 24 months, 1360 patients had sleep studies: 981 (72%) polysomnography (PSG); (379) 28% polygraphy and 11 (0.80 %) MSLTs.

Results:

Report parameters	Mean (min-max range)
Self-reported sleep duration	493 min (390-720)
2 week Actigraphy reported sleep duration	417 min (318-494)
Mean Sleep efficiency	87.70 % (47.7-98.5)
Mean Sleep latency	22.5 min (2.5-54)
REM latency	130.7 min (40.5-396)
Arousal index	8.03 (3.9-19.2)
AHI	8.54 (0.6-35.9)
PLM index	12.2 (1.2-43)
Average sleep latency	7.27min (1.5-15.6)

Conclusion: Diagnoses were narcolepsy type I (0 %), narcolepsy type 2 (27.27 %), idiopathic hypersomnia (63.64%), other (9.09%), and co-morbid Obstructive Sleep Apnoea (18.18%). An MSLT service is labour intensive and time consuming but is essential to a high volume sleep service to accommodate the spectrum of sleep disorders encountered.

Disclosures: None

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1.13 Outcomes in at home pulse oximetry in a paediatric respiratory centre

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Background: Home pulse oximetry is a first line investigation for sleep disordered breathing (SDB) in children. These studies are reliant on parental/guardians education of study technique, potentially contributing to technically inadequate, non-diagnostic studies.
Methods: Data was assessed from a prospectively collected database from January 2018 to July 2023 of all scheduled home oximetry in a regional paediatric respiratory centre. Data assessed included total number of studies, failure and non-attendance rates.
Results: Over the sample period 2,386 studies were arranged. Of these 1,573 (65.9%) were completed. In 2020, 25.3% (97/383) of all planned studies were cancelled during the COVID-19 pandemic. Studies were technically inadequate in 33.6% of all completed studies (528/1573). Rates of technical inadequacy were highest in 2020 at 38.2% of completed studies (83/217) and 2021 at 37.8% (98/259). Inadequacy rates were lowest in 2023 at 27.4% (66/241). There was no statistically significant sustained trend over the sample period.
Conclusions: Rates of non-attendance and technical inadequacy were significant, with the latter highest during pandemic restrictions, which may have impacted parent/guardian education. A large amount of resources could therefore be more efficiently utilised. These results will be used to inform an audit cycle with implementation of further educational resources for parents/guardians.

Keywords: Sleep disordered breathing, SDB, home pulse oximetry

Disclosures: No disclosures to make.

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

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1.14 A review of the use of domiciliary non-invasive ventilation in a tertiary hospital

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Background: Non-invasive ventilation (NIV) represents a therapeutic option for many conditions including a range of respiratory, neurological and musculoskeletal disorders. In our institution, we care for a wide spectrum of these conditions and thus, in 2021, we established optimisation clinics for patients on long-term domiciliary NIV.
Methods: We set out to review the patients attending our service for NIV. We reviewed the indications and pressure settings that provided therapeutic benefit for our patients.
Results: We reviewed 8 patients in total. 3 patients were male and 5 patients were female. The mean age was 50.8 years ± 16.7 representing a wide range in age. 50% of patients (n=4) carried a documented diagnosis obesity hypoventilation syndrome (OHS), 25% (n=2) patients had a diagnosis of kyphoscoliosis, 1 patient (12.5%) had a diagnosis of progressive central hypoventilation and 1 (12.5%) had a diagnosis of motor neuron disease (MND). The variation of NIV pressures used to treat these patients are outlined in **Table 1.**
Conclusion: Our data indicated that a variety of pathologies require domiciliary NIV. The pressure requirements are typically higher than those traditionally advocated for use in the initiation of NIV in acute settings and that an individualistic approach to NIV management can significantly impact hospital admissions in select cases.

Table 1.

Patient no.	Diagnosis	IPAP	EPAP
1.	OHS	22	10
2.	OHS	22	10
3.	Kyphoscoliosis	24	8
4.	OHS	22	12
5.	Kyphoscoliosis	17	7
6.	Progressive idiopathic central ventilation	20-26 (AVAPS targeting TV 520mls)	8
7.	MND	16	7
8.	OHS	20	11

Table 1. highlights the range of NIV pressures used at treat our patients. *Abbreviations: AVAPS: average volume-assured pressure support (AVAPS); TV: tidal volume*

Keywords
Non-invasive ventilation; obesity hypoventilation; kyphoscoliosis; motor neurone disease

Disclosures
No relevant disclosures to declare

1.15 Are we doing the necessary investigations to monitor for cardiometabolic risk factors in confirmed cases of obstructive sleep apnoea in our centre?

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Background: Obstructive sleep apnoea (OSA) is a prevalent condition characterized by the collapse of the upper airway during sleep. While polysomnographic indices like apnea-hypopnea index (AHI) and oxygen desaturation index (ODI) are commonly used for OSA diagnosis, recent research has focused on novel quantitative markers such as hy1poxic burden and desaturation severity[1]. These markers have shown strong associations with cardiovascular morbidity. Current evidence also strongly suggests all patients diagnosed with OSA should be screened for metabolic syndrome [2].
We assessed the current practice in our centre to determine whether the necessary blood investigations are being conducted to effectively identify and manage associated cardiometabolic disorders in confirmed OSA patients.
Method: We conducted a retrospective audit to evaluate whether patients with confirmed OSA had appropriate blood investigations completed for cardiometabolic workup.
Results: As part of the comprehensive cardiometabolic screen, the following blood investigations were analysed: Lipids, HbA1c, Brain natriuretic peptide (BNP), thyroid function tests (TFTs), renal and liver profile.
28.8% had lipid profiles recorded, 26.8% had HbA1c levels , 31.9% had TFTs, whilst 10% had BNP levels.
Conclusions: Basic on this audit cycle there is scope to improve the management of cardiometabolic risk factors in our OSA patients. We aim to implement a tool in order to improve this.

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

References

1. Blekic, N. *et al.* (2022) "Impact of desaturation patterns versus apnea–hypopnea index in the development of cardiovascular comorbidities in obstructive sleep apnea patients," *Nature and science of sleep*, 14, pp.1457–1468. https://doi.org/10.2147/nss.s374572.
2. Ys, R. *et al.* (2016) "Diabetes mellitus and obstructive sleep apnoea: implications for clinicians," *The Journal of Clinical and Scientific Research*, 5(4), pp. 225–233. https://doi.org/10.15380/2277-5706.jcsr.16.05.003.

1.16 Management and Outcomes of Mild OSA (AHI 5-15): A Real-World Study

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Background: Obstructive Sleep Apnoea (OSA) is characterised by recurrent partial or complete collapsibility of the upper airway during sleep. The apnoea-hypopnoea index (AHI) is used to grade the severity of OSA [1]. Continuous Positive Airway Pressure (CPAP) therapy works by blowing and keeping the upper airway open overnight. CPAP is usually only offered to subjects with mild OSA if symptomatic or at significant cardiovascular risk. However, controversy remains whether it is necessary to treat mild OSA at all. This study aims to explore the management and outcomes of mild OSA (AHI 5-15) in the adult population.
Methods: Retrospective database review of adults attending a sleep clinic from 2016-2021. Subjects were selected if diagnosed with mild OSA by either home sleep apnoea testing or polysomnography. Outcomes included conservative therapy, CPAP prescription, or alternative treatments.
Results: 107 patients (42 males, 65 females), age (mean 46.48, SD 11.396), only 31 (29%) were offered CPAP. 12 (11%) were considered successful at one month, based on symptomatic improvement and confirmed treatment compliance.
Conclusion: A minority of patients with mild OSA do well with CPAP but it remains unclear which factors predict success.

Keywords: Mild Obstructive Sleep Apnea, CPAP therapy.

Disclosures:

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

References

1. *Obstructive Sleep Apnoea* (2022) *Irish Thoracic Society*. Available at: https://irishthoracicsociety.com/lung-disease/sleep-apnoea/

1.17 The Effect of Sleep on Successful Weight Loss Following Bariatric Surgery

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Background: Bariatric surgery is the most effective method of sustained weight loss in morbidly obese patients. Despite this, up to 30% of patients fail to lose an adequate amount of weight for the surgery to be considered successful. Healthy sleep has been shown sustain weight loss. As it is unclear which factors influence weight loss following bariatric surgery, this study aims to assess the impact of sleep duration and quality.
Methods: A retrospective database review was undertaken including 341 adults who underwent bariatric surgery in Bons Secours Hospital and also undertook a sleep study between 2008-2022.
Results: The study population were an average age of 46.3±11.0 years, 79% female, with mean pre-op BMI 49.0±8.4 kg/m^2. Average sleep duration was 6.8±1.4 hours. Linear regression analysis identified gastric bypass surgery type, absence of diabetes and absence of hypertension as independent predictors of weight loss following surgery. Sleep duration, Obstructive Sleep Apnoea (OSA), and CPAP use were not significant factors. After multivariate regression analysis both gastric bypass surgery ($p<0.001$) and absence of hypertension ($p=0.01$) remained independent predicators of increased Percentage Excess Weight Loss (%EWL) at 12 months post-surgery.
Conclusion: Sleep duration and presence of OSA were not significant factors impacting %EWL after surgery.

Disclosures:

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1.18 Non-CPAP therapies in the treatment of Obstructive Sleep Apnoea

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Continuous positive airway pressure (CPAP) has been considered the first line treatment for Obstructive Sleep Apnoea (OSA) but has a variable success rate leading to sub-optimal compliance. Non-CPAP therapies are offered to those who are intolerant or opposed to CPAP.
A retrospective database review of adult OSA patients treated with non-CPAP therapy, attending the sleep clinic between 2018 and 2019, was performed. Patient demographics, co-morbidities, pre-treatment, and post-treatment apnoea hypopnoea index (AHI) were recorded for analysis.
Twenty-five (64%) were male, mean age of 52.9 ± 13.2 years, BMI of 39.9 ± 12.6 kg/m^2. Number of patients and mean pre and post treatment AHI events per hour for each therapy include; bariatric surgery (n=15, AHI 34.8 v 24.2), positional therapy (n=7, AHI 39.5 v 12.9), mandibular advancement device (n=7, AHI 26.8 v 15.5), weight loss (n=3, AHI 21.6 v 9.0), oxygen therapy (n=5, AHI 55 v 20.3) and tonsillectomy (n=2, AHI 68.4 v 39.3). Overall, 51.3% achieved an AHI<15 post therapy.
Conclusion: Mandibular advancement devices and positional therapy fared best, with less success with oxygen therapy and tonsillectomy. The sample size is too small to draw definitive conclusions but suggests non-CPAP therapies can be effective but are inferior to CPAP.

1.19 Home Sleep Apnoea Testing: Optimising Patient Outcome with Limited Resources

Orla Wynne, Jeff Murphy, Craig McDonnell, Prof. Eddie Moloney

Tallaght University Hospital(TUH)

Due to a lack of in-house hospital beds and facilities to run the gold standard overnight inpatient full polysomnography diagnostic sleep service, TUH opted to utilise home polygraphy sleep studies (level 3 home sleep apnoea testing) for diagnostic sleep testing, from September 2021 to July 2023. Scoring of the home sleep studies was carried out manually by one of the 3 trained sleep physiologists working in TUH.
Patients were referred by their General Practitioner, or from other Medical services within the Hospital. The patients were sent a sleep screening questionnaire to complete, and a consent form to sign for the home sleep study.
Between September 2021 and July 2023, 828 sleep questionnaires with consent forms were posted to patients. 431 patient (52%) returned completed questionnaires. 400 patients (48%) have had a home sleep study to date.
Results:
Negative: (AHI < 5) 78 (19.5%)
Positive OSA (AHI >5) 322 (80.5%)

- Mild AHI 5-14 : 122
- Moderate AHI15-29: 96
- Severe AHI >30: 104

Conclusion: Patients who respond and engage, with the questionnaire and consent form, have a high probability of having a positive home sleep study.
Home sleep studies are an effective way to provide a diagnostic testing service for patients when resources are limited such as access to hospital beds and availability of qualified Sleep Physiologists.

Poster Session 2: ILD & Long Covid

2.1 Experience of a National Rare Lung Disease Clinic

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Background: Rare lung disease is defined by prevalence of less than 5 per 10,000[1]. Specialty expertise is scarce. Specialised clinics help ensure access to appropriate healthcare for patients with rare diseases.[1] Many rare diseases if diagnosed in a timely manner and managed appropriately are compatible with a normal life.[2]
The aim of this study was to identify the cohort of patients who attend the National Rare Lung Disease clinic and their underlying disease.
Methods: Single centre observational study looking at the patients who attended the Rare Lung Disease clinic from April 2019 to August 2023. Data collected from clinic letters identified age, gender, underlying diagnosis, and those who were under investigation for suspected rare lung disease.
Results: 180 patients attended the clinic from April 2019 to August 2023. 47 were male and 131 were female. 76.4 % of patients had a formal diagnosis. 24.4% of patients attending were under investigation for suspected rare lung disease. Table 1 shows the variety of diagnosed rare lung disease currently attending the National Rare Lung Disease Clinic (NRLDC).
Conclusion: Specialised clinics allow patient access to expertise for diagnosis and management of rare lung disease, and allow for opportunities for identification, international collaboration and research for future avenues for treatment.[3]

Disclosures:

Table 1. Patient cohort attending National Rare Lung disease clinic from April 2019 –August 2023

Diagnosis	Percentage (%)
Under investigation	24.4 (N=44)
Birt-Hogg-Dubé syndrome (BHD)	17.8 (N=32)
Lymphangioleiomyomatosis (LAM)	16.1 (N=29)
Diffuse idiopathic pulmonary neuroendocrine cell hyperplasia (DIPNECH)	13.3 (N=24)
Lymphoid interstitial pneumonia (LIP)	6.1 (N=11)
Pulmonary Langerhans cell histiocytosis (PLCH)	4.4 (N=8)
Pulmonary alveolar proteinosis (PAP)	3.9 (N=7)
Tuberous sclerosis (TSC) LAM	2.8 (N=5)
Yellow nail syndrome (YNS)	1.7 (N=3)
Alpha-1 antitrypsin deficiency (A1AT)	1.1 (N=2)
Lymphangiomatosis (GLA)	1.1 (N=2)
Respiratory bronchiolitis–associated interstitial lung disease (RBILD)	1.1 (N=2)

Diagnosis	Percentage (%)
Tuberous sclerosis Multifocal micronodular pneumocyte hyperplasia (TSC MMPH)	1.1 (N=2)
Cryptogenic Organising Pneumonia (COP)	0.6 (N=1)
Catamenial Pneumothorax	0.6 (N=1)
IGG4 Disease	0.6 (N=1)
MEN1 associated nodules	0.6 (N=1)
Nodular Lymphoid Hyperplasia	0.6 (N=1)
Pulmonary Alveolar Microlithiasis (PAM)	0.6 (N=1)
Primary ciliary dyskinesia (PCD)	0.6 (N=1)
Pulmonary Light Chain Deposition Disease (PLCDD)	0.6 (N=1)
Pulmonary Meningoendothelial Nodules	0.6 (N=1)
	100 (N=180)

References:

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2.2 BREATHE – Bringing Resourcing, Empowerment and Awareness To the Home Environment: Patients' Perception of Home Spirometry and Oximetry Monitoring for Connective Tissue Disease related Interstitial Lung Disease

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2. Tissue Engineering Research Group, Royal College of Surgeons in Ireland, Dublin, Ireland
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Background: Home spirometry has been shown to be valuable in monitoring disease course in idiopathic pulmonary fibrosis (IPF). We explore the acceptability and feasibility of home spirometry and oximetry in patients with connective tissue disease-related interstitial lung disease (CTD-ILD).
Methods: Patients with CTD-ILD and IPF were recruited at the Beaumont Hospital ILD clinic. Patients were provided a handheld spirometer and oximeter linked to a smartphone app. A survey was conducted at 6 months to assess patients' perception of home monitoring.
Results: Fourty-one patients with CTD-ILD and 51 with IPF were recruited. 12/41 patients with CTD-ILD patients experienced Raynaud's phenomenon but only 7.32% required an ear oximeter. 7930 spirometry and 7565 oximetry readings were recorded (Table 1). Most patients found it easy to set up the devices for home monitoring. 16.67% in the CTD-ILD cohort experienced difficulty using the devices due to hand problems, but none in the IPF cohort. Reported barriers to remote monitoring included forgetting to use, excessive cough or breathlessness (Figure 1). Most patients found home monitoring beneficial, insightful and would recommend it to others.

Conclusion: Home monitoring was acceptable and feasible in patients with CTD-ILD despite impaired hand function. Remote monitoring should be considered in patients with CTD-ILD as part of standard management.

Acknowledgments: The authors would like to extend their gratitude to all the patients who took part in this study; the research and ILD specialist nurses and pulmonary function test technicians, Rebecca Borton, Cillian O'Brien and Colin Edwards from patientMpower. Their commitment and contribution towards this study are greatly appreciated.

Funding: WL Ng was funded by a two-year Strategic Academic Research Doctor in Medicine (StAR MD) Programme by the Royal College of Surgeons in Ireland in collaboration with Beacon Hospital to carry out this study. WL Ng has also received additional funding from the Irish Society for Rheumatology's Rheumatology Patient Initiative Fund. KH was supported by the Health Research Board, Ireland, Emerging Clinical Scientist Award (ECSA-2020-011). The study sponsors were not involved in the study design, data collection, data analysis and writing of this manuscript.

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

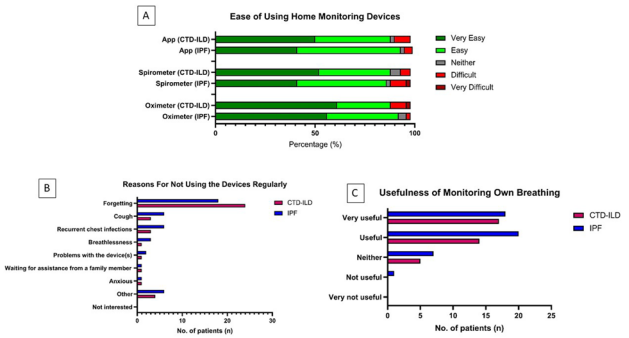
Corresponding author: Wan Lin Ng

Table 1 Baseline demographics of study patients (n=92) and six-month data on home monitoring

	CTD-ILD (n=41)	IPF (n=51)
Age, years, median (IQR)	66 (58, 73)	71 (63.5, 79)
Male, n (%)	17 (41.46%)	21 (52.94%)
CTD Diagnosis:		
Rheumatoid Arthritis		N/A
– Erosive rheumatoid arthritis	8 (19.5%)	N/A
– Non-erosive rheumatoid arthritis	12 (29.3%)	N/A
Systemic Sclerosis	9 (22.0%)	N/A
Idiopathic Inflammatory Myopathies	4 (9.8%)	N/A
Primary Sjögren's syndrome	2 (4.9%)	N/A
Mixed Connective Tissue Disease	2 (4.9%)	N/A
Overlap Syndrome	2 (4.9%)	N/A
Vasculitis	1 (2.4%)	N/A
Systemic Lupus Erythematosus	1 (2.4%)	N/A
Non-CTD Diagnosis:		
Idiopathic Pulmonary Fibrosis	N/A	37 (72.5%)
Interstitial Pneumonia with Autoimmune Features	N/A	14 (27.5%)
Death		
Six months of home monitoring	1 (2.44%)	1 (1.96%)
Total No. of FVC readings	2946	4984

	CTD-ILD (n=41)	IPF (n=51)
Average FVC readings per patient	72	98
Median FVC (L)	2.19	2.64
Median FVC Predicted (%)	82.12	88.54
Total No. of SpO2 reading	2787	4778
Mean SpO2 (%)	94.84	94.91

Figure 1: (A) A comparison of the ease of using home monitoring app and devices between patients with CTD-ILD and IPF. (B) The reasons for not using the home monitoring devices regularly. (C) Patients' perception of usefulness of monitoring own breathing



2.3 The role of Immunoglobulin A in the pathogenesis of Idiopathic pulmonary fibrosis, A literature review

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Background: Idiopathic pulmonary fibrosis (IPF), is characterised by progressive parenchymal fibrosis. The pathogenesis of IPF is driven by prolonged pulmonary fibroblasts and myofibroblasts activity. Recent research has sparked interest in the potential role of chronic activation of fibroblasts and myofibroblasts through immunoglobulin-based mechanisms, such as immunoglobulin A (IgA). As such, the researchers aim to review current literature exploring the potential role IgA has in the pathogenesis of IPF.
Methods: A comprehensive literature search was conducted using two largely used search engines, with inclusion of literature over a 20-year period between 2003 and 2023 inclusive published in the English language using the following search terms (("Idiopathic Pulmonary Fibrosis" OR "Interstitial Lung Disease") AND "Immunoglobulin" AND "Immunoglobulin A" AND "biomarkers").
Results and Conclusion: 9 articles were selected for review. The role of IgA in IPF appears to stem from direct activation of fibroblast, upregulated further with indirect activation via TGF beta. Additionally, IgA creates a chronic proinflammatory state, to which fibroblast and myofibroblasts are attracted to, due to IgA's proinflammatory interaction with pulmonary endothelial cells. With this pathogenic knowledge, advances have stemmed around the evolving use of IgA as a biomarker, particularly around the area of prognostication.

Keywords: Idiopathic pulmonary Fibrosis, Immunoglobulin A, Inflammation, Pathogenesis

Disclosure: The authors state that they have no conflict of interest

Corresponding Author: Joshua Olaniyi

2.4 Hypoxia-stimulated Human Epididymis Protein 4 (HE4) Secretion by Bronchial Epithelial Cells and its Effect on Pulmonary Fibroblasts

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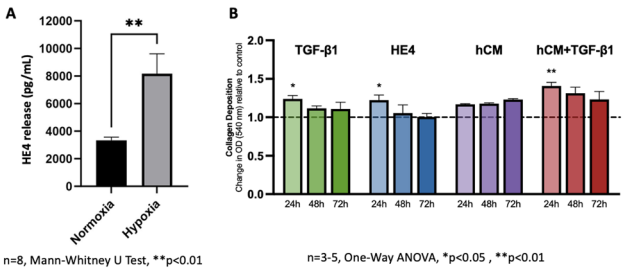
Background: Human Epididymis Protein 4 (HE4), a biomarker of ovarian cancer, has been implicated in fibrotic lung diseases. Here we aim to assess the hypoxia-stimulated secretion of HE4 by bronchial epithelial cells and investigate its effect on pulmonary fibroblasts.
Methods: Hypoxia-stimulated (6h 1% O_2, 18h 21% O_2) HE4 secretion was assessed using ELISA and confirmed with Western Blot in bronchial epithelial (16HBE14o-) cells. Pulmonary fibroblasts (CCD-11Lu) were exposed to recombinant human HE4 (rHE4), TGF-beta1 and hypoxia-conditioned medium (hCM). Collagen deposition was quantified using Sirius RED staining. The expression of collagen and inflammatory markers, including IL-6 and IL-8, was assessed using qRT-PCR and confirmed by ELISA.
Results: Hypoxia induced significant HE4 secretion in 16HBE14o- (Figure A). Collagen deposition was significantly increased in pulmonary fibroblasts following rHE4 and TGF-beta1 exposure. Collagen deposition was more gradual but sustained after hCM exposure (Figure B). rHE4-stimulated pulmonary fibroblasts also showed increased expression and secretion of IL-6 and IL-8.
Conclusions: HE4 is secreted by bronchial epithelial cells in response to hypoxia and has a fibrogenic and pro-inflammatory effect on pulmonary fibroblasts.

Keywords: HE4, interstitial lung disease, lung fibrosis

Disclosures: KNP was funded by the British Association for Lung Research**.** The authors declare no conflict of interest.



2.5 A scoping review of the unmet needs of patients diagnosed with idiopathic pulmonary fibrosis (IPF)

Carita Bramhill, [1] Donna Langan, [2] Helen Mulryan, [2]Anne-Marie Russell, [3] Anne-Marie Brady[1].

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Aims: This scoping review aimed to synthesise the available evidence and identify gaps in the literature regarding the unmet needs of patients diagnosed with IPF.
Methods: A systematic search was performed in March 2022 of six online databases, including a comprehensive review of grey literature between 2011-2022. Inclusion criteria included patients diagnosed with IPF or PF. Titles, abstracts, and full papers were screened against the inclusion criteria by two independent reviewers. Data was analysed using descriptive and reflexive thematic analysis. A total of 884 citations were reviewed. Ethical approval was not required for this scoping review.
Results: 52 citations were selected for final inclusion. Five themes were identified: psychological impact of an IPF diagnosis; adequate information and education: at the right time and in the right way; high symptom burden support needs; referral to palliative care and advanced care planning (ACP) and health service provision -a systems approach.
Conclusion: This review highlights the diverse range of needs patients with IPF have, and the urgent need for a systems approach to care, underpinned by an appropriately resourced multi-disciplinary team. The range of needs experienced by patients with IPF transcend multiple domains and require targeted research, coupled with the development of a patient-focused clinical care programme.

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

Keywords: Idiopathic pulmonary fibrosis, pulmonary fibrosis, unmet needs, support

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2.6 An audit of access to diagnostics in a specialised connective tissue disease-associated interstitial lung disease shared care clinic

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Background: The often insidious onset, and progression, of interstitial lung disease is associated with worse outcomes in patients with connective tissue diseases. We performed a retrospective audit of our quarterly CTD-ILD clinic focusing on access to routine investigations needed regularly to allow timely recognition of disease progression.
Methods: An audit of this clinic performed in 2020/21 revealed limited access to PFTs, thoracic imaging and echocardiography during the pandemic. We reaudited access to these diagnostics for 57 outpatients attending the CTD-ILD clinic in 2022. Data on age, gender, background diagnosis, ILD subtype, period since most recent investigations and results from PFTs and echocardiography were collated.
Results: Within the prior 12 months, just 53% of our CTD-ILD cohort had PFTs performed (mean 14 months, IQR 19 months), 61% had CT Thorax (mean 17 months, IQR 19 months) and 40% had echo (mean 19 months; IQR 22 months). Scleroderma was the most common rheumatological diagnosis (26%). NSIP was the commonest radiological subtype (40%).
Conclusion: Patients at our centre are without access to PFTs and other key diagnostics for prolonged spells, beyond the intervals recommended for monitoring ILD progression and limiting opportunity for intervention. An ongoing lack of access to both urgent and routine diagnostics continues to pose a problem in a post-pandemic period.

Disclosures: The authors declare no conflict of interest

2.7 Interstitial Lung Disease (ILD) Service Naas General Hospital (NGH)

[1]Olivia Lee, [1]Amani El Gammal, [1]Christine Hogan, [1]Elizabeth Kohn, [1]Catherine Callan, [1]Barbara Loughman.

[1]Naas General Hospital

Background: ILD encompasses a heterogeneous group of diseases of known and unknown aetiology which causes damage and destruction of the lung parenchyma. Patients often experience debilitating symptoms and poor prognosis (1). Timely access to an accurate diagnosis and an effective care plan is crucial for these patients. Delayed access to an ILD centre is associated with increased mortality (2). Multidisciplinary discussion (MDD) is recommended for diagnostic decision making in ILD management (3). In line with a 'hub and spoke' model of shared care an ILD MDD was established in August 2021 between Tallaght University Hospital (TUH) and NGH (3).
Method: A 2 year retrospective review was carried out from August 2021 to August 2023 of the database of ILD patients attending a respiratory outpatient clinic (n=60).
Results: To date 40 patients have been discussed at the NGH/TUH MDD and 20 patient are still being worked up for ILD in NGH. 15 patients have been started on treatment (steroids or anti-fibrotic therapy). 8 patients were referred to TUH ILD service due to complex diagnosis. 17 patients are being management conservatively with ongoing monitoring.
Conclusion: Comprehensive ILD care delivery has several key components including diagnosis, treatment, monitoring, support/advocacy, education and research, with an overarching goal of improving patient care and advancing the field of ILD. Creative and innovative strategies are needed to find ways to optimally deliver ILD care to the highest number of patients possible.

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

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2.8 A retrospective review of pulmonary rehabilitation outcomes in Interstitial Lung Disease

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Background: Pulmonary rehabilitation is a safe non-pharmacological intervention in the management of Interstitial Lung Disease (ILD) that results in greater exercise tolerance, quality of life and functional status (Dowman *et al*. 2021). However, it has been suggested that further research is required to explore the long-term effects of pulmonary rehabilitation and sustainability of improvements in ILD (Dowman *et al.* 2021).
Methods: A retrospective review of 30 ILD patient outcomes after an eight week pulmonary rehabilitation programme. Clinical functional assessment was performed prior to commencing the programme using tools such as the six minute walk test (6MWT), Modified Medical Research Scale (MMRC) and King's Brief Interstitial Lung Disease (KBILD) questionnaire. Follow up assessment was repeated on completion of the programme, and again at three, six, nine and twelve months post rehabilitation.
Results: The post-rehabilitation assessment showed that the minimally important difference (MID) was achieved by 57% (n=17) of patients in the 6MWT, 47% (n=14) in MMRC and 60% (n=18) in KBILD. On subsequent follow up at the 3 month assessments, 45% (n=13) maintained their post programme MID in 6MWT distance, 38% (n=11) in MMRC and 55% (n=16) in KBILD.
Compared to pre-rehabilitation status, improved outcomes (6MWT, MMRC & KBILD) remained at six, nine and twelve months, however to a lesser degree. This was complicated by disease progression in some patients, with three patients dying during the follow up timeline.
Conclusion: In the majority of our ILD patients, improved symptoms and functional capacity were identified post pulmonary rehabilitation with sustained benefit at three, six, nine and twelve months.

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

Reference: Dowman, L., Hill, C.J. & Holland, A.E. (2021) Pulmonary rehabilitation for Interstitial Lung Disease. *Cochrane Database of Systematic Reviews,* 1(2), 7-47.

2.9 A Review and Audit of the Pulmonary Fibrosis Nurse Led Clinic within the UHL Hospital Group

P. Ryan, C. McInerney, L. Kokina, E. Gleeson, M. Cullinan, N. Ryan, A. O'Brien

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Aim: To review the management of patients with pulmonary fibrosis being treated with anti-fibrotic therapy in the nurse led clinic within the University Hospital Limerick Group.
Method: A review of patient case notes in the outpatient department of the management of pulmonary fibrosis patients according to the NICE guidelines 2013.
Background: People are diagnosed with idiopathic pulmonary fibrosis (IPF) only with the consensus of a multidisciplinary team with expertise in the disease (NICE,2013). Due to the severity of the disease and the poor prognosis, it is important to ensure high quality care for our patient's and ensure best practice which in turn will allow for expert person centred quality care.
Findings: All IPF patients in this audit seen in the respiratory department knew their diagnosis (n=42), had a CT scan and were under the care of a respiratory consultant. Only 55% of patients had being discussed at an ILD MDM. Of the patients on anti-fibrotic medication a total of 20% had to change anti-fibrotic therapy at some point. All patient's had evidence of their being referred to pulmonary rehabilitation. 71% had documentation of evidence of PFT's having been performed with 90% of patient's having had a 6MWT. All patients received an oxygen assessment with 70% of the patients requiring oxygen. Education on disease and on disease management which is a key step in the management of IPF had been given to all patients, with 100% of patients receiving written information. All patients that had a diagnosed who required palliative care were referred to palliative care for symptom management. Follow up appointments were in line with the NICE guidelines.

2.10 A Review of Pulmonary Fibrosis Patients Journey of the Advanced Nurse Practitioner Satellite Clinic

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Department of Respiratory Medicine, University Hospital Limerick Group, Ennis and Nenagh Hospital, UHLG.

Aim: To review pulmonary fibrosis patient's experiences in relation to the delivery of care in the satellite clinic in Ennis and Nenagh.
Method: A review of the patient journey in Ennis and Nenagh Outpatient's Department.
Background: Idiopathic Pulmonary Fibrosis (IPF) is defined as a specific form of chronic, progressive fibrosing interstitial pneumonia of unknown cause, occurring primarily in older adults, and limited to the lungs (ATS 2017). IPF primarily presents with shortness of breath at rest or aggravated by exertion, dry cough and by the time symptoms have appeared irreversible lung damage has often already occurred. University Hospital Limerick is a dedicated expert centre for managing patients with Pulmonary Fibrosis, which covers a vast area. Despite this, patients were travelling significant long distances, using large amounts of oxygen and increased symptom burden. A satellite clinic was set up in Ennis and Nenagh outpatients to improve access to services for patients nearer their home, improve patient's experience and reduce oxygen consumption.
Findings: All PF patients seen in Ennis and Nenagh OPD found the information on their appointment letter had clear instructions on where their clinic appointment was being held including directions to the clinic. Patient's commented that reception was welcoming and there was a significantly shorter distance to walk for their appointment than at the University Hospital. Patients found that they had a significant reduced travelling time to get to their appointment and reduced walking distances in the hospital which consequently led to reduced 02 consumption; this

allowed for a reduced burden on cost, and travel time. A common theme highlighted was an improvement in the clinic experience. Patients noted a reduced time waiting and were home in a shorter period of time in compared to the bigger centre. Managing patients closer to home has proven an expert patient-centred approach leads to an improved patient experience, while notably patients commented that they also received an expert clinical examination on par with the expert center. While barriers to getting patients to the satellite clinic exist a great effort to accommodate patients nearer to home is essential.

2.11 Perfenidone vs Nintedanib for Idiopathic Pulmonary Fibrosis - an Observational study at a Teaching Hospital in Republic of Ireland

Junaid Rasul Awan[1], Orlaith Shinners[1], Shahram Shahsavari[1], Owais Rahman[1], Junaid Zafar Sheikh[1], Zafran Ali[1] , Kaitlyn Cinnamond[1], Hira Gul[1], Umar Khan[1], Aidan O'Brien[1.]

1. Respiratory Department, University Hospital Limerick, Ireland.

Introduction: Pirfenidone and nintedanib are well-established idiopathic pulmonary fibrosis (IPF) treatments[1]. In this study we compared the two anti-fibrotic treatment regimens available for the treatment of idiopathic lung fibrosis.
Methods: In this observational study, 220 participants aged ≥ 40 years were followed-up using their files and respiratory-medicine data-base, during the period of January 2014 to January 2023. We compared the mean difference in percentage rate of lung function decline, mortality rate, hospital admissions and tolerability of the two drugs. We also looked at the lung function decline based on the gender and age (Table 2).
Results: 57 out of 103 (55%) and 63 out of 117 (53.8%) died in nintedanib and pirfenidone groups respectively (Table 3). There was no significant difference (p-value=0.0731) in tolerability / side-effects with nintedanib (16.50%) and pirfenidone (26.50%). Nintedanib surpasses pirfenidone in context of exacerbations / hospital admissions. (Table 4). Percentage rates of decline in FVC, DLCO and TLC were not significantly different between the two groups (Table 1 & 2).
Conclusion: Both treatments were well tolerated, similarly efficacious and remain good therapeutic choices in slowing lung function decline albeit in the context of a disease with enduring mortality[2].
Conflict Of Interest : The authors declare that they have no conflict of interest

Abbreviations

FVC Forced vital capacity.
DLCO Diffusing capacity of the lungs for carbon monoxide.
TLC Total lung capacity

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Table 1: Test of rate of decline mean difference between treatments.

Measure	Time Period	Treatment		T-test (p-value)
		Nintedanib Mean (n)	Pirfenidone Mean (n)	
FVC	Baseline and after 12 months	-6.83 (49)	-4.89 (65)	0.5690
	12 months and follow-up after 24 months	-8.05 (49)	-0.32 (65)	0.0499
DLCO	Baseline and after 12 months	-7.79 (49)	-7.19 (57)	0.8989
	12 months and follow-up after 24 months	-8.77 (49)	-2.62 (57)	0.0546
TLC	Baseline and after 12 months	-2.22 (17)	-6.20 (41)	0.3531
	12 months and follow-up after 24 months	-5.57 (5)	-3.17 (17)	0.5061

Table 2: Mean Percentage Rate of Decline between Treatments by Gender and Age.

Measure	Time point	Nintedanib Mean (n)		Pirfenidone Mean (n)		Nintedanib Mean (n)		Pirfenidone Mean (n)	
		Female	Male	Female	Male	<70 years	≥ 70 years	<70 years	≥ 70 years
FVC	Baseline to 12 months	-12.40 (11)	-5.22 (38)	-1.48 (20)	-7.73 (45)	-1.38 (8)	-7.90 (41)	-0.81 (23)	-7.13 (42)
	12 to 24 months	-9.14 (11)	-7.74 (38)	-7.54 (20)	-2.90 (45)	-7.35 (8)	-8.19 (41)	-1.59 (23)	-1.36 (42)
DLCO	Baseline to 12 months	-4.50 (11)	-8.74 (38)	-2.92 (19)	-9.32 (38)	-8.44 (8)	-7.66 (41)	-2.83 (22)	-13.48 (35)
	12 to 24 months	-8.46 (11)	-8.86 (38)	-6.41 (19)	-0.73 (38)	-4.44 (8)	-9.62 (41)	-1.87 (22)	-5.44 (35)
TLC	Baseline to 12 months	-14.67 (4)	-1.60 (13)	-7.03 (14)	-5.76 (27)	-2.64 (3)	-2.13 (14)	-9.05 (18)	-3.97 (23)
	12 to 24 months	-2.74 (1)	-7.65 (4)	-6.57 (6)	-8.48 (11)	-12.26 (1)	-3.90 (4)	-3.68 (7)	-2.81 (10)

Table 3: Multivariable Logistic Regression Model

Variable	Group	OR (95% CI)	P-value
Treatment	Pirfenidone	1	
	Nintedanib	0.92 (0.54 – 1.56)	0.749
Gender	Female	1	
	Male	0.67 (0.38 – 1.20)	0.176

Table 4: Other Outcomes

Variable	Outcome	Nintedanib %(n)	Pirfenidone %(n)
Hospital Admissions	0	60.19 (62)	44.44 (52)
	1	20.39 (21)	19.66 (23)
	2	13.39 (14)	17.95 (21)
	3	4.85 (5)	9.40 (11)
	4	0.97 (1)	5.98 (7)
	5	0.00 (0)	1.71 (2)
	7	0.00 (0)	0.85 (1)
Tolerability	Tolerable	83.50 (86)	73.50 (86)
	Intolerable	16.50 (17)	26.50 (31)

2.12 The Prevalence of Post-Covid Interstitial Lung Disease in A Tertiary, Single Centre Hospital in Ireland

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Introduction: The initial waves of acute severe Covid-19 infections manifested primarily in the lungs. Post-covid interstitial lung disease (PC-ILD) has been described with a prevalence of 4.8 to 10% and strong evidence-based guidelines to manage this are lacking[1]. We report a low rate of PC-ILD prevalence in patients attending the respiratory clinic after a severe Covid-19 infection with acute respiratory failure.

Methods and Results: Three hundred and sixty five patients with acute respiratory failure secondary to Covid-19 infection admitted from March 2020 to March 2022 were followed up in clinic. Chest radiograph (CXR) was performed and 84% percent (n=306) were reported as normal. Twenty-seven CT thorax performed beyond 12 months after initial presentation were examined for this study. 9 CT thorax were reported as normal, 6 emphysema, 8 interstitial abnormalities (3 UIP pattern, 2 NSIP and 3 PC-ILD as per ILD-MDT (0.8% of total), 4 others). One PC-ILD was 41-year old and a non-smoker. All PC-ILD were male, requiring at least non-invasive ventilation or high flow oxygen during inpatient stay. All PC-ILD are non-progressive to date, and anti-fibrotic was not offered. One patient was referred for lung transplantation.
Conclusion: As a single, tertiary hospital, we report a low rate of PC-ILD. However, the majority of patients had CXR only for follow-up imaging, and this might influence the detection rate.

References:
[1]Ann Am Thorac Soc. 2021 May; 18(5):799-806

Conflict of Interest: *None to declare*

2.13 Respiratory Symptoms at the Long COVID clinic: Are Further Investigations Required?

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Background: The HSE 'Model of Care for Long COVID' defines Long COVID as symptoms beyond 12 weeks (1). It is associated with a myriad of symptoms affecting multiple systems, including respiratory. We analysed the prevalence of respiratory symptoms and objective findings in patients attending the combined COVID clinic (ran by both respiratory and infectious disease clinicians).
Methods: A retrospective audit of new patients attending the Long COVID clinic from November 2022 to February 2023 was completed. We assessed time to referral from index infection; nature of symptoms; investigations

performed, including lung function tests and imaging; inhaler therapy; and subsequent referral to respiratory or sleep specialist services.
Results: 113 new patient attendances were reviewed. On average, referrals to the Long COVID clinic were made 8 months following the index COVID-19 infection. 53% (n=60) had respiratory symptoms, predominantly dyspnoea, cough, wheeze or combination on their initial visit. Only 24/60 patients had a CXR prior to their visit, with 24% (n=6) showing abnormalities. Follow-up imaging was normal in 50% of these cases. 23% (n=26) had pre-existing lung conditions, with asthma being the most common. PFT's were completed in 50% of patients with respiratory symptoms. 92% of PFT's carried out were normal. Inhaler therapy was commenced in 8% (n=9), and 11% (n=12) were referred on to a specialist respiratory clinic, 5/12 having previously been known to respiratory services. 48% (n=55) of patients underwent Nijmegen screening tool. 45% out of these scored ≥ 23, indicating a potential dysfunctional breathing pattern. In this cohort, 64% presented with dyspnoea initially.
Conclusion: Although more than half of the patients are presenting with respiratory symptoms, the majority have normal CXR and PFT findings. As the model of care for Long COVID evolves, a more holistic person-centred approach is important.

Reference:

1. HSE Model of Care for Long Covid service (2021)

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

2.14 The use of forced oscillometry in detecting abnormalities in lung function in symptomatic post-acute COVID-19 patients

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Background: In response to the COVID-19 pandemic, a Post-Acute Covid clinic was established at Connolly Hospital. Oscillometry is reported to have a higher sensitivity than spirometry in detecting abnormalities in post-acute Covid patients. We investigated the use of Oscillometry in addition to spirometry, reversibility, diffusing capacity, and lung volumes in symptomatic post-acute Covid-19 patients.
Methods: Test data collected between June 2022 to April 2023 was included as part of a final year undergraduate project. Only reliable high quality tests were included, 51 symptomatic patients (31F:20M). Demographics, age, BMI, previous lung disease, smoking status and inhalers were recorded. Patients attending the clinic presented with varied symptoms and severities.
Results: Nineteenpatients (37%) had normal spirometry results. Within this group 57.9% had abnormal oscillometry results, 37% with abnormal DLCO and 8% had reduced TLC. Female sex and history of inhaler use may be significant in this group.
Conclusion: The respiratory problems associated with Covid-19 are complicated and need additional testing, such as Oscillometry to provide for a full diagnostic picture. Our findings are consistent with published literature, that Oscillometry detects more lung physiology abnormalities in a symptomatic patient post-acute Covid patient population, than other lung function tests.

Disclosures: none

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

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2.15 Dysautonomia and Postural Orthostatic Syndrome of Hypocapnia in Long Covid Syndrome

Shane O'Brien[1,2], Edana Maher[1], Conor Hayes[1], Laura Piggott[1], Ciara Scallan[1], Zara Cunningham[2], Thomas Butler[1], Carol Buckley[1], Deirdre B Fitzgerald[1,2], Patrick D Mitchell[1,2], Seamas C Donnelly[1,2].

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Background: At least 10% of COVID-19 survivors will develop long covid syndrome (LCS).[(1)] Dysautonomia and orthostatic intolerance (OI) have been reported in both chronic fatigue syndrome and LCS. [(2)] Postural orthostatic syndrome of hypocapnia (POSH) has been demonstrated in patients with chronic fatigue syndrome and could be a contributing factor to LCS.[(3)]
Objectives: This study aims to evaluate the prevalence of OI and POSH in a cohort of patients with LCS.
Methods: 50 patients with a diagnosis of LCS aged >18 underwent a NASA lean test (NLT) in our clinic. The NLT consists of measurements of respiratory rate, heart rate, blood pressure, pulse oximetry, end tidal CO2 and symptoms taken over 10 minutes in supine, followed by a leaning position.
Results: Orthostatic symptoms developed in 50% (n=25) during the test. Supine or orthostatic hypocapnia occurred in 58% (n=29) of patients. Postural orthostatic tachycardia occurred in 32%(n=16) and postural orthostatic hypotension occurred in 32%(n=16).
Conclusion: This study provides evidence of dysautonomia and hypocapnia in LCS. The NLT can be easily performed in clinic. Hypocapnia has been implicated in orthostatic cerebral vasoconstriction and this may be a treatable target for LCS. [(4)]

Disclosures: None

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Poster Session 3: TB, CF & Infections

3.1 Supporting alveolar macrophage function to enhance immune responses to *Mycobacterium tuberculosis* in the lung

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Background: Alveolar macrophages (AM) are the first line of defence to mediate protection against Mycobacterium tuberculosis (Mtb). However, Mtb can reduce AM defence mechanisms to facilitate its own growth and survival, therefore, AM function is critical in determining disease outcome. The interplay between structural and immune cells contribute to mounting effective immunity but also mediates tissue pathology, supporting disease progression, for example during Tuberculosis disease.
Methods: AM were treated with IFN-γ or IL-4 for 24 hours and subsequently stimulated with irradiated Mtb strain H37Rv or LPS for a further 24 hours. Expression of antigen presentation and co-stimulatory molecules, and cytokine production were quantified by flow cytometry and ELISA, respectively. A549 alveolar epithelial and MRC-5 lung fibroblast cells were stimulated with TNF and IL-1β to mimic in vivo alveolar conditions during inflammation and IL-6 and IL-8 from structural cells were determined by ELISA.
Results & Conclusion: When IFN-γ primed AM were challenged with Mtb, AM exhibited enhanced expression of antigen presentation and co-stimulatory molecules and had augmented cytokine production compared with controls, suggesting inhaled IFN-γ may have therapeutic potential as an immuno-supportive host directed therapy. Additionally, IL-1β and TNF synergise to induce enhanced IL-6 and IL-8 production, propagating inflammation through structural cells in the lung.

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

3.2 Meclizine induces aerobic glycolysis in human macrophages and can enhance the glycolytic response to Mtb infection

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Background: *Mycobacterium tuberculosis* (Mtb)-infected macrophages undergo metabolic shift, with induction of "aerobic glycolysis", which drives anti-TB effects (1). Virulent Mtb strains attenuate this glycolytic response to evade host defences (2). Meclizine is an over-the-counter antihistamine prescribed for motion sickness that can induce aerobic glycolysis in neuronal and fibroblast cells (3, 4). We investigated the impact of meclizine on human macrophage metabolism, and its ability to enhance the glycolytic response to Mtb infection.
Methods: Central carbon metabolism of PMA-treated THP-1 cells or primary human MDM pre- and post-treatment with Meclizine or Vehicle control was interrogated using Agilent Seahorse XFe24 Analyzer. Macrophages were treated with Meclizine or Vehicle control for 3 hours prior to stimulation with LPS or infection with irradiated Mtb (iMtb), and metabolic activity and cytokine production assessed at 24 hours by Seahorse and sandwich ELISA, respectively.
Results and Discussion: Meclizine induced glycolysis and inhibited oxidative phosphorylation in human macrophages, with maximal effects at 180 minutes post treatment. Meclizine enhanced glycolytic reprogramming in iMtb-infected macrophages compared to Vehicle-treated controls. However, no significant difference in TNFα or IL-1β secretion was observed.
Conclusions: Meclizine enhances the macrophage glycolytic response to iMtb infection, however this is not associated with an increased induction of pro-inflammatory cytokines. Further work is underway to investigate the impact of Meclizine-induced metabolic changes on macrophage mitochondrial function and bacillary clearance.

Keywords: Tuberculosis; macrophage; glycolysis; host-directed therapy

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

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3.3 Are we ordering follow-up chest x-rays for community acquired pneumonia? A prospective audit examining the ordering of follow-up chest x-rays for patients admitted over the course of single week - St Lukes' Hospital Kilkenny

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[1] St. Lukes Hospital General Hospital, Co. Kilkenny

Background: Current guidelines state that a chest x-ray (CXR) demonstrating consolidation should be repeated at 6 weeks for those with persisting signs or symptoms and especially those at higher risk of malignancy[1]. In practice, onus lies on the admitting team to organise follow-up of any patients with consolidation.
Methods: A one-week prospective audit of medical admissions was performed. Patients with CXR evidence of pneumonia were followed at an average interval of 28.3 days from date of admission to assess whether follow-up CXR had been requested. Recommendation by the radiologist on ordering follow-up, if present, was noted.
Results: 100 patients were admitted. 90 underwent a CXR. 16 reports mentioned consolidation or infective changes. Seven had follow-up booked by the hospital (43.75%), one was ordered by a GP (6.25%), one had repeat CXR owing to re-presentation (6.25%), two patients had computed tomography imaging of the thorax during admission (12.5%), one remained an inpatient (6.25%). Four patients had no follow-up CXR ordered(25%). Four reports referenced ordering follow-up imaging which occurred in all cases.

Conclusion: A significant proportion of patients didn't have follow-up imaging ordered (25%). We hope to reduce this rate with further education on clinical guidance and explicit recommendation in radiology reports.

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

References:
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3.4 BPaLM treatment in MDR TB

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In 2022 the WHO released an updated set of consolidated guidelines on the treatment of multi drug resistant TB. Recommended in this was the use of BPaLM, which combines Bedaquiline + Pretomanid and Linezolid for a 6-to-9-month treatment plan. They based this rationale on improved success rates, as well as lower deaths and failures when compared to other treatment plans.
In 2020 the New England Journal of Medicine Published a paper called the treatment of highly resistant Pulmonary Tuberculous, a study done for the Nix TB alliance. This South African study demonstrated a successful outcome in 95 of the first 107 patients after six months of treatment with BPaL and six months of post-treatment follow-up.
This regimen replaces the previously used 18-month oral regimen, consisting of combinations of quinolone, Bedaquiline, linezolid; in addition to Clofazamine, Prothionamide and terizidone. This regimen typically consisted of a combination of 5 drugs depending on mycobacterial phenotypic sensitivity testing.
In May 2022 St James Hospital started using BPaLM as an alternative treatment for multidrug resistant TB, a treatment plan that ranges from 6-9 months depending on complexity. This poster will highlight the benefits of this shorter treatment plan, such as The WHO regimen containing 5 medications costing 174,109 euro (18 months of treatment), whereas the BpaLM regimen costing an estimated 68,090 euro (6 months), or that patients are given medications for a shorter period reducing side effect exposure, while demonstrating its improved efficacy.

Age/Sex		Duration	Treatment
65 F Ukrainian	Pulmonary Disease	9 Months	BPaL
42 M Ukrainian	Pulmonary Disease	6 Months	BPaLM
31 F Latvian	Pulmonary Disease	6 Months	BPaL
32 M Ukrainian	Pulmonary Disease	6 Months	BPaL

2.5 An Audit of the Management of Pleural Effusions at an Irish Tertiary Teaching Centre

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[2] Department of Respiratory Medicine, St James's Hospital

Background: Parapneumonic pleural effusions commonly occur in patients presenting with community acquired pneumonia, rendering treatment more complex and increasing morbidity and mortality. We sought to analyse and compare the treatment of patients admitted under respiratory- and non-respiratory teams presenting with parapneumonic pleural effusions in St. James Hospital in 2019.
Methods: Patients undergoing a pleural effusion procedure in SJH in 2019 were identified using cytology laboratory records. Chart review was performed to identify those diagnosed with parapneumonic effusion (n=17), and data for imaging, laboratory testing, treatment, and patient outcomes for respiratory (n=6) and non-respiratory (n=11) admitted patients was collated.
Results: Results show lower median wait times for respiratory patients until their first pleural procedure at 3 days (±12.2), compared to 6 days (±9.9) for non-respiratory patients. Respiratory patients waited a median of 1 day (±7.66) for CT scans, compared to 5 days (±7.83) for non-respiratory patients. Respiratory patients had a median wait time of 3 days (±2.08) for an ultrasound compared to 6 days (±6.82) for non-respiratory patients. Median length of stay of was 16 days (±7.87) for respiratory patients, compared to a median of 23 days (±41.84) for the non-respiratory patients.
Conclusions: Admission under a respiratory team was associated with more efficient management of patients with parapneumonic effusions.

3.6 The innate and adaptive immune responses following Mesenchymal Stromal Cell administration before 'second hit' injury in rodent pneumonia models

Claire H. Masterson[1], Ignacio Sallent[1], Lanzhi Liu[1], Hector E. Gonzalez[1], Sean D. McCarthy[1], Declan Byrnes[1], Senthil Alagesan[1], Juan Fandiño[1], Abigail Warren[1], Daniel P. O'Toole[1] John G. Laffey[2]

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Background: In ventilated ARDS patients secondary, opportunistic infection is often a result of a depressed immune system due to prolonged primary infection and overuse of antibiotics. Here we aimed to develop a clinically-relevant, 2-hit model by first establishing *K.pneumoniae* infection and then administering a subsequent lipopolysaccharide (LPS) injury to mimic secondary injury. Mesenchymal stromal cells (MSCs) were administered during the acute phase of pneumonia to examine a possible protective effect toward a later 'second hit' injury.
Methods: A clinically-isolated, antimicrobial-resistant (AMR) *K.pneumoniae* bacteria was administered to rats to induce pneumonia. MSCs or control (PBS) was administered 1h later. After 72h, a bolus of *E.coli* LPS was administered, and injury allowed to develop during ventilation for 4h. Blood and BAL were collected and analysed post-mortem for leukocyte numbers, differential cell counts, and inflammatory cytokine levels to determine MSC mechanism of action *in vivo*.
Results: MSCs increased survival compared to control animals. Total white cell counts in the lung were decreased by MSCs after LPS injury (Fig1A) and neutrophil fraction was also reduced (Fig1B). Circulating white cell populations were notably different at baseline in non-survivors of 2nd hit and/or prolonged ventilation, MSCs appeared to stabilise this (Fig1C &D).

Conclusion: MSCs attenuated secondary injury and decreased mortality in pneumonia and appeared to be mediated by circulating and local immune populations.

Funding: This research was funded by the Science Foundation Ireland Future Research Leaders Award (16-FRL-3845) awarded to JGL.

Conflicts of Interest: JGL reports consulting for Baxter Inc and for Cellennkos. All other authors declare no conflict of interest.

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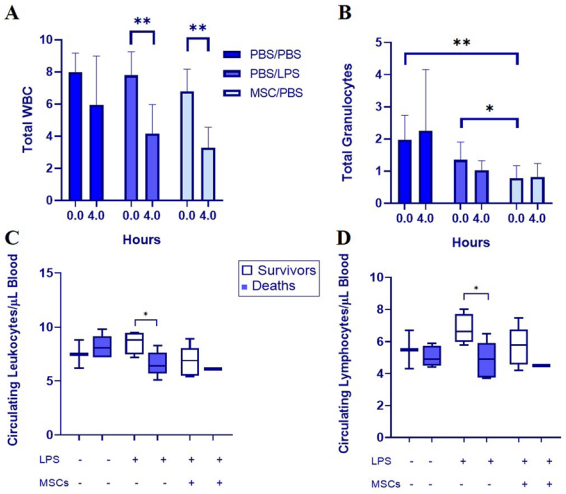


Figure 1: Local and Circulating white blood cell populations are altered by MSC administration and survival is dependent on baseline levels. LPS administration decreased the circulating levels of WBCs at 4h (A). Granulocytes were decreased by MSC administration at baseline and retained at low levels (B). Animals who did not survive the 4h protocol had significantly lower levels of WBCs and lymphocytes at baseline (C,D).

3.7 Delivering Effective Treatment for Latent Tuberculosis Infection Using A Hybrid Care Model

[1]Arshima Rasheed, [1]Sarah O'Beirne.

[1]Department of Respiratory Medicine, St. Vincent's University Hospital, Elm Park, Dublin 4, Ireland.

Background: Latent tuberculosis infection (LTBI) evaluation and management is a common reason for referral to the TB service. Prior to the pandemic all patient encounters occurred in person. Since mid-2020 we have used a hybrid model of care with the first evaluation and decisions regarding therapy occurring in-person and subsequent clinic visits performed virtually.
Methods: We evaluated our LTBI service between 07/2020-12/2022, examining the rate of therapy completion, adverse events and number of patients lost to follow-up, to assess the effectiveness of this hybrid model.
Results: Eighty-three patients were included. A majority, (n=67, 81%), attended for all required blood testing and were reached for all virtual clinic encounters (n=79, 95%). The overall treatment completion rate was 92%. Among those who failed to complete treatment, the mean age was 50 years with the majority (75%) referred by the occupational health department. Those requiring LTBI therapy prior to commencement of biologic therapy were most compliant with LTBI therapy with a treatment completion rate of 100% versus 81% amongst those undergoing LTBI therapy for other reasons.
Conclusion: This data suggests that a hybrid care model is an effective way to treat LTBI, with potential benefits for patients and staff versus traditional in-person care**.**

Disclosures:

Funding: No funding was received.

Conflict of Interest: AR and SO'B have no conflicts of interest to declare related to this abstract.

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

3.8 Frequency of Spontaneously Expectorated Sputum Samples in Adult People with Cystic Fibrosis, Pre vs Post Elexacaftor/Ivacaftor/Tezacaftor Initiation

[1]*Michael Lindesay,* [1]*Louise Collins,* [1]*Brian Casserly.*

[1]*University Hospital Limerick, Limerick, Ireland.*

Background: Early detection of lower respiratory tract infections (LRTIs) in People with Cystic Fibrosis (PwCF) is paramount to disease management and improved health outcomes. Currently, the primary method for LRTI detection involves spontaneously expectorated sputum samples. Since initiating Elexacaftor/Ivacaftor/Tezacaftor (EIT), many PwCF report less coughing and sputum production, potentially limiting opportunity for LRTI detection. This study compares the frequency of spontaneously expectorated sputum samples pre- vs post-EIT and makes recommendations for future sampling methods.
Methods: PwCF > 18 years old, attending University Hospital Limerick were included. PwCF without recorded start dates, or, not currently taking EIT were excluded. Samples from 2018 to 2022 were analysed to determine the average number of patient's samples before vs after initiating EIT.
Results: Of 81 PwCF, 36 were included in the analysis. Table 1 outlines sample means and standard deviations pre- (8.5, SD=8.8) vs post- (1.8, SD=2.4) EIT. Graph 1 demonstrates reducing sampling frequencies since EIT's use.
Conclusion: The use of EIT correlates with decreased sputum sampling frequency. Therefore, Induced Sputum sampling is recommended for PwCF who are incapable of spontaneous sputum expectoration.

Keywords: Cystic Fibrosis, Sputum Sampling, Elexacaftor/Ivacaftor/Tezacaftor (EIT).

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

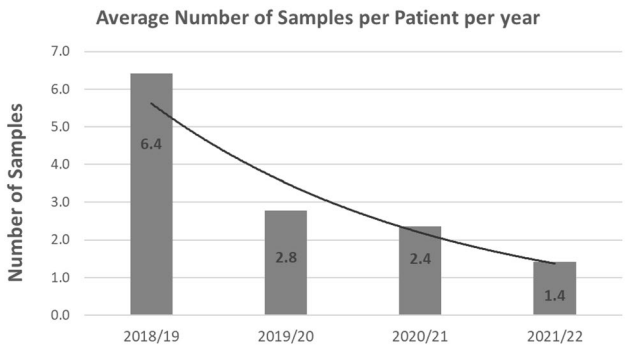
Table 1.

	Pre-EIT	Post-EIT
Number (n)	306	64
Range	43	9
Minimum	0	0
Maximum	43	9

	Pre-EIT	Post-EIT
Mean	8.5	1.8
Std. Deviation	8.8	2.4
Skewness	2.2	1.7
Kurtosis	6.5	2.3

Table 1. Descriptive data for number of samples (n) taken Pre- vs Post- EIT Initiation

Graph 1



Graph 1 Average number of samples taken per patient per year
*Year runs between 01 October to 30 September

3.9 Clinical associations and implications of non-tuberculous mycobacteria (NTM) positive-culture in cystic fibrosis: An epidemiological analysis

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Background: Non-tuberculous mycobacteria (NTM) cause morbidity in individuals with pre-existing lung disease including cystic fibrosis (CF). Understanding the implications of NTM positive-culture on disease trajectory and management remains challenging. We analysed the epidemiological characteristics to identify clinical associations with NTM in an Irish CF cohort.
Methods: We evaluated age, BMI, FEV 1 trends, CF-ABLE score [(1)], bacterial colonisation, vitamin D levels and diabetes status among CF patients with NTM positive-culture.
Results: 22 CF patients isolated NTM. Mean age was 26 years. Mean BMI was 23.1. 8 individual species of NTM were identified. (Figure 1) Vitamin D deficiency n=9. Diabetes n=5. Mean FEV1 (%predicted) at year -1, 0 and 1 (relative to NTM isolation) was 79, 74 and 79. Mean CF-ABLE score was 1.5 at all timepoints. The average number of exacerbations requiring treatment within twelve months of isolating NTM was 1/annum.
Conclusion: Our incidence of NTM reflects global trends. [(2)] A diverse population of NTM species were isolated, 12 slow-growing and 10 rapidly-growing. NTM did not result in a decline in FEV1, increased exacerbation frequency or an increase in CF-ABLE score. NTM positive-culture in patients with CF may be associated with vitamin D deficiency but not diabetes.

Keywords: Non-tuberculosis mycobacteria (NTM), cystic fibrosis (CF).

Disclosures:

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

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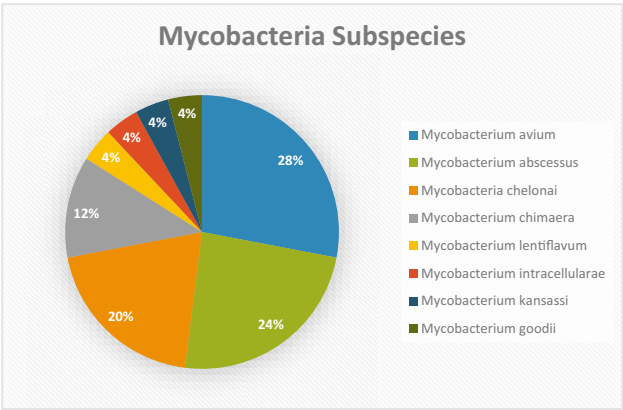
Corresponding Author: Joseph William McHugh **ORCHID account**

Figure 1: Mycobacteria subspecies isolated among CF cohort.



3.10 Lung Clearance Index (LCI) in adult patients with cystic fibrosis (CF) in the era of CFTR modulators

[1]Magdalena Mulligan, [2]Louise Collins, [1]Daryl Butler, [2]Brian Casserly, [3]Colum Dunne, [1]Barry Linnane

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Centre for Interventions in Infection, Inflammation & Immunity (4i), University of Limerick, Ireland.

Introduction. Lung clearance index (LCI) describes ventilation inhomogeneity[1]. It is typically measured by the multiple breath washout (MBW) test, which has been developed to detect early changes in the peripheral airways[2]. The long term effects of highly-effective CFTR modulators on pulmonary outcomes of patients with cystic fibrosis (CF) remain under investigation. The aim of this pilot study was to assess the efficacy of MBW in the adult CF patients at the University Hospital Limerick.
Materials and Methods. LCI measurements were performed using the ExhalyzerD, controlled with Spiroware 3.2.1 software. All spirometry tests were carried out using a handheld EasyOne Air spirometer equated with the Quanjer (GLI) 2012 prediction equation. All MBW tests were completed prior to spirometry testing and the study subjects were clinically stable on assessment day.
Results. To date, we collected data from 23 independent assessments (Table 1). Twenty-one spirometry assessments resulted in a normal FEV_1 value (>80%). The *mean±SD* of LCI value for corresponding assessments was *7.83±1.10*. Although we observed a nonlinear correlation between LCI and $ppFEF_{25-75\%}$ (Figure 1), additional tests will be required to establish more accurate correlation.
Conclusion. The MBW has potential for integration into the standard care of adult CF patients with mild lung disease.

Keywords: multiple breath washout, lung clearance index, cystic fibrosis, CFTR modulator.

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

Acknowledgements: The authors wish to acknowledge the contribution of TLC4CF who donated the ExhalyzerD to the Adult Cystic Fibrosis Department at UHL.

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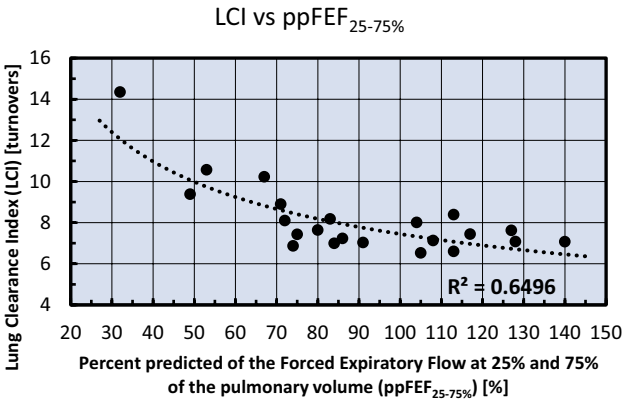
Table 1. Characteristics and lung function parameters.

Parameter	**median**; [range]
Age [years]	**21**; [16 – 27]
Height [cm]	**169**; [150 – 189]
Weight [kg]	**69.8**; [50.4 – 91.7]
BMI [kg/m^2]	**24.1**; [19.2 – 28.9]
$LCI_{2.5}$ [TO]	**7.62**; [6.53 – 10.57]
$ppFEV_1$ [%]	**96**; [58 – 113]
$ppFEF_{25-75\%}$ [%]	**84**; [23 – 140]

Figure 1. LCI vs $ppFEF_{25-75\%}$ in adults with CF (one test was excluded from this analysis).



3.11 Not Always What It Seems: A Cross-Sectional Study Looking at Cystic Fibrosis Patients not prescribed Cystic Fibrosis Transmembrane Receptor Modulator (CFTR) Therapy

Aoife Carolan[1], Claire Fleming[1], Mairead McCarthy[1], James Dorgan[1], Sarah Twohig[1], Janice Mansfield[1], Edel Madden[1], Sarah Mulcahy[1], Ciara Howlett[1], Karen Cronin[1], Kevin F Deasy[1,2], Hisham Ibrahim[1,2], Barry J. Plant [1,2].

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Background: Life-changing CFTR modulator therapy eligibility is determined by genotype, with approximately 10% of patients worldwide predicted to be ineligible (1).
Methods: This cross-sectional study assessed the characteristics of CF patients not prescribed CFTR-modulators attending our adult CF service on June 1st 2022, the reason why, clinical outcomes including: percentage predicted forced expiratory volume in one second, body mass index, number of infective pulmonary exacerbations and hospitalisations and compared them to those on a CFTR-modulator.
Results: 156 patients were analysed. 17(9.3%) were not prescribed a CFTR-modulator; 15(88.2%) due to personal choice, with only two ineligible due to genotype representing 1.3% of the total eligible cohort. Those not prescribed a CFTR-modulator were older (p=0.0255), trended towards a higher median ppFEV1 (92%, (Z=1.562, p=0.1182)), had a normal median BMI, 24.6(IQR 6.5), and a lower burden of complications with an association between pancreatic insufficiency and modulator therapy (OR 16.63, P<0.0001).
Conclusion: Although at first glance the percentage of patients not prescribed a CFTR-modulator was consistent with the 10% predicted ineligibility worldwide, on closer examination this is not the case. Only 1.3% of patients were ineligible due to genotype. There appears to be a self-selecting group choosing to remain off modulators.

Keywords: CFTR Modulator, Patient choice

Disclosures. Nil

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3.12 An audit to assess whether minimum bundle of aetiological tests are ordered in adults with non-CF bronchiectasis

Kate Devlin[1], Aodhagan McGoohan[1], Katherine Murphy[1], Minesh Kooblall[1, 2]

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Background: Bronchiectasis is a chronic respiratory disease characterised by persistent cough, sputum production and recurrent infections due to abnormal, permanent bronchial dilation. Effective treatment hinges on thorough diagnostics. Careful selection of investigations can significantly alter bronchiectasis management by indicating specific therapies, as well as minimising unnecessary treatments.
Methods: We retrospectively audited adherence to European Respiratory Society (ERS) guidelines for standardised bronchiectasis testing, which recommends a minimal test bundle including Full Blood Count (FBC), serum immunoglobulins, Allergic Bronchopulmonary Aspergillosis (ABPA) testing and sputum culture. We analysed charts of 40 patients with radiologically confirmed bronchiectasis in Peamount Hospital (November 2022 – August 2023).
Results: We observed that 40 (100%) patients had FBC sent, 26 (65%) had serum immunoglobulins sent, 17 (42.5%) were tested for ABPA and 30 (75%) had sputum cultures sent. We observed that just 15 (37.5%) of patients received all four of the suggested investigations, as recommended by the ERS (see Table 1).
Conclusion: Our audit highlights the need for a dedicated screening tool to aid early, accurate diagnosis and enhance bronchiectasis management. We plan to implement the tool and re-audit this topic in one year.

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

Table 1: Investigation Distribution in Bronchiectasis Cohort

INVESTIGATION	FBC	SERUM IMMUNOGLOBULINS	ABPA TESTING	SPUTUM MC&S	ALL RECOMMENDED INVESTIGATIONS
NUMBER OF PATIENTS	40/40 (100%)	26/40 (65%)	17/40 (42.5%)	30/40 (75%)	15/40 (37.5%)

3.13 Audit of adherence to bronchiectasis guidelines at Galway University Hospitals

Sally Griffiths, Fearghal O'Neill, Michael J Harrison, Melissa J McDonnell

Department of Respiratory Medicine, Galway University Hospital

Background: European Respiratory Society (ERS) guidelines for the management of adult bronchiectasis recommend specific diagnostic investigations to tailor treatments to an identified aetiology. This audit examines current local practice against the 2017 ERS guidelines.
Methods: A retrospective review of patient files was undertaken, using the search term "bronchiectasis" in clinic letters between January and July 2023. All patients with a confirmed diagnosis of bronchiectasis were included. We reviewed investigations requested including FBC, quantitative immunoglobulins, Aspergillus serology and sputum culture, alongside the prevalence of patients on antimicrobial prophylaxis.
Results: 80 patients, (35 male), were included in the analysis. 87.5% of patients had immunoglobulins, 85% total serum IgE and 65% IgE specific to Aspergillus. Of those tested, abnormal results were recorded in 8.5%, 30.8% and 17.3% respectively. 29 (36%) patients were prescribed antimicrobial prophylaxis of which 70% had sputum sent for NTM culture previously.
Conclusion: Adherence to guidelines for diagnostic testing in patients with bronchiectasis can be improved to meet the ERS standard. We propose that improvements can be achieved by implementing a standardised diagnostic panel, alongside targeted teaching sessions. We aim to introduce a standard laboratory panel and re-audit after 6 months to assess improvements.
The authors declare that they have no conflicts of interest.

References: Polverino E, Goeminne PC, McDonnell MJ, *et al.* European Respiraotry Sociaety guidelines for the management of adult bronchiectasis. *Eur Respir J* 2017; 50: 1700629 [https://doi.org/10.1183/13993003.00629-2017]

3.14 Clinical Audit of Bronchiectasis admissions in a tertiary referral centre and their management

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[1]Department of Respiratory Medicine, Beaumont Hospital, Dublin 9

Background: Both the ERS and BTS have published guidelines on the management of bronchiectasis patients. We examined adherence to these guidelines in patients presenting to Beaumont Hospital.
Methods: We looked at data from all bronchiectasis admissions to Beaumont Hospital in 2021. We used a combination of electronic patient records, written clinical notes, and electronic radiology systems to determine whether standard of inpatient care and follow-up management conformed to international standards.
Results: Data from 107 patients was audited. Frequency of investigations was variable, such as sputum MC&S (81%), CXR (91%), serum immunoglobulins (52%), total IgE (42%), and ABPA (40%). 81% of patients had appropriate antibiotics prescribed. Duration of antibiotic therapy was 14 days in 52% of cases. 64% of patients received chest physiotherapy. In the outpatient setting, the majority had recommended annual investigations including sputum MC&S (62%), spirometry (56)%, and MRC Dyspnoea score measurement (50%). 45% of patients performed airway clearance. 20% used adjunctive airway clearance devices, while 57% used home nebulisers. 45% of patients received formal airway clearance education.
Conclusions: Overall, there was good adherence to established international guidelines seen throughout the audit period. However, we identified several areas for improvement in terms of post-exacerbation care and follow-up management.

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

3.15 Antimicrobial Prescribing in Post-Stroke Aspiration Pneumonia

Fiona Murphy[1], Siobhan Quirke[1], Luke Harris[1], Tom Walsh[1]

[1]Galway University Hospital

Background: Aspiration pneumonia is a common in patients who have had an acute stroke. Empiric antibiotics are frequently prescribed at the time of aspiration. There is a high rate of spontaneous recovery in those who have an aspiration event and these individuals do not require antimicrobial therapy. The overall aim of this audit was to ensure appropriate antimicrobial stewardship in this setting.
Methods: Prospective was collected for patients with confirmed or suspected aspiration pneumonia. Data review included whether speech and language opinion occurred prior to aspiration, any changes to diet, evidence suggestive of a bacterial process and antibiotic choice and duration.
Results: Data was collected on 42 patients over a three month period. Initial swallow assessment was documented in 37 patients. 66% of patients had SIRS criteria. 75% had a rise in inflammatory markers. 66% of patients had confirmed consolidation on their chest Xray. All patients had formal speech and language reviews during their inpatient stay. 90% of patients had modifications to their feeding regime. One patient had their antibiotics de-escalated when their bloods, imaging and vital signs improved.
Conclusion: Patients who do not have SIRs criteria, a rise in inflammatory markers or CXR consolidation should have antimicrobials reviewed and de-escalated as appropriate.
data

Key Words
Aspiration Pneumonia
Anti-microbial stewardship

Disclosures
The authors declare there was no conflict of interest.
There was no funding for this project.

3.16 ATTITUDES TO COVID-19 VACCINATION AMONGST HIGH RISK OUTPATIENT POPULATIONS

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Introduction: Vaccination plays a vital role in reducing COVID-19 related hospitalisations and mortality. Despite this, many patients, even vulnerable individuals including those with chronic respiratory disease, diabetes mellitus and advancing age, may be unsure about the safety and effectiveness of vaccination.
Methods: We utilised a questionnaire to explore the attitudes and knowledge regarding COVID-19 vaccination amongst patients attending respiratory, diabetic and medicine for the elderly outpatient clinics in St Michael's Hospital between May and June 2023. Participation was voluntary and anonymous.
Results: One hundred patients completed the survey. Of these, 77% believed the COVID-19 vaccine was safe, with 20% unsure; 79% thought it was effective, while 18% were unsure. The main reason participants accepted vaccination was to protect themselves (68%), while concern regarding side effects being the most common reason to decline (18%). Interestingly, 77 patients believed they had all recommended doses of vaccine, however only 60 individuals had received the minimum recommended course and applicable boosters.
Conclusion: Despite overall trust in COVID-19 vaccination, we observed a significant proportion of patients who were not adequately protected from COVID-19, unknowingly missing vaccine doses due to lack of knowledge about vaccine schedules and booster requirements.

Funding: No external funding was received

Conflict of Interest: The authors have no conflict of interest to declare

3.17 Home oxygen therapy outcomes of post COVID-19 patients (2020-2023). Oxygen Therapy Clinic, Our Lady of Lourdes Hospital

Sarah Nolan[1], Viji Mathew[1]

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Background: This poster explores the need for home oxygen therapy in those being treated for COVID-19 from Our Lady of Lourdes Hospital. Home oxygen therapy is a long established practice in the general respiratory population but the impact of COVID-19 and the need for on-going home oxygen therapy in its treatment is not yet well known.
Methods: Collation and analysis of COVID-19 patient data collected from the Oxygen Therapy Clinic (OTC) in OLOL was analysed. The assessment results of the 30 patients who attended the OTC with COVID-19 from 1/1/2020-31/7/2023 were reviewed. The source of referral and the reason for referral was recorded. The outcome and OTC follow-up for each patient was analysed along with any onward referrals.
Results: 30% of patients had another respiratory diagnosis. 76.66% of patients either had no oxygen requirements or had oxygen supplied during their in-patient stay removed upon attending the OTC (see Table 1). 80% of patients were discharged from the oxygen therapy clinic on their initial visit (see Table 2). 13.33% of patients were referred to other OPD clinics (see Table 3).
Conclusions: The majority of patients with COVID-19 who were referred for assessment or discharged from hospital with home oxygen did not require it on assessment in the OTC.

Keywords: COVID-19, home oxygen therapy, LTOT, ambulatory oxygen

Disclosures: N/A

Funding: N/A

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

Table 1. Oxygen Therapy Clinic patient outcomes

Outcomes	No. of patients
No oxygen required	11
Remove both LTOT and ambulatory oxygen	4
Remove ambulatory oxygen	8
Remove LTOT and change ambulatory oxygen	2

Outcomes	No. of patients
Commence on ambulatory oxygen	1
Change to ambulatory oxygen	1
Appointment not required and discharged	1
No change to previous prescription	3

Table 2. Oxygen Therapy Clinic follow-up plans

Oxygen Therapy Clinic Follow-up	No. of patients
Discharged	24
Review in 1 year	3
Review in 6 months	3
Review in 2 months	1

Table 3. Onward referrals from the Oxygen Therapy Clinic

Onward referrals	No. of patients	
Overnight oximetry	1	
PFTs	3	
Sleep clinic	1	
Consultant clinic referral	Referred	3
	Already linked in	16
Discussed with consultant	6	
Pulmonary rehabilitation	Referred	5
	Declined	2
	Already linked it	1
	Unsuitable	22

3.18 Pulmonary infiltrates with pulmonary embolism in hospitalized patients of Mid-West regional Hospital Ireland before and after Covid-19 pandemic: A comparative study

Zafran Ali[1], Hira Gul[1], Shahram Shahsavari[1], Tomas McHugh[1], Orlaith Shinnersl[1], Junaid Rasul Awan[1],Ashragat Hussain, Abdul Raziq[1], Aidan O Brien[1]

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Introduction: Pulmonary embolism (PE) is a potentially fatal disease with heterogeneous clinical presentation and outcome [1]. The Covid-19 disease outbreak in 2019 reached devastating proportions and is still posing a significant challenge to healthcare professionals all over the world. Since the pandemic, increasing number of studies has shown abnormal coagulation parameters in patients hospitalized with severe forms of Covid-19 infection, the risk for which is further increased after prolonged hospitalization in patients who are critically ill with the disease [2, 3]. The purpose of our study was to find out the presence of pulmonary infiltrates on CTPA in patients with confirmed pulmonary embolism before and during Covid-19 pandemic.
Materials and Methods: In this comparative study we retrospectively searched the medical records for patients admitted during the period of January 2019 to May 2019, in University Hospital Limerick with confirmed PE on CTPA and compared the data to that of patients admitted with the similar clinical picture during the Covid-19 pandemic, in the period of Jan 2021 to May 2021. Presence of PE along with pulmonary infiltrates like ground glass opacities, airspace shadowing and consolidation were compared between these two groups.
Results: A total of 37 patients between the age of 22 and 90 years (mean age 56 years) were evaluated. Patients were selected on the basis of confirmed pulmonary embolism on CT pulmonary angiogram. PE was found in 13 patients in pre-pandemic group and in 24 patients in pandemic group. In patients with diagnosed pulmonary embolism, pulmonary infiltrates were found in 3 (23%) patients in pre-pandemic group and 11(46%) patients in pandemic group.
Conclusion: The presence of pulmonary infiltrates with PE during Covid-19 pandemic was increased which showed that Covid-19 increase the risk of pulmonary embolism.
Discussion: Respiratory tract infections including Covid-19 are a significant risk factor for pulmonary embolism and patients admitted with Covid-19 may prompt early investigation with CT pulmonary angiography which can help in early diagnosis and treatment of disease thereby preventing major complications and may aid in decreasing mortality and morbidity [4,5].

Keywords: Pulmonary embolism, Covid-19 pandemic, venous thromboembolism

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Poster Session 4: Integrated Care

4.1 Respiratory Diagnostics incorporating a detailed Diagnostic Review and Report

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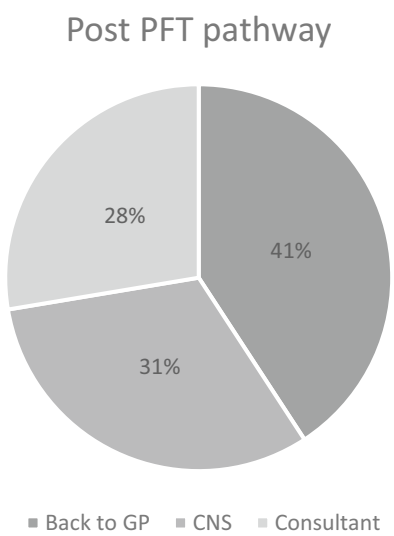
[1]St Vincent's University Hospital (SVUH), Dublin, Ireland.

Background: A community based diagnostic spirometry service that included a detailed respiratory symptom and clinical history assessment, was undertaken by Respiratory Physiologists in a recent pilot Sláintecare project. This service has been expanded to include full lung function tests when required and the detailed diagnostic report is available to both the referring GP and the Respiratory Integrated Care (RIC) team.
Methods: Respiratory Physiologists are ideally placed as providers of respiratory diagnostics to carry out this detailed assessment and offer 'next step' recommendations to GPs, thereby providing an enhanced community based service for patients. Referrals to other RIC professionals are made when appropriate, improving overall access to the Respiratory Integrated Care service. Clinical governance is provided by the Respiratory Consultant.
Results: 41% of total patients (n=76) were referred to the GP with no further input from the RIC team required. 31% of patients required follow up by the respiratory CNS. 28% required a consultant appointment or input (figure 1). 6% were referred to smoking cessation and 38% required further PFTs.
Conclusion: This advanced practice initiative supports the ECC model by providing GPs and the RIC team with crucial high quality diagnostic information. The community based service provided by the Respiratory Physiologist is an important component of RIC services.

Keywords: Respiratory Physiologist, Advanced Practice, Pulmonary Function Testing, Respiratory Integrated Care

Disclosures: The authors have no disclosures or conflicts of interest to disclose

Figure 1: Patients seen by Respiratory Physiologists and referrals



4.2 NIMIS Project connecting Connolly Hospital Respiratory Diagnostics services to the new Dublin North West Community Integrated Care Hub diagnostics services in CHO9

[1,2] Louise Brien, [1,2] Abirami Subramaniam, [3]Gary Monk, [1,2]Aisling McGowan

[1]Connolly Hospital Blanchardstown, Dublin 15, Ireland; [2] Dublin North West Integrated Care Centre CHO9, Dublin, Ireland; [3]National NIMIS team, Ireland

Background: National Integrated Medical Imaging System (NIMIS) enables the acquisition, storage, retrieval, and sharing of images and test reports. Pulmonary function testing (PFT) once limited to acute hospital settings is now available in the community. It is critically important to standardise IT and reporting systems across linked sites.
Methods: Respiratory physiologists worked for 11 months with the local and national NIMIS teams, local and community HSE IT, and PFT equipment supplier on this integration project. We used our expertise in this area to extend NIMIS by connecting both diagnostic sites via the HSE network to NIMIS.
Results: Establishing a uniform diagnostic pathway/workflow using NIMIS across both sites ensures equal benefits for community patients, staff and referring physicians (Consultants and General Practitioners). The successful implementation of NIMIS in the Community Integrated Care hub and Connolly Hospital will revolutionise the way physiology services are delivered, improving patient care, efficiency, and collaboration among healthcare professionals
Conclusion: The integration of NIMIS across sites facilitates; remote access capabilities, operational efficiency improvements, and enhanced collaboration will transform lung function services in these settings. Patients benefit from faster diagnosis, better coordination of care, and improved outcomes. Healthcare professionals enjoy streamlined workflows, increased productivity, and enhanced collaboration.

Disclosures: None

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

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4.3 PR Plus+: Maintenance programmes following Pulmonary Rehabilitation: The patient perspective

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Background: Pulmonary rehabilitation (PR) is the recognised gold-standard of community-based care for chronic respiratory conditions[1] but long-term gains in patient wellbeing are not sustained.[2] Community-based exercise maintenance programmes have shown promise in addressing this issue[3] but there is an absence of qualitative patient data informing same.
Methods: Participants who had completed a programme of PR within the previous 18 months at HSE Primary Care centres in Limerick and Ennis were invited to participate in focus groups discussing PR maintenance programmes.

Results: Seventeen participants (female:n=9(53%); mean(SD) age:68.8(10.1) years) took part in four focus groups (three in-person, one online) in July, 2023. All participants reported a positive PR experience, but most failed to maintain exercise habits afterwards. All participants were enthusiastic about maintenance programmes, which they thought should be led by a trained health/fitness professional. Six-eight week rolling blocks to be accessed within one-two months post-PR, comprising exercise and social components were preferred. Educational sessions were favoured by some, with others finding these boring and repetitive. Light-touch ongoing assessment to monitor progress was preferred. In-person settings for maintenance classes were overwhelmingly favoured.
Conclusions: Patient insights about PR maintenance programmes provide useful guidance for policy makers considering provision of this service.

Keywords: Pulmonary Rehabilitation; maintenance programmes, exercise.

Disclosures

Funding: This study was funded by the Health Research Board Summer Studentship programme (Ms Niamh Coffey)

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

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4.4 Respiratory Waitlist Initiative Clinic: a blueprint for the integrated care hubs?

Rachel Christner[1], Ciara Sherlock[2], Philippa Needham[2], Eoghan O'Regan[2], Fergal Moore[2], Niamh Duignan[2], Helen Mulryan[1], Olivia Healy[1], Veronica McGoldrick[1], Anthony O'Regan[1,3], Thomas McEnery[1], Sinead M.Walsh[1,2], Ruth P Cusack[1].

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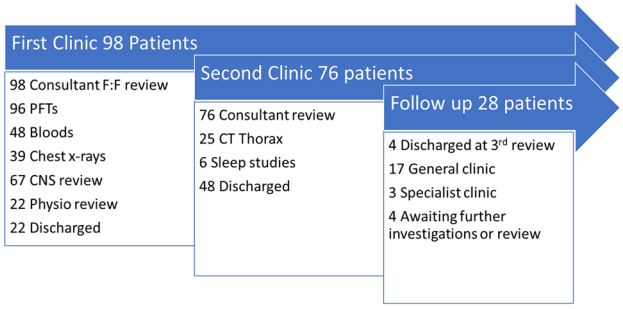
3. Royal College of Physicians, Dublin, Ireland.

Hospital waiting lists have emerged as a pressing concern in modern healthcare. In 2021, the General Respiratory Clinic at Galway University Hospital had over 900 patients awaiting general review. A Waiting List Initiative Clinic was introduced in November 2021 to address this issue, with simultaneous waiting list validation.

Between November 2021 and July 2023, over nine clinics, 109 patients were offered an appointment from the routine waiting list. Patients completed a 'one-stop-shop' with spirometry followed by a multidisciplinary team assessment comprising a Respiratory Consultant, CNS, and specialist Physiotherapist. Patients completed chest x-ray and bloods as required. Patients received up to 3 Initiative Clinic visits, dependent on the complexity of their condition, before they were discharged to GP care or referred onto respiratory general/specialist clinics. Baseline demographics, referral reason, time to review, interventions, investigations and outcomes were explored.
The clinics were attended by 98 patients. The primary source of referrals was from GPs (94%). Treatment was initiated or changed in 70% of patients. 22.4% patients were discharged at first review with a diagnosis, with 20% referred to general/specialist clinics (Figure 1). Regular validation of the acute hospital wait list occurred simultaneously to reduce overall wait times to access respiratory care.
The Initiative Clinic proved highly successful in reducing the waitlist, streamlining patient evaluations, and delivering necessary therapies. The approach of utilizing a multi-disciplinary team to assess non-urgent, appropriate referrals could be reproduced in integrated care as a means of reducing the pressure on acute hospital clinics.

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

Figure 1: Waiting list initiative outcomes.



Abbreviations: CNS = Clinical nurse specialist; CT = Computed tomography; F:F = Face to face; PFTs = Pulmonary function testing; PFTs = Pulmonary function testing; Physio = Physiotherapy.

4.5 Mid-West Integrated Care GP Access Respiratory Clinic: A Service Evaluation

Sarah Cunneen[1], Brian Fitzgibbon[1], Anjitha Ann Babu[1], Martha Dillon[1], Grainne Casey[1], Enda Collins[1], Sinead Cleary[1], Grainne Casey[1], Enda Collins[1], Prof Aidan O'Brien[2], Dr Brian Casserly[2], Louise Crowley[3], Kathryn Considine[3], Carmel Murray[3] Carmel O Connor[3], Patricia O' Rourke[4] and Josie Dillon[4].

1. Respiratory Integrated Care Programme, Chronic Disease Management, Health Service Executive, CHO 3. 2. ULHG Respiratory 3. Community Discipline Managers 4. CDM Operational leads.

Background: A community-based interdisciplinary Clinical Nurse Specialist / Physiotherapist led clinic was established in Mid-West Community Healthcare with the aim of optimising people living with

chronic respiratory diseases. It enables GP practices in North Tipperary and Co Clare to refer patients at the lowest level of complexity directly to respiratory services in line with the HSE Integrated Model of Care for the Prevention and Management of Chronic Disease.
These clinics provide appointments to patients with chronic respiratory diseases in locations as close to their home as possible and an opportunity for participation in community Pulmonary Rehabilitation.
Methods: GPs referred patients over 16 years with confirmed COPD or Asthma. Patients were assessed with outcome measures Asthma Control Test, COPD Assessment Test, mMRC Dyspnoea scale and General Anxiety Disorder 7.
Results: 74 patients have been seen with an average of 3 exacerbations in the previous year. 11% of the patients had been admitted to hospital and 10% required out of hours GP services.
Conclusion: This evaluation of a local service development, demonstrated that it is feasible to run as is evident from the referrals, attendance rates, and range of treatments received by patients. The outcome of this service evaluation will inform future local respiratory service planning.

Keywords: GP access, Interdisciplinary, Integrated Care

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

4.6 An assessment of the 'one-stop-shop' community respiratory clinics to optimise COPD and asthma management

D. Ganesan[1], C. Sherlock[1], P. Needham[1], A. Joseph[1], E. O'Regan[1], F. Moore[1], N. Duignan[1], M. McGoldrick[1], O. Healy[1], D. Dunne[1], S.M. Walsh[1]

[1]Galway University Hospital; Galway City Integrated Care Hub, CHO2

Background: A key component of the respiratory integrated programme is patient-centred specialist care of COPD and asthma in the community (1). We describe the roll-out of the consultant-led 'one-stop-shop' respiratory multidisciplinary clinic, where the first 50 patients have been reviewed.
Methods: Electronic patient records (EPR) for those referred to the community clinic in Galway City Integrated Care Hub were reviewed. Data was collected using excel, including patient details, referral information including date and source, location of community clinic, status of spirometry including if reversibility done, list of investigations, involvement of MDT, changes in medication, and referral for pulmonary rehabilitation.
Results: 50 patients attended, the majority initially were from the acute respiratory wait list. Direct GP referrals have increased. 98% had diagnostic spirometry performed. 86% had a CNS review, 48% had physiotherapist review. 64% (n=32) had a medication change, 48% (n=24) escalation, 16% (n=8) de-escalation. 22% were listed for pulmonary rehabilitation.
Conclusion: Community respiratory clinics ensures timely access to specialist care. Early diagnoses of Asthma and COPD allows for optimal pharmacological and non-pharmacological interventions. This project has enabled the delivery of person-centred care. The 'one-stop-shop' model ensures times spent travelling to clinical appointments has dramatically reduced.

Keywords: community respiratory clinic, chronic disease management

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

References:
1. National Framework for the Integrated Prevention and Management of Chronic Disease in Ireland 2020 – 2025

4.7 Evaluation of GP direct access to spirometry in Galway City Integrated Care Hub

D. Ganesan[1] M. McGoldrick[1], O.Healy[1], S.M. Walsh[1]

[1]Galway University Hospital; Galway City Integrated Care Hub, CHO2

Background: Early access to spirometry by GPs is a key part of the respiratory integrated programme (1). Equitable and timely access to spirometry allows an early diagnosis of COPD and Asthma to be made. We describe the implementation of the first 40 GP direct access spirometry referrals and results in Galway City Hub.
Methods: Electronic patient records (EPR) from May 2023 – July 2023 of those referred for spirometry from GPs in Galway City Hub were reviewed. We used Excel to collect the data of referral date, date of spirometry done, date of report, patient location, if reversibility done, technique and results of spirometry.
Results: 34/40 patients attended, distributed across the community networks. Mean wait time from referral was 33 days. 88% demonstrated adequate technique. The spirometry results as follows: 62% normal, 35% obstructive and 3% restrictive. Reversibility was carried out in 13 patients, of whom 7 demonstrated positive results.
Conclusion: Early access to diagnostics allows the correct diagnoses of asthma and COPD to be made in the community. This empowers GPs to manage the patients appropriately with timely referral to community respiratory integrated services such as community pulmonary rehabilitation, clinical nurse specialists and physiotherapists.

Keywords: GP diagnostics, PFTs, community clinic

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

Corresponding Author: Dhiviya Ganesan

References:
1. National Framework for the Integrated Prevention and Management of Chronic Disease in Ireland 2020 – 2025

4.8 Integrated Cardiopulmonary Specialist Care – A Novel Approach

[1, 2] Isra Hussein, [1,3] Lavanya Saiva, [1, 2] Abirami Subramaniam

[1]Dublin North West Integrated Care Centre, CHO9 [2]Respiratory Department, Connolly Hospital Blanchardstown, Dublin [3]Cardiology Department, Connolly Hospital Blanchardstown, Dublin

Background: The co-existence of cardiopulmonary disease are common because of similar risk factors, overlap in pathophysiology and presenting features. In line with Sláintecare's aim, the Dublin North West Specialist Ambulatory Care hub has pioneered a combined model of care in the assessment of patients with cardiopulmonary disease.
Methods: We report a prospective review of our Integrated Cardiopulmonary clinic experience. Patients were assessed concomitantly by consultants, nurses and physiotherapists, from both specialities. In the same visit, diagnostic testing (ECG, Echo, PFTs) were performed. A comprehensive treatment plan was subsequently devised following an interdisciplinary case discussion.
Results: Eleven patients were reviewed (6F:5M), mean age 68 years, majority were ex-smokers(64%). The most common respiratory diagnoses

were COPD(64%), asthma(27%) and cardiology diagnoses were heart failure(55%), ischaemic heart disease(18%) and hypertension(18%). Outcomes: 4 new diagnoses identified (36%), 9 patients (82%) required further investigations. All patients received both cardiorespiratory education and self-management plans with appropriate follow up. Onward referrals were predominantly to oxygen clinic (36%), and pulmonary rehabilitation programme(27%). This initiative also reduced appointments to minimum 2 visits with positive patient feedback.
Conclusions: Cardiopulmonary multi-morbidity presents many diagnostic and therapeutic challenges. The establishment of our Integrated Cardiorespiratory clinic has facilitated a timely and efficient management of these patients with complex needs.

Key Words: chronic obstructive pulmonary disease, heart failure, integrated care

Disclosures: The authors declare that there is no conflicts of interest.

4.9 Is Community Pulmonary Rehabilitation (PR) Environmentally Friendly?

[1]Catherine Speirs, [1]Eimear Griffin, [1]Aoife O'Hara.

[1]Integrated Care Programme Chronic Disease, Ballinasloe Ambulatory Care Hub, Community Healthcare West, St Brigid's Campus, Ballinasloe, Co. Galway

Background: "Climate change is the biggest global health threat of the 21st century" (Watts *et al.,* 2018) and "current emissions trajectories pose an unacceptable and potentially catastrophic risk to human health" (Watts *et al.,* 2015). The aim of chronic disease hubs is to ensure patients receive the right care, at the right time and in the right place (Sláintecare 2020). Therefore, the aim of this study is to analyse the sustainability of community PR.
Methods: 10 patients participated in an 8 week community PR programme. At the assessment patients mode of transport was recorded. CO_2 emissions, distance, time and cost were calculated for each patient travelling to community PR and Acute PR (hypothetically). Only the patients who could drive were analysed.
Results: 7 patients drove, 1 walked and 2 got the bus to PR.
Conclusions: In conclusion, community PR resulted in significantly less CO_2 emissions released into the atmosphere. Community PR is more cost effective and less time consuming for patients. One patient was able to walk community PR. By providing the right care, at the right time and in the right place we are also providing an environmentally sustainable service, reducing carbon emissions and reducing air pollution.

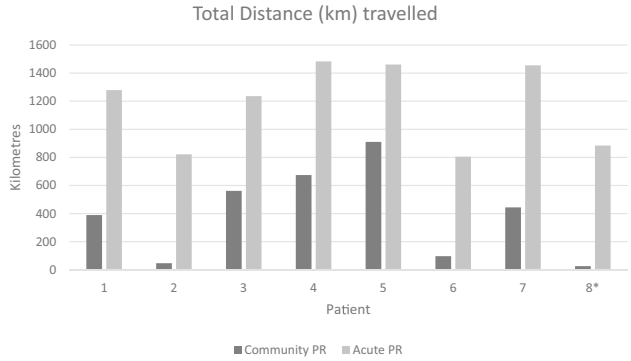


Figure 1. The total distance travelled by patients attending community PR vs the distance they would have to drive to acute PR. *8* indicates the patient who walked to Community PR.*

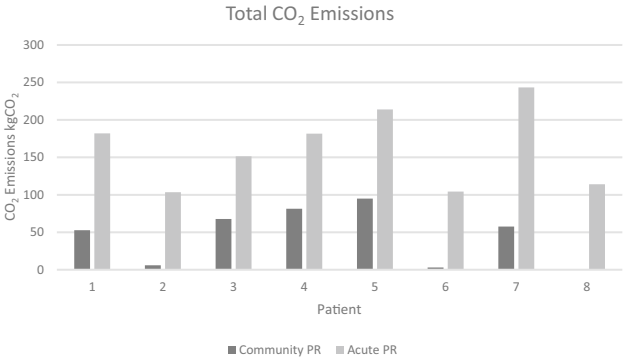


Figure 2. The CO_2 emissions for each patients journey to community PR vs acute PR.

	Community PR	Acute PR
Total CO_2 emissions	363.39 $kgCO_2$	1,294.26 $kgCO_2$
Total kilometres (km) travelled	3,103.2 km	9,605.2 km
Total cost for fuel (€)	€223.72	€801.28
Total time travelling (hours)	58 Hours	167 Hours

Table 1. Total CO2 emissions, kilometres travelled, cost of fuel and time spent travelling to Tuam vs MPH.

Keywords: Climate change, pulmonary rehabilitation, CO_2 emissions, sustainability.

Disclosures:

Funding: No funding provided.

Conflict of interest: No conflicts of interest to declare.

Corresponding Author: Catherine Speirs, Senior Physiotherapist. Integrated Care Programme Chronic Disease, Ballinasloe Ambulatory Care Hub, Community Healthcare West, St Brigid's Campus, Ballinasloe, Co. Galway**.** Catherine.speirs@hse.ie

References:
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Watts, N. et al. (2015) "Health and climate change: policy responses to protect public health," *The Lancet*, 386(10006), pp. 1861–1914. Available at: https://doi.org/10.1016/s0140-6736(15)60854-6.

Watts, N. et al. (2018) "The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come," *The Lancet*, 392(10163), pp. 2479–2514. Available at: https://doi.org/10.1016/s0140-6736(18)32594-7.

4.10 Winning Goals For The Royal County.

Rosaleen Reilly[1], Agnes Barry[1]

[1]Meath Integrated Respiratory Service, Navan, Co Meath

Background: Pre 2021, patients in County Meath travelled outside the county to avail of non-acute respiratory care. A 9 month Slaintecare project of an integrated respiratory service facilitated the establishment of Pulmonary Outreach, Pulmonary Rehabilitation, Chronic Disease Management, Oxygen Therapy and Respiratory Advanced Nurse Practitioner (RANP) Clinics. In the absence of an Integrated Care Hub, continuation of these services has relied on vital support from secondary care.
Method: A timeline review of the service from March 2021 to June 2023 highlighting key achievements in line with the Enhanced Community Care Model.
Results: A total of 522 patients engaged with the service: 657 home visit episodes and a total of 478 clinic episodes across hospital and community sites. A total of 370 Oxygen Therapy appointments were issued. The RANP Clinic provided 81 new and 64 review appointments. Over 15 months, 68 patients were assessed for pulmonary Rehabilitation.
Conclusion: Governance from secondary care facilitates continuation of this service. This framework is not in line with the ECC Model. Integrated Consultant Governance and staff recruitment is paramount to ensure all Meath patients have equitable access to community based specialist respiratory care.

Keywords: Integrated Service, Slaintecare, Governance,

Conflict of Interest: No conflict of interest.

4.11 A retrospective analysis of COPD diagnosis and staging in the Respiratory Integrated Care Hub, Chronic Disease Management Programme, Cork City.

Casey D[1], O'Riordan U[1], Bowen B[1] , Vairamani P[1], O'Donnell M[1], Varghese P.[1], Ahern M[1], Osbourne M[1], Noonan C[1], Meade C[1], O'Regan H[1] Carvalho J[1], Paulos V[1], Tangney N[1], Murphy J[1], Gomez F[1,2]

[1]Chronic Disease Hub, Respiratory Integrated Care, SMOH, Gurranabraher, Cork

[2]Department of Respiratory Medicine, Cork University Hospital, Wilton, Cork.

Background: An overview of the diagnosis and staging of patients with COPD assessing symptom control and disease staging.
Objectives: Respiratory disease, specifically COPD and Asthma account for the highest numbers of in-patient hospitalisations and bed days compared to other diseases within our Irish health system. In 2019, COPD was the seventh leading cause of DALYs globally and the eighth leading cause of years of life lost. Acute exacerbations represent the main direct cost for COPD care, accounting for more than 70% of COPD- related costs incurred from emergency visits and hospitalisations, however there are numerous indirect costs.
Methods: We completed an audit of patients presenting to the hub with a confirmed COPD diagnosis in spirometry. N=86 patients had a new diagnosis, of COPD. We evaluated MMRC, Exacerbation history hospital and community, FEV1, change in medications and Disease staging. Smoking history was also evaluated.
Results: We found with early referral and easy access to diagnostics within our service. Patients are diagnosed and optimised on treatment earlier leading to better outcomes for patients.

Funding: *This study has not received any funding.*

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

References:
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World Health Organisation (2023) COPD-DALYS, https://www.who.int/news-room/fact-sheets/detail/chronic-obstructive-pulmonary-disease-(copd), Online, Accessed on 10th August 2023.

4.12 "Mid-West Community Pulmonary Rehabilitation: Right Care, Right Place, Right Time"

[1]Lauren Kennedy, [1]Maria Madigan, [1]Brian Fitzgibbon, [1]Mairghread Moynihan, [1] Emer Richardson, [1]Liam O'Connell, [1]Sinead Cleary, [1]Grainne Casey, [1]Sarah Cunneen, [1]Maire Curran, [1] Enda Collins, [2] Aidan O'Brien, [2] Brian Casserly, [3]Louise Crowley, [3]Kathryn Considine, [3]Carmel Murray, [4]Patricia O' Rourke and [4]Josie Dillon.

1. Respiratory Integrated Care Programme, Chronic Disease Management, Health Service Executive, CHO3. 2. UL Hospital Group 3. Community Physiotherapy Managers, CHO3 4. Chronic Disease Management Operational Leads, CHO3.

Background: Pulmonary Rehabilitation (PR) in the Midwest was historically delivered in acute settings. February 2022 saw the launch of Community PR in community venues. The community PR aimed to improve access and to overcome barriers to enrolment such as travel and proximity to venue (1). It supports the Enhanced Community Care 'right care, right place, right time' ethos (2). Aim: To present new Mid-West community PR venues and the patient's feedback.
Methods: Venue selection had many considerations such as waiting list demands and patient's address. Satisfaction questionnaires were issued to patients following completion of each PR programme. Feedback was collated and used to advance future programmes.
Results: Community PR ran in 9 venues across the Midwest, 41 programmes completed serving 426 patients to date, with 6 programmes pending. This included 3 virtual programmes. Patients feedback was positive in terms of convenience, accessibility and proximity to venues. Face-to-face programmes were the patient's preferred mode of delivery, however virtual PR provided access to those without transport.
Conclusion: Midwest community PR provide a new pathway outside of the acute setting. These programmes illustrate the improved access to care, offering alternative locations, reducing travel and facilitating patient's needs.

Keywords: Community Pulmonary Rehabilitation, Enhanced Community Care

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

References:
1. National Clinical Programme Respiratory (2020), 'A guidance document for setting up a Pulmonary Rehabilitation Programme for Healthcare professionals', Version 4.
2. Government of Ireland (2022), 'SlainteCare: Right Care, Right Place, Right Time, SlainteCare Action Plan 2022', gov.ie/Sláintecare.

4.13 Earlier diagnosis of COPD in Dublin North Central Respiratory Integrated Care

Alison McAlister[1,2], Cherry Wynne[1,2], Abi Mani[1,2], Ciarán Heatley[2], Stanley DW Miller[1,2]

[1]Respiratory Integrated Care, Dublin North Central, Dublin, Ireland

[2]Mater Misericordiae University Hospital, Dublin

Background: Under-diagnosis and misdiagnosis of Chronic Obstructive Pulmonary Disease (COPD) leads to patients receiving no treatment or incorrect treatment. Spirometry is vital to establish a diagnosis of COPD [1]. Respiratory Integrated Care (RIC) nurse-led clinics enable earlier access to spirometry and diagnosis facilitated by consultant-led Respiratory Integrated Multidisciplinary Meetings (MDM).
Methods: Patient referrals received to the nurse-led RIC clinics between May 2021 and May 2023 were reviewed. Patients who had a presenting clinical diagnosis of either COPD or 'query' COPD but no previous spirometry performed were included in this study. All patients had subsequent spirometry performed and were then discussed at our weekly Integrated Respiratory MDM.
Results: 294 patient referrals were received overall. Of these, 99 (33.7%) patients were identified with a clinical diagnosis of COPD or 'query' COPD but no previous spirometry performed. Of these 99 patients, 64 (64.6%) were subsequently confirmed with a diagnosis of COPD (GOLD Grade 1: 22 (34.4%); Grade 2: 32 (50%); Grade 3: 9 (14%))
Conclusion: RIC Dublin North Central enables improved access to diagnostics and specialist input, which provides correct diagnosis and treatment. This provides an opportunity for secondary prevention and early intervention to minimise the impact of the disease process. [2].

Disclosures:

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

References
1. Global Initiative for Chronic Obstructive Lung Disease (2023 Report) https://goldcopd.org/2023-gold-report-2/
2. National Clinical Programme for Respiratory End To End COPD Model of Care (December 2019) https://www.hse.ie/eng/about/who/cspd/ncps/ncpr/copd/moc/end-to-end-copd-model-of-care-december-2019.pdf

4.14 The Exacerbator Phenotype – A Case for Integration

[1]Niamh Julian, [2]Martha O'Connor, [1]Sinead Delahunty, [1]Daphne Masterson, [2]Celine Dunphy, [2]Yusuf Vapra

[1]South Tipperary Community Specialist Respiratory Team, Integrated Care Programme for Chronic Disease, HSE, Ireland.
[2]COPD Outreach Team, Tipperary University Hospital, Clonmel, Co Tipperary, HSE, Ireland.

Background: It is evident from a review of Pulmonary Rehabilitation (PR) attendance data, that it is often the Chronic Obstructive Pulmonary Disease (COPD) patients with the highest symptom burden who do not complete the PR programme, due to intolerable levels of shortness of breath on exertion and recurrent exacerbations.
Methods: A literature review was undertaken, and combined with a case review to illustrate that the optimisation of a patient post exacerbation, through the COPD Outreach Early Supported Discharge programme, prior to attending PR, had a significantly positive impact on adherence and outcomes of the PR programme.
Results: A multi-level approach to treatment for exacerbator phenotype COPD patients, both pharmacological and non-pharmacological, has the potential to lead to better management of the disease, and better quality of life for patients. It is suggested that extending this approach to PR, with a pre-PR optimisation programme may improve adherence and outcomes within this cohort.
Conclusion: A further step needs to be taken towards "patient-tailored therapy" in the exacerbator phenotype cohort. The COPD Outreach and Respiratory Integrated Care services in South Tipperary will continue to work together towards developing a reproducible format to ensure the best outcomes for our post exacerbation COPD patients.

Keywords: Chronic Obstructive Pulmonary Disease, Pulmonary Rehabilitation, COPD Outreach, Integrated Care

Disclosures: Nothing to declare

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

Corresponding Author: Martha M. O'Connor, https://orchid.org/0009-0001-7621-7965

References: Nil in abstract

4.15 A nine month evaluation of the pulmonary rehabilitation (PR) service in the Ballinasloe Chronic Disease Hub (CDH) CHO2

[1]Eimear Griffin, [1]Aoife O'Hara, [1]Catherine Speirs

[1]Integrated Care Programme Chronic Disease, Ballinasloe Ambulatory Care Hub, Community Healthcare West, St Brigid's Campus, Ballinasloe, Co. Galway

Background: An overview of PR referrals and patients in the Ballinasloe CDH since its initiation is presented. Accepted referrals are reviewed and patients demographics, diagnosis and outcome measures are evaluated.
Method: Referrals to PR in the CDH were accepted following weekly triage. PR programmes were provided in community locations determined by largest waiting lists. Patients who met the inclusion criteria were offered a pre-assessment. Patient demographics and referral information were recorded (Table 1).
Results: Two hundred PR referrals were received by the CDH. Nine referrals did not meet the criteria and were not accepted. Figure 1 outlines the referral sources.
Conclusion: Our evaluation highlights a monthly average of 20 PR referrals. For several reasons, programme uptake was only 42%. Staffing is the biggest barrier to maintain waiting list management. Therefore, current PR programmes are a cohort design. It is hoped that these issues will resolve, and rolling, virtual and maintenance PR programmes can be provided.

Patient Demographics	Pre-Assessment Outcome Measures
Gender	mMRC
Mean age	6MWT
Diagnosis	CFS
Oxygen dependence	Sarcopenia

Table 1 Patient demographics and pre-assessment outcomes.

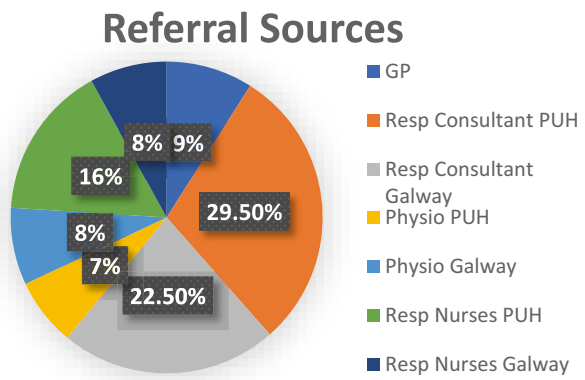

Figure 1. Referral sources

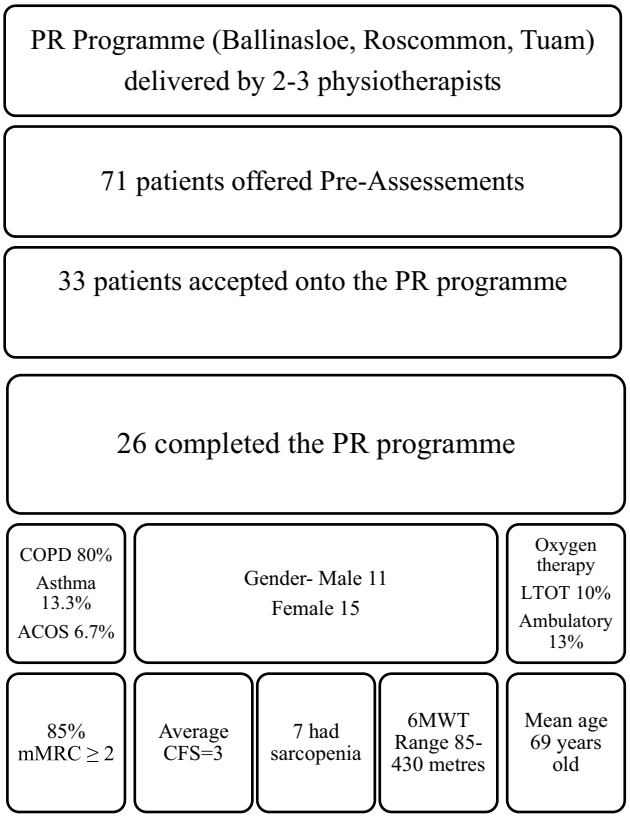

Figure 2. PR programme process, patient demographics and pre-assessment outcome measures.

Keywords: Pulmonary Rehabilitation, Outcome measures, patient demographics, chronic disease

Disclosure:

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

4.16 Review of patient experience survey on the referrals and outcome measures of the Respiratory Integrated Care Hub, Chronic Disease Management Programme, Cork City.

Vairamani P[1], Casey D[1] , O'Regan H[1], Casey C[1], Hickey C[1], Tangney N[1], Murphy J[1], O'Riordan U[1] , Hannafin J[1], Paulos V[1], Jaona C[1], O' Donovan C[1],Bowen B[1], Varghese P[1], Ahern M[1], O' Donnell M[1] ,Gomez F[1]

[1]Chronic Disease Hub, Respiratory Integrated Care, SMOH, Gurranabraher, Cork.

Background: The Structured Chronic Disease Management (CDM) Programme aims to prevent and manage patient chronic diseases using a population-approach. The Respiratory ICP creates a model of care that manages patients in a community setting which is timely, safe, efficient, as close to their home as possible and incorporates specialist services, reduce hospital admissions and promote self-management. Our hub opened its doors to referrals and patients in June 2022.
Objectives: Perform a retrospective review to understand the service users experience to improve the quality of care.
Methods: A 16-item dichotomous questionnaire was developed to understand the service user experiences, with an open ended question. These questionnaires were discussed with patients with help from administration staff. Patients who responded to a phone call agreed to complete the questionnaire. 100 patients were chosen at random over the last 3 months.
Results: All patients felt they were satisfied with the advice and information provided by the healthcare professional during their appointment to the CDM hubs. Majority of patients felt that by attending the CDM hubs they had a better knowledge on the self-management of their symptoms.
Conclusion: Our expert care, diagnostics and knowledge means accurate diagnosis, disease staging, appropriate management and improved health outcomes for respiratory patients living with a chronic disease in conjunction with their GPs.

Funding: *This study has not received any funding.*

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

References:
Health Service Executive (HSE) Chronic Disease Management Programme. [(accessed on 10th August 2023)]. Available online: https://www.hse.ie/eng/about/who/gmscontracts/2019agreement/chronic-disease-management-programme/chronic-disease-management-programme.html.
Health Service Executive (HSE) National Framework for the Integrated Prevention and Management of Chronic Disease in Ireland 2020–2025. Health Service Executive; Dublin, Ireland: 2020. [Google Scholar]

4.17 A retrospective study on COPD patients attending emergency Department after outreach input.

Tintu Augustine[1], Tariq Quadri[1].

[1]COPD Outreach, Respiratory department, Naas general hospital, Naas, Kildare.

COPD is an incurable, progressive illness affecting the lung with significant symptoms. An exacerbation of COPD is considered an Ambulatory Condition[1].
The aim of COPD Outreach programme is to reduce the number of admissions, ED presentations and hospital length of stay. The objective is facilitate a safe, planned early/ assisted discharge[2]. The programme provide patient education which enables patients to identify signs and symptoms of exacerbation and instigate self-management plans[3].
A retrospective audit was carried out to evaluate the impact COPD Outreach programme. Study evaluate the ED presentations among COPD patients after COPD Outreach input. Samples were selected based on inclusion and exclusion criteria.
COPD Outreach reviewed 193 patients to assess the suitability of the programme. 59 patients were included in the programme. Of the 59 patients 21(group A) had more than 3 ED presentations in 6 months, 17 patients (group B) had 2 ED presentations and the remaining 21(group C) patients had one presentation. After COPD Outreach input group A showed a 50% reduction in ED presentation, group B showed an 80% reduction in ED presentation and group C shows 70% reduction. Self-management empower patients to manage their COPD at home during their exacerbation, which reduce the number of ED presentations .Currently the outreach is working 50% capacity in Naas ,improved staffing will enable improved accessibility to the service.

References

1. Executive summary of the Global Strategy for Prevention, Diagnosis and Management of COPD 2023: the latest evidence-based strategy document from the Global Initiative for Chronic Obstructive Lung Disease (GOLD).
2. HSE End to end model of care for COPD (2019).
3. A guidance document for setting up COPD Outreach Services for Healthcare Professionals (2022).

4.18 Establishment of a Chronic Obstructive Pulmonary Disease (COPD) Outreach Programme Integrated with Community Pulmonary Rehabilitation in the North West.

[1]Helen Johnston, [1]Nathan Scanlon, [1]Katherine Finan.

1. Sligo University Hospital and Benbulbin Chronic Disease Management Hub, Sligo, Rep. of Ireland.

Background: Community Pulmonary Rehabilitation (PR) was established in the Benbulbin Chronic Disease Management (CDM) Hub in 2021. A COPD Outreach Service was established at Sligo University Hospital (SUH) in June 2023.
Current guidelines strongly recommend PR after a severe exacerbation as it is associated with improved exercise capacity and quality of life, and reduced readmissions [1]. However, referrals for, and uptake of, post-hospitalisation PR are historically low. Previous studies have shown that delivery of a COPD discharge bundle by a PR practitioner is associated with increased PR referral and uptake [2]. Both SUH COPD Outreach team members have recent experience as Pulmonary Rehabilitation practitioners (PT C.SP 4.5 years, CNS 6 months).
Methods: Site networking meetings were established for COPD outreach staff to visit the Hub.
Shared journal club meetings and RIC Steering Group meetings were attended.
The National Clinical Programme COPD Discharge Bundle template was implemented for all COPD Outreach referrals with referral to PR prompted.
Access was secured to shared electronic folders patient resources and a database was established to enhance communication about patients. Data was collected on PR referral rates.
Results: Successful referral pathways have been established. 9 (100%) of eligible COPD Outreach patients have been referred onto PR. Patients who were clinically assessed as requiring prioritisation were effectively highlighted via communication channels and timely review scheduled. Further audit plans to examine rates of uptake and completion of those referred to PR by COPD Outreach.
Conclusions: Closer integration between hospital and PR services with effective communication and shared network resources may increase post-hospitalisation PR referral and uptake.

Keywords: COPD, pulmonary rehabilitation, integrated-care.

Disclosures:

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

Corresponding Author: Helen M Johnston.

References:

1. Global Strategy For The Diagnosis, Management, And Prevention Of Chronic Obstructive Pulmonary Disease (2023 Report). Global Initiative for Chronic Obstructive Lung Disease; 2023. Available from: https://goldcopd.org/wp-content/uploads/2023/03/GOLD-2023-ver-1.3-17Feb2023_WMV.pdf
2. Barker RE, Kon SS, Clarke SF, et al. COPD discharge bundle and pulmonary rehabilitation referral and uptake following hospitalisation for acute exacerbation of COPD. Thorax 2021;76:829-831.

4.19 Transforming referral pathways for Respiratory Patients in the Community.

Daphne Masterson [1], Niamh Julian [1], Sinéad Delahunty [1]

[1]Respiratory Integrated Care, South Tipperary Integrated Care Programme for Chronic Diseases

Background: Referral pathways for symptomatic respiratory patients were traditionally through hospital systems and subsequently to specialist nurses and physiotherapists. This joint Advanced Nurse Practitioner (ANP)/Physiotherapy pilot project accepts direct referrals from two General Practitioner (GP) practices. The absence of a Respiratory Consultant led to this pilot, which is consistent with the Integrated Care Programme for Chronic Disease (ICPCD) model of care.
Methods: Inclusion and exclusion criteria were developed. Clinical governance remains with the GP, with a Respiratory Consultant providing remote support. Meetings with the GP practices to discuss and establish inter-professional communication and referral systems. A standard operating procedure was developed and approved by stakeholders.
Results: Review occurs within four-weeks. Average distance to clinic is 4.5 kilometres. To date, 8%(n=2) are confirmed as no respiratory disease; 20%(n=5) asthma; 56%(n=14) COPD and 16%(n=4) unclear

diagnosis and need further evaluation. Optimisation with education, self-management strategies and multi-disciplinary team referrals.
Conclusions: This interdisciplinary project demonstrates that referral to Community Respiratory teams is effective when delivering patient centred care locally and improves the patients overall experience. Using interdisciplinary collaborative teamwork, incorporating holistic assessment, advanced decision-making and optimisation of pharmacological and non-pharmacological interventions as appropriate improves overall outcomes, reduces symptom burden, and decreases unscheduled care.

Keywords: Integrated care, COPD, GP referrals

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

4.20 A COPD Self-Management Education Day

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Background: The comprehensive educational component of pulmonary rehabilitation (PR) is an important component of chronic obstructive pulmonary disease (COPD) self-management. Depending on circumstances PR may not be convenient or appropriate for an individual patient [1].
Method: 73 patients who did not complete PR were identified on the Respiratory Integrated Care (RIC) patient database. Reasons included that they did not fit the criteria or they declined or did not attend the programme.
An invitation letter about the COPD Self-Management Day was sent to the 73 patients. 18 patients responded and 11 patients attended.
A clinical specialist physiotherapist and clinical nurse specialists working in RIC delivered self-management educational talks.
Results: Patients completed a satisfaction survey. 100% of patients agreed that they had a better understanding of COPD, felt more confident and motivated to manage their COPD and would recommend the day to others. 9 patients had their inhaler technique corrected, 2 patients were linked back into the CNS clinic, 2 patients now agreed to referral to PR and 1 patient had new equipment ordered.
Conclusion: The COPD Self-Management Education Day was effective in improving patient's knowledge and confidence to cope on a day to day basis with their disease. Notably, patients had their inhaler technique corrected and were linked into RIC services.

Disclosures:

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

References:

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4.21 Establishment of an Integrated Chronic Obstructive Pulmonary Disease (COPD) Outreach Service in the North West.

[1]Helen Johnston, [1]Nathan Scanlon, [1]Katherine Finan.

1. Sligo University Hospital and Benbulbin Chronic Disease Management Hub, Sligo, Rep. of Ireland.

Background: COPD was the third leading cause for emergency inpatient admissions in HSE Hospitals in 2021, with an average length of stay (LOS) of 7.5 days.[1] A HSE key priority is increasing integration between acute and community services.
Some patients are susceptible to frequent exacerbations (defined as >2 per year) and have worse health status and morbidity[2]. The most important predictor is a history of exacerbations.
A COPD Outreach Service was established at Sligo University Hospital (SUH) in June 2023 with the aim of enhancing COPD patient care, decreasing LOS and readmissions.
Methods: Prior to the commencement of the COPD Outreach Service an audit was completed using HIPE/IPMS from 2022 with the aim of establishing a baseline of COPD impact to inform service delivery.
Results: There were 306 discharges for COPD from SUH in 2022. The average LOS was 7.1 days. 44(20.8%) patients had ≥2 admissions for COPD. Of these 36/44(81.8%) had ≥2 admissions the previous year. 30/44 (75%) had data available to examine in further detail. Notable frequent co-morbidities included Congestive Cardiac Failure 14/30(47%), Cardiovascular Disease 21/30(70%) and current smoking 18/30(60%). 10 (5%) patients had ≥4 admissions for COPD accounting for 72.5% (29) of all readmissions. All of these individuals with ≥4 admissions had at least one 30 day readmission.
Conclusions: This audit has helped to identify those who may benefit from additional health and social care services including COPD Outreach with the aim of more efficient use of resources and improved outcomes for patients.

Keywords: COPD, admissions, integrated-care.

Disclosures:

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

Corresponding Author: Nathan Scanlon

References:

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Poster Session 5: Lung Cancer, Pleural and Surgery

5.1 Lung cancer demographics of an inner city hospital.

[1]Ali Al-Mukhaizeem, [1]Terry O'Connor

[1]Mercy University Hospital, Cork, Ireland

Background: Lung cancer is the fifth commonest cancer in Ireland, with roughly 2700 new diagnosis each year.[1] The Mercy is a 347 bed acute general hospital [2] located in the city centre of Cork. Our aim was to evaluate the numbers of lung cancers being diagnosed through its doors.

Methods: A retrospective analysis, of a prospectively maintained database of all patients diagnosed with lung cancer at the Mercy University Hospital between 2010 and present day.
Results: Over the 14 year period, there have been a total of 1128 patients being evaluated for lung cancer, 658 male and 470 female, with an average of 80 patients diagnosed each year. The mean age was 68.5 years. The pathology/cytology showed, 696 patients with Non-small cell lung cancer (363 Adeno, 311 Squamous, 22 Large), 163 with Small cell lung cancer and 269 other (145 no tissue diagnosis, 92 Metastatic lesion, 20 Lymphoma and 12 Mesothelioma) The data also showed that most of our patients were diagnosed with advanced disease, 472 with stage IV and 148 with extensive.
Conclusion: Despite being an acute "general " hospital, the Mercy is the first point of call for a large cohort of patients presenting for the initial evaluation of a possible lung cancer diagnosis.

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

References
1- *Lung cancer* (no date) *Irish Cancer Society*. Available at: https://www.cancer.ie/cancer-information-and-support/cancer-types/lung-cancer?gclid=CjwKCAjw29ymBhAKEiwAHJbJ8kSOtWdRXQGkICHb7UxYC5R57rj5ee_nfBKYh2M-jzxaD-7tQbI6MRoCZkkQAvD_BwE (Accessed: 12 August 2023).
2- *About the mercy hospital* (2020) *Mercy Hospital Foundation*. Available at: https://www.mercyhospitalfoundation.ie/our-work/about-the-mercy-hospital/#:~:text=Today%20the%20Mercy%20University%20Hospital,patient%2C%20outpatient%20and%20A%26E%20services. (Accessed: 12 August 2023).

5.2 Was Covid the Culprit? An Audit into Red Flag Cancer Pathway Timelines during the Pandemic.

Laura Carr, Cathal Donaghy, Debbie Cullen, Naomi Chapman, Kerri-Maire Hennan, Rory Convery, Diarmuid McNicholl

Craigavon Area Hospital

Disclosures: Nil to make.

Conflict of interests: Nil to declare.

Introduction: The COVID pandemic has affected the Southern Health & Social Care Trust (SHSCT) lung cancer service. With reduced clinic access, and regional loss of Thoracic surgery theatre time only some of the services impacted. Our aim was to assess the performance of the SHSCT lung cancer service to facilitate service improvement.
Methods: A retrospective audit of GP referrals to the SHSCT Lung Cancer Pathway against the Northern Ireland Cancer Network (NICAN) lung pathway (2014) over 4 months (01/11/2021 to 28/02/2022). Data collected was from both Cancer Patient Pathway System and Northern Ireland Electronic Care Record.
Results: 195 GP referrals were received, with 135 attending clinic. 36 patients were diagnosed with lung cancer. 14 patients received radical treatment, 14 received palliative oncology treatment and 8 best supportive care.
Two of 28 patients (7%) had a decision to treat agreed with patient within 31 days of referral, median 63 days (IQR: 40 -103). Nine of 28 patients (32%) had definitive treatment commenced with 62 days; median 64 days (IQR 53 - 117).
Conclusions: The majority of GP referrals to lung cancer service are not meeting the NICAN pathway timeline, highlighting the need for change.

5.3 Dedicated lung nodule multidisciplinary meeting using volumetric analysis

Grainne Cogan[1], Smitha Kenson[1], Camilla Conta[1], Farzana Yah[1], Ian Counihan[1], Aidan Quinn[1], Tidi Hassan[1]

[1]*Our Lady of Lourdes Hospital, Drogheda, Co. Louth, Ireland*

Introduction: The detection of pulmonary nodules either incidentally or through screening is increasing in prevalence. In the ITS 2020 meeting, we demonstrated that a dedicated nodule service using the volumetric analysis as per the BTS 2015 Guidelines is effective in reducing CT surveillance from 2 years to 1 year compared to two-dimensional diameter measurements. We report the service after 4 years since its introduction (Grade C recommendation).
Methods: Using the nodule registry through NIMIS, we collected surveillance data from January 2020-December 2022. The MDM nodule service was attended 6 weekly by a respiratory physician and radiologists. Volumetric analysis using the BTS 2015 Guidelines was used for surveillance.
Results: Four hundred and forty two cases were discussed, comprising 262 patients in three years. There has been 9 to 10% increase in the number of cases discussed every year (n=132 in 2020, n=148 in 2021 and n=162 in 2022). In 2021, 37% (n=55) were discharged on the first assessment while 54% of patients (n=49) were discharged after 3 months and 1 year surveillance with solid nodules using volumetric analyses.
Conclusion: The detection of lung nodules are increasing and this is reflected in our practice. Volumetric analyses using the BTS Guidelines can improve early discharge at 1 year as opposed to using to using 2-dimensional diameter measurements.

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

References
British Thoracic Guidelines 2015

5.4 Recording of Performance status (PS) in lung multi-disciplinary meetings (MDM).

D. Ganesan*[1], R. Chrisner*[1], M. Irfan[1], D. Breen[1]

(both authors contributed equally to this study)*

[1]Department of Respiratory Medicine, Galway University Hospital

Background: Guidelines and evidence stipulate the use of performance status (PS) in making treatment decisions as they impact outcomes. Accordingly, appropriate treatment options can be discussed in the MDM. (1,2)
Methods: Retrospective data was collected from lung cancer MDM minutes between June and August 2022. Patients were followed up over one year from the time of diagnosis to record their outcomes including mortality and functional deficits A total of 30 patients with confirmed tissue diagnosis of new lung cancer with UHG follow up were included. Type and staging of lung cancer, PS based on ECOG, co-morbidities (Charlson Index), pulmonary function test, 6-minute walking test, MDM outcome, treatment given, and functional outcome were recorded using Excel.
Results: 9 patients (30%) had PS documented in the MDM minutes. 29 patients (96.7%) had co morbidities recorded using the Charlson Comorbidity Index (CCI). 6.9% (2/29) had CCI score of 1-2,

6.9% had CCI score of 3-4 and 86.2% (25/29) had CCI score of ≥ 5. 37% (11/30) patients had different treatment given compared to MDM outcome. Only 2 out of the 11 patients had PS recorded. 46.7% (14/30) of the patients were classified as M0 disease. The mortality rate within M0 group was 21.4% (3/14). Meanwhile, the remaining 53.3% (16/30) were classified as M1 disease. The mortality rate within M1 group was 93.8% (15/16). 90% (27/30) had CCI ≥ 4 which indicates moderate risk and 16 of the patients died indicating mortality rate if 59%.
Conclusion: This audit shows that the PS documentation in MDM discussions is very poor. The overall functional outcome is more closely associated with the Charlson risk index rather than the performance status, but this could be due to the poor documentation.
Keywords: performance status recording, lung cancer, mortality rate in lung cancer

Reference(s):
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2. Third Edition 2009. https://irishthoracicsociety.com/wp-content/uploads/2017/05/ITSLungCancerGuidelinesFebruary2010.pdf

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

5.5 To do or not to do: Repeat imaging of pulmonary nodules – are we compliant with the guideline (BTS, 2015)?

[1]Dzufar Halim, [1]Sally Griffiths, [1]David Breen

[1]Galway University Hospital, Galway, Ireland

Background: Most pulmonary nodules encountered are benign but can be an initial sign of lung cancer. (1) This dilemma leads to inappropriate follow-up imaging and opportunity costs: time, money, CT slots and clinic spaces. Therefore, we aimed to establish our compliance with the guidelines and propose changes for improvement.
Methods: We retrospectively reviewed clinic letters across the respiratory outpatients over a 2-week period in 2022. Characteristics of the pulmonary nodules, patients risk profile and interval scan were compared against the standard; British Thoracic Society (BTS) Guidelines for the Investigation and Management of Pulmonary Nodules (2015). Target compliance is 100%.
Results: Of 557 clinic reviews, 62 (11%) were for pulmonary nodule follow-up with solid nodules making up 90% of them. All the reviews were in-person consultations. The majority were smokers (76%) and the average age was 70. Out of 62 nodules, 51 (82%) had appropriate follow-up imaging. 11 follow-ups were not compliant (see table 1) Compared to Fleischner Guidelines 2017, there were 8% discordances.
Conclusion: We achieved 82% compliance with the BTS guideline for pulmonary nodule follow-ups. As a part of quality improvement, a new IT system "Lung Cancer Orchestrator" is being integrated with the current system. This system advises follow-up interval scans and simultaneously identifies patients suitable for virtual care post-repeat imaging; potentially improving compliance and associated opportunity costs. We aim to repeat the audit a few months after the new system goes live.

Keywords: Pulmonary nodule, Surveillance, Information Technology

Disclosure:

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

Corresponding Author: Dzufar Halim, https://orcid.org/0009-0008-4244-1695

Reference
1) Mazzone PJ, Lam L. Evaluating the Patient With a Pulmonary Nodule: A Review. JAMA. 2022 Jan 18;327(3):264-273. https://doi.org/10.1001/jama.2021.24287. PMID: 35040882.

Table 1. shows compliance of follow-up imagings between 2 guidelines including inappropriate ones

	Compliance	
	BTS 2015	**Fleischner 2017**
YES	51 (82%)	50 (81%)
NO:	11 (18%)	12 (19%)
Earlier scan	5	6
Later scan	1	0
Not discharged	3	4
No Follow-up	2	2

5.6 Low Yield of Urgent Haemoptysis Referrals for Lung Cancer Clinics.

David Quigley[1], Finbarr O Connell[1], Parthiban Nadarajan[1].

[1]Saint James Hospital, Dublin 8

Introduction: Haemoptysis and an abnormal chest x-ray are the two indications for urgent review in Rapid access lung clinic (RALC). Yet the yield of lung cancer diagnoses and extent of investigation in such cases are unclear. This audit aims to assess lung cancer cases investigation in urgent haemoptysis referrals.
Methods: Retrospective analysis of 80 patients via Electronic Patient Record referred urgently with haemoptysis to a lung cancer clinic period July 2022 – February 2023. Data included demographics, smoking status, CXR, CT scans, bronchoscopies, and final diagnosis. Primary endpoint: number of lung cancer cases.
Results: Among 80 patients, only 6 (7.5%) had lung cancer, with one non-smoker. Notably, 5 had abnormal CXR and other had abnormal CT. No patients with normal CXR (73%) or CT had abnormal bronchoscopy. 44 had infectious symptoms/sinusitis, and 17 had unknown aetiology. Six required ongoing nodule surveillance. TB, bronchiectasis and medication related were other notable causes.
Discussion: Urgent haemoptysis referrals resulted in a low lung cancer diagnosis rate (7.5%) and significant investigation. Utilizing alternative diagnostic strategies and risk scoring based on demographics with large sample sizes can optimize patient management and reduce unnecessary investigations, alleviating resource stress. Limitations include unstandardized haemoptysis volume measurement, variable symptom severity, and small sample size for risk scoring system development. Refining the diagnostic approach may enhance patient outcomes and resource allocation for haemoptysis referrals to lung cancer clinics.

Keywords: Lung cancer, Haemoptysis, Rapid access clinic

Disclosures: none

5.7 Lung Biopsies in 2023- The Good, The Bad, and The Ugly

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[1]*Mater Misericordiae University Hospital, Dublin, Ireland*

Background: CT-guided lung biopsy is a well-established method of evaluating suspected lung malignancies. However, it carries significant risk, particularly in individuals with severe emphysema. The Herder model is used to predict malignancy risk, guiding further management, and avoiding unnecessary biopsies. The British Thoracic Society recommends only those with Herder Model risk of below 70% proceed to biopsy. We aim to assess true risks of lung biopsies, impact on management, and local adherence to BTS recommendations.
Methods: Retrospective review of electronic records and imaging of patients undergoing CT-guided lung biopsies at our institution between July 2021-July 2023.
Results: 141 patients underwent biopsies over 2 years. 96% were diagnostic. 67% had a Herder score of >70%. Of these, 91% were confirmed malignant. The rate of periprocedural haemorrhage was 26%. 42% developed pneumothoraces, however only 7% required a chest drain. Mean length of stay was 12.3 days, with complications of prolonged-airleak, pneumonia, and recurrent pneumothoraces observed. There was 1 death post biopsy, with 5 further deaths within 1 month of biopsy.
Conclusions: The Herder Model may be an effective tool to triage patients referred for biopsy. Considering biopsies on a case-by-case basis, rather than as part of routine lung malignancy workup, may limit complications in high-risk individuals.

Keywords: Herder; lung biopsy; pneumothorax

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

5.8 Evaluation of Pleural Fluid Cytology for the Diagnosis of Malignant Pleural Effusion in A Single, Tertiary Centre

[1]Elaine Curran, [1]Arsah Asis, [1]Camilla Conta, [1]Junaidy Ishak, [1]Mohammad Yaseen, [1]Tidi Hassan

[1]*Our Lady of Lourdes Hospital, Drogheda, Co. Louth, Ireland*

Introduction: Malignancy and infection remain the most common cause of unilateral undifferentiated pleural effusions. Pleural cytology should be a standard test especially if malignant pleural effusion is suspected but local estimate for sensitivity remains unknown[1].
Methods: We conducted a retrospective study on pleural fluid cytology that was sent to the histopathology department in Our Lady of Lourdes Hospital from July 2022-July 2023. Demographic, radiologic and cytologic data were collected using the iPIMS, NIMIS and Winpath systems. Statistical analysis was performed using Prism GraphPad 7.05.
Results: Thirty-two pleural fluid samples were sent to the histopathology lab. Forty-three percent (n=26) were subsequently diagnosed as unilateral pleural effusion. Twenty-two (85%) were confirmed as malignant pleural effusion on the first pleural sampling. Cancer sites include lung n,% (9,40) breast (7,31), ovary (2,9) lymphoma (1,5), and unknown (3,13). One pleural fluid was classified as a transudate based on Light's Criteria. Multivariate logistic regression demonstrated the highest odd ratio (OR, 95% CI) for known malignancy (4.2,3.1-7.9), unilateral effusion (2.1, 1.4-2.9) and exudate effusions (1.9, 1.5-2.6).
Conclusion: As a single, tertiary hospital, we report a high sensitivity for pleural fluid cytology for malignant pleural effusion. As there is a wide variation of sensitivity reported, local estimates are important to inform clinical practice.

References:
[1]British Thoracic Society Guidelines for pleural disease, Thorax 2023;78s1-s42

Conflict of Interest: *None to declare*

5.9 An Audit evaluating the Management of Malignant Pleural Effusions admitted under the Oncology Service in St James's Hospital in 2019

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[1] Respiratory Department, St James's Hospital, Dublin 8
[2] Department of Clinical Medicine, Trinity Centre for Health Sciences, St James's Hospital, Dublin 8

Background: Ambulatory management of malignant pleural effusions (MPE) is increasing in many health jurisdictions (1). We sought to evaluate current management of pleural effusions in patients admitted under the Oncology Service in SJH.
Methods: A list of pleural effusion procedures performed from 1st January 2019 to 31st December 2019 was generated through cytology laboratory specimen records and HIPE data. Those admitted under the Oncology Service were identified by electronic patient record, and medical chart review conducted.
Results: 42 patients, undergoing 52 pleural effusion procedures, were identified. Of 42 patients, pleural effusion was the primary reason for admission in 33 (78.5%). Median time from admission to first procedure was 3 days, and median LOS was 19 days. Thoracics review was requested for 18 patients (42%), and for these patients median time from admission to first Thoracics team review was 1 day. Respiratory team review was requested for 5 patients (11.9%), and median time from admission to first Respiratory team review was 7 days. Of 52 pleural procedures performed, 5 (9.6%) were aspirations, 44 (84.6%) were chest drain insertions, 2 (3.8%) were PleurX drain insertions, and 1 (1.9%) was a VATS procedure. Talc pleurodesis was performed on 5 occasions. Admission was deemed avoidable by individual case evaluation against referral criteria for a proposed Ambulatory Pleural Effusion Pathway in 27 (64.3%)
Conclusions: Ambulatory pathways are not routinely used for patients with MPE admitted under the SJH Oncology Service, but could potentially reduce patient wait time for procedures and save bed days.

Keywords: Pleural, Malignant Pleural Effusion, Ambulatory

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

References:
1. Young RL, Bhatnagar R, Medford AR, Maskell NA. Evaluation of an ambulatory pleural service: costs and benefits. Br J Hosp Med (Lond). 2015;76(10):608.

5.10 An Evaluation of the Content, Readability, and Reliability of publicly available web-based information on pneumothorax surgery in Ireland.

[1,2]Martin Ho, [1,2]Samin Abrar, [2]Patrick Higgins, [1,2]Kishore Doddakula

[1]University College Cork, Cork, Ireland.
[2]Cork University Hospital, Cork, Ireland.

Background: The internet is often a first port-of-call for patients exploring treatment options. No study has evaluated online information quality regarding pneumothorax surgery. Knowledge regarding same may allow physicians to guide patients to appropriate websites. We aim to **e**valuate the content, readability, and reliability of online information regarding pneumothorax surgery.
Methods: 11 search terms related to pneumothorax surgery were entered into Google, Bing, and Yahoo. The first twenty websites from each search were identified. The Journal of American Medical Association (JAMA) and DISCERN criteria were applied to evaluate website reliability. To evaluate readability, 10 standardised tools were utilised. To evaluate content, a novel 10-part questionnaire was designed.
Results: N=79 websites were analysed. The mean JAMA score was 1.82+/-1.22 out of 4. The mean readability score was 15.43+/-9.76. Only four websites were written at a 6th-grade reading level. 43% of websites did not mention side effects of pneumothorax surgery. 48.1% did not mention alternative treatment options.
Conclusions: Most websites were written above the 6th-grade reading level recommended by the US Department of Health and Human Services. Many excluded essential information regarding pneumothorax surgery. This emphasises the need for comprehensive, reliable websites on pneumothorax surgery.

Keywords: pneumothorax, readability, reliability, web-based information.

Disclosures:

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

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5.11 Enhancing the Quality of External Referrals to Thoracic Surgery in a Tertiary Referral Centre

Joseph McLoughlin[1], Matthew G. Davey[1], Rachel Brown[1], Timothy S Nugent[1], Shane Ahern[1], David G. Healy[1], Hossein Javadpour[1], Karen C. Redmond[1], Donna A. Eaton[1]

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Background: To perform a closed loop audit and quality improvement initiative to improve the quality of referrals to our local thoracic surgery department.
Methods: A pre-intervention cycle was performed evaluating the quality of referrals (as compared to the York University Thoracic Surgery Referral Proforma) in consecutive patients referred over an 8-week period. A departmental thoracic surgery referral proforma was then designed. Thereafter, a post-intervention cycle was then performed over the subsequent 8-week period, where the referral proforma was shared with the referring doctor at the time of referral.
Results: In the preintervention cycle, 30 referrals were evaluated, compared to 21 in the post-intervention cycle. There was significant improvement in the quality of referrals made in the post-intervention cycle, where 93.2% (411/441) of York University criteria were included versus 63.0% (416/660) in pre-intervention referrals (P<0.001). A significant improvement was observed in recording referral date (P=0.001), patient's addresses (P=0.007), patient's location (P<0.001), the urgency of referrals (P<0.001), details regarding patient imaging (P<0.001), dates of relevant imaging (P=0.013), other investigation details (P<0.001), general practitioner names (P<0.001) and contact numbers (P<0.001).
Conclusion: This closed loop audit demonstrates the value of using a standardised thoracic surgery referral proforma to improve the quality of referrals to our service. We recommend our colleagues in other units adopting a similar template to improve the quality of prospective referrals to their service.

Keywords: thoracic surgery, referrals, standardisation, proforma

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

5.12 Superior Suction of Boston Exalt Model B 2.8 Single-use Flexible Bronchoscope: Case Studies.

Pooja Pooja[1], Liam Kelly[1], Agne Buseckyte[1], Marcus P. Kennedy[1]

[1]Department of Respiratory Medicine, Cork University Hospital, Cork, Ireland.

Background: The COVID-19 pandemic and the global trend towards disposable technology have led to an increase in the use and production of single-use or disposable bronchoscopes (SUFB). Our recently published bench top and pre-clinical evaluation identified vastly superior suction capabilities over other single use and reusable bronchoscopes (1). We subsequently published the first clinical study evaluating the Boston SUFB range. Their superiority provides significant advantages in bronchoscopic procedures, such as the removal of thick secretions, endobronchial biopsies, excision of tumours, and suctioning around instruments.
Methods: Four patients who underwent flexible bronchoscopy using Boston Exalt Model B 2.8 channel in various clinical settings during 2022-2023 were included.
Results: In these 4 cases, the 2.8 Exalt SUFB was utilized in the ICU, theatre, and endoscopy unit. It was user-friendly and accessible while performing the various procedures such as airway inspection, endobronchial biopsy, and cauterization. Additionally, foreign bodies were effortlessly extracted with the assistance of a snare.
Conclusion: The 2.8 Exalt bronchoscope demonstrated ease of adaptation, high suctioning quality, and successful foreign body removal. Also, there were no complications noted in relation to the capability of instrument such as handle break, suction failure, and image failure.

Keywords: Covid-19, Single-use flexible bronchoscope, Pandemic.

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Deasy KF, Sweeney AM, Danish H, O'Reilly E, Ibrahim H, Kennedy MP.
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O'Reilly EM, Sweeney AM, Deasy KF, Kennedy MP. J Bronchology Interv Pulmonol. 2022 Oct 17. https://doi.org/10.1097/LBR.0000000000000904.

5.13 The Effects of a Low Suction Strategy using Digital Chest Drainage Devices after Lung Resection Surgery

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Thoracic Surgery, Royal Infirmary of Edinburgh, Edinburgh UK

Background: A low suction strategy on digital chest drainage devices after lobectomy reduces chest drain duration. Our cardiothoracic unit has typically used -0.8 to -2.0 kPa suction following lung resection. We aimed to change the practice in our unit and assess if this reduced time until chest drain removal.
Methods: Data was collected for lung resection operations for approximately 3 months pre- and post-intervention, including: operation details, level of suction, and duration of chest drainage (days to last drain removed). Low suction was defined as -0.4kPa and high suction => 0.8kPa. Patients were excluded (n=9) if a digital drain was not used, no lung tissue was resected, or the level of suction crossed over between the two groups.
Results: The high suction group consisted of 20 patients, with 16 undergoing lobectomy and 4 wedge resections; the low suction group had 15 patients - 9 lobectomy and 6 wedge resection/segmentectomy. Mean time to drain removal was 2.55 vs 2.33 days for high and low suction groups respectively.
Conclusion: Chest drain duration reduced after intervention, confirming low suction to be a safe and non-inferior strategy.

Key words: Air leak, Digital drain.

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

5.14 Robotic Assisted Thoracic Surgery - Early Results of an Expanding Program

Laura M Staunton[1], Rebecca Weedle[1], Vincent Young[1], Gerard J Fitzmaurice[1]

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Background: Robotic assisted thoracic surgery (RATS) patients experience shorter chest drain duration and hospital stays, as well as reduced post-operative pain, compared to VATS and open procedures.[1] Literature reports post-operative length of stay (LOS) averaging 4 days.[2,3] This review of early outcomes for our expanding robotic programme combined with enhanced recovery protocol includes length of stay, chest drain duration and post-operative complications.
Methods: 34 robotic cases were performed since late 2022 - 2023. Demographics and PFT's were reviewed (Table 1). Analysis was performed using STATA analysis software. Analgesia, complications and final histology were also considered.
Results: 32 patients were reviewed; 2 patients were excluded due to VATS conversion. 53% were female, with median age of 65.5 years. 79% of resections were for malignancy. Median post-operative day of discharge was day 2. Median chest drain duration was 1 day. Refer to Table 2. 18% of patients had a post-operative air leak. All patients discharged to home well with a mortality rate of 0%. Pain was well-controlled with intercostal blocks, PCA, NSAIDs and paracetamol.
Conclusion: Review of early results of the RATS program in our institution demonstrated a shorter duration of chest drainage and post-operative length of stay as well as reduced post-operative complications.

Keywords: robotic thoracic surgery, chest drain, discharge

Disclosures: None

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

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Table 1:

Gender	Age	FEV1	DLCO	Operation	Post-operative Discharge Day	Chest drain duration	Complications	Histology
Female	55	92	86	RATS LLL Metastectomy	1	1	None	17mm CRC
Male	74	92	80	RATS RLL	1	1	None	17mm Adeno pT1(mi) N0
Female	65	65	47	RATS RLL	2	1	None	10mm SqCC, pT1aN0
Male	67	101	80	Right chest wall mass excision	1	1	None	40mm, Desmoid-type fibromatosis
Female	38	N/A	N/A	Diagnostic Wedge RUL, RML, RLL	1	1	None	Lymphoma, MALT type
Male	62	95	38	Diagnostic RATS LUL + LLL wedge	1	1	None	UIP
Female	66	125	108	RATS LLL	3	1	None	24mm, Adeno pT1aN0
Female	26	N/A	N/A	RATS right thymectomy	2	1	None	Thymic hyperplasia
Male	67	100	94	RATS LUL + LLL metastectomy	3	1	None	Metastatic SqCC
Male	39	40	73	Right RATS Thymectomy	5	3	None	Thymoma, type B2, 2.3cm
Male	49	N/A	N/A	Right RATS resection of retrocrural mass + left thoracotomy lesion	2	1	Seroma / Chylothorax	A somatic malignancy arising from / in a teratoma metastasis
Female	80	154	95	RATS RLL	6	3	Surgical emphysema	15mm, Adeno, pT1bN0
Female	63	98	91	RATS LUL	3	1	None	9mm, Adenosquamous, pT1aN0
Male	72	73	48	Left RATS Thymectomy	2	1	None	Thymoma, Type A, 60mm, pT1aNX
Female	71	109	79	RATS RUL	2	1	None	25mm, Adeno, pT1cN0M0
Female	49	N/A		Left RATS Lymph Node Biopsy	1	1	None	Relapsed EBV positive lymphoma
Female	61	106	142	Right RATS resection of posterior mediastinal mass	2	1	None	41mm, Benign ganglioneuroma,
Female	62	109	53	RATS RUL	8	7	Conservative Mgt Airleak	36mm, Adeno, pT2aN1
Female	65	101	65	RATS RUL, wedge RML	7	6	Conservative Mgt Airleak	18mm, Adeno, pT1bN0
Female	49	125	108	RATS RLL	2	1	None	19mm, a Adeno pT1bN0
Male	75	64	64	RATS RLL	2	1	R2 – f/u Open Resection	pTxN0 SqCC
Male	68	95	97	RATS LLL	2	1	None	55mm, Adeno, pT3N0
Female	75	122	83	RATS LUL	4	3	None	12mm, SqCC, pT1bN0
Male	69	86	61	RATS RUL	3	2	None	17mm + 13mm SqCC + Adeno, pT1b(m) N0

Gender	Age	FEV1	DLCO	Operation	Post-operative Discharge Day	Chest drain duration	Complications	Histology
Female	53	99	36	RATS LUL posterior segmentectomy + apical wedge	79	1	Pancreatitis, ICU admission	5mm + 15mm, Adeno, cT2a (m) N0
Female	66	124	48	RATS LLL	11	10	VATS repair of airleak	41mm, Adeno, pT2bN1
Female	79	108	61	RATS RUL	5	3	None	15mm + 10mm Adeno, pT1a (m) N0
Male	75	114	100	RATS left apical segmentectomy LL	2	1	None	25mm, pT2aN0M0, Adeno
Male	79	105	77	RATS LLL	15	14	VATS repair of airleak	10mm, pT1aN0, Adeno
Male	52	68	58	RATS LLL	3	2	None	51mm, pT3N0, SqCC
Male	73	76	47	RATS LLL	21	14	VATS repair of airleak	17mm, pT1bN0, Adeno
Male	56	102	57	RATS LUL	11	10	VATS repair of airleak	55mm Adeno, pT4N0M1a

Abbreviations: Robotic Assisted Thoracic Surgery (RATS), Left Lower Lobectomy (LLL), Left Lower Lobectomy (LUL), Right Upper Lobectomy (RUL), Right Middle Lobectomy (RML), Right Lower Lobectomy (RLL). Video Assisted Thoracic Surgery (VATS), Squmous Cell Carcinoma (SqCC), Adenocarcinoma (Adeno).

Table 2:

Category	Mean	Median
Female	53%	50%
Age (years)	62.5	65.5
FEV1	98.1	100.5
DLCO	74	62.5
Post op day of d/c	6.6	2
Chest drain duration	3.03	1

5.15 Retrospective audit on the use of sedation during bronchoscopy/EBUS in Beaumont Hospital

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[1]*Department of Respiratory medicine, Beaumont Hospital, Dublin 9* .

Background: Most bronchoscopists use sedative drugs in bronchoscopy. There is no standardised practice internationally on the use of sedation in bronchoscopy/EBUS. Recently a national bronchoscopy quality improvement committee has been formed with a view to the creation of Key Quality indicators (KQIs) including sedation that will reflect high quality Bronchoscopy practice.
Method: Retrospective audit to assess dose of midazolam, fentanyl and lidocaine used during bronchoscopy/EBUS in Beaumont hospital between January and April 2023. Data was obtained from bronchoscopy reports on the Beaumont computer system and EndoRAAD (endoscopy reporting programme). Our findings were then compared to BTS guidelines and with other international data available.
Results: 224 procedures were carried out between January to April 2023. 158 bronchoscopies and 66 EBUS. Table 1 summarises the results of the doses used. The median doses used were midazolam 3mg and fentanyl 25mcg in bronchoscopy, with midazolam 3mg and fentanyl 50mcg in EBUS. There is a paucity of guidelines with regards to the recommended doses of sedation that should be used.
Conclusions: The results from our audit would conclude that our practice of sedation use in bronchoscopy/EBUS is in line with available international recommendations. Local/national guidelines need to be created based on our current practice and on the international guidelines available.

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

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5.16 Multi-disciplinary surgical management of retrosternal goitre: A Case Series

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1. Department of Cardiothoracic Surgery, Cork University Hospital, Cork

Introduction: Retrosternal goitre descends below the thoracic inlet or has more than 50% of its volume below this level. In most cases the retrosternal goitre can be excised via cervical approach, but some cases

require sternotomy for the removal of thyroid completely. This case series discusses a multi-disciplinary approach to these cases.

Case Series: Patient Demographics and Clinical Presentation

A 45-year-old female presented with a 1.5-year history of progressively worsening shortness of breath. In her medical history, she had undergone a left-sided thyroid lobectomy in 2000. A CT scan identified a mediastinal mass. This patient was admitted electively for excision of retrosternal goitre, with sternotomy as an option to aid in its excision if required.

Two male patients, a 76-year-old and 56-year-old both male presented with retrosternal goitre and underwent sternotomy in combination with cervical approach for complete excision.

Conclusion: The combined us of a median sternotomy approach with cervical approach offers a safe method for excision of retrosternal goitres, ensuring complete excision of the thyroid gland while reducing the potential harm to critical structures. Our series of cases highlights the importance of comprehensive preoperative assessment and personalised surgical planning to achieve the best outcomes for these patients.

5.17 The importance of drain size and drain site selection for patients with pneumothorax

D O'Malley[1], MA Farrell[2], MP Rogan[1]

[1] *Department of Respiratory Medicine, University Hospital Waterford*
[2] *Department of Radiology, University Hospital Waterford*

Background: We investigated chest drain insertion for pneumothorax and subsequent management in our hospital, with reference to the British Thoracic Society (BTS) pleural disease guideline 2010.[i]

Methods: We reviewed hospital admissions and respiratory consults to capture patients with chest drains inserted for pneumothorax from January 2022 to February 2023. Subsequent chart review of cases was performed for the 24 patients included.

Results: Pneumothorax resolved with initial drain insertion alone in 33% of cases, rising to 54% with the addition of wall suction. Drain size was less than 14Fr in 54%, with resolution in 62%. Larger drains had a 45% resolution rate. Repeat drain siting was required in 33% of all cases, most frequently for a malpositioned drain. In total 71% of our patients had pneumothorax resolution, with 7 patients transferred to a tertiary centre for surgical input.

Conclusion: Our review highlights the importance of education in chest drain insertion with reference to the BTS guidelines.

Keywords: pneumothorax, education, chest drain

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

Corresponding Author: Donal J O'Malley

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5.18 Histologic evidence of acute cellular rejection in post-transplant lung biopsies

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[1]Mater Misericordiae University Hospital, Dublin, Ireland

Background: Incidence of lung transplantation is increasing, with a median survival of 6.7 years post-transplant (1). The leading cause of death is bronchiolitis obliterans syndrome (1), with acute cellular rejection a significant risk factor. We determined the frequency of acute rejection at this institution over a one-year period.

Methods: Histopathological reports for post-transplant lung biopsies performed in 2022 were reviewed. Acute rejection was graded according to the International Society for
Heart and Lung Transplantation guidelines (2).

Results: Fifty-seven biopsies were performed on 39 patients (29 male, 10 female). The average age was 52 years (range 27-72 years). Most biopsies were performed within one year of transplant (64.9%). The majority showed no evidence of acute rejection (68.4% grade A0), with 28.1% showing minimal or mild acute rejection (21.1% A1, 7.0% A2). No cases of moderate or severe acute rejection were recorded.

Conclusion: The frequency of acute rejection within our institution in 2022 was comparable with international data (1).

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

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5.19 Practice Makes Progress – Importance of Simulation Teaching in Respiratory Medicine and Patient Care. A QI Project to Improve Pneumothorax Management and Chest Drain care among NCHDs.

Junaid Rasul Awan[1], Kaitlyn Cinnamond[1], Orlaith Shinners[1], Shahram Shahsavari[1], Junaid Zafar Sheikh[1], Owais Rahman[1], Sana Malik[1], Aidan O'Brien[1].

[1]Respiratory Department, University Hospital Limerick, Ireland.

Modern search engines have revolutionised access to study materials, but arguably nothing can replace hands-on training when it comes to life-saving interventions. The main objectives of our study were to evaluate and ensure competency of NCHD pneumothorax management and chest drain apparatus in emergency and non-emergency situations. Initially, a survey was conducted to assess pneumothorax management awareness and chest-drain apparatus care among NCHDs involved in acute medical take. The survey outcomes were then used to propose simulation teaching sessions. Multiple stakeholders were involved including:

- Mid-West Intern Network
- RCPI-BST Regional Director
- Department of Medicine Teaching Co-ordinator

Respiratory Consultants delivered lectures on physiology and basic management, and practical sessions were provided by respiratory registrars.

91 NCHDs attended these sessions. Re-survey reflected promising feedback and re-enforced the importance of simulation teaching sessions:

1. Confidence levels increased from 21% to 80%
2. Optimum placement for tension pneumothorax needle decompression increased from 44% to 92%

3. Correct Identification of safety triangle borders for chest-tube insertion increased from 42% to 96%
4. Correct water-seal management for 3 chamber chest-tube apparatus was recognised by 97% of NCHDs in the re-survey, compared with 46% initially.

Results were presented to stakeholders, who decided to incorporate these sessions officially in department of medicine teaching curriculum.

Conflict of interest: none to declare

Poster Session 6: General Respiratory 1

6.1 Setting up a new Continuous Laryngoscopy during Exercise (CLE) service for the diagnosis of Exercise Induced Laryngeal Obstruction (EILO) at Connolly Hospital, Dublin

[1]Aisling McGowan, [1]Isalynne DelAgua, [1]Liam Cormican, [1,2]Dimitris Ampazis

[1]Connolly Hospital, Dublin, Ireland; [2]Cavan General Hospital, Ireland.

Background: CLE is a diagnostic procedure that allows real-time visualisation of the larynx during exercise, providing valuable insights into exercise-induced laryngeal dysfunction (e.g. EILO).
Methods: The implementation of a CLE service involved:
1. Infrastructure and Equipment: A room equipped with a high-quality laryngoscope and video recording system. Cardiopulmonary exercise testing (CPET) equipment with cycle ergometer and range accessories adapted specifically for the procedure.
2. Staffing and Training: Respiratory Consultant, Respiratory Physiologist and Respiratory Nurse specialist. All highly trained and experienced.
3. Patient Selection and Preparation: A standardised protocol was developed to identify individuals with suspected EILO. Pre-examination preparation involved baseline physiology tests, pre-test preparation, informed consent.
Results: Service established in March 2023, 3 patients tested to date. One patient diagnosed with EILO, 2 referred for further investigations.
Conclusion: This CLE service is the first in Ireland and will allow us to gain valuable insights into EILO and improve patient care. It requires careful planning, infrastructure development, staff training, and standardised protocols for service delivery. A priority is to establish an aftercare pathway involving a multidisciplinary team.

Disclosures: This service initiative supported by supply of equipment from Ambu

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

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6.2 An evaluation of physician-diagnosed airways disease versus physiological confirmation

[1]Barry Moran, [1]Andrew Clarke, [2]Olivia Goltsis, [1]Emer Kelly, [1]Orla O'Carroll

[1]St. Vincent's University Hospital, Elm Park, Dublin 4. [2]School of Medicine, University College Dublin, Belfield, Dublin 4.

Background: Physiological confirmation of asthma and COPD avoids inappropriate treatments and missing other diagnoses. (1, 2) Clinical diagnoses can be frequent with limited community access to pulmonary function tests (PFTs).
Aims: To evaluate a cohort of new patients referred to the respiratory National Treatment Purchase Fund (NTPF) waiting list clinic with physician-diagnosed airways disease for the prevalence of true airways disease.
Methods: A prospective analysis of all patients with physician-diagnosed asthma or COPD attending a respiratory NTPF-funded waiting list initiative between September 2022 and May 2023.
Conclusion: The frequent non-respiratory diagnoses and early discharges highlight the importance of primary care PFT access. The discrepancy between GP, specialist and PFT diagnoses suggests a role for risk-stratification tools to enhance predictive probability of disease.

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

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Table 1 Characteristics of patients with physician-diagnosed airways disease (COPD or asthma) (n=100)

		No. (%)
Age	Range: 19-92 years Median: 58 years	
Sex	Male Female	46 (46%) 54 (54%)
Smoking status	Active smoker Ex-smoker, active vaping Ex-smoker Never smoker Unknown	27 (27%) 10 (10%) 36 (36%) 25 (25%) 2 (2%)
PFTs previously	Yes No	10 (10%) 90 (90%)
Already on regular inhaled therapy	Yes No	69 (69%) 31 (31%)
Working diagnosis post Respiratory Consultant review	COPD alone COPD + exacerbating co-morbidity* Asthma Asthma + exacerbating co-morbidity* ACOS Non-airways disease	24 (24%) 26 (26%) 5 (5%) 14 (14%) 3 (3%) 21 (21%)

		No. (%)
PFT results	Normal PFTs	39 (39%)
	Obstruction, no bronchodi-	34 (34%)
	lator reversibility	11 (11%)
	Obstruction, significant	8 (8%)
	bronchodilator revers-	5 (5%)
	ibility	2 (2%)
	Awaited/did not attend	1 (1%)
	Unable to perform	
	Preserved ratio, impaired	
	spirometry	
	Restriction	
Final diagnosis	COPD	35 (35%)
	Asthma	13 (13%)
	ACOS	4 (4%)
	Likely asthma, awaiting	4 (4%)
	bronchial provocation	13 (13%)
	study	11 (11%)
	Rhinitis	7 (7%)
	GORD and rhinitis	8 (8%)
	GORD	5 (5%)
	DNA/PFTs delayed	
	Other	
Disposition	Discharged by first return	73 (73%)
	review	27 (27%)
	Further appointment	
	scheduled	

*Exacerbating co-morbidities: Rhinitis, GORD, OSA, deconditioning.

6.3 Inpatient Management of pulmonary embolism as per NICE guidelines.

Zaheer Aslam[1], Omer Abdullah Chowdhary[1], Mostafa Negmeldin[1]

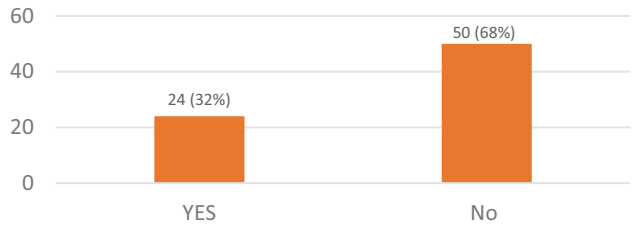
[1]Bedford Hospital NHS Trust, Bedford, Bedfordshire, United Kingdom

Background: The purpose of this audit was to ascertain whether admitted patients of pulmonary embolism are managed as per NICE guidelines within our trust, to identify areas of concern and improve local service.
Methods: Data was collected from May 2022 to October 2022 for seventy four patients admitted to hospital with symptoms and signs of pulmonary embolism and confirmed with Computed tomography pulmonary angiogram/ventilation perfusion scan. Data included baseline bloods, imaging and type of anticoagulant patient started on.
Results: Our results showed that though most patients had baseline bloods and chest X ray done however 32.4% of patients had computer tomography abdomen and pelvis done to screen for malignancy without any signs and symptoms of malignancy. (see bar chart no.1). Majority of patients 62% were started on tinzaparin on admission. (see pie chart no.2). 75% patients who were thrombolysed were haemodynamic stable. (see pie chart no.3).
Conclusion: Patients are not managed as per NICE guidelines, unnecessarily investigated increasing resource burden on the hospital. Anticoagulation not started as per NICE guidelines leading to prolonged hospital stay. Thrombolysing patients who are haemodynamically stable causing potential patient harm.

Keywords: Pulmonary embolism, NICE guidelines (NG158), Thrombolysis

Disclosures: No funding and no conflict of interest

1.



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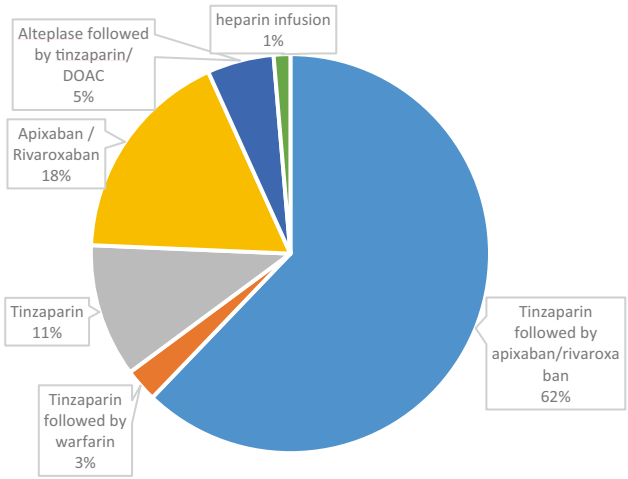

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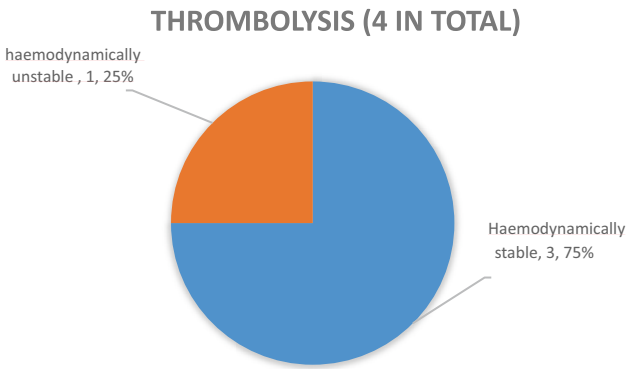

Corresponding Author: Zaheer Aslam

6.4 Yield of CTPA in the diagnosis of Acute Pulmonary Embolism: A Single Centre Experience

[1]Antonia Harold-Barry

[1]*University College Cork, Cork, Ireland.*

Background: There is increasing use of Computed Tomography Pulmonary Angiogram (CTPA) in recent years, being sensitive and specific for Pulmonary Embolism (PE). A normal CTPA result is shown to safely exclude PE. (1) The aim is to assess the PE positivity rate of CTPA in Mallow hospital. Low yield rate would indicate overuse of CTPA. CTPA is associated with up to 10mSV of radiation – approximately 137 chest x-rays. (2)
Methods: Patients presenting to Mallow Hospital Medical Assessment Unit (MAU) with suspected PE between January and June 2023 were included. Retrospective data was collected from Xero radiology system assessing for positive vs negative for PE. Imaging acquired from 64-row multi-detector CT system. CTPA requests and discharge letters used to collect data on main symptom reported.
Results: 52 patients included. 6 positive – yield rate 11.54%. Figure 1 represents percentages of patients presenting with the six most common symptoms into MAU.
Conclusion: Mallow Positivity rate is 11.54%. Positivity rates vary– US studies show rates as low as 2%, recent UK study showed 18.8%. (3) (4) Lower limit generally accepted as approx. 10% under which overuse should be considered. The Royal College of Radiologists recommends 15% - 30%. (5) Results indicate there is a role for a protocol in Mallow MAU for ordering CTPAs. Perc and Years scores not routinely recorded in MGH – recommended to use in Cork University Hospital on Emed.ie. Plan to implement algorithm for suspected PE in Mallow MAU (Figure 2).

Keywords: Pulmonary Embolism, CT Pulmonary Angiogram, Positivity rate.

Disclosures:

Funding: *There was no funding required for this study.*

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

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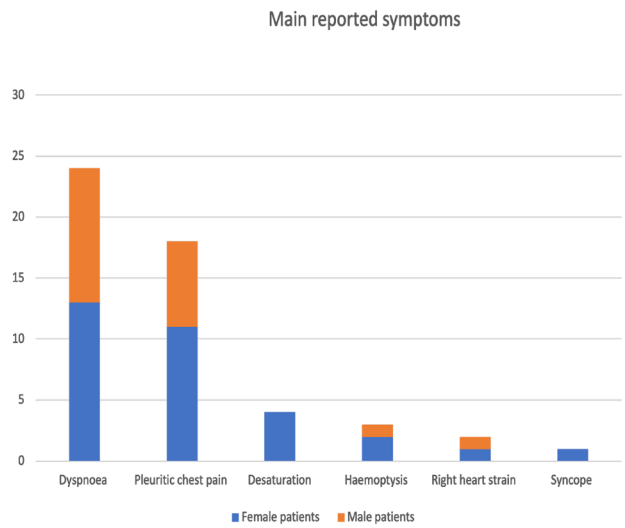
Figure 1: Fig. 1 represents numbers (table) and percentages (text box) of patients presenting with the six most common symptoms into MAU further categorised into male and female patients



Dyspnoea - 47% of patients

Pleuritic chest pain – 34%

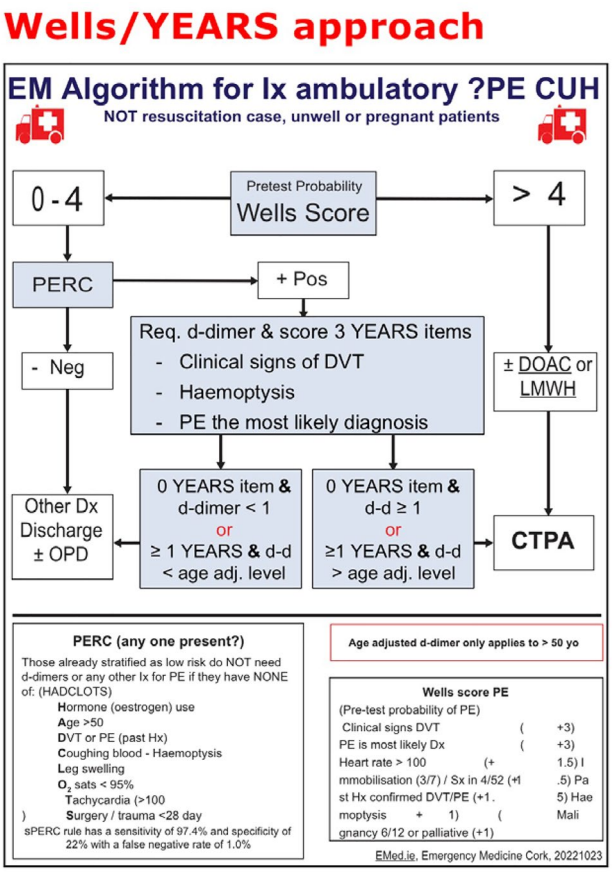
Desaturation – 7%

Haemoptysis – 6%

Right heart strain – 4%

Syncope – 2%

Figure 2: Algorithm recommended for use on Emed.ie website for Suspected Pulmonary Embolism



6.5 1st Irish National Pulmonary Hypertension Audit - 2021-2022

Margaret Higgins1, Nizrull Nasir[1], Foad Bukhari[1], Luke Forde[1], Salima Meghani[1], Denise Lennon[1], Caitriona Minnock[1], Ciara McCormack[1], Sarah Cullivan[1] Brian McCullagh[1], Sean Gaine[1], Syed Rehan Quadery[1]

1. National Pulmonary Hypertension Unit, Mater Misericordiae University Hospital, Dublin, Ireland

Background: Pulmonary hypertension (PH) is a rare, debilitating and life shortening condition which is defined by a mean pulmonary arterial pressure of < 20 mmHg at rest on right heart catheterization. The National Pulmonary Hypertension Unit (NPHU) in Dublin is the quaternary referral centre for patients with PH in Ireland. The 2022 ESC/ERS PH guidelines recommend annual audit of the PH service. Until recently there was no annual audit in Ireland.
We aimed to create an active registry of patients with PH and measure the quality of care provided to the patients referred to our centre using the standards in the UK National Audit of PH.
Methods: This retrospective study identified patients who presented to the NPHU between April 2021 to March 2022.
Results: 265 patients were identified. Baseline characteristics are highlighted in **table 1** and results in **table 2**.
Conclusion: This study demonstrates the importance of a PH registry in Ireland to identify any potential shortcomings in our care. We sense that the Covid-19 pandemic has had a significant impact on our service. We plan to continue to reaudit our service and maintain an active registry to enhance the care of PH patients in Ireland.

Table 1.

Patient Characteristics	
Patients, n	265
Gender, n (%): female	180 (67)
Age (years): mean (±SD)	60 (17)
Attendance type, n (%)	
New	60 (22.6)
Follow up	205 (77.4)

Table 2.

Results	
Diagnosis within 6 months, n(%)	
No	8 (11)
Yes	65 (89)
Seen or discharged within 30 days, n(%)	
No	22 (30.6)
Yes	50 (69.4)
Pre-treatment RHC, n(%)	
No	3 (5.7)
Yes	50 (94.3)
6MWD and FC, n(%)	
No	107 (45.7)
Yes	127 (54.3)
Vasoreactivity Testing , n(%)	
No	28 (87.5)
Yes	4 (12.5)
Drug within 12 weeks, n(%)	
No	12 (24.0)
Yes	38(76.0)
If on PH drug, diagnosis recorded, n(%)	
No	15 (7.4)
Yes	188 (92.6)
1st line used (PDE5i), n(%)	
No	102 (87.2)
Yes	15 (12.8)
QoL score documented, n(%)	
No	251 (99.6)
Yes	1 (.04)
Annual Consultation, n(%)	
No	16 (7.6)
Yes	195 (92.4)
PEA wait-time <4months, n(%)	
No	20 (95.2)
Yes	1 (4.8)
BPA wait-time <18 weeks, n(%)	
No	9 (100)

Table 2. *Abbreviations: RHC: right heart catheterisation; 6MWD: 6-minute walk distance; FC: functional class; PDE5i: phosphodiesterase type 5 inhibitor; QoL: quality of life; PEA: pulmonary endarterectomy: BPA: balloon pulmonary angioplasty*

Keywords
Pulmonary Hypertension; Audit; Quality and Safety; Clinical Governance

Disclosures
No relevant disclosures to declare

6.6 Alpha-1 Antitrypsin ameliorates lung injury in an ex vivo model of Acute Respiratory Distress Syndrome

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Background: Acute Respiratory Distress Syndrome (ARDS) is characterized by hypoxemia, altered alveolar-capillary permeability and an inflammatory pulmonary odema. A curative therapy for ARDS remains elusive and the mortality rate is alarmingly high. The endogenous serine anti-protease Alpha-1 Antitrypsin (AAT) is a candidate treatment option for ARDS. As such, we aimed to investigate the therapeutic potential of AAT in an ex vivo porcine model of ARDS.
Methods: Healthy lungs were explanted from female pigs, perfused, warmed to 37°C and ventilated. Baseline variables were recorded prior to initiation of the ventilator-induced lung injury protocol was initiated and administration of 20mg/kg LPS via the perfusate. The intervention group received 240mg/kg AAT via the perfusate 1 hour post-injury. Inflammatory cytokines and neutrophil elastase (NE) activity were quantified by Enzyme-linked Immunosorbent Assay (ELISA) and a commercially-available kit, respectively.
Results: Trends were observed in the AAT group (n=5) towards decreased pulmonary artery pressure, pulmonary vascular resistance, peak inspiratory pressure and plateau pressure compared to the untreated group (n=5). Gas exchange was significantly improved in lungs that received AAT while inflammation and NE activity was significantly reduced versus the untreated lungs.
Conclusions: While work remains to fully characterize the therapeutic benefit of AAT, preliminary results are promising.
Keywords: ARDS, Alpha-1 Antitrypsin, ex vivo lung perfusion

Disclosures:

Funding: This study was funded by US Department of Defense (grant number 19207A01) and the Irish Research Council (grant number 21547A01).

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

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6.7 NICE Guidelines followed for management of patients with Confirmed Pulmonary Embolism in Naas General Hospital.

Sahib Khan[1], Said Rehman[2], Amani ElGammal[3]

Introduction: Pulmonary Embolism (PE) patients are common presentation to Medical Department. There are burden on Radiology for CTs. There are standard Guidelines available to be followed for such patients.
Methodology: Naas General Hospital, First study: 6th October 2022-6th January 2023 second study: 06th of April 2023-July 06, 2023. All confirmed PE patients in the medical department admitted from ED were included in the study. Those who were already inpatients, incidental finding of pulmonary Embolism were excluded from the study. The latest NICE guidelines were compared to the protocol followed by the medical team.
Result: Out of total 54 vs 28 patients, Male were 57.4% vs 42.9%. Mean age was 60.98±16.22 vs 67.85±9.45. Weight was, 86.22±24.14 vs 88.85±9.24. Sign/symptoms of Malignancy were present in 31.5% vs 28.6% of patients, in whom 74.8% vs 87.5% got CT-TAP done. Those with no sign/symptoms of malignancy, 16.2% vs 5% patients got their CTTAP done. Thrombolysis was offered to one unstable patients 100% vs 0% (0 patient). All stable patients (100% vs 100%) were not offered thrombolysis.
Conclusion: In the re-audit, there is improvement but still room available in the following of NICE guidelines. A repeated Audit is recommended next year to see further improvement.

Keywords: Pulmonary Embolism, Anticoagulation, D-Dimers.

6.8 NICE Guidelines followed for patients presenting with suspected Pulmonary Embolism in Naas General Hospital.

Sahib Khan[1], Saddam Husain[2], Jamal Shah[3], Amani ElGammal[4]

Introduction: Suspected Pulmonary Embolism (PE) patients are common presentation to Medical Department. There are standard Guidelines available to be followed for such patients to make less burden on Radiology for CT Pulmonary Angiogram (CTPA).
Methodology: First study from of 6th October 2022 to 6th January 2023, second study from 06th April 2023 to July 06, 2023. Suspected PE presenting to medical department from ED for whom CTPA was planned were included in the study. Those who were already inpatients, incidental finding of pulmonary Embolism were excluded from the study. The latest NICE guidelines were compared to the protocol followed by the medical team.
Result: Out of total 107 vs 59 patients. Mean age 60.84±18.24 vs 72.45±14.97**.** Chest X-ray was done in 87.9% vs 100.0% of patients. Two level wells score were assessed in 18.7% vs 50.8% of patients. Those of Wells score >4, 74.5% vs 89.7% were offered Anticoagulation. Those with less than 4 wells score (60), 80% vs 100.0% were having D-Dimers done.
Conclusion: There is still room available for improvement for compliance to Guidelines. A repeated Audit is recommended following year.

Keywords: Pulmonary Embolism, Anticoagulation, D-Dimers.

6.9 Outcomes from a Respiratory Ambulatory Assessment Unit in a District General Hospital

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Background: A Consultant led Respiratory Ambulatory Assessment Unit (Respiratory Hub) was opened on a part time basis, (2.5 days per week) in this District General Hospital (DGH) in December 2021 to try facilitate enhanced discharge from hospital, improve access for pleural procedures and avoid hospital admission where possible. The aim of this study was to assess the Hub outcomes over 2 consecutive years.
Methods: The service was audited over a 3 month period from December 2021 to February 2022 (year 1) and from December 2022 to February 2023 (year 2). Data was collected each week on routes of referral to the Hub; numbers of patients seen; number of patients where hospital admission was avoided and bed days saved from early discharge.
Results: The number of patients seen in year 1 and year 2 was similar, 254 patients seen year 1 and 255 patients seen year 2. Referral source was similar both years: early discharge from hospital, 56% and 57%; direct referral from casualty, 8% and 4%; Acute Medical Unit, 14% and 19%, referral from community respiratory nurses, 5% and 7%, respiratory outpatient waiting list, 16% and 14%. Bed days saved were a combination of early discharge from hospital, casualty avoidance and admission avoidance, this was 271 days in year 1 and 323 days in year 2.
Conclusions: The Respiratory Hub has been an effective adjunct to the Respiratory Unit in this DGH, resulting in reduced respiratory hospital admissions and a significant saving in bed days.

6.10 An exploration of a general respiratory waiting list

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Background: 21,629 patients currently await outpatient respiratory medicine review in Ireland. (1) This study aimed to profile the nature of a general respiratory outpatient waiting list.
Methods: A prospective analysis of all patients attending a respiratory NTPF-funded waiting list initiative between September 2022 and March 2023.
Results: Of 285 patients scheduled for general respiratory outpatient clinic, 207 attended. Of this 207, median time to review was 25 months (range 2-45). 41.55% (n=86) were male and median age was 59 (range 19-92). 24.15% (n=50) were active smokers. The most common referral indications were dyspnoea, (n=54, 26.01%), cough (n=46, 22.22%), asthma control (n=20, 9.66%), COPD control (n=12, 5.80%), assessment for COPD (n=9, 4.35%) and recurrent LRTIs (n = 9, 4.35%). 33.33% (n=69) had underwent a chest x-ray prior to review and despite only 14.01% (n=29) having completed PFTs, 44.93% (n=93) were on inhaled therapy. 15.94% (n=33) were discharged after their first review and 18.84% (n=39) after their second.
Conclusions: A significant number of patients referred to general respiratory clinics attend without initial diagnostic tests. Improved community access would expedite management of low-acuity respiratory illnesses, conserving specialist expertise for complex patients.

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

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6.11 A prospective audit of chest x-ray reporting accuracy by non-consultant hospital doctors (NCHDs): A comparison between in-hours and out-of-hours shifts during one week of acute medical admissions - St Lukes' General Hospital Kilkenny

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Background: The reading of chest x-rays (CXR) for acute medical patients is an essential skill for admitting doctors, with previously described NCHD inaccuracy[1,2]. We assessed the accuracy of NCHD reporting and whether a difference existed between in-hours and out-of-hours.
Methods: A one-week prospective audit of medical admissions was performed. NCHD's report, radiology report and CXR report time were recorded. Four distinct outcomes were established: true positive, true negative, false positive and false negative. (Table 1)
Results: Ninety-six patients were admitted, 86 had a CXR performed. 58 admission notes commented on the CXR (67.4%). There were ten true positives and twenty-three true negatives. Sixteen reports were available during the same shift with median time to report of 1.53 hours, zero false positives (0%) and one false negative (6.25%). 42 reports were available at a later shift/day with median time to report of 17.16 hours, ten false positives (23.8%) and six false negatives (14.3%).
Conclusion: Accuracy in CXR reporting varied which may correlate with report availability. This may lead to inappropriate omission or commission of treatment which impacts patient outcomes. The results highlight the need for formal NCHD teaching on CXR reporting which we plan on implementing locally, in the first instance.

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

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Table 1. Total number and percentages of each possible outcome separated by time of report availability.

	N =	True positive	True negative	False positive	False negative	Report transcribed or Dr. telephoned with result
CXR available same shift	16	3 (18.8%)	4 (25%)	0 (0%)	1 (6.25%)	8 (50%)
CXR available at a later shift/day	42	7 (16.7%)	19 (45.2%)	10 (23.8%)	6 (14.3%)	0 (0%)
Total	58	10 (19%)	23 (39.7%)	10 (17.2%)	7 (13.7%)	8 (13.7%)

Table 1. True positive: a positive finding reported by both radiology and NCHD. True negative: a normal CXR reported by both radiology and NCHD. False positive: NCHD reports a finding subsequently not described in radiology report. False negative: NCHD fails to report a finding subsequently described in radiology report.

6.12 DASH score for recurrent VTE-Retrospective study

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Recurrent thromboembolism is associated with increased mortality and morbidity. The risk is lowered by the anticoagulation with a large effect in the initial phase following the venous thromboembolic event. The DASH score is used to calculate the risk of recurrent VTE in an individual with a recent VTE event and who has completed a 3-6-month course of anticoagulation. Individuals with a DASH score of ≤1 have a low risk of annual recurrence whilst those with a DASH score of ≥ 2 have an increased risk of VTE.

Aim: To assess the usefulness of DASH to predict the risk of recurrent venous thromboembolism score in the patients with unprovoked PE who had DASH score of </- 1 and did not have long term anticoagulation

Method: Single centre retrospective evaluation of patients seen in the respiratory PE clinic from January 2021 until December 2022.

Results: Mean age was 62. From the total 112, 74 (66%) had confirmed PE, 59 (79%) out of 74 had provoked and 25 (21%) had unprovoked PE. 3 (12%) patients with unprovoked PE who had DASH score of one or less then, had their anticoagulation stopped after 6 months and they were followed for 2 years and did not have any recurrence of Venous thromboembolic events. One patient with unprovoked PE had DASH score of 3 but D dimers were negative after stopping anticoagulation and he did not have any recurrence of VTE.

Among 74 patients, 1 patient had Saddle PE, 7 (9.5%) patients had central PE, 40 (54%) patients had bilateral PE and 24 (32%) patients had Right sided PE.

Conclusion: Patients with unprovoked PE who had DASH score of 1 or <1 had no evidence of recurrence of PE despite their anticoagulation being stopped on a follow up of 2 years.

D-dimer is perhaps the most important marker to predict the risk of unprovoked PE but we will require a large multi-centre studies with longer follow up to validate it.

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Table 1

Total number of patients Included in the Study	**Male**	**Female**
112	46 (42%0	66 (58%)
Total number of patients diagnosed with PE	**Provoked PE**	**Unprovoked PE**
74	59 (79%)	25 (21%)
Total number of patients with Unprovoked PE	**DASH score of 1 or less**	**DASH score of 2 or more**
25	3 (12%)	22 (88%)
Recurrence of VTE in patients with DASH score of 1 or less after stopping anticoagulation	0	0

6.13 Clinical Audit of Pulmonary Embolism (PE) management at discharge in a tertiary referral centre

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Background: We examined PE care in Beaumont Hospital in terms of symptoms, investigations and follow-up management and its adherence to international standards.

Methods: We looked at written and electronic data of PE admissions to Beaumont Hospital over a 6 month period in 2022 and compared care to guidance laid out in the 2019 ESC guidelines for PE management.

Results: Data from a total of 171 patients was included. Appropriate anticoagulation was commenced in 96% of patients. Recognised diagnostic algorithms were used in 88% of cases. Risk factors for PE were assessed for in 85% of cases. Appropriate risk stratification after diagnosis occurred in 77% of cases. 52% of patients underwent a right heart assessment. Haematology were consulted in 54% of cases. 78% of patients were reassessed as outpatients after 3-6 months.

Conclusions: Overall there was good adherence to the guidelines in terms of the work-up of patients with a suspicion for PE. However, there were several deficiencies identified in terms of post-diagnostic care and follow-up management. Since this audit period a specialist Coagulation service has been set up and access to diagnostics has been improved. The impact of these changes will be assessed in the next audit cycle.

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

6.14 CTPA in Pregnancy: A Refresher on Risk Vs Reward

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Background: Acute pulmonary embolus(PE) is a rare cause of maternal morbidity and mortality with increased risk in the third trimester and post-partum period[1,2]. Normal physiological sequalae of pregnancy can mimic the presentation of acute PE which can result in an uncertain clinical picture[3]. There is a low threshold to investigate and exclude PE in this patient cohort[4,5].
Methods: We present the current clinical information and guidance with regard to Computed Tomography Pulmonary Angiogram (CTPA) in pregnancy.
Results: Despite the use of risk calculators and D-dimer blood tests, a large proportion of these patients undergo ionising CTPA with the inevitable stochastic radiation risks[6]. Informed patient consent is of paramount importance in this regard.
The radiation dose delivered to the foetus in a CTPA is well below the accepted level for teratogenicity and death with the main concern being for a marginal increase in the risk of childhood malignancy[7]. Hormone induced increase in breast glandular activity results in increased radiosensitivity with increased risk of breast cancer, particularly younger patients[8]. The theoretical risk of hypothyroidism in neonates secondary to iodinated contrast have not been confirmed[9].
Conclusion: CTPA is recommended in the correct clinical context as the benefit of correct diagnosis and avoiding unnecessary anticoagulation outweigh the risks of ionising radiation[10].

Keywords: CTPA, Computed Tomography Pulmonary Angiogram, PE, Pulmonary Embolus, Risk

Disclosures: None

Funding: None

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

Corresponding Author: James A O'Regan

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6.15 Learnings From the First 18 months of a Novel Cross-Site Multi-Disciplinary Pulmonary Pregnancy Service

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Introduction: During pregnancy women are physiologically at increased risk for acquiring acute and/or exacerbating existing pulmonary conditions including pulmonary embolism (PE), asthma and interstitial lung disease (ILD). Maternal audits highlight PE as the leading cause of direct maternal mortality in the UK and Ireland. Prescribing and radiology hesitancy during pregnancy may contribute to suboptimal care (1).
Aim: To establish a cross-site pulmonary pregnancy service to improve care for pregnant women with acute and chronic pulmonary conditions.
Methods: In 2022 a cross-site pulmonary pregnancy service between Beaumont Hospital (BH) and the Rotunda Combined Obstetric Maternal Medicine Clinic (COMMC) was established. This incorporated:

- Consultant Respiratory Physician sessions within the COMMC monthly
- Pulmonary Pregnancy Clinic (PPC) BH monthly
- Multi-disciplinary working
- Quality improvement initiatives
    - Airway medications safety in pregnancy
    - Asthma patient leaflet
    - Audit - pregnant women admitted to BH with respiratory diagnosis
    - PE pathway for pregnant patients (BH)

Results: Beaumont PPC had 90 attendances, new : review 1:1.25, 14% did not attend, top conditions asthma, covid-related and post-PE, 45% post-hospitalisation referral. None (0%) required further pulmonary hospitalisation, all (100%) had successful delivery.
Conclusion: Novel cross-site pulmonary pregnancy service delivers excellent maternal and foetal outcomes.

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6.16 Impact of Respiratory Clinical Nurse Specialist attendance in a General Respiratory clinic

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The respiratory service in Our Lady of Lourdes Hospital in Drogheda has expanded rapidly over the past 3 years to accommodate the increased workload associated with the Covid-19 pandemic. The clinical nurse specialist (CNS) role is crucial in managing patients with chronic airway disease and is aligned with five core competencies focused on patient care, timely access to diagnostics and evaluation, treatment optimization, and adherence to the regime.
The introduction and impact of a Respiratory CNS presence in a general respiratory clinic was evaluated. In particular we assessed the role of the Respiratory CNS in disease education, community integration, inhaled therapy assessment and optimisation and self-management action plans.
Results showed that inhaler technique review is essential with a high percentage of patients seen by the CNS requiring a change of inhaler device due to ineffective technique, inadequate inspiratory flow rate or insufficient dose for the disease condition.
The respiratory CNS provides an important service in the Respiratory clinic and should be considered as an essential component in multidisciplinary outpatient service provision.

Conflict of Interest: *None to declare*

6.17 Patients' Reported Reasons of Non-Attendance in a Respiratory Outpatient Services

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Non-attendance to planned care is a widespread problem across different hospital setting worldwide. It affects healthcare resources by reducing clinic efficiency and increasing wait times for specialist consultations and waiting lists. A phone-based interview questionnaire was utilised among patients identified as non-attendee at the respiratory outpatient services of Our Lady of Lourdes Hospital in Drogheda, Ireland. Out of 30 identified non-attendance, 14 responded and completed the survey interview. The majority of patients were aged 65 and above. The main reason for non-attendance was a lack of awareness of the planned care (n=10), an appointment cancelled by a hospital staff member (n=2), forgetting the appointment (n=1) and hospital admission (n=1). These highlights the importance of appointment notifications and reminder letters and empowering them to be responsible in scheduled care. In light of digital transformation, considering an electronic notification to remind patients of their appointments. Further studies to determine other factors influencing increased non-attendance to outpatient care.

Conflict of Interest: *None to declare*

6.18 Establishing a Breathing Pattern Disorder clinic, a Respiratory Integrated Care physiotherapy experience.

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Background: There is increasing awareness across the field of respiratory medicine of the importance of breathing pattern disorders (BPD) as a cause of chronic breathlessness. The prevalence of BPD is estimated to be 8–10% of the general population, rising to 36% of asthmatics [1]. Our Respiratory Integrated Care (RIC) Clinic in Carlow/ Kilkenny recognised a group of patients with suspected BPD, not responding to medication. The need for a BPD clinic was identified.
Method: Physiotherapists undertook relevant training (Bradcliff Level 1). A BPD clinic proposal was developed. A clinical governance structure was agreed. The clinic began accepting referrals from an RIC Consultant.
Results: Physiotherapists achieved competency in BPD assessment and treatment. A BPD clinic was established. Preliminary data analysis showed 13 referrals. 100% of patients referred had symptoms consistent with BPD as per Nijmegen Questionnaire (NQ) scores. Data on the effectiveness of the treatment interventions is pending.
Conclusion: BPD treatment is a growing area of physiotherapy practice. BPD can be accurately identified when appropriate professional development by RIC staff is undertaken.

Keywords: Breathing pattern disorders, physiotherapy

Disclosures: None

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

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6.19 Assessment of functional ability and frailty in Pulmonary Rehabilitation; An evaluation of outcomes in the Longford Westmeath Pulmonary Rehabilitation Service

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Background: Frailty is a multidimensional syndrome characterised by decreased functional reserve (1) affecting up to one in four patients with Chronic Obstructive Pulmonary Disease (COPD) (2). The Short Physical Performance Battery (SPPB), a mobility and balance test

incorporating static balance, 4 Metre Gait Speed and 5 Repetition Sit-to-stand can identify people living with frailty (3) and has been shown to be responsive to Pulmonary Rehabilitation (PR) with a proposed minimum clinically important difference (MCID) of 1 (4).The aim of this evaluation was to assess the impact of our PR service on functional ability in a group of patients with chronic respiratory disease using the SPPB.
Methods: 26 patients attending the Longford Westmeath PR service between January and June 2023 were included in the study. The SPPB was completed at pre- and post-assessment stage by a registered physiotherapist.
Results: 20 (77%) patients met the MCID of 1 at programme completion. Using a cut-off score of ≤7 (5), 6 patients (23%) were defined as frail at pre-assessment stage, but this figure dropped to 3 (11%) on completion of the programme.
Conclusion: In this sample of patients completing PR we demonstrated a reduction in the number of patients defined as frail at programme completion. Over three-quarters of patients had a clinically significant improvement in total SPPB score indicating overall improvements in physical function.

Conflict of Interest: The authors have no conflicts of interest to declare.

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6.20 An audit of ventilation perfusion imaging in patients with connective tissue disease associated pulmonary arterial hypertension

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Background: Extensive assessment is required prior to assigning a clinical group and subgroup for patients with suspected pulmonary arterial hypertension (PAH). These investigations include ventilation perfusion (VQ) imaging, which is required to screen for chronic thromboembolic pulmonary disease (CTEPD) which is amenable to specific interventions. The aim of this study was to assess compliance with VQ screening in subjects with connective tissue disease (CTD) associated PAH.
Methods: Cases of CTD-PAH which were referred to the national pulmonary hypertension unit between 2010 and 2020 were included (IRB:1/378/2176TMR).
Results: Eighty cases of CTD-PAH were identified during the study period. VQ scanning was performed in 52% of cases (n=42) and was reported as normal in 51% (n=41) and indeterminate in 1 case. There were no positive VQ scans. VQ imaging was not performed in the remaining 48% (n=38).
Conclusion: This data highlights that improved compliance with VQ scanning is required for patients with CTD-PAH, as cases of comorbid CTEPD may be missed. Reassuringly none of the VQ scans performed during this period were positive.

Disclosures:

Conflict of Interest: The authors have no conflicts of interest regarding this abstract

6.21 Investigating the role of the Acute Respiratory Distress Syndrome disease microenvironment on human bone-marrow derived Mesenchymal Stromal Cells.

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Background: Human bone-marrow derived Mesenchymal Stromal Cells (hBM-MSCs) have attracted significant attention as a cell-based therapy for many years. Their immunomodulatory and regenerative properties, in combination with their low immunogenicity, makes them an appealing treatment for a variety of conditions. hBM-MSCs are known to require cytokinemediated activation signals, also known as licensing, in order to be deemed efficacious. This suggests that the highly-inflammatory ARDS patient micro-environment, containing cytokines such as IL-6, TNF-α, IFN-γ and MIF, may contribute to hBM-MSC activation.
Methods: hBM-MSCs were cultured at a density of $1x10^5$ in a 12-well plate and exposed to 20% ARDS patient serum for 24 hours. The cells and supernatants were than harvested for gene and protein expression studies, along with various functional assays.
Results: Our data demonstrates that hyper-inflammatory, but not hypo-inflammatory, ARDS patient serum has the potential to license hBM-MSCs, and therefore, enhance their therapeutic efficacy *in vitro*.

Conclusion: This study highlights the importance of ARDS patient stratification prior to treatment identification.

Disclosures

Conflict of interest: The authors declare there is no conflict of interest.

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Poster Session 7: General Respiratory 2

7.1 An Audit of pleural fluid analyses in a tertiary hospital

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[2] Department of Clinical Medicine, Trinity Centre for Health Sciences, St James's Hospital, Dublin 8

Background: Pleural effusions are common and pleural fluid analysis is an essential diagnostic tool. We sought to evaluate pleural fluid analyses in SJH against the BTS Guideline for Pleural Disease (1).
Methods: A list of all pleural fluid samples received by the SJH Pathology laboratory in 2019 was generated. Electronic Patient Record review was performed, clinical data collected, and collated for analysis.
Results: 229 pleural fluid specimens were identified, associated with 206 procedures. Of 206 procedures, 92 (44.7%) were performed by IR, 47 (22.8%) by Thoracics, 39 (18.9%) by Respiratory, and 28 (13.4%) by others.
Of 229 samples, protein was measured in 118 (51.5%), LDH in 123 (53.7%), routine culture in 161 (70.3%), and TB culture in 155 (67.7%). Where the procedure was performed by the Respiratory Team, a sample was more likely to be sent for measurement of protein (85%), LDH (90%), and culture (92.5%).
The BTS guideline-recommended minimum sample volume of 25mL for cytological analysis was achieved in only 101 samples (44.1%). Median volume of fluid sent for cytological analysis was 20mL, irrespective of team.
Conclusions: Pleural fluid biochemical analyses are underutilised in SJH, and pleural fluid volume sent for cytological is less that that recommended by BTS guidelines in the majority of cases. Respiratory teams are more likely to request guideline-recommended analyses.

Keywords: Pleural, Effusion, Fluid Analysis.

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

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1. Roberts ME, Rahman NM, Maskell NA, Bibby AC, Blyth KG, Corcoran JP, et al. British Thoracic Society Guideline for pleural disease. Thorax. 2023.

7.2 Evaluating the potential impact of an Ambulatory Pleural Effusion Pathway on inpatient admissions in a tertiary referral hospital

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Background: Traditionally, most patients with pleural effusion are managed as inpatients. However, recent evidence shows that ambulatory pathways for pleural effusion procedures can result in admission avoidance in up to 92% of cases, lower healthcare costs and improved patient experiences (1, 2). We sought to audit pleural procedures performed in St James's Hospital over a 12-month period to explore the potential of a proposed Ambulatory Pleural Effusion Service to reduce admissions.
Methods: A list of pleural effusion procedures performed from 1st January 2019 to 31st December 2019 was generated through cytology laboratory specimen records and HIPE data. Location of the procedure (inpatient versus outpatient) was noted. Detailed chart review was performed to evaluate each case against referral criteria for a proposed Ambulatory Pleural Effusion Service, to identify cases where admission could potentially have been avoided.
Results: 236 patient episodes involving pleural effusion procedures were identified. Only 10 episodes (4.2%) were managed in the outpatient setting. Median LOS was 17.1 bed days, cumulatively 6869 bed days. Chart review revealed 79 patient episodes (33%), involving 105 pleural procedures, that met criteria for referral to the proposed Ambulatory Pleural Effusion Service. 75% involved malignant effusions. These 79 avoidable admissions were associated with a cumulative LOS 1176 bed days.
Conclusion: Introduction of an Ambulatory Pleural Effusion Service in St James's Hospital could potentially reduce admissions related to pleural effusions by 33% and save significant bed days.

Keywords: Pleural effusion; ambulatory

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

References:
1. Young RL, Bhatnagar R, Medford AR, Maskell NA. Evaluation of an ambulatory pleural service: costs and benefits. Br J Hosp Med (Lond). 2015;76(10):608.
2. Penz ED, Mishra EK, Davies HE, Manns BJ, Miller RF, Rahman NM. Comparing cost of indwelling pleural catheter vs talc pleurodesis for malignant pleural effusion. Chest. 2014;146(4):991-1000.

7.3 An Audit of the Pleural Fluid Sampling Practice for Unilateral Pleural Effusions in a Teaching Hospital

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[1]Wexford General Hospital

Background: Unilateral pleural effusions are commonly encountered in clinical practice. Pleural fluid sampling is required to establish a diagnosis. This retrospective review aimed to determine if workup of a pleural effusion was in keeping with best practice BTS guidelines.

Methods: HIPE discharge coding was used to identify patients with a primary diagnosis of pleural effusion from July 2022-January 2023. The electronic system was utilised to identify patient demographics and fluid sampling practices. An excel tool was used to enter data.
Results: Fluid Sampling was in keeping with BTS guidelines in 20% of effusions between July 2022 and January 2023. 25 patients had Pleural Taps during this period. 40% for pleural effusions and 60% for pneumothoraces. 100% of the audited patients had chest drains inserted. 50% of the patients had post drain insertion complication of pneumothorax.
Pleural microbiology was included in 80%. Pleural cytology was included in 60%. Pleural cell count was included in 50%. Pleural LDH was included in 70%. Pleural protein was included in 70%. Pleural Ph was included in 20%.
Conclusions: This audit suggests adherence to BTS guidelines at our institution is suboptimal. While 100% of effusions were sampled, only 20% were adequately sampled. Increased awareness of the recommended sampling as per BTS guidelines is required in order to fully investigate pleural effusions and minimise repeated invasive investigations . To remedy this, we have created a sampling checklist document.

Disclosures: There is nothing to disclose

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7.4 Do we need Oxygen Assessment and Review Clinics?

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[2] Portiuncula Hospital, Ballinasloe, Co Galway

Background: Since initiation in 2018 the Oxygen Assessment and Review (OAR) clinic has assessed 497 patients. A collaborative clinic with specialist nursing and physiotherapists. The aim of this study is to review clinical outcomes of new patients referred to the OAR Clinic from January to July 2023.
Methods: Evaluation of the clinic dataset. Specifically new patients referred to the OAR clinic after recent discharge from hospital or outpatient Consultant clinics.
Results: 107 patients were seen at the OAR clinic between January and July 2023. 27 new patients presented for initial oxygen assessment. 10 of those patients had LTOT initiated on hospital discharge less than 8 weeks prior to assessment. 60% of patients required changes to prescription or equipment. 40% required education to maximise adherence to pre-existing script. 17 borderline hypoxic patients were referred for initial assessment. Only 1 patient met the criteria for LTOT initiation, 3 for ambulatory oxygen and 3 did not attend the appointments.
37% of patients assessed did not have any Oxygen requirements 8 weeks after discharge or referral from OPD clinics.
Conclusion: 100% of patients assessed 8 weeks post initiation of LTOT on hospital discharge required changes to prescription, equipment or encouragement to adhere to prescription. Only 6% of patients referred with borderline hypoxia met the criteria for initiation of LTOT. 17% required Ambulatory oxygen.

Keywords: Oxygen Assessment and Review Clinic, Long Term Oxygen Therapy, Ambulatory Oxygen Therapy

Disclosures:

Funding: No funding provided

Conflict of interest: No conflicts of interest to declare

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References: Irish Thoracic Society, Anail, ISCP. Irish Guidelines on Long Term Oxygen Therapy (LTOT) in Adults. 2015.
British Thoracic Society Guideline for home oxygen in Adults. 2015.

7.5 An Audit of Non-Invasive Ventilation (NIV) Practice in a Level 3 Hospital

[1]Ibrahim Haydar, [1]Niamh Boyle, [1]Aoife O'Brien, [1]Colm Quigley.

[1]Wexford General Hospital, Wexford, Ireland.

Background: BTS guidelines state that NIV should be given in appropriate clinical areas by trained staff using optimal settings[1]. In our hospital, NIV is typically prescribed by non-specialist doctors on non-respiratory wards. This audit assessed adherence to BTS guidelines[2] and NIV quality.
Methods: Retrospective review of 13 patients, identified using HIPE coding, admitted to Wexford General Hospital with Type 2 respiratory failure(T2RF) and received NIV during January-July 2022.
RESULTS: Average age was 67. 85% had COPD, 30% were on long term oxygen therapy(LTOT) and 38% had prior NIV use. All patients had T2RF on initial gas, with average pH 7.25, and pCO2 9.16. 92% had chest x-ray before NIV. 38% had escalation plans recorded. 68% were for full escalation. Escalation plans were absent in 75% of patients on LTOT.
Average initial pressures were IPAP 15 and EPAP 5 with average pressure support of 9.6. ABGs were repeated in all cases, with 61.5% within one hour. 53% had settings adjusted incorrectly (settings unchanged despite worsening acidosis, NIV removed despite ongoing acidosis or suboptimal IPAP/EPAP adjustments).
NIV was started by non-specialist registrars(38%) and senior house officers(30%). General Medical Teams started NIV(61.5%), followed by emergency medicine(30%) and Respiratory teams(7%).
Conclusion: BTS guidelines adherence was suboptimal. NIV optimisation and ceiling of care establishment were poor. Increased awareness on NIV management is needed. A new NIV pathway has been implemented and a re-audit is ongoing.

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: A23CLIN341

References:
1. Davidson AC, Banham S, Elliott M, Kennedy D, Gelder C, Glossop A, et al. BTS/ICS guideline for the ventilatory management of acute hypercapnic respiratory failure in adults. Thorax. 2016;71 Suppl 2:ii1-35.
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7.6 The Ripple Effect; how the evolving role of CT coronary angiogram may impact on service demands in respiratory medicine.

Niamh Logan[1], Cara Weldrick[1], Bing Wei Thaddeus Soh[1], Aidan O'Brien[1]

[1]University Hospital Limerick, Limerick, Ireland

Background: NICE guidelines on stable chest pain recommend CT coronary angiogram (CTCA) as a first line investigation. UK estimates say 523-545 CTCA per 100,000 population per year are needed (1) (2).
Methods: Our retrospective study evaluated the prevalence of pulmonary nodules on CTCA's.
Results: Of 120 CTCA's 12 had pulmonary nodules. We calculated approximately 26,673 CTCA's would be required annually in Ireland to assess stable chest pain, a subsequent 2,667 would require a CT thorax.
Conclusion: Guideline implementation could result in increased service demands however may facilitate early identification of nodules.

Keywords: CTCA, lung nodules

Disclosures: No funding was received for this study and the authors declare that they have no conflict of interest.

Corresponding author: Niamh Logan, https://orcid.org/0000-0002-3623-0487

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7.7 Audit on the implementation of guidelines for the use of High Flow Nasal Oxygen (HFNO) in Beaumont Hospital

James O'Hanlon[1], Linda Keegan[1], Conor Hayes[1], Breda Cushen[1]

[1]Deapartment of Respiratory Medicine, Beaumont Hospital, Dublin 9

Background: We developed a local policy document and accompanying flow algorithm to support HFNO use in the setting of hypoxaemic respiratory failure, in order to standardise HFNO use and identify areas for change/improvement.
Methods: The new HFNO policy document was introduced to two core respiratory wards over a pilot period between October 2022 and January 2023. Use of HFNO on these wards was audited and compared to pre-policy audit results. Information was collected from the medical and nursing observation record. User feedback was also obtained.
Results: Data from 14 patients was audited. There continued to be significant deviations in practice, especially around the performance of arterial blood gas (ABG) measurement and variance from the recommended temperature and flow rate settings. There were significant improvements compared to pre-policy data, such as in the prevalence of pre-initiation ABG measurement (78.5%), documented prescriptions (61.5%-v-15%), and minimum hourly observations (100%-v-25%). Overall staff feedback was positive.
Conclusions: Overall, the implementation of a dedicated local policy for HFNO use has been well-received by staff and has resulted in significant improvements. However, adherence to the guideline remains suboptimal with substantial variation in practice. We plan to amend our guideline based on these results prior to re-audit.

Keywords: HFNO (High Flow Nasal Oxygen).

Disclosures: the authors declare that they have no conflicts of interest.

7.8 An Audit of Non-Invasive Ventilation Practices in a Model 3 Hospital.

Eleanor Cronin [1], Roa Awadalla Ibrahim [1], Chithra Varghese[1]

[1] Midlands Regional Hospital, Tullamore

Timely use of NIV in Acute Hypercarbic Respiratory Failure (AHRF) has been linked with a more rapid clinical improvement and a reduction in mortality. BTS recommends all hospitals have a AHRF pathway.
We assessed compliance with BTS guidelines in MRHT, assessing the timing of initiation, ABG monitoring and titration of settings and weaning of NIV. Currently the management of NIV is limited in the high dependency care units.
A retrospective chart review was carried out. Of the 12 patients, median time median time between the first ABG identifying AHRF and commencement of NIV was 150 mins. 50% of patients did not have an ABG analysed withing the first 60 mins of NIV initiation. No patients had a documented plan for the timing of ABGs or weaning of NIV. 66% of patients had a documented ceiling of care.
The results indicate delays in the initiation of NIV and poor compliance with BTS guidelines in the monitoring and weaning of NIV in AHRF. A delay in accessing a critical care bed is one of the limiting factors contributing to the timely reassessment and titration of NIV. An NIV pathway has been developed in MRHT to progress the use of NIV to dedicated beds in wards, aiming to improve adherence to best practice management.

7.9 An Audit of Oxygen Prescription Rates in St James' Hospital Dublin

Niamh O'Flaherty, John Murray, Parthiban Nadarajan[1]

[1]Department of Respiratory Medicine, St James's Hospital Dublin

Background: Oxygen is among the most commonly used drugs in the hospital setting. As with all drugs, inappropriate use may cause harm, particularly in patients at risk of hypercapnia. BTS Guidelines recommend oxygen is prescribed and that target saturations / recommended flow rates be documented.[1]
Method: On two separate days (in February and May 2023), we reviewed all inpatients in St James's Hospital and noted those receiving oxygen therapy. We then reviewed charts to assess for:

a) Oxygen prescription on the drug chart
b) Instructions in medical notes re: target saturations / flow rates

Results: 78 patients were on oxygen therapy at the time of audit. Only 6 patients (7.7%) had a valid prescription. Of these, 4 were inpatient in either CCU or ICU. 33 (42.3%) had instructions documented in medical notes. 39 (50%) patients receiving oxygen had no prescription or documented plan regarding oxygen therapy.
Conclusion: There were poor rates of oxygen prescription across all areas of the hospital. CCU and ICU (where oxygen is part of an pre-set admission "bundle") had the highest rates. After educational interventions, we plan to re-audit in 2 months assessing for improvement in oxygen prescription rates.

Keywords: Oxygen; prescribing

7.10 Oxygen Therapy Clinic: A 10 year review

Sarah Nolan[1]

[1]Our Lady of Lourdes Hospital, Drogheda, Co. Louth, Ireland

Background: The purpose of this study was to review the efficacy of the Oxygen Therapy Clinic (OTC) in Our Lady of Lourdes Hospital, Drogheda since establishment ten years ago. Follow-up in the OTC can significantly decrease inappropriate supplemental oxygen use, which can result in significant cost savings while providing improved healthcare delivery
Method: Collation and analysis of patient data collected from the OTC since its inception. The results of 2093 patient assessments during the ten year time period from 01/10/2013-31/07/2023 were reviewed. The referring condition, source of referral and the reason for referral was recorded. In addition data from the clinic was analysed based on whether a prescription was initiated, changed, remained unchanged or cancelled.
Results: 64.05% of post hospital patients and 57.24% of review patients had a change to or removal of their prescription on follow-up in the OTC. The OTC optimises the benefits of oxygen therapy, ensures best patient care and effectively reduces the cost of inappropriate oxygen prescribing with an estimated cost saving of €3,096,944 over 10 years.
Conclusion: Strong evidence exists for the importance of reviewing patients' prescriptions following hospital discharge along with regular reviews as their disease progresses. The OTC has shown to be cost effective.

Keywords: Oxygen Therapy, Oxygen Therapy Clinic, Cost savings

Disclosures: N/A

Funding: N/A

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

7.11 Quality improvement initiative to improve knowledge on home oxygen therapy amongst physiotherapists and nurses in Our Lady of Lourdes Hospital

Sarah Nolan[1], Viji Mathew[1]

[1]Our Lady of Lourdes Hospital, Drogheda, Co. Louth, Ireland

Background: Home oxygen should be administered by competent healthcare providers who possess the knowledge, skill, and judgment/abilities to make clinical decisions regarding the administration of oxygen. This poster aimed to assess the knowledge and practice of health professionals towards oxygen therapy.
Methods: Collation and analysis of pre and post nursing and physiotherapy staff surveys following education on home oxygen therapy and provision of a home oxygen therapy resource folder.
Results: Confidence amongst nurses discharging patients home on oxygen improved from 35.3% to 61.5% and ability to seek information on oxygen equipment/prescriptions increased from 41.2% to 80.8%. Physiotherapists scored 100% both pre and post in accessing appropriate documentation and gathering information regarding oxygen equipment/prescriptions. Their knowledge on types of oxygen equipment increased from 80% to 100% and those providing written information to patients on discharge with home oxygen increased from 80% to 90% (see table 1).
Conclusions: Physiotherapist knowledge on home oxygen therapy remains at a very high level in Our Lady of Lourdes Hospital. Nursing knowledge has improved across all but one category however high staffing turnover has highlighted the need to conduct quarterly education sessions to maintain staffing knowledge on the topic. The home oxygen therapy folder has proved to be a useful resource for staff in the hospital.

Keywords: Home Oxygen Therapy, Oxygen resources, Education

Disclosures: N/A

Funding: N/A

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

Table 1. Physiotherapist and nursing survey results pre and post education and implementation of an oxygen resource folder

	Confident in discharge with new homeO_2		Received education on home oxygen before		Knowledge on where to access documents to order HomeO_2		Knowledge on differentO_2 equipment types		Knowledge on where to contact aboutO_2 equipment or flow rate		Provided written information to patients on homeO_2	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Physio Pre-education n=5	100%	0%	100%	0%	100%	0%	80%	20%	100%	0%	80%	20%
Physio Post-education n=10	90%	10%	100%	0%	100%	0%	100%	0%	100%	0%	90%	10%
Nurse Pre-education n= 17	35.30%	64.70%	0%	100%	41.20%	58.80%	11.80%	88.20%	41.20%	58.80%	0%	100%
Nurse Post-education n=26	61.50%	38.50%	19.20%	80.80%	42.30%	57.70%	23.10%	76.90%	80.80%	19.20%	7.70%	92.30%
Combined Nursing and Physiotherapists Results Pre-education n=22	50%	50%	22.70%	77.30%	68.20%	31.80%	27.30%	72.70%	54.50%	45.50%	18.20%	81.80%
Combined Nursing and Physiotherapists Results Post-education n=36	68.60%	31.40%	40%	60%	57.10%	42.90%	37.10%	62.90%	85.70%	14.30%	28.60%	71.40%

7.12 NIV Service in Cork University Hospital: An overview of service provision and the development of an NIV education programme

Maeve O'Grady[1], Áine O'Sullivan[1], Elaine O'Farrell[2] & Dr Michael Henry[3]

[1] Physiotherapy Department, Cork University Hospital, Wilton Cork
[2]The Centre of Nurse Education, Cork University Hospital, Wilton, Cork
[3] Respiratory Department, Cork University Hospital, Wilton, Cork

NIV delivery in CUH faces many challenges. A re-audit of NIV service provision along with the development and delivery of a comprehensive NIV education programme was undertaken in CUH 2022/2023. The results of the re-audit were compared to the results of both the 2020 CUH NIV audit and the 2019 BTS NIV audit and benchmarked against the 2016 BTS NIV guidelines.

The respiratory physiotherapists together with the centre for nurse education, developed a class based NIV education programme designed to increase knowledge, competence and confidence among nursing staff in NIV patient management. Over 100 nurses have attended this 4 hour programme with 100% of attendees agreeing that the NIV study day would aid in changing or improving clinical practice. An overwhelming majority of attendees rated the theoretical and workshop content of the course as excellent. Ongoing NIV education is delivered to NCHD's by the physiotherapy department and medical respiratory team in CUH. The re-audit showed improvements in the following areas: A move to improve patient cohorting has resulted in 55% of patients on NIV ending up on the acute respiratory ward in 2023 compared to only 32% in 2020. A review by a clinical expert occurred within 4 hours of commencement of NIV in 40% of cases in 2023 compared with 18% of cases in 2020. NIV was deemed a success in 80% of patients in 2023 compared with 68% of cases in 2020. Results in other areas were less favourable showing that targeted education provision to the wider MDT is essential to build on improvements achieved to date.

7.13 Usage of Non-Invasive Ventilation (NIV) in Patients with Acute Hypercapnic Respiratory Failure, in comparison to the British Thoracic Society (BTS) guideline in Rural Ireland, West Cork.

Sarah Rafar, Priyanka Thitme, Rizwan Aziz

Bantry General Hospital, Co. Cork

Background: Respiratory failure occurs due to the inability of the lungs to provide sufficient alveolar ventilation to maintain normal arterial oxygen and carbon dioxide levels.
Methods: Retrospective analysis conducted over three months by various teams on patients who required NIV in High Dependency Unit. A comparison between the study cohort and BTS guidelines regarding the criteria for initiation of NIV therapy.
Results: 50% of patients had Type 1 Respiratory Failure and were commenced on AIRVO. Another 41.6% of patients who proceeded to Bilevel-positive airway pressure had Type 2 Respiratory Failure. Within the study cohort, 75% had pre-NIV arterial blood gas (ABG) taken as per BTS guidelines. Subsequent ABG monitoring fell short, with 33.3% performed in 1st hour and 25% in the 4th-6th hour.
Conclusion: Some aspects of this study were compliant with the BTS guideline - the indication of commencing on NIV and having ABG taken before the same. Improvements in the form of providing an escalation plan in the event of deterioration, periodic repetition of ABG, and subsequent titration of the NIV settings as per clinical correlation will ensure adherence to BTS guidelines and optimize therapy benefits for patients.

Keywords: non-invasive ventilation

Disclosure: There is no conflict of interest.

References:
Davidson AC, Banham S, Elliott M, et al, BTS/ICS guideline for the ventilatory management of acute hypercapnic respiratory failure in adults, Thorax 2016;71:ii1-ii35.

7.14 An Oxygen Therapy Clinic (OTC) Serving Meath Patients

Rosaleen Reilly[1] & Agnes Barry[2]

Meath Integrated Respiratory Service, Our Lady's Hospital, Navan, Co Meath (OLHN)

Background: Prior to Jan 2022, Meath patients requiring Long Term Oxygen (LTOT) or Ambulatory Oxygen Therapy (AOT) attended an oxygen service outside the County or had no follow up. An Oxygen Therapy Service was developed and delivered by the Meath Integrated Respiratory Service, under the governance of Respiratory Consultants in OLHN.
Method: Key performance indicators and clinic activity for 18 months were collected and audited.
Results: A total of 371 appointments were issued. A total of 103 new patients attended, with 82% referred from local sources. Review episodes completed amounted to 179. Forty four and 63 patients had LTOT and AOT respectively prior to attending. A total of 18 LTOT amendments and 70 AOT amendments were made. New LTOT was ordered for 4 patients, with 13 prescribed new AOT. LTOT and AOT was removed in 7 and 12 cases respectively. A Consultant discussion was required in 61 cases. Liaison with patient family was required in 45% of cases.
Conclusion: Establishment of this Oxygen Service has allowed Meath patients to avail of therapy optimisation close to their home.

Keywords: Integrated service, Slaintecare, Ambulatory Hub, Governance,

Conflict of Interest: No conflict of interest.

7.15 Improved oxygen prescription compliance

Elaine Curran[1], Patrick Doyle[1,] Dimitris Smith Diakidis[1], Eamonn Mullen[1], Sarah Forder[1], Moeez MafbooL[1], Fionn Nally[1], Taimoor Salman[1] and Elaine Hayes[1]

[1] Respiratory Department, Our Lady of Lourdes Hospital, Drogheda, Co. Louth

Background: Medical oxygen is one of the most commonly used drugs in acute care settings. Inadequate prescribing is common, as shown in a UK national audit where only 57.5% of patients had a valid prescription.[1] We undertook a quality improvement project (QIP) aimed at achieving enhanced oxygen prescription in our hospital in line with Irish thoracic society guidelines. [2]
Methods: An initial snapshot audit of oxygen prescription was undertaken in July 2022 for all wards, reviewing documentation of SpO2, flow rate, target SpO2, delivery system and duration/review date. Interventions were undertaken following audit cycle 1 completion. Audit cycle 2 was completed following a second snapshot audit in April 2023.
Results: In audit cycle 1 only 9% (4/43) of patients had oxygen prescribed on the drug Kardex. Intervention included a redesign of the oxygen prescription section on the drug Kardex and education sessions for both medical and nursing staff. In audit cycle 2, 87% (41/47) had oxygen prescribed in the drug kardex.
Conclusion: We achieved our goal of enhancing oxygen prescription within our hospital with a 78% improvement in Audit cycle 2. Further work is needed to maintain this achievement with ongoing education and annual re-audit.

1. O'Driscoll, R. British Thoracic Society Emergency Oxygen Audit Report National Audit Period: 15 August – 1 November 2015. United Kingdom. 2016.
2. Irish Thoracic Society. Irish Guidelines on the Administration of Oxygen Therapy in the Acute Clinical Setting in Adults 2017. Ireland. 2017.

7.16 O2 - What Should We Do? Oxygen Clinic, Nenagh Hospital, ULHG – Evaluation, Audit and Improvement Plan

Olivia Quinn[1], Aidan O'Brien[1], Brian Casserly[1], Rizwan Aziz[1], Catherine Quinn[1]. [1]University Limerick Hospital Group

Background: Currently in Ireland there are approximately ten thousand people living with some form of home oxygen therapy (ITS, 2015). A nationwide review in 2019, found 38% of Irish hospitals had a dedicated oxygen assessment clinic, while 62% did not. A pilot oxygen clinic was set up in the Medical Assessment Unit (MAU), Nenagh Hospital, in 2021.
The purpose of this clinic was:

- To provide a structured, multidisciplinary team approach to managing patients who require oxygen therapy, assessment and review

- To move oxygen assessments from the general medical respiratory clinics, to a specific oxygen clinic
- To provide onsite medical support for the Respiratory Clinical Nurse Specialist (CNS) in completing oxygen assessments
- To reduce cost implications associated with oxygen prescriptions
- To ensure oxygen prescriptions have a timely follow up
- To support the right oxygen prescription for the right patient
- To improve patient satisfaction
- To complete oxygen assessments in a standardised format based on the Irish Guidelines on Long Term Oxygen Therapy (LTOT) in Adults (ITS, 2015).

Method: An audit and improvement plan was completed in 2022
Results: Oxygen assessments supported right drug, right patient, right time, which also proved cost effective. Patient reviews were completed within 8-12 weeks as recommended. Patient satisfaction was extremely positive.
Conclusions: Improved compliance with international guidelines was demonstrated, while areas of improvement were also highlighted.

Key words: oxygen therapy, respiratory clinic

Disclosures:

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

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2. Irish Thoracic Society (2015) Irish Guidelines on Long Term Oxygen Therapy (LTOT) in Adults
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7.17 Long Term Non-Invasive Ventilation (NIV) Service

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Background: Long-term NIV in chronic obstructive pulmonary disease (COPD) is both an established and increasingly used treatment option for patients with chronic hypercapnic respiratory failure. It has been shown to have both benefits in mortality and a trend towards reduction in re hospitalization particularly at higher inspiratory pressures (1).
Methods: A single centre retrospective cohort study was conducted to review all patients commenced on long-term NIV between the periods of Feb 2014 to June 2023. Data collected included patient demographics, lung function, arterial blood gas measurements, ventilator settings, outpatient (OPD) review frequency, hospitalisations, mortality and compliance.
Results: A total of 32 patients were commenced on long-term home NIV. 44% (n=14) male vs 56% female (n=20), with a median age of 65 years vs 66 years respectively. Utilization of home NIV significantly increased over the preceding 3 years with 72% (N=23) commencing post 2020 and 41% (N=13) of all patients initiated in the last 8 months. More than 50% of patients had no respiratory OPD follow-up.
Conclusion: In response to our findings we aim to establish a ventilation specific clinic for this cohort of patients. These NIV clinics will aim to optimize pressure settings and decrease treatment non-compliance leading to a reduction in both symptom burden and need for hospitalisation.

Keywords NIV, clinics, compliance.

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

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7.18 Is the O_2 OK?

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Background: The British Thoracic Society (BTS) Home Oxygen Guideline (2015) provides a detailed evidence-based guidance for the use of home oxygen for patients out of hospital. The majority of evidence comes from the use of oxygen in patients with chronic obstructive pulmonary disease. The guideline makes recommendations for assessment, follow-up protocols, and risk assessments. The Irish Guidelines on Long Term Oxygen Therapy (LTOT) in Adults (2015) offer a standardised guide that can be adopted in all areas where home oxygen is being provided. They articulate most recent evidence from the BTS Guideline.
A review of Irish services (O'Donnell et al,2019) found 62% (n=20) had **no** dedicated oxygen assessment and review (OAR) clinic. Of the 38% (n=12) with OAR clinics, criteria for initial assessment and oxygen prescription were met. However, titration of oxygen and general follow up did not meet guideline recommendations. Centres without oxygen clinics generally prescribed oxygen following an in-patient stay (78%) however unable to provide any follow up for these patients.
The National Clinical Guideline published by the Department of Health in March 2021 "*Recommendation 15: Oxygen therapy provision*" states;
Oxygen (greater than 15 hours per day) to patients with chronic respiratory failure has been shown to increase survival in patients with severe resting hypoxemia (a pO2 < 7.3kPa).
Methods/Results: A retrospective audit of 216 patients seen in OAR (Oxygen Assessment and Review) clinic from January 2022 to July 2023 examined the number of patients referred for Long Term Oxygen Therapy (LTOT) assessment and review post recent hospital discharge following an exacerbation.
15.27% (n=33) of patients were assessed following a recent discharge. The average pO2 on discharge from hospital was 7.1kPa. The average pO2 on assessment at OAR (6 weeks post exacerbation and discharge) was 10.1kPa.
63.63% (n=21) patients were discharged from the OAR with no requirement for LTOT in alignment with The National Clinical Guideline recommendations.
Conclusion: The goal of oxygen therapy is to achieve adequate tissue oxygenation using the lowest possible FiO2 in severe hypoxemic patients (pO2 <7.3kPa). While many patients can require LTOT following an exacerbation it is paramount to ensure they are followed up and guided in its correct use.

OAR Clinics provide evidenced based care in correct prescribing, assessment and follow up which is safe, cost effective and optimal for patients.

Keywords: Oxygen Assessment and Review Clinic, Long Term Oxygen Therapy, Ambulatory Oxygen Therapy

Disclosures:

Funding: No funding provided

Conflict of interest: No conflicts of interest to declare

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References:

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C. O'Donnell, P. Davis, T. McDonnell, (2019) Oxygen Therapy in Ireland: A Nationwide Review of Delivery, Monitoring and Cost Implications https://pubmed.ncbi.nlm.nih.gov/31411015/
Irish Thoracic Society (ITS) 2015 Irish guidelines on long term oxygen therapy (LTOT) in adults https://anail.ie/wp-content/uploads/2016/11/Irish-LTOT-Guidelines

7.19 Long term savings from short term oxygen assessments

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Background: Data suggests that there are large numbers of patients on Long Term Oxygen Therapy (LTOT) where it is not clinically indicated [1]. Oxygen therapy is expensive, with an estimated annual national cost of €9 million [1]. In March 2023 a Respiratory Integrated Care (RIC), Physiotherapy-Led Oxygen Assessment and Review Clinic (OARC) was established in Carlow/ Kilkenny. We aimed to quantify the cost saving impact of this clinic by withdrawing oxygen therapy no longer clinically indicated.
Methods: We collected data on the interventions implemented in our OARC including initiation, adjustment and withdrawal of oxygen therapy. We contacted Irish LTOT providers to establish oxygen therapy costs. Based on these findings we calculated the cost saving implications.
Results: We reviewed 18 patients in the first 5 months. As per national guidelines 8 (44%) of patients no longer met criteria for LTOT and had it withdrawn. The average cost of LTOT per patient per month is €203. Our clinic resulted in a monthly cost saving of €1,624 thus far with a prospective annual saving of €19,488.
Conclusions: RIC OARCs have the potential to identify unnecessary LTOT. In addition to maintaining best clinical practice they confer cost saving benefits. Further research is required.

Keywords: Long Term Oxygen Therapy, Oxygen Assessment and Review Clinic, cost saving

Disclosures: None.

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

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Corresponding Author: Orla Threadgold, Chronic Disease Management Hub Carlow/Kilkenny, South East Community Healthcare, James' Green, Kilkenny

7.20 Staff experience survey on the impact of inhaler education on acute medical wards in Cork University Hospital- a quality improvement initiative.

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Background: Inhaled bronchodilators and inhaled steroid medications are important components in the management of asthma and chronic obstructive pulmonary disease. A recent systematic review of inhaler technique studies in patients has reported frequent error rates with no apparent improvement over a 40 year period, and another systematic review demonstrated that all subgroups of health care professionals (including physicians, respiratory therapists, nurses and pharmacists) also have high error rates in the use of these devices which has been known since 1984.
Objective: Perform a retrospective review on staff experience on the impact of inhaler education on wards and improve standards of care.
Methods: A 10-item dichotomous questionnaire was developed to understand the staff experiences on the inhaler training provided to them with an open ended question to allow for quality improvement ideas and feedback. Staffs who attended the training completed the questionnaire.
Results: All staff felt they were confident and had a better understanding of administering inhalers after attending inhaler education. 95% of staff felt that not having enough time/knowledge/confidence were the main barriers in administering prescribed inhalers for their patients. 82% of staff felt that conducting inhaler technique competency assessment and providing in-service education 6-monthly, would help in improving their clinical practice.
Conclusion: A single effective educational session on inhaler technique can significantly improve health professionals long-term ability to demonstrate these skills and improve quality in practice.

Funding: *This study has not received any funding.*

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

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7.21 A Review and Audit of Nebulised therapy within the UHL Hospital Group

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Aim: To explore the management of nebulised therapy while an inpatient in the UHL Hospital Group
Method: A review of patient medication kardex while an inpatient in the UHL Hospital Group
Background: Drug delivery via inhalation is the mainstay of treatment for many respiratory diseases. There are a number of devices and delivery methods available for the administration of specific drugs, which include metered-dose inhalers (MDIs), breath-actuated inhalers and dry powder inhalers.
Using an MDI-spacer for the administration of bronchodilators and inhaled corticosteroids to inpatients has led to a reduction in treatment preparation and delivery time and enabled early administration by the healthcare professional in addition to a potential reduction in medication cost
It is recommended that bronchodilators and steroids are administered separately. It is recommended that inhaled steroids should preferably be given by hand-held inhaler devices (using a spacer device) because of lack of evidence for any advantage from the nebulised route which is more time consuming and more expensive.

Findings: A total of 45 medication kardex's were reviewed within the UHLG. Almost half of the patients (44%) were capable of using an MDI and spacer instead of a compressor, while only 28% (n=13) of the patients suitability to step down to inhaled therapy were assessed when their symptoms improved. 87% of the patients had their medication administered using a compressor as compared to to piped oxygen and 84% (n=26) had their bronchodilator and steroid administered separately. Only 4 % (n=2) had their nebuliser unit disposed of after each use.

Recommendations: Education of healthcare professionals is an integral component in assessing patients requiring nebulisation in AMAU/ED and inpatient wards.
Referral to the respiratory team will show a reduction in nebulised therapy.
Written information should be provided to all patients being discharged on nebulised therapy .

Poster Session 8: COPD

8.1 Establishing Diurnal Variation of Inflammatory Markers in Genetic COPD

Lameese Alhaddah[3,4], Emma Leacy[3,4], Ronan Heeney[2,4], Tomás P. Carroll[2,3,4], Mark Murphy[3,4], Cedric Gunaratnam[1,4], Annie Curtis3, Gerry McElvaney[1,2,4]

1. School of Medicine, Royal College of Surgeons in Ireland, Dublin, Ireland 2. Alpha-1 Foundation Ireland, RCSI ERC, Beaumont Hospital, Dublin 9, Ireland, 3. School of Pharmacy and Biomolecular Sciences, Royal College of Surgeons in Ireland, Dublin, Ireland 4. Beaumont Hospital, Dublin 9, Ireland

Background: Genetic COPD is characterised by Apha-1 antitrypsin deficiency (AATD). The most common clinical manifestations of severe AATD is emphysema, cirrhosis and liver cancer, and panniculitis. The circadian rhythm is a 24-hour cycle of daily oscillations in physiology. These circadian variations have been characterised in common acute phase reactants in healthy humans but not yet investigated in COPD.
Methods: Heparinised venous peripheral blood was obtained at 8:00, 13:00, and 20:00 from stable AATD patients, and healthy MM controls. CRP and FBC analysis was performed with whole blood, and cytokines analysis from plasma and monocyte supernatant with and without LPS stimulation at three different time points using ELISA. Our panel was comprised of TNF- α Soluble IL-6 receptor (sIL-6R), IL-10, TNF-α, Soluble TNF receptor (sTNFR1), IL-β, IL-17, IL-10.
Results: White cell differentiation shows statistically significant circadian changes only in severe AATD deficiency (ZZ phenotype) with a rise in neutrophils, monocytes, and lymphocytes, in the evening (p= 0.01) (table.1). In monocyte supernatants, IL-β shows the most increase in LPS response in each time point in ZZ patients. Clock genes show a circadian pattern of expression in the MM cohort that collaborates with previous studies[1]. These patterns were partially lost in the ZZ group.
Conclusion: Neutrophils, lymphocytes and monocytes increase in the evening in ZZ AATD compared to other groups. Plasma cytokine expression can subtly vary between MM, MZ and ZZ groups.

Keywords: Alpha-1 Antitrypsin, COPD, Circadian Rhythm

Disclosures:

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

Corresponding Author: Lameese, A S A, Alhaddah, https://orcid.org/0000-0002-4249-3654

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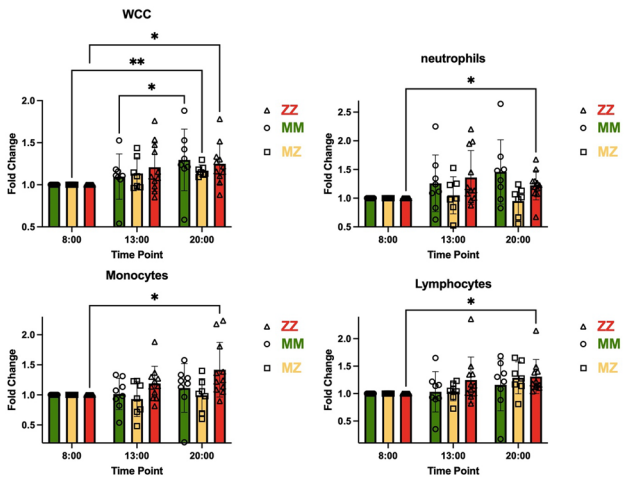
Figure 1. Full blood count analysis with automated haematology analyser demonstrates circadian variation in total white cell count in all cohorts (MM, MZ, ZZ). Cell differentiation shows statistically significant circadian changes only in the ZZ cohort with rise in neutrophils, Monocytes, and lymphocytes in the evening (p= 0.01).



8.2 Serum Eosinophils in Patients with Chronic Obstructive Pulmonary Disease (COPD) Attending Our Lady of Lourdes Hospital (OLOL)

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Introduction: COPD eosinophilic phenotype (COPDEP) have increased risk of exacerbations despite on triple therapy (LAMA/LABA/ICS)[1]. These patients may respond to anti-IL5 and are currently screened for the MATINEE trial. We perform a study to determine the prevalence of COPDEP in patients on triple therapy.
Method: Patients with a diagnosis of COPD on triple therapy attending scheduled respiratory services were screened for COPDEP defined as a peripheral-blood differential eosinophil count of 2%. COPD-asthma overlap syndrome were excluded. A retrospective chart and electronic records (NIMIS) were performed.
Results: 187 individuals with a diagnosis of COPD and on triple therapy attended scheduled respiratory services from July 2022 to December 2022. 32 individuals (17%) had increased blood eosinophil count of 2% within the past 12 months. 29 individuals (91%) had at least two moderate exacerbations and/or at least one severe exacerbation which stratify them as advanced COPD (GOLD E). The mean FEV1 and FEV1/FVC ratio were 51±19 and 62±4 percent respectively. 9 individuals (28%) were on long-term oxygen therapy. 12 patients were deemed eligible to the MATINEE clinical trial and referred.
Conclusion: The reported prevalence of COPDEP attending scheduled respiratory services is lower compared to the reported prevalence of 40%. However, there is a timely need to identify COPDEP to ensure these patients are identified as high risk and may benefit from clinical trial enrolment.

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Conflict of Interest: *None to disclose*

8.3 Carbon Emissions, Sedentary Travel Time and Mode of Transport to a Community-Based Multi-Site Pulmonary Rehab Program

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Background: Ireland is a major emitter of healthcare carbon emissions. Pulmonary Rehabilitation (PR) is gold standard treatment for patients with chronic respiratory disease. Transport is a common barrier to PR attendance. Reduced activity levels and air pollution are factors in self-management of lung disease. Since May 2022, PR is available in five South Tipperary community-based locations compared to only hospital-based PR in Clonmel.
Methods: Individual patient transport modes to community-based PR programs was recorded. Google maps calculated distance and travel time from patients' location to the previous hospital-based PR. The NHS Carbon Calculator calculated carbon emissions of a standard diesel car travelling from the patients' location to the previous hospital-based PR.
Results: Patients attending one hospital based PR class in Clonmel travelled 32-73km or 0.5-1.3hrs, Table 1. Community-based PR patients (n=147) saved 83,228.8 kilometres travelling, 1,470.4 hours of sedentary travel time and avoided 15,174.5 kg CO2e being released Figure 1 and 2. Community locations enabled 13.6% (n=20) to use active travel, 3.4% (n=5) carpooled and 21.1% (n=31) were driven, Figure 3.
Conclusions: This South Tipperary community-based PR program demonstrates significant reductions in carbon emissions and sedentary travel time; increases the opportunity for active travel and reduces transport as a barrier.

Keywords: Pulmonary rehabilitation, carbon emissions, sedentary travel time, active travel

Disclosures:

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

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Table 1. Distance and Travel Time for one Participant to Attend one Hospital-Based PR Class in Clonmel

	Distance (return journey) km	Travel time hrs
Cahir	32.2	0.5
Tipp Town	71.6	1.2
Cashel	49.4	0.9

	Distance (return journey) km	Travel time hrs
Carrick	45.2	0.9
Ballingarry	73.4	1.3

Figure 1. A comparison of Sedentary Travel Time Return Journey from New Community-Based PR Locations to Previous Hospital-Based PR Program in Clonmel

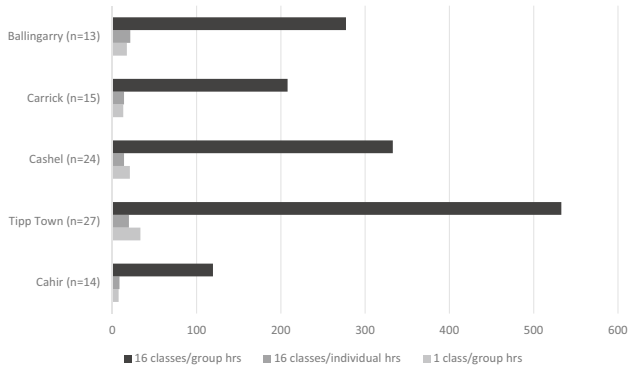


Figure 2. Diesel Car Return Journey Emissions from New Community-Based PR Locations to Previous Hospital-Based PR Program in Clonmel

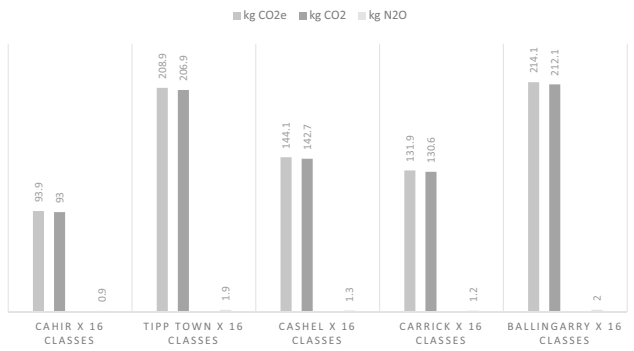
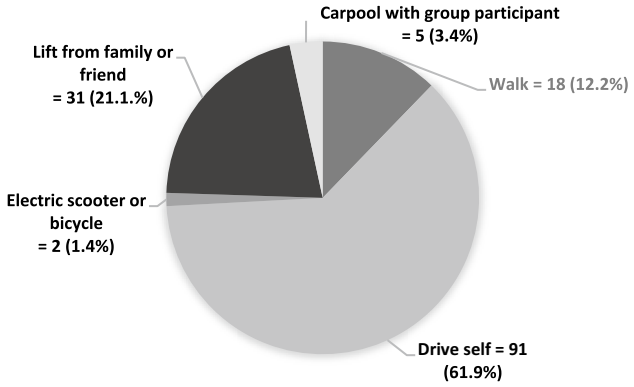


Figure 3. Transport Mode of Patients to Community-Based PR



8.4 Pre and Post Pandemic Exercise Capacity and Symptom Burden in Chronic Obstructive Pulmonary Disease

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[2]Department of Respiratory Medicine, St Vincent's University Hospital, Elm Park, Dublin 4

Background: During the COVID-19 pandemic physical and social distancing (lockdowns and cocooning) were recommended for high-risk groups including those with chronic obstructive pulmonary disease (COPD) to reduce infection risk. However, isolation can have profound effects on physical activity and mental health and may result in deconditioning.
Methods: To assess the impact of cocooning in COPD, we examined exercise capacity (six-minute walk test (6MWT) distance), symptom burden, (COPD Assessment Test (CAT)), and the Hospital Anxiety and Depression Scale (HADS) in COPD patients referred for (pulmonary rehabilitation) PR before and after the onset of the COVID-19 pandemic.
Results: A total of 160 patients with COPD undergoing assessment for PR were included, with n=118 undergoing assessment in 2018 and 2019 (pre-pandemic) and n=42 undergoing assessment in 2020 and 2021 (during/post pandemic onset). Unexpectedly, the mean 6MWT distance was significant higher in the post-pandemic group ($p<0.05$). However, this cohort reported a significantly higher symptom burden ($p<0.05$) *versus* their pre-pandemic counterparts and exhibited as a trend towards HADS score ($p>0.05$).
Conclusion: Though no reduction in exercise capacity was observed, COPD patients attending for PR assessment after the COVID-19 pandemic onset were significantly more symptomatic, with higher anxiety and depression scores than prior to the pandemic.

Funding: No external funding was received.

Conflict of Interest: The authors have no conflict of interest to declare

8.5 Mapping behaviour change interventions for physical activity behaviour in chronic obstructive pulmonary disease to the Theoretical Domains Framework: a systematic review and meta-analysis

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[1]University College Cork, Cork, Ireland, [2]Trinity College Dublin, Dublin, Ireland, [3]Mercy University Hospital and University College Cork, Cork, Ireland.

Background: Behaviour change interventions could help to improve physical inactivity in chronic obstructive pulmonary disease (COPD) (1). The aim of this systematic review and meta-analysis was to identify, analyse and synthesise behaviour change interventions for physical activity in COPD, which were subsequently mapped to the Theoretical Domains Framework (TDF) (2).
Methods: Nine databases were searched and data was extracted from included studies. Physical activity interventions were mapped to Michie's Behaviour Change Taxonomy (3) and the TDF and synthesized using meta-analysis. Bias, quality and certainty of the evidence were assessed utilizing Cochrane risk of bias tool (4) and GRADE criteria (5).

Results: This systematic review of 12 randomized controlled trials (n=1211) identified counselling, step-count monitoring, social support and goal-setting as the most frequently utilized interventions to promote physical activity in people with COPD. There were some significant short-term improvements in physical activity when interventions included domains of goals, behaviour regulation and social influences. Meta-analysis revealed no significant long-term impact on steps-per-day (SMD 0.16, 95% CI -0.03, 0.36; p=0.10).
Conclusions: There is some evidence that behaviour change interventions incorporating domains of goals, behaviour regulation or social influences may improve physical activity behaviour in COPD, although changes were not sustained in the longer term. Optimal behaviour change interventions to sustain long term changes in physical activity in people with COPD are not known.

Keywords: Chronic obstructive pulmonary disease, physical activity, behaviour change

Disclosures:

Funding: This study is funded by University College Cork as part of CH's PhD.

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

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8.6 A review of Azithromycin Prophylaxis; Appropriateness of Initial Prescription and Safety Monitoring

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[1]Respiratory Integrated Care, South Tipperary Integrated Care Programme for Chronic Disease Management.
[2]St. Luke's Hospital, Kilkenny.
[3]Respiratory Integrated Care, St. Luke's Hospital, Kilkenny & Carlow/Kilkenny Integrated Care Programme for Chronic Disease Management.

Background: Azithromycin prophylaxis in appropriately selected Respiratory patients reduces exacerbation frequency [1]. This quality improvement initiative reviews patients receiving prophylactic Azithromycin. This assesses if initial azithromycin prescriptions were according to guidelines and, determines if follow-up measures were taken ensuring no adverse side effects (ASE) or antimicrobial resistance (AMR).
Methods: Appropriately, commenced patients, who demonstrated exacerbation reduction, were enrolled on to an on-going safety-monitoring pathway. If azithromycin was inappropriately commenced, if no improvement was noted, or if ASE/AMR were identified, the patient was enrolled onto a structured withdrawal pathway.
Results: Initial data suggests high incidence of inappropriately commenced azithromycin with a discontinuation rate to date, of 63%. Total ASE incidence is high with QTC prolongation, deranged liver function tests and potential drug interactions existing in both groups. AMR has not been identified to date. No deterioration of chest health has been observed in those who have had their azithromycin discontinued.
Conclusions: This initiative highlights high levels of inappropriate azithromycin prescription and lack of safety measures. We suggest a formal ongoing Advanced Nurse Practitioner led azithromycin clinic to monitor patients commenced on azithromycin. Our audit has demonstrated that this evaluation and discontinuation is safe and has prevented some potentially adverse events.

Keywords: COPD, Azithromycin

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

References: [1] https://pubmed.ncbi.nlm.nih.gov/24746000/

8.7 Steroid Prescribing Practices in Acute COPD Exacerbations–An Audit of a Level 3 Irish Hospital

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Background: Glucocorticoid prescription improves lung function and recovery time in acute COPD exacerbations (1). Guidelines suggest 5-day treatment with systemic glucocorticoids is non-inferior to longer durations, and treatment with oral prednisolone versus intravenous administration is equally effective (1,2).
Methods: We conducted a retrospective chart review assessing all patients in Wexford General Hospital admitted with acute COPD exacerbations between January and February 2023 to analyse concordance with these recommendations.
Results: Of the 38 patients admitted, 20 (52.6%) received oral prednisolone. The duration of treatment ranged between 2 and 14 days. Only 7 (35%) received the recommended 5 days of treatment. 13 patients (34.2%) were prescribed intravenous hydrocortisone - duration varied between 2 and 9 days. Only 1 patient had a documented swallowing hazard as their indication for intravenous versus oral steroid treatment. 22 patients (57.8%) patients received a stat dose of intravenous hydrocortisone in the Emergency Department.
Conclusions: Steroid prescription was highly variable between clinicians in our centre with regards to both route of steroid administration and duration of treatment. Consideration should be given to the development of hospital guidelines and improved staff awareness on appropriate steroid prescribing to reduce the burden of longer glucocorticoid exposure.

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

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References:

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Table 1: Types, doses, and route of steroids prescribed as inpatient until discharge.

Types of steroids	Duration (days)														Total patients
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Prednisolone 30mg	0	0	0	1	6	1	0	2	0	2	0	0	1	0	13
Prednisolone 40mg	0	2	0	2	1	0	2	0	0	0	0	0	0	0	7
IV hydrocortisone	0	3	1	0	1	3	2	0	1	0	0	0	0	1	12
No regular steroids															4
Combination prednisolone /hydrocortisone	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
															38

Table 2: Doses and frequency of hydrocortisone prescribed as inpatient

Doses and frequency of hydrocortisone	Number of patients
IV Hydrocortisone 100mg OD	1
IV Hydrocortisone 100mg BD	1
IV Hydrocortisone 100mg TDS	5
IV Hydrocortisone 100mg QDS	7
Total	14

8.8 Does an information talk prior to Pulmonary Rehabilitation improve completion rate?

[1]Clodagh O'Meara, [1]Majella O'Reilly, [1]Amy Anderson, [1,3]Abirami Subramaniam, [2,4] Stanley DW Miller

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Background: One systematic review reported that the number of Pulmonary Rehabilitation (PR) drop-outs following pre-assessment ranged from 9.7% to 31.8% (1). Reasons include limited understanding and high symptom burden resulting in a belief that PR is of limited benefit (2). In an attempt to improve completion rates we introduced an information talk on PR prior to enrolment.
Method: This is a retrospective review of the Respiratory Integrated Care (RIC) PR database for the Dublin North West and Dublin North Central Hubs between April 2022 and July 2023. Data analysed included demographics, source of referral, diagnosis, disease severity, comorbidities and completion rates. Completion rate was defined as minimum of 50% programme attendance with post PR assessment done.
Results: Sixty-five patients attended our PR information talk; majority were COPD patients referred from acute hospital and RIC teams. We observed completion rates of 72% for those who attended versus 46% for those who did not attend the PR information talk.
Conclusion: Our data indicates that PR completion rates increased with the additional PR information talk prior to enrolment. Continuation of this educational talk is warranted as higher level engagement in PR is a proven effective intervention for patients with chronic respiratory disease.

Key Words: pulmonary rehabilitation (PR)

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

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8.9 Can Pulmonary Rehabilitation (PR) Resolve Sarcopenia in patients with Chronic Lung Disease?

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[1]Integrated Care Programme Chronic Disease, Ballinasloe Ambulatory Care Hub, Community Healthcare West, St Brigid's Campus, Ballinasloe, Co. Galway

Background: Sarcopenia is a disorder involving the loss of skeletal muscle mass and function that commonly occurs with advancing age along with with a number of chronic health conditions. There is higher prevalence of sarcopenia in COPD patients. Resistance exercise and protein supplementation are the treatment for sarcopenia. The aim of this study is to demonstrate whether an 8 week PR programme resolves sarcopenia in patients with chronic lung disease.
Methods: 22 patients participated in an 8 week PR programme (Table 1). As part of the PR pre- and post-assessments hand grip strength was measured using a hand grip dynamometer to assess for sarcopenia. 6 patients were diagnosed with sarcopenia (Table 2).
Results:
By the end of the programme 5 out of 6 patients had resolution of their sarcopenia.
Conclusions: This study highlights that 86% of the patients had resolution of their sarcopenia following an 8 week programme. All COPD patients had full resolution of their sarcopenia. Hand grip strength slightly improved for the patient with ACOS but PR didn't resolve their sarcopenia. No patients with asthma presented with sarcopenia prior to commencing PR.

Diagnosis	Age range	Gender	
		Male	Female
COPD	60-83	5	11
Asthma	52-65	0	3
ACOS	47-72	2	1

Table 1. Age range and gender of patients.

Gender	Diagnosis	Pre-Assessment (lbs) Men <59.5Lb Women< 35Lb	Post-Assessment (lbs) Men <59.5Lb Women< 35Lb
Female	COPD	24	45
Female	COPD	30	35
Female	COPD	21	45
Female	COPD	28	60
Male	COPD	58	60
Male	ACOS	35	38

Table 2. Pre- and post-assessment handgrip strength measurements of the sarcopenic patients.

Keywords: Chronic Lung Disease, Sarcopenia, Pulmonary Rehabilitation

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

8.10 An Audit on Compliance with COPD Guidelines in Midlands Regional Hospital, Tullamore

Eleanor Cronin [1], Anna Winifred Hayes [1], Hannah Casey [1], Chithra Varghese [1]

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COPD represents a significant burden on our health service and is responsible for more deaths than any non-respiratory cancer. GOLD (2023) advises that forced spirometry is mandatory to establish a diagnosis of COPD. We aimed to assess compliance with GOLD and BTS guidelines in our institution.
A retrospective review was carried out of patients admitted in 2022 with a HIPE coded diagnosis of AECOPD. A chart review was carried out on 20 patients and information gathered on a) background history, b) assessments and investigations, c) initial management and d) management on discharge. A further 177 patients were reviewed specifically to ascertain if they had ever had PFTs.
Of the 197 patients, 23% had ever had Spirometry to establish a diagnosis of COPD. 55% of patients were initially placed on IV hydrocortisone for a median of 4 days. The median cumulative steroid dose was 275mg prednisolone equivalent. 55% of patients were treated with IV antibiotics. 65% of patients were reviewed by the Respiratory CNS prior to discharge. 0 patient were referred for pulmonary rehab on discharge.
This audit demonstrates several areas for improvement, particularly with respect to the high frequency of IV steroid use in AECOPD which we plan to address with education sessions. This audit also demonstrates the need for an on-site PFT service in MRHT.

8.11 How pulmonary rehabilitation influences Frailty as measured using the Clinical Frailty Scale (CFS)

Niamh Duignan[1], Fergal Moore[1], Eoghan O' Regan[1], Ciara Sherlock[1], Philippa Needham[1], Arun Joseph[1], Sinead Walsh[1]

[1]ICPCD Respiratory, Galway City Integrated Care Hub, Galway, Ireland.

Background: Frailty is a state of increased vulnerability as a result of decreased reserve and function of multiple body systems with age, which compromise the ability to cope with acute stressors (Alshibani 2022). The Clinical Frailty Scale (CFS) is a 9-point scale that quantifies frailty based on function in individual patients.
Aims & Objectives: 1.To determine the prevalence of frailty in COPD and Asthma patients referred to Community Pulmonary Rehabilitation (PR). 2. To examine the impact of an 8- week PR programme on frailty using the CFS.
Method: 41 patients with COPD and Asthma were assessed for a community PR programme. Mean age 73.9 years [SD 7.6], mean mMRC Dyspnoea score 2.27 [SD 1.0], mean 6 minute walk test (6MWT) distance 340 metres [SD 113].The CFS was used to screen for frailty and was completed on each patient at the initial PR assessment and on conclusion of the programme.
Results: 85.5% of patients were affected by frailty.27/41 (66%) completed a programme. 52% of patients improved their CFS. Mean Improvement: 1.07 [SD 0.27].
Conclusion: An 8-week community PR programme significantly reduces frailty levels in COPD and Asthma patients.

Keywords: Clinical frailty scale, Community Pulmonary rehabilitation

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

References: Alshibani, A., Coats, T., Maynou, L. *et al.* A comparison between the clinical frailty scale and the hospital frailty risk score to risk stratify older people with emergency care needs. *BMC Emerg Med* **22**, 171 (2022). https://doi.org/10.1186/s12873-022-00730-5

8.12 A new initiative: Progressive Resistance Training (PRT) in patients with Chronic Obstructive Pulmonary Disease (COPD) in Pulmonary Rehabilitation (PR) exercise class

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[1]Physiotherapy Department, Tallaght University Hospital, [2] COPD Outreach, Tallaght University Hospital

PRT provides a training modality for increasing peripheral muscle strength in COPD[1]. The increase in muscle strength obtained after resistance training is higher than that obtained after endurance training[2]. PRT evokes less dyspnoea during exercise, thereby making it easier to tolerate than endurance training[2]. Studies demonstrate 20-30% reduction in quadriceps strength in patients with COPD compared with healthy subjects[3]. This reduction in quadriceps strength contributes significantly to exercise intolerance in COPD[3]. Results of 16 participants were analysed post PR. They showed that only 50% of participants achieved the minimal clinically important improvement (MCID) in their 1 minute STS, 69% achieved the MCID in their COPD Assessment Test and 44% achieved the MCID in the Modified Medical Research Council Dyspnoea scale. The previous design of the PR was endurance based primarily using time for progression for each exercise depending on how the patient was feeling. It was unspecific and non-prescriptive for strength training. It is hoped that with an additional strength focused assessment and PRT focused exercise prescription using sets and reps, alongside the Rating of Perceived Exertion scale, that patients will increase strength and improve outcomes overall. This 8 week pilot is ongoing and results will be analysed thereafter.

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Conflict of Interest: None to declare.

8.13 Alpha-1 Antitrypsin Deficiency: Evaluating the Effectiveness of Health-Related Quality of Life Data in Tracking Disease Severity and Progression

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[1]Royal College of Surgeons in Ireland, Dublin, Ireland; [2]Department of Medicine, Irish Centre for Genetic Lung Disease, Royal College of Surgeons in Ireland, Dublin, Ireland; [3]National Centre for Expertise in AATD, Beaumont Hospital, Dublin, Ireland.

Background: Alpha-1 antitrypsin deficiency (AATD) is an inherited disorder that often causes lung disease, particularly COPD [1]. AATD significantly impacts health-related quality of life (HRQoL) [2]. While spirometry and radiology are commonly used to assess disease severity in AATD [3], HRQoL measures are often overlooked. This project aimed to compare objective clinical investigations with HRQoL measures in determining disease severity and progression.
Methods: Patients with confirmed ZZ, SZ and MZ phenotypes (n=516) enrolled in the national AATD registry were selected. A cross-sectional analysis and a longitudinal study were conducted, comparing demographics, forced expiratory volume in one second (FEV_1), carbon monoxide diffusing capacity (DLCO), and the St. George's Respiratory Questionnaire (SGRQ).
Results: SGRQ mean total scores were highest in ZZ patients for active, past and never smokers when compared to SZ and MZ (table 1). SGRQ scores significantly correlated with FEV_1% predicted ($r = -0.3272$, $p=0.0069$) and DLCO% predicted ($r = -0.4818$, $p<0.001$) (table 2). Patients receiving augmentation therapy have a mean SGRQ score change of -15.5 over a mean time of 7.39 years (figure 1).
Conclusion: Subjective HRQoL measures can complement objective clinical assessments in assessing lung disease severity in AATD.

Keywords: Alpha-1 antitrypsin deficiency (AATD), chronic obstructive pulmonary disease (COPD), health-related quality of life (HRQoL), augmentation therapy.

Disclosures:

Funding: This study was not funded.

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

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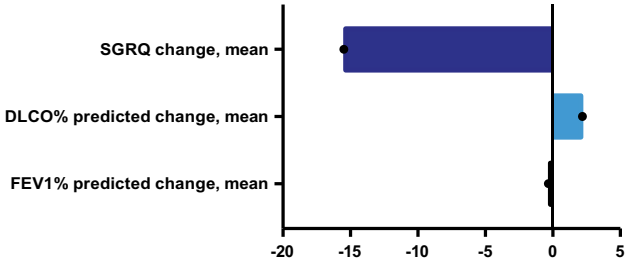
Table 1. Most recent spirometry and QoL results for the 3 phenotypes classified by smoking history.

k	Active smokers			Past smokers			Never smokers			
	ZZ	SZ	MZ	ZZ	SZ	MZ	ZZ	SZ	MZ	P-value
n	9	9	22	134	54	81	85	55	67	
Pack-years, mean	16.82	20.92	49.38	20.2	24.34	26.24	n/a	n/a	n/a	0.1129
Most recent CAT score, mean	22	18	10	16.19	15.35	13.13	10.58	3.63	13.67	0.0175
Most recent mMRC score, mean	1.75	3	1	1.64	1.45	1	0.54	0.23	0.54	<0.0001
SGRQ total score, mean	47.75	12	n/a	32.13	28.18	10.75	20.95	10.13	8.25	0.021
Most recent FEV_1/FVC, mean	0.64	0.65	0.60	0.49	0.67	0.66	0.69	0.78	0.74	<0.0001
Most recent FEV_1% predicted, mean	76.78	73.22	75.68	59.94	84.17	84.64	89.32	103.8	95.13	<0.0001
Most recent DLCO% predicted, mean	79.71	72	67.73	54.34	78.96	79.46	83.5	90.63	84.51	<0.0001

Table 2. Correlation analysis between SGRQ, subjective measures and PFTs.

Variables	Pearson correlation coefficient (compared with SGRQ)	*p*-value
Age, n=56	0.1027	0.4512
Pack-years, n=35	0.3582	0.0173
FEV_1% predicted, n=56	-0.3272	0.0069
DLCO% predicted, n=50	-0.4818	<0.0001
CAT scores, n=41	0.6049	<0.0001
mMRC scores, n=47	0.6417	<0.0001

Figure 1. Changes in SGRQ scores, DLCO% and FEV_1% predicted over a mean period of 7.39 years for patients receiving augmentation therapy.



8.14 Don't ignore the nonsense: Alpha-1 Antitrypsin Deficiency caused by null mutations

R.C. Heeney[1], O. Cahalane[2], I. Ferrarotti[3], S. Ottaviani[3], G. Kelly[1], C. Gunaratnam[1], N.G. McElvaney[1] and T.P. Carroll[1].

[1]Alpha-1 Foundation Ireland, RCSI Education & Research Centre, Beaumont Hospital, Dublin 9. [2]Department of Biochemistry, Beaumont Hospital, Dublin 9. [3]Department of Biochemistry and Clinical Genetics, University of Pavia, Italy.

BACKGROUND: AAT deficiency (AATD) is a hereditary disorder caused by mutations in the SERPINA1 gene, and can lead to COPD, liver, and skin disease. The most common harmful mutation is Z (Glu342Lys, rs28929474) but <200 other pathological variants exist. ATS/ERS guidelines advocate screening COPD, refractory asthma, cryptogenic liver disease and panniculitis cohorts, and first degree relatives of AATD patients.
METHODS: <24,000 individuals have been screened following ATS/ERS guidelines in the Irish national targeted detection programme. AAT is measured quantitatively and qualitatively by isoelectric focusing and by immune turbidimetry respectively. Rare mutations are identified by SERPINA1 sequencing.
RESULTS: We have identified 6 rare Null (Q0) mutations in 17 patients. These mutations include Q0bolton, Q0dublin, Q0porto, Q0cork, Q0amersfoort, Q0lisbon. Individuals with Null mutations presented with bronchiectasis, refractory asthma, and early onset COPD. Two of the mutations were completely novel.
CONCLUSION: Our findings highlight the importance of a comprehensive diagnostic approach to AATD that includes phenotyping, genotyping, and DNA sequencing to accurately identify rare and novel pathological mutations. The advantages of a correct diagnosis of

AATD are many, including pulmonary and liver surveillance, increased smoking cessation, specific treatments, family testing, and mitigation against occupational and environmental exposures.

CONFLICT OF INTEREST: The authors declare that they have no conflict of interest.

8.15 Implementation of Azithromycin Prophylaxis Guidance in Our Lady of Lourdes Hospital, Drogheda

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Background: This poster explores a quality improvement initiative on the use of prophylactic azithromycin at Our Lady of Lourdes Hospital (OLOLH). Azithromycin prophylaxis has been shown to decrease the frequency of exacerbations in patients with chronic lung disorders. Patients starting azithromycin prophylaxis should be carefully chosen and continuously monitored to get maximal benefit with the least risk.
Methods: Three hundred and nineteen COPD Outreach patient files who attend OLOLH were reviewed to assess trends in the use of Azithromycin prophylaxis in OLOLH. Thirty-three patients were on prophylactic Azithromycin. Three patient cases were randomly selected in April 2022 to assess the initiation and review trends with the use of the HSE azithromycin audit tool (HSE, 2022).
Results: 10% of COPD patients who attend the OLOLH respiratory service are on Azithromycin and require regular follow up. The audit result revealed that there is 100% compliance with an Azithromycin prophylaxis initiation review, however the completion of the follow-up risk benefit analysis which should be completed every six to 12 months is low.
Conclusions: The candidate ANP conducted an education session on Azithromycin prophylaxis guidance for respiratory team, developed an Azithromycin initiation and review check list sticker, patient information leaflet and an ANP lead Azithromycin prophylaxis review clinic.

Reference: HSE 2022 azithromycin-prohylaxis-audit-tool-2022-0307.pdf https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/safe-prescribing/azithromycin-prohylaxis-audit-tool-2022-03-07.pdf

Keywords: Azithromycin prophylaxis, chronic lung disorders, exacerbations, follow up.

Disclosures: N/A

Funding: N/A

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

8.16 Exploring Metal-Derived Therapeutics For Combating COPD Exacerbations

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With rising antimicrobial resistance challenging conventional antibiotic use, metal-derived drugs are potential alternatives, with their alternative and multi-modal mechanism of action. In this study, the antibacterial and anti-biofilm activity profiles of $\{[Cu(3,6,9\text{-tdda})(phen)_2]\cdot 3H_2O\cdot EtOH\}_n$ (Cu-tdda-phen), $\{[Mn(3,6,9\text{-tdda})(phen)_2]\cdot 3H_2O\cdot EtOH\}_n$ (Mn-tdda-phen) and $[Ag_2(3,6,9\text{-tdda})(phen)_4]\cdot EtOH$ (Ag-tdda-phen) (3,6,9-tdda = 3,6,9-trioxaundecanedioic acid; phen = 1,10-phenanthroline) was assessed against clinical *Haemophilus influenzae, Streptococcus pneumoniae* and *Pseudomonas aeruginosa* isolates from COPD patients. The metal-tdda-phen complexes demonstrated heightened activity in comparison to established antibiotics against clinical isolates in relation to planktonic growth, biofilm formation and established biofilms, with reductions in biofilm exopolysaccharide and extracellular DNA (eDNA), therefore suggesting these as targets. Metal-tdda-phen complexes were selectively toxic towards lung cancer (SKMES-1) and COPD (HBEC4 cells exposed to cigarette smoke extract) cell lines in comparison to normal cell line (HBEC4). The therapeutic potency of the metal-tdda-phen complexes was further assessed in an *in vivo* model using *Galleria mellonella* larvae challenged with the *P. aeruginosa* clinical isolates. The metal complexes were well tolerated by the *G. mellonella* and affected the host's immune response by stimulating immune cells (hemocytes) and enhancing the expression of immune-related peptides, transferrin (iron-binding protein) and IMPI (inducible metalloproteinase inhibitor). Therefore, this work highlights the antibacterial capabilities of metal-derived drugs both *in vitro* and in a pre-clinical *in vivo* model.

Disclosures:

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Conflict of Interest: AM.B. has received honoraria from Roche and AstraZeneca. AM.B. is president of Lung Cancer Europe (LuCE), which has received support from Amgen, AstraZeneca, Bayer, Blueprint Medicines, Bristol Myers Squibb, Boehringer Ingelheim, Daiichi-Sankyo, Lilly, Merck, MSD, Novartis, Pfizer, Regeneron, Roche, Sanofi, Takeda, Janssen, Novocure, and ThermoFisher.

8.17 Effectiveness of COPD Support Ireland-delivered exercise classes in maintaining symptoms and functional status

[1]Joan Johnston, [1,2]Ciara Hanrahan, [1]Tim McDonnell, [1,3]Breda Cushen.

[1]COPD Support Ireland, Dublin, Ireland; [2]Discipline of Physiotherapy, University College Cork, Cork, Ireland; [3]Department of Respiratory Medicine, Beaumont Hospital, Dublin, Ireland.

Background: The benefits of intensive exercise courses in COPD diminish over time. We examined the effectiveness of weekly exercise classes delivered by COPD Support Ireland (COPDSI) in maintaining symptoms and functional status.
Method: Participating COPDSI members completed Borg breathlessness score, CAT score, 1-minute sit-to-stand (STS) and 6-minute walk test (6mwt) assessments at 3-month intervals. The change in assessment results over time, and the proportion of participants who maintained or improved scores were established.
Results: Data from 273 participants from 23 COPDSI groups nationwide was examined. There was high symptom burden, mean CAT 18.5

(6.8) on first assessment. There was no significant change in mean symptom scores at 3- or 6-months. At 3-months, 69% had maintained or improved CAT and 44% at 6-months. 28% reported changes exceeding the MCID at both time points. Three-quarters had unchanged or improved Borg scores with 25% exceeding the MCID for improvement at both 3- and 6-months.
Functional status did improve; 6mwt distance increased significantly at 3-months (n=15), mean change 39.7(34.1)m, p=0.0005, with 60% exceeding the MCID threshold. Mean STS repetitions were unchanged over time. Results were maintained or improved in 66.6% and 75% at 3- and 6-months respectively.
Conclusion: COPDSI exercise classes are effective in maintaining symptoms and functional status.

Funding: This study was funded by COPD Support Ireland

Conflicts of Interest: The authors declare that they do not have any conflicts of interest.

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8.18 An Investigation of Rare Genetic Variants for COPD: Evaluating the M_{malton} Mutation

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Background: Alpha-1 antitrypsin deficiency (AATD) is a genetic disorder caused by mutations in the SERPINA1 gene, resulting in a reduced level or function of the alpha-1 antitrypsin (AAT) protein. M_{malton} is an underdiagnosed mutation causing severe AATD that manifests with emphysema and liver cirrhosis This article aims to provide a comprehensive overview of M_{malton}, its molecular mechanisms, clinical implications, and diagnostic considerations.
Methods: Blood samples (n = 12) were collected from individuals with low AAT levels showing an MM phenotype on isoelectric focusing (IEF). An assay for the rapid detection of M_{malton} was optimised using PCR-based genotyping and patient data were extracted from the national AATD registry and medical charts in Beaumont Hospital, creating a case study describing the clinical consequences of M_{malton}.
Results: Using the new assay, a novel case of M_{malton} heterozygote was diagnosed in a patient who showed a normal MM phenotype IEF. (Figure 1)
Conclusion: Despite increasing awareness for testing at-risk populations for AATD, there is a discrepancy between identified cases and expected cases within the population due to the multi-layered approach required to achieve a conclusive diagnosis. The case study and the table showing the various genotypes outlined a correlation between having M_{malton} and developing pulmonary and hepatic complications.

Disclosures:

Funding: The authors declare that there was no funding granted

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

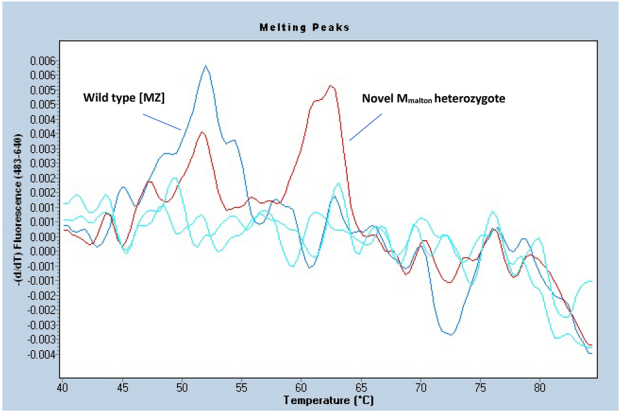

Figure 1. M_{malton} genotype assay melting peaks.
Using the newly-optimised assay, a novel case of M_{malton} heterozygote (Genotype: M/M_{malton}) was identified using PCR-based genotyping.

Poster Session 9: Telehealth and Smoking

9.1 Utilising digital technology in the diagnosis of patients with suspected asthma

Patrick J Kerr[1,2], Ciara Ottewill[1,2], Christina Campbell[1,3], Vincent Brennan[1,3], Ben McGinn[2], Lorna Lombard[1], Helen Doherty[1], Orla Smith[1], Elaine MacHale[1], Richard W Costello[1,3]
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3. Beaumont Hospital, Dublin, Ireland

Background: Diagnostic accuracy is a challenge in asthma management. Many individuals are treated for asthma without having confirmatory physiological testing due to disease variation and limited access to diagnostics. We hypothesise that longitudinal, digitally measured lung function and treatment use could improve the assessment of diagnosis and control of asthma.
Methods: Participants with a clinical diagnosis of asthma were recruited. Spirometry and type-2(T2) biomarkers were measured at 4-weekly intervals over 12 weeks. Remote monitoring of lung function and inhaler use was performed concurrently. Methacholine challenge testing (MCT) was arranged for any individual without a definitive diagnosis of asthma by their study completion. At least two respiratory specialists reviewed all results to establish the diagnosis.
Results: Data from 61 participants are included. Complete data are available on 43. Spirometry and Fraction Exhaled Nitric Oxide (FeNO) confirmed asthma in 18% of cases at enrolment (N=11). Repeated measures confirmed asthma in a further 15%(N=9). The remaining participants were referred for MCT, where 30% (7/23) tested positive. Improvement in T2 biomarkers was noted in participants with asthma (N=27); median FeNO=32ppb at enrolment, median FeNO=19ppb on completion ($p<0.05$). Fourteen participants with asthma remained physiologically uncontrolled at completion, with elevated diurnal variation, T2 biomarkers. Two of these were non-adherent, but twelve demonstrated refractory disease despite good adherence to high-dose ICS/LABA. Unnecessary steroid/bronchodilator treatment was discontinued in sixteen individuals without asthma.

Conclusions: Multiple objective tests are often required to diagnose asthma accurately. Additionally, longitudinal digital monitoring can allow early identification of patients refractory to inhaled therapy.

Keywords: asthma, diagnosis, spirometry, adherence

Disclosures

Funding: This study is funded by Royal College of Surgeons in Ireland (RCSI) through the StAR MD research programme.

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Conflict of Interest: Richard Costello has patents on the use of acoustics to assess inhaler errors and adherence, a method to quantify adherence, predict exacerbations, has received grants from Aerogen and GlaxoSmithKline; and speaker fees for Aerogen, AstraZeneca and GlaxoSmithKline.

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Clinical Trial Registry: NCT05357274 https://clinicaltrials.gov/

9.2 Community Virtual Pulmonary Rehabilitation Advancements in the Mid-West

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Background: Midwest Community Virtual Pulmonary rehabilitation (VPR) was launched in April 2022 offering alternative access to patients unable to attend conventional pulmonary rehabilitation (PR) [1.] The aim is to highlight the VPR advancements and the qualitative feedback from patients and staff.
Methods: 3 VPR programmes were conducted with 15 patients enrolled. The initial programme involved patients from Limerick. The service expanded to make VPR accessible across the Midwest, addressing patient transport barriers. A collaborative meeting was held; staff provided feedback and VPR procedures were advanced. Patient satisfaction questionnaires were issued and feedback collated on completion of VPR.
Results: Advancements: Expansion of access to VPR across the Midwest. Agreement reached across CHO3 on the documentation required to support VPR. Telehealth equipment provided by the local telehealth working group. Staff feedback sessions highlighted the importance of technological support for patients and initiatives were established. Patient Feedback: Patients that enrolled had expressed interest in VPR due to work commitments or lack of transport. VPR met their healthcare and physiotherapy needs.
Conclusions: VPR provides an alternative delivery method for a select cohort of patients. VPR has improved accessibility to patients in the Midwest. Patients required significant technological support.

Keywords: Virtual Pulmonary Rehabilitation

Acknowledgments: Chronic Disease Management Midwest Telehealth Working Group.

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

References

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9.3 Enhanced identification and stratification of patients with COPD using a digitally-innovative data platform solution in General Practice

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3. IQVIA Interface Clinical Services, 3 Forbury Place, 23 Forbury Road, Reading, United Kingdom, RG1 3JH

Background: COPD accounts for more hospitalisations in Ireland than that for cardiovascular & non-lung cancer cases combined[1]. Ireland has the 6th highest hospitalisation rate for COPD among selected OECD countries[2]. Whilst COPD isn't curable, it's treatable & early diagnosis and treatment helps slow the decline in lung function and improve patient outcomes.[3]
Methods: IQVIA have developed a bespoke digital platform via a non-promotional service funded by GlaxoSmithKline which enables efficient & accurate identification & stratification of COPD patients based on clinical markers – ensuring those with greatest clinical need are prioritised for review.
Results: The service has been delivered in 50 sites to date. Following chart review, 3,293 patients had a prior coded diagnosis of COPD. An additional 2,537 patients were identified for diagnostic coding based on clinical data (increase of 77%). 1,480 patients were consulted in IQVIA nurse clinics. 53% of patients received ≥1 pharmacological interventions and 95% of patients received ≥1 non-pharmacological interventions.
Conclusions: The service has demonstrated 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.

References:

1) Irish Thoracic Society, Respiratory Health of the Nation, 2018
2) National Healthcare Quality Reporting System Report 2021/2022 https://www.gov.ie/pdf/?file=https://assets.gov.ie/236763/88ff5f95-b41e-467f-aac9-e6a7a07490fe.pdf#page=null
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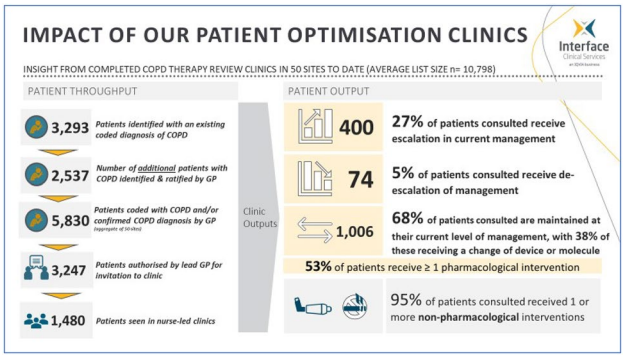

Figure 1: Illustration of the clinical outputs of the COPD patient review service, demonstrating the increase in COPD patients identified for coding and trends in pharmacological and non-pharmacological outputs.

9.4 A mixed methodology study to determine indicative key performance indicators that will support, inform and harmonise appropriate use and development of digital health technologies for respiratory patient usage.

Tara Byrne,[1,2] Niall Murray[2], Mary McDonnell-Naughton[2], Neil Rowan[2]

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2. Technical University of the Shannon, Midland Campus, Athlone, Ireland

Background: There has been a staggering interest amongst academics, healthcare professionals, technologists, and policy makers on the development of digital health technologies (DHT). However, there is a marked lack of research focusing on key performance indicators (KPIs) for DHT that will inform usage, regulation including AI trustworthiness. Thus, there is a need to elucidate appropriate KPIs so as to effectively develop e-technologies for serving remote respiratory patient-care.
Objective: To explore perceptions, beliefs, barriers, and cues-to-action that underpin decision making and inform future key performance indicators (KPIs) among a cohort of Irish respiratory patients prompting acceptability of DHT.
Methods: An exploratory sequential mixed-methods design was undertaken in Ireland.
Results: 58 individuals participated in this study. 45% (n=26) male and 55% female (n=32). The mean age was 65.9, 29% reporting from an urban background, 60% from a rural. 52% (n=30) believed DHT would reduce hospital admission.36% (n= 21) indicated preference for a reduction in clinic appointments. 41% (n=17) had no concerns regarding the sharing of health data,40% (n=19) were not concerned about the security of the technology.
Conclusion: It is important to share information from bottom up-user perspective to inform top-down strategic government policies such as for DHT– particularly at interface where decisions are made. Indicative KPIs emerged during this study; however, there is a need to reach broad stakeholder consensus for future use of DHT in Respiratory care.

Keywords: digital health technologies; respiratory care; harmonization; KPIs; sustainability

Disclosures:

Funding: Tara Byrne acknowledges funding from TUS and HSE in support of her PhD.
The authors declare that they have no conflict of interest.

Corresponding Author: Tara Byrne https://orcid.org/0000-0002-3494-7417

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Brenner M, Weir A, McCann M, et al. Development of the key performance indicators for digital health interventions: A scoping review. DIGITAL HEALTH. 2023;9. https://doi.org/10.1177/20552076231152160

9.5 Bespoke 3D printed attachment to deliver CPAP to a patient with a laryngectomy

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1. University Hospital Galway, Galway. 2. Clinical Research Institute, University of Galway, Galway

Background: A patient with a laryngeal stoma required continuous positive airway pressure (CPAP), but the altered anatomy did not provide a means to anchor the CPAP tubing to this patient's airway. A review of the academic literature and professional forums revealed that there was no off-the-shelf accessory available.
Methods: A multidisciplinary team, in conjunction with the patient; designed, prototyped, and tested a bespoke 3d printed connector assembly to allow the patient to receive CPAP therapy. The final build assembly comprised of a combination of off the shelf medical devices and 3D printed components using materials compliant with the medical device industry.
The patient was central to the design process, including trial of the final prototype, and provided continuous feedback on performance and usability. Objective and subjective outcome measures were assessed pre-intervention, at 3 months and 6 months.
Results: A clinically importance difference was met in subjective and objective outcome measures at 3 and 6 months review. Subjectively the patient reported significant improvements in quality of life.
Conclusion: This project is a case study example of multidisciplinary hospital team using 3D printed technology to collaborate with a patient to develop a customised product to meet an otherwise unmet need.

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

Corresponding Author Ciara M Dolan

9.6 Overview of an Electronic Respiratory Inpatient Referral System in a District General Hospital

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[1]Respiratory Unit, Altnagelvin Area Hospital, Londonderry, Northern Ireland

Background: This District General Hospital (DGH) runs a 5 day/week email respiratory inpatient referral system whereby referrals are assessed by a respiratory middle grade doctor and discussed with a respiratory consultant. The aim of this study was to assess the number, origin and outcomes of the referrals over a period of time.
Methods: A record of all respiratory inpatient referrals was kept over a 3 month period from November 2022 to January 2023. Number of referrals received, origin of referral, reason for referral and outcome was recorded.
Results: 145 referrals were assessed by the Respiratory Unit over the 3 month period. 90% of these referrals had an initial assessment within 24 hours. The Acute medical Unit and surgical wards accounted for > 50% referrals. The most common reason for referral was a pleural effusion (27, 18%), all of which had an ultrasound performed. Shortness of breath and hypoxia was the second most common reason for referral (25, 17%). 29 patients had to be transferred to the respiratory ward, 28 patients required respiratory follow up either at the Respiratory Ambulatory Hub, with the community respiratory team or via the respiratory outpatients clinic.
Conclusions: The inpatient respiratory referral system provides very rapid access to respiratory expertise throughout the hospital with improved patient turnover. A conservative estimate of 37 bed days were saved during this 3 month period.

9.7 Pilot study of a Virtual Ward for Covid-19 and non-Covid-19 acute respiratory conditions in Our Lady of Lourdes Hospital

Aisling O'Connor[1], Michelle Uno[1], Tidi Hassan[1]

[1]*Our Lady of Lourdes Hospital, Drogheda*

Background: The Remote Monitoring programme for Covid-19 provided early supported discharge, reducing length of stay and facilitated admission avoidance. The aim of this pilot study was to expand the programme and evaluate the feasibility of a Virtual Ward for Acute Respiratory Conditions.
Methods: Over a six month period, 25 patients were enrolled in the Virtual Ward. Ages ranged from 16 to 93, with an average age of 55. Referrals came from Respiratory inpatient wards, ED, Respiratory Outpatient Clinics, Staff hub and AMAU/Day wards. Patients were referred for various acute respiratory conditions: Covid-19 (48%), exacerbation of severe asthma (16%), pneumonia (16%), pneumothorax (12%), and exacerbation of pulmonary fibrosis (8%).
Results: Patients were enrolled for an average of 11 days, monitored daily through a clinician portal and provided with education regarding self-management of their condition. Of the patients enrolled, 36% were discussed with the Respiratory team and 12% readmitted to hospital. Upon discharge from the programme, 48% required no further follow up and 36% followed up in Respiratory clinics.
Conclusions: A Virtual Ward for Covid-19 and non-Covid-19 acute respiratory conditions is feasible. It provides a safe and effective option to facilitate early supported discharge and can enable admission avoidance for this cohort.
Keywords: Acute respiratory conditions, virtual ward, early supported discharge
Conflict of interest: The authors declare that they have no conflict of interest.

9.8 Introduction of a New Virtual Respiratory Patient Board Meeting in Tallaght University Hospital (TUH) - by Judith Maxwell

Judith Maxwell[1], Rachel Egan[1], Elaine Joyce[1], Amy Scullion[1], Alisson Breen[1], Aparna Ladd[1], Carol Buckley[1], Emma Mulligan[1], Louise Cullen[1], Sara Keane[1], Ciara Scallan[1].

[1]Tallaght University Hospital, Tallaght, Dublin.

TUH has recently expanded the respiratory service in Nursing and Physiotherapy. There are 2 candidate Advanced Nurse Practitioners, 1 Clinical Specialist Physiotherapist liaison with Peamount, 1 Chronic Obstructive Pulmonary Disease (COPD) Outreach team comprising of 1 Senior Physiotherapist and 1 Clinical Nurse Specialist and 3.5 respiratory Clinical Nurse Specialists. Staff are located in various sites over the main hospital campus.
This has led to a number of posts with overlapping workloads and responsibilities. It was noted that often one patient would be reviewed by three different members of staff for different aspects of care and occasionally duplication of care occurred.
To streamline the process and to prevent overlapping, a virtual respiratory patient board meeting was set up comprising of the staff above. A virtual meeting takes place twice a week to discuss all respiratory patients and ensure the appropriate person is aware of the patient and care is not being duplicated or missed. This also provides a forum to raise questions within the group and determine solutions together.
The virtual respiratory patient board meeting has improved communication between the respiratory nursing and physiotherapy teams and has led to new developments in the way patients are followed up and care is provided.

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

9.9 Outcomes of a Pilot Virtual Pulmonary Rehabilitation Programme in a DGH

Jill Geraghty (1), Roisin Mc Garrigle (2), Annette Henderson (3), Ruth Griffith (3), Rose Sharkey (1)

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3. Physiotherapy Dept., WHSCT, N Ireland

Background: Pulmonary rehabilitation (PR) programmes are of benefit to patients with chronic respiratory disease. In order to prevent disruption of the PR service during the Covid-19 pandemic, we piloted a Virtual Pulmonary Rehabilitation (VPR) programme.
Methods: We ran a 6 week (2 sessions each week) programme consisting of aerobic and strength exercises and educational videos were sent to participants to view before each session. Participants were assessed pre and post-intervention.
Results: We audited the pilot VPR programme between October 2020 and March 2021. 48 patients completed the VPR programme

questionnaire - 28 female and 20 male. Mean age was 67 years. 75% of patients had a diagnosis of COPD with the reminder having ILD. 32 patients (91%) found the virtual presentations clear with 97% finding them informative and 90% watched the educational videos before each session. Average MRC scores improved from 3.57 to 3.35. Only one patient would have preferred a face to face programme.
Conclusions: VPR offers an alternative method of accessing PR services for those who cannot access the face to face programmes. We will continue to offer this alternative programme to patients as the potential for future interruptions to healthcare services is very real.

9.10 How "green" is our practice: metered dose inhaler prescribing and knowledge of their environmental impact

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[1]Chronic Disease Management Hub Carlow/Kilkenny
[2]St. Luke's General Hospital Carlow/Kilkenny

Background: Due to the propellants they contain, metered dose inhalers (MDIs) have a higher carbon footprint than dry powder inhalers (DPIs) and soft mist inhalers (SMIs), which are proven to be as effective as MDIs in suitable patients [1]. We aimed to determine MDI prescribing prevalence and knowledge of their environmental impact among our respiratory team.
Methods:
A chart audit of inhalers prescribed for COPD and Asthma patients (n=50) seen by the respiratory team
An online survey of the respiratory team (n=10) on the environmental impact of MDIs
Results:

1) 29% of patients prescribed an MDI by their GP were switched to a DPI or SMI by the team. 40% of patients were commenced on a DPI or SMI and 2% on an MDI.
2) 50% of team members correctly identified the carbon footprint of MDIs and only one team member felt confident to and had previously discussed lower carbon inhaler choices with patients.

Conclusion: Although the team preferentially commenced patients on inhalers with a lower carbon footprint, less than one third of patients were switched from an MDI to a DPI or SMI. Additionally, the team's knowledge of and advice provided to patients on the environmental impact of inhalers could be improved.

Keywords: inhalers, carbon footprint, sustainability

Disclosures: None.

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

References:
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Corresponding Author: Eve Stanley, Chronic Disease Management Hub Carlow/Kilkenny, South East Community Healthcare, James' Green, Kilkenny

9.11 Assessment of an optimised tobacco smoking exposure calculation

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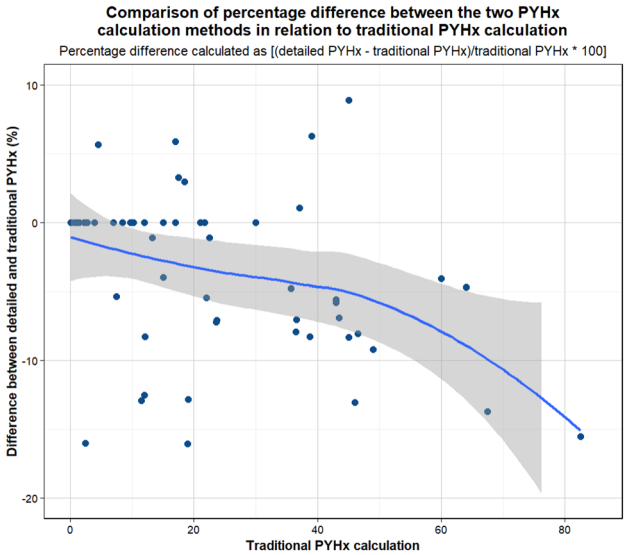
[1]School of Medicine, University College Dublin.
[2]Department of Respiratory Medicine, St Vincent's University Hospital, Dublin 4.

Background: Tobacco smoke is a determinant of lung function in exposed individuals. The "pack-year history"(PYHx) is commonly used to quantify tobacco exposure [(years_smoked*average_daily_cigarettes)/20] but may be insensitive to periodic variations in smoking intensity. We explored whether exposure estimates generated by a refined approach to PYHx calculation ($PYHx_{detailed}$) vary significantly from the traditional approach ($PYHx_{trad}$), and correlate more closely with lung function.
Methods: We surveyed consecutive ever-smoking patients attending St Vincent's University Hospital PFT lab over a 3-week period. $PYHx_{trad}$ and $PYHx_{detailed}$ were calculated using average daily tobacco consumption for each decade. Correlation between exposure and $FEV_{1\%predicted}$ was assessed.
Results: 105 patients were included. $PYHx_{trad}$ and $PYHx_{detailed}$ were strongly correlated (rho=0.9), however increasing $PYHx_{trad}$ was associated with a decrease in $PYHx_{detailed}$ (-0.76%$PYHx_{detailed}$ per unit increase in $PYHx_{trad,}$ p=0.001, Figure 1). $PYHx_{detailed}$ correlated more strongly with $FEV_{1\%predicted}$ (-0.48% per unit increase in $PYHx_{detailed}$, p<0.001, R^2=0.135 vs -0.22% per unit increase in $PYHx_{trad}$, p=0.018, R^2 =0.055).
Conclusions: $PYHx_{trad}$ may overestimate tobacco exposure, especially at higher calculations. $PYHx_{detailed}$ correlates more closely with $FEV_{1\%predicted}$ and may offer more accurate estimates of tobacco exposure, with potential for use in the research setting.

Keywords: Smoking, Tobacco, Spirometry, Pack-Years

Conflict of Interest: Authors declare no conflict of interest.

Figure 1.



9.12 A review of patient disclosure of cannabis and e-cigarette use in an acute medical cohort

Gill Douglas[1], Cara M Gill[1], Emer Kelly[1], Orla O'Carroll[1]

[1]St Vincent's University Hospital, Dublin

Introduction: Every year in Ireland more than 4500 people die of smoking related diseases[1]. While the prevalence of cigarette smoking continues to decline, the use of e-cigarettes and cannabis is increasing[2,3].
Aim: The primary aim of this study was to identify patient disclosure of cigarette smoking, e-cigarette use and cannabis use in patients admitted to the acute medical unit (AMU).
Methods: All new patients admitted to the AMU over a consecutive five day period were invited to participate in the survey.
Results: Mean age of patients (n=63) was 63.71 years, with 40% female. Smoking status was documented in 75% of patients on admission, with 42.4% current or previous smokers. 7.81% of patients (n=5) admitted to smoking cannabis when directly questioned, though none disclosed this without direct questioning. 12.5% of patients (n=8) reported using a vape, though only 2 patients disclosed this without prompting.
Conclusion: This study highlights the prevalence of cannabis and e-cigarette use in an acute medical patient cohort. Additionally it highlights the importance of obtaining a detailed smoking history in patients.

Keywords: Smoking, Cannabis, E-Cigarettes

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

References:
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9.13 Improving Smoking Cessation Services in accordance with National Stop Smoking Guideline: A Quality Improvement Pilot Project

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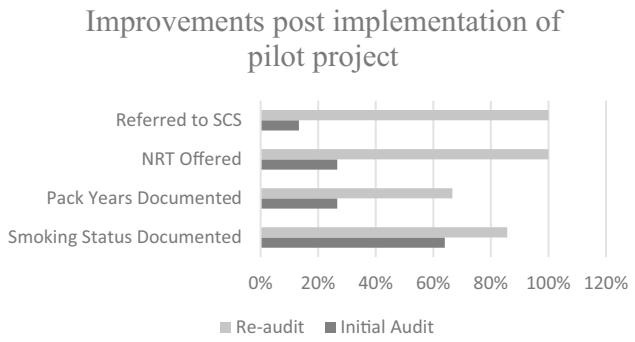
[1]Department of Respiratory Medicine, Galway University Hospital

Introduction: Tobacco use is the leading cause of preventable death, disease and disability worldwide. The HSE's Stop Smoking Guideline highlights the importance of documentation, behavioural and pharmacological support. The Manchester CURE Project report identified a lack of provision of tobacco addiction treatment and presented an effective approach to smoking cessation.
Methods: We reviewed inpatient charts across medical and surgical wards. Smoking status documentation, brief advice consultation, NRT prescription and referral to smoking cessation services was reported for each patient. A Smoking Cessation Proforma was introduced on a pilot ward, supported by a poster campaign, nursing education at safety pauses and an opt-out referral to smoking cessation services. The audit was repeated after five weeks to assess improvements.
Results: 19.7% of audited inpatients were active smokers. Following intervention, marked improvement was seen in smoking status documentation (64.4% to 85.4%) (Figure 1). 95.4% of active smokers were referred to smoking cessation services, compared to 13% pre-intervention (p=0.007). During the pilot period, 30.4% of ward admissions, totalling 21 new patients, were referred to smoking cessation services.
Discussion: This data highlights the need for improved smoking cessation practices. Targeted interventions have improved identification, treatment and referral of active smokers. We aim to develop and maintain an effective approach to smoking cessation to target a referral rate of 100%.

References: Department of Health (2022). Stop Smoking (NCEC National Clinical Guideline No. 28)
The authors declare that they have no conflict of interest.

Figure 1: Assessing improvements following implementation of pilot project.



9.14 Prevalence of chronic health conditions among young adults living in Ireland and associations with smoking and e-cigarette-use

[1,2]Joan Hanafin, [1]Salome Sunday, [1]Luke Clancy

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Background: There are myriad barriers to equality, including health equality, for persons with disabilities [1]. Young adults with long-lasting health conditions, impairments or disabilities (LHC) face pervasive social and material hardship [2]. Smoking is a leading cause of morbidity and premature death, contributing substantially to inequalities [3,4] yet little is known about smoking and even less about e-cigarette-use in this population. We report on smoking and e-cigarette use in Irish 20-year-olds reporting LHC.
Methods: We use data from Wave 4 of *Growing Up in Ireland* Cohort '98, n=5,190, when participants were 20 years old [3]. Ever and current smoking and e-cigarette use were measured by whether participants responded yes to "ever" used and yes to "occasional" or "daily" use.
Results: 22.2% (n=1151) had one or more LHC (Table 1). Learning (10.5%, n=543), psychological/emotional (7.0%, n=365) and pain (5.7%, n=297) were the most frequently reported difficulties (Table 2).

Young adults with LHC had statistically significantly higher prevalence of current smoking (41.0 vs 36.5%) and current e-cigarette use (15.6% vs 12.6%) (Table 3).
Conclusion: Smoking and e-cigarette use is significantly higher in 20-year-olds with LHC adding further inequality to the lives of these rarely-surveyed young adults. Targeted surveys and interventions are required.

Keywords: disabilities, smoking, e-cigarettes, young adults.

Disclosures:

Funding: This study was funded by Grant number 209, Royal City of Dublin Hospital Trust.

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

Acknowledgement: The data that support the findings were used under license for the current study, and are available from Central Statistics Office Ireland but restrictions apply. https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/dataforresearchers/rmfregister/). Wave 4 ethical approval was granted by the GUI Research Ethics Committee, Department of Children and Youth Affairs.

Corresponding Author: Professor Joan Hanafin https://orcid.org/0000-0002-8016-2266

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Table 1. Number of long-lasting conditions or difficulties of Young Adults (20-year-olds), GUI Cohort '98 (Wave 4)

Do you have any of the following long-lasting conditions or difficulties? (Yes/No to 1 or more)	N (%)
No conditions	4038 (77.8)
1 Condition	793 (15.3)
2 Conditions	247 (4.8)
3 or more conditions	111 (2.1)
Total	5189 (100.0)

Table 2. Type of long-lasting conditions or difficulties of Young Adult (20-year-olds), GUI Cohort '98 (wave 4)

Do you have any of the following long-lasting conditions or difficulties? (Yes/No)	Yes N (%)	No N (%)	Total
Blindness or serious vision impairment	97 (1.9)	5092 (98.1)	5189 (100.0)
Deafness or a serious hearing impairment	49 (1.0)	5140 (99.0)	5189 (100.0)
Mobility	94 (1.8)	5096 (98.2)	5190 (100.0)
Intellectual	230 (4.4)	4960 (95.6)	5190 (100.0)
Learning	543 (10.5)	4647 (89.5)	5190 (100.0)
Psychological or emotional	365 (7.0)	4822 (92.9)	5187 (100.0)
Pain	297 (5.7)	4892 (94.3)	5189 (100.0)

Table 3. Smoking and e-cigarette use among young adults with and without long-lasting conditions or difficulties (20-year-olds), GUI Cohort '98 (wave 4)

Number of long-lasting conditions or difficulties				
Smoking/E-cigarette Use	No Condition 4038 (77.8)	At least 1 condition 1151 (22.2)	Total 5189 (100.0)	P-value
Ever-Smoked (Wave 4)				
No	1018 (25.3)	326 (28.9)	1344 (26.1)	
Yes	3004 (74.7)	803 (71.1)	3807 (73.9)	0.02
Current Smoking (Wave 4)				
No	2565 (63.5)	679 (59.0)	3244 (62.5)	
Yes	1474 (36.5)	472 (41.0)	1946 (37.5)	0.01
Ever used e-cigarettes (Wave 4)				
No	2127 (52.9)	564 (50.0)	2691 (52.2)	
Yes	1896 (47.1)	564 (50.0)	2460 (47.8)	0.09
Current e-cigarette use (Wave 4)				
No	3528 (87.4)	972 (84.4)	4500 (86.7)	
Yes	511 (12.6)	179 (15.6)	690 (13.3)	0.01

10 Oral Presentations

10.1 A pilot study evaluating the clinical applicability of a novel hardware & software platform (aflo^{TM}) in patients with airway disease

[1]Martin G Kelly, [2]Susan Kelly, [3]Geraldine Horigan, [4]John O Kelly, [2,5]Liam Mc Daid & [2,5]Jim Harkin

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[2]Respiratory Analytics Ltd, Derry
[3]Ulster University, Coleraine
[4]Aberfoyle Medical Practice, Derry
[5]Ulster University, Derry

Background: Effectiveness of inhalers depends on drug delivery to lungs. Correct inhaler technique is essential. Reviews of inhaler technique have shown asthma and COPD users make critical errors [1]. These reduce lung deposition leading to lower symptom control, poorer health outcomes and higher healthcare utilisation costs.
Methods: Patients with airway diseases, on maintenance preventer, identified as having adherence/symptom control issues, were invited to participate. Aflo™ platform (electronic inhalation device, App and cloud data analytics tool) was used to monitor inhaler technique and adherence to medications. Real time feedback corrected technique errors and issued reminders to users [2]. After onboarding, data collected for four weeks. Information collected on prior health utilisation & user satisfaction.
Results: 21 participants (20 asthmatic), 12 male, age 11-60y were recruited. Five had hospital admission in last 5y. 13 had attended the emergency department. 13 claimed to understand their medication. 17 self-reported uncontrolled symptoms. Four had attended GP clinic in previous year. Asthma control test 17 before & 18 after the study. See table 1 for user feedback. Some did not answer all questions. Some technical & user challenges were identified.
Conclusion: Use of aflo™ platform is feasible. Technical challenges can discourage users. Complete data assimilation requires closer work with participants.

Keywords: asthma management, inhaler technique, healthcare app

Disclosures:

Funding: The work was funded by Respiratory Analytics Ltd

Conflict of Interest: Susan Kelly, Liam Mc Daid & Jim Harkin are founders & are on the board of Respiratory Analytics Ltd.
Martin Kelly acts as medical advisor to Respiratory Analytics Ltd & sits on the board.

Corresponding author: Martin G Kelly, https://orcid.org/0000-0003-1462-815X

References:
1. Sulku J et al. *npj Primary Care Respiratory Medicine* 2021; 31:5. https://doi.org/10.1038/s41533-021-00218-y
2. https://afloanalytics.com/

Table 1: User feedback

Feedback criterion	Agree/ totally agree	No answer
Reassured seeing data	14	6
Understood light indicators	15	6
Could follow the app	15	6
Felt took preventer more regularly	11	6
Would recommend aflo™	13	6
Would ask for it to be prescribed	13	6
Felt helped self-management	14	6
Happy with data sharing	14	7

10.2 Pharmaceutical Modifications of Human Epididymis Protein 4 (HE4) has Antifibrotic and Anti-Inflammatory Effects on lung fibrosis

Paul Peppard[1,2], Nazia Chaudhuri [2], Koray Niels Potel[2], Bettina Claudia Schock[1]

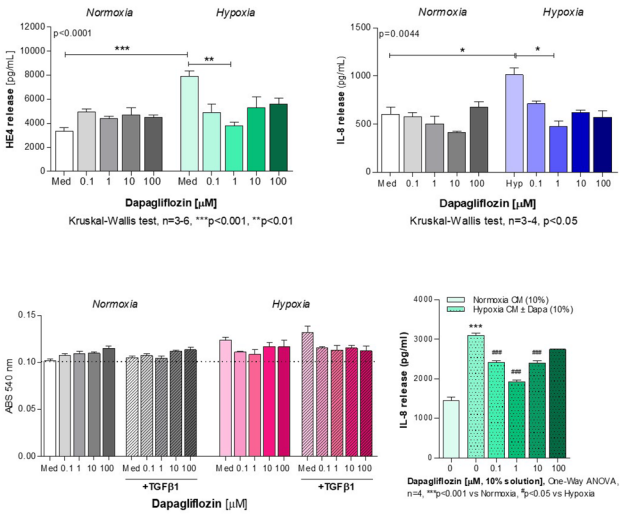
[1] Queen's University Belfast, Belfast, Antrim, UK.
[2] Ulster University, Derry, Londonderry, UK.

Background: HE4 (human epididymis protein 4), is fibrogenic and increased in fibrotic lung diseases, including systemic sclerosis with interstitial lung disease (SSc-ILD). Hypoxia and inflammation are typical features of SSc-ILD, and hypoxia induces HE4. Dapagliflozin, an inhibitor of sodium-dependent glucose co-transporter 2 (SGLT2) lowers HE4 in renal epithelial cells. We therefore investigated the effect of Dapagliflozin on hypoxia-induced HE4 and on fibrosis and inflammation in an in-vitro model of lung fibrosis.
Methods: Bronchial epithelial cells (16HBE14o-) cultured with Dapagliflozin (0-100μM) were exposed to normoxia (21%O_2) or hypoxia (1%O_2, 6h, 18h normoxia). Lung fibroblasts (CCD-11Lu) were cultured in 10% conditioned medium (CM) from 16HBE14o- cells. HE4, IL-8 and collagen deposition were determined by ELISA and Sirius RED staining.
Results: Dapagliflozin dose-dependently reduced hypoxia-induced HE4 in 16HBE14o- cells (Fig 1). In lung fibroblasts, the hypoxia-CM (Fig 2) showed significantly reduced expression of markers of inflammation (IL-8) and fibrosis (collagen deposition).
Conclusions: HE4 is an important mediator linking fibrosis and inflammation. Dapagliflozin inhibits HE4 and is anti-inflammatory and antifibrotic in a model of lung fibrosis.

Keywords: HE4, interstitial lung disease, lung fibrosis, pharmaceutical modification

Disclosures: PP was funded by the British Association for Lung Research (BALRSS23-02). The authors declare no conflict of interest.

References: (1) Huang X, *et al.* 2022 (https://doi.org/10.1097/FJC.0000000000001268)



10.3 Induced Pluripotent Stem Cell-derived Alveolar Epithelial Type 2 Cells – A Novel Model to investigate Sex Hormones and their Role in Pulmonary Fibrosis

[1,2]Anja Schweikert, [3]Sahin Sarihan, [1,2]Mari Ozaki, [3,4]Hannah Nyarko, [5]Imran Sulaiman, [1,2]Irene Oglesby, [1,2]Killian Hurley

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[4]SFI Centre Research Training in Genomics Data Science, Ireland
[5]Department of Respiratory Medicine, Beaumont Hospital, Dublin, Ireland

Background: Idiopathic Pulmonary Fibrosis (IPF) occurs predominantly in men over the age of 60 years and women after the onset of menopause, implying a role for sex hormones in disease development. Mouse models suggest that estrogen affects IPF pathogenesis. Research in human models is lacking. We hypothesize that type 2 alveolar epithelial (AT2) cells respond to sex hormones and that human iPSC-derived AT2 cells (iAT2s) can be used to model this.
Methods: Non-diseased iAT2 cells were treated with control, estradiol or testosterone. Expression of AT2 marker genes and sex hormone receptors was measured by RT-qPCR. Bulk RNA sequencing was executed to investigate iAT2 response to these sex hormones. ESRβ and GPER1 expression on protein level was investigated using Western Blot Analysis.
Results: Significant expression of ESRβ and GPER1 was shown on the protein and RNA level in iAT2 cells and were downregulated following estradiol treatment. Expression of SFTPA1 and SFTPC was downregulated following estradiol treatment but upregulated following testosterone treatment.
Conclusion: This is the first report of sex hormone treatment of human iAT2 cells and explores their effect on typical cell expression markers and human disease pathways. Our preliminary data shows opposing effects of estrogen and testosterone on surfactant genes.

Disclosures:

Funding: This study was funded by the HRB Emerging Clinical Scientist Award (ECSA-2020-011)

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

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10.4 Implementing SleepHalo as a clinical decision support system (CDSS) for non-compliant complex Continuous positive Airway Pressure (CPAP) therapy cases.

[1]Megan McGrane, [1]Lauren McCann, [1]Liam Cormican [1]Aisling McGowan

[1]Connolly Hospital, Dublin, Ireland

Background: Patients reject CPAP due to difficulty tolerating the treatment and other complex reasons. SleepHalo is a commercially available CDSS used with any CPAP device. We investigated the use of the SleepHalo service as an interventional tool in five complex patients attending the CPAP review clinic at Connolly hospital.
Methods: Patients (2F:3M) with poor compliance were included. Multiple interventions over 6 months by CPAP suppliers and clinical physiologists failed to improve compliance. SleepHalo devices attached to CPAP devices facilitated data transmission accessible to the clinic. The SleepHalo patient service provided continuous support; patient home visit, nasal assessment, standardised CPAP settings, re-titration period followed by recommendations on therapy and personalised settings to increase individuals comfort on therapy. SleepHalo data is standardised to correct for cpap software bias, also provides unique environmental data and patient self-management via text/phone support.
Results:

Compliance	Main changes
1/5 no improvement	Mask change 5/5
3/5 fully compliant	Humidity correction 5/5
1/5 increased compliance (0% to 47%)	Room temperature issues 2/5
	Pressure optimisation 3/5

Conclusion: Access to detailed therapy data and timely intervention tailored to the patient is critical to success. Mask fit, humidity, bedroom temperature, pressure optimisation are key factors identified as contributors to improving CPAP compliance.

Disclosures: This service initiative supported by supply of equipment from Dynomed, Ireland.

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

Corresponding Author: Megan McGrane

10.5 Retrospective 10-year review of medical thoracoscopies in Galway University Hospital 2013 - 2023

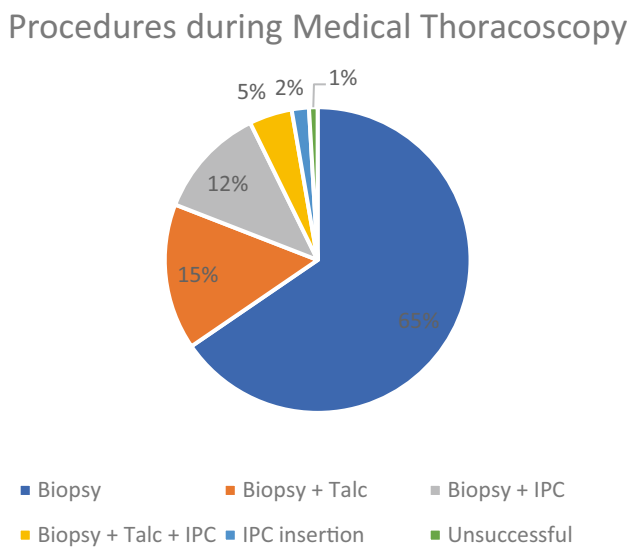
Sally Griffiths[1], Lucy Power[1], Killian Marsh[1], David Breen[1]

[1]Galway University Hospital, Galway, Ireland

Background: Medical thoracoscopy is a procedure performed by respiratory physicians, to obtain parietal pleural biopsies in order to diagnose or confirm malignancy involving the pleura, or as a combined procedure with therapeutic intent. The primary indication for medical thoracoscopy is suspected malignant pleural effusion (MPE).
Methods: We conducted a retrospective, single-centre review of recorded medical thoracoscopies performed from 2013-2023 in Galway University Hospital. A total of 110 patients were included. Data collection included patient demographics, indication, interventions undertaken, diagnostic yield and complication rate.
Results: 75 males and 35 females underwent medical thoracoscopy; 66.4% (N=73) diagnostic only, 31.8% combined diagnostic and therapeutic (N=35) and 1.8% (N=2) therapeutic IPC insertion (Figure 1). Of these, 107 (97.2%) underwent pleural biopsy, with one unsuccessful procedure.
The diagnostic yield of parietal pleura biopsies was 98.1% (N=105) - 62 (59%) were malignant and 43 (41%) were non-malignant, with 3 positive for tuberculosis infection.
2 patients (1.8%) had major complications. Minor complications reported were pneumothorax (1.8%), pneumonia (5.4%), atrial fibrillation (2.7%) and subcutaneous emphysema (2.7%).

Conclusion: Overall medical thoracoscopy within our centre in appropriately selected patients has an excellent diagnostic yield in suspected MPE, for diagnosis, further tissue sampling, or confirmation of metastatic disease. It a safe procedure with few complications.
The authors have no conflict of interest to declare.

Figure 1: Procedures undertaken during all medical thoracoscopies 2013-2023



10.6 The Potential Impact of Sublobar Resection for NSCLC Management in an Irish Setting

Rebecca Weedle[1], Jack Whooley[1], Vincent Young[1], GJ Fitzmaurice[1], Ronan Ryan[1]

[1]St James's Hospital, Dublin

Background: Sublobar resection is non-inferior to lobectomy in carefully-staged clinical stage 1A NSCLC based on two recent large multi-centre RCTs. These trials have been heralded as establishing sublobar resection as the standard of care for this subset of patients. Implementing these findings into practice in Ireland will require additional resources. The aim of this study was to establish what proportion of patients undergoing lung resection for NSCLC would meet the trials' radiological inclusion criteria.
Methods: A retrospective review was conducted on all patients who underwent lung resection for NSCLC in a single tertiary referral unit over a two-year period. This cohort was screened for patients who had a peripheral tumour, excluding the right middle lobe, measuring ≤2cm, with a consolidation-to-tumour ratio of >0.5, and clinically node-negative.
Results: 417 NSCLC resections were performed. 114 patients met the clinical TNM criteria. Of these, 71 patients had tumours located in the outer third of the lung. Resection was by lobectomy (n=58), segmentectomy (n=2), or wedge resection (n=11). Four patients (6%) had pre-operative invasive mediastinal staging. Six patients (8%) had nodal metastasis on final histopathology.
Conclusions: Approximately 17% of patients undergoing surgical management of NSCLC could be considered for sublobar resection if the findings of JCOG 0802 and CALGB 140503 are accepted into practice. Adequate resources and further collaboration between cardiothoracic surgery, respiratory medicine and histopathology would be required to ensure these patients are appropriately staged and selected.

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

10.7 Is Fissure Integrity Affected by the Severity of Emphysema and Does This Direct the Choice of Lung Volume Reduction Procedure?

[1]Ben Shanahan, Luigi Ventura, Joanne Hargrave, David Waller

[1]St Bartholomew's Hospital, West Smithfield, London, United Kingdom

Background: Endobronchial lung volume reduction (EBLVR) is dependent on near complete fissure integrity (FI). Some assume that fissure integrity declines with the progression and severity of underlying emphysema, leading to the misconception that some patients may become 'too bad' for EBLVR and proceed to premature surgical intervention.
Methods: In 98 patients (53 male, 45 female, mean age 68) undergoing lung volume reduction we analysed emphysema anatomy using quantitative CT software program StratX. We have a policy of offering EBLVR as the first treatment option in those without collateral ventilation (CV) irrespective of severity of emphysema or operative risk (Figure 1).
Results: There was no significant difference in the mean severity of emphysema (%voxel density <910 HU) in the target lobe in those undergoing EBLVR compared to LVRS (60.1% vs 60% p=0.1). There was no significant association between FI and emphysema severity in the target lobe (correlation coefficient 0.03, p=0.74)
Conclusions: FI is not associated with the degree of destruction in the target lung and therefore the severity of disease should not in itself influence the decision to treat by either EBLVR or LVRS. It follows that delaying intervention and risking disease progression will not necessarily reduce the chances of EBLVR being successful.

Disclosures: The authors have no conflict of interest to declare

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11 Paediatric Presentations

11.1 Uncontrolled asthma and related risk factors among children attending hospital services in Ireland

Sarah P Lewis[1], Elizabeth A Miles[2], Des Cox[1], Basil Elnazir[1], Sande O Okelo[3], Scott Harris[2], Mary Jane Meara[1], Fionnuala Heraghty[1], Maeve Kelleher[1]

[1]Children's Health Ireland, Dublin, Ireland [2]MSc Allergy, University of Southampton, Southampton UK [3]David Geffen School of Medicine, UCLA, Los Angeles, CA

Background: Poorly controlled asthma is frequently identified during routine clinical review[1]. The aim of this study was to investigate uncontrolled asthma (UA) prevalence and associated risk factors in children attending paediatric hospital services in Dublin, Ireland.

Methods: Parents of children aged 2-18 years with asthma attending outpatient or emergency services, for any reason during the study period (August-December 2022), were invited to complete an anonymous questionnaire about their child's asthma. PACCI Sum Score cut-off ≥3 was used to identify UA[2]. Logistic regression was used to investigate risk factors for UA.
Results: Of 96 children surveyed, 63 had UA (66%; 95% confidence interval (CI):56 to 75%). Of 52 children attending outpatient clinics, 31 (60%;95%CI:46 to 73%) had UA. Though not statistically significant, UA prevalence was lower in respiratory (41%;95%CI:22% to 64%) than non-respiratory clinics(69%;95%CI:52% to 81%;p=0.061). There was no association between asthma control and treatment regime(p=0.748). Odds of UA reduced for each additional year of age (adjusted odds ratio(aOR):0.81;95%CI:0.71 to 0.93;p=0.002), while missed activities increased odds of UA(aOR 3.58;95%CI:1.35 to 9.53;p=0.01).
Conclusion: Prevalence of UA was high across all settings with younger children at greater risk. All healthcare interactions with children with asthma are an opportunity to identify poor asthma control.

Disclosures:

Funding: *This study did not receive any external funding.*

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

Corresponding Author: Sarah P Lewis

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2. Okelo SO, Eakin MN, Patino CM, et al. The Pediatric Asthma Control and Communication Instrument (PACCI) asthma questionnaire: for use in diverse children of all ages. *J Allergy Clin Immunol* 2013; **132**(1): 55-62.

11.2 Children's Asthma Pack – A Patient Centred Initiative For A Family Friendly Asthma Education Resource

Mary Devitt ,Catherine Carrig, Jacqueline Lyons, Basil Elnazir,

Children's Health Ireland at Tallaght, Dublin, Ireland.

Background: Education is a core component of effective self management programmes for children with asthma (1). Respiratory nurse specialists at CHI@Tallaght provide asthma education on average to 1000 children and families annually. The Children's Asthma Pack (CAP), provides an innovative education approach to improve parental confidence in managing their child's asthma in the community.
Methods: CAP, a user friendly designed A5 wallet containing standardised asthma resources.These included asthma information booklet, inhaler technique leaflets and QR video codes, personalized asthma action plan, and parent feedback survey. CAP is given to all patients with asthma diagnosis within the hospital setting. Follow up telephone consultation arranged for those not reviewed by a respiratory nurse.
Results: CAP given to all inpatients with asthma diagnosis and attending asthma nurse led clinics. Feedback survey shows 80 percent of parents confident in managing their child's asthma since receiving CAP. 100 percent of parents found CAP easy to follow.
Conclusions: Improved access to asthma information and support, with an increased parental confidence in managing their child's asthma. Plans to digitilise CAP to increase accessibility to families and healthcare professionals are in order.

Keywords: Asthma education.

Disclosures: Asthma Society of Ireland resources.

Funding: SPARK awarded funding for printing.

Conflict of Interest: The authors declare no conflict of interest.

References:
Global Initiative for Asthma. 2022. GINA Report, Global Strategy for Asthma Management and Prevention. https://ginasthma.org

11.3 The changing challenges to the parents of growing children with Cystic Fibrosis in Ireland:

The Irish Comparative Outcome Study of Cystic Fibrosis (ICOS)

Rini Bhatnagar[1], Nancy Bhardwaj[1], Barry Linnane[2], Mary Herzig[3], Muireann Ni Chroinin[4], David Mullane[4], Desmond Cox[5], Paul McNally[5], Sheila Javadpour[5], Basil Elnazir[6], Peter Greally[6], Fiona Healy[7], Michael Williamson[7], Dubhfeasa Slattery[7], Laura Kirwan[8], Gillian Lancaster[9], Claire Glasscoe[9], Ricardo Segurado[1], Kevin W Southern[9], Patricia Fitzpatrick[1]

[1]University College Dublin, School of Public Health, Physiotherapy and Sports Science, Dublin, Ireland, [2]University Hospital Limerick, Limerick, Ireland, [3]University Hospital Galway, Galway, Ireland, [4]Cork University Hospital, Cork, Ireland, [5]Children's Health Ireland at Crumlin, Dublin, Ireland, [6]Children's Health Ireland at Tallaght, Dublin, Ireland,[7]Children's Health Ireland at Temple Street, Dublin, Ireland, [8]Cystic Fibrosis Registry of Ireland, Dublin, Ireland, [9]University of Liverpool, Department of Women's and Children's Health, Liverpool, United Kingdom

Background: Children with Cystic Fibrosis (CWCF) require continuous care and treatments that are labour-intensive and time-consuming for parents. This study aims to evaluate caregiver burden of parents of CWCF recruited to ICOS study, a census-based historical cohort study of CF.
Methods: This is the first population-based study to use the newly validated Challenge of Living with CF-Short Form (CLCF-SF) generated from a larger psychometric tool "CLCF", selecting 15 items whilst not losing validity as a measure of caregiver burden. This study involves parents of CWCF born July 2008-June 2023. Comparisons were based on child's age (<60 months/"younger group" (mean=44 months) vs ≥60 months/"older group" (mean=129 months)) at time of questionnaire completion.
Results: 173 parents participated. Among all parents, marginal to great difficulty was reported managing CF demands (28%) and family handling challenges (43%); 77% had difficulty establishing CF care routine, issues managing oral medication (27%), nebulisers (47%) and physiotherapy (42%). Significantly more parents of older children struggled with extra expenses (54.1% vs 35.3%; p=0.024) reported that their children were easily upset (54.9% vs 37.3%; p=0.034) and moody (50% vs 25.5%; p=0.003). Among all parents, significantly more whose children were on CFTR modulator therapy reported their child's moodiness than those who were not (50.6% vs 33.7%; p = 0.025).

Conclusion: Our findings suggest greater caregiver burden in parents of older CWCF and a need for more support in establishing CF care routine.

Keywords: Cystic Fibrosis, CLCF-SF, caregiver

Funding: This study is funded by Health Research Board (ILP HSR 2019-005)

Conflict of interest: Authors declare no conflict of

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11.4 COVID-19 infection and lung function in children with Cystic Fibrosis. A comparison of pre and post infection FEV1.

N Courtney[1], D Butler[2], B Linnane[2, 3]

1. **University of Limerick, Graduate Entry Medical School, Limerick, Ireland**
2. Department of Paediatrics, University Hospital Limerick, Dooradoyle, Limerick, Ireland
3. School of Medicine and Centre for Interventions in Infection, Inflammation and Immunity (4i), University of Limerick, Limerick, Ireland

Background: No studies have evaluated the effectiveness of COVID-19 vaccines in children with Cystic Fibrosis. This study aims to characterise the impact of COVID-19 infection on FEV1 (% predicted) in children with CF and determine if COVID-19 vaccine had an effect on FEV1.
Methods: Ethical approval granted for a retrospective single-centre study in UHL. The population was children ≤18 years with confirmed diagnosis of CF. If COVID-19 infection was identified, the following data points were collected; most recent FEV1 before COVID-19, most recent FEV1 after COVID-19, best FEV1 the following year, COVID-19 vaccination status at time of infection.
Results: 86 charts reviewed, n=50 contracted COVID-19, n=7 contracted COVID-19 twice. 40/50 could perform spirometry and were included in analysis (Table 1)
Mean FEV1 increased in both vaccinated (n=32) and unvaccinated (n=8) 1 year after COVID-19 infection (Figure 1). Welch's unpaired *t*-test showed no statistically significant difference between the two groups FEV1% predicted one year after COVID-19 infection (p=0.84). One-way ANOVA did not demonstrate a significant change in FEV1 over the study duration (p=0.36)
Conclusions: There was no statistically significant difference in FEV1 between the two groups. The introduction of elexacaftor-tezacaftor-ivacaftor (Kaftrio®) is a confounder in this study and likely contributed to the improved lung function.

Keywords: Cystic fibrosis, COVID-19, COVID-19 vaccine

Disclosures: Nil

Funding: Nil

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

	Vaccinated (n=32)	Unvaccinated (n=8)
Median Age (Interquartile Range)	11 years (6.5)	9 years (6)
Number of COVID-19 infections 2020	1	1
Number of COVID-19 infections 2021	8	4
Number of COVID-19 infections 2022	26	3
Number of COVID-19 infections 2023	4	0
Total infections	39	8

Table 1. Demographics of population

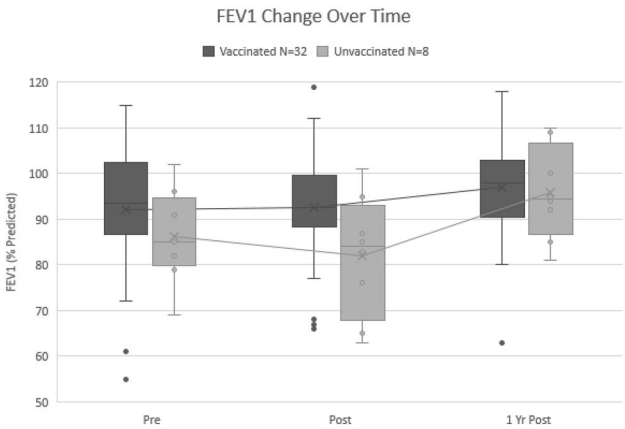

Figure 1. FEV1% Predicted change over time

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