4.04 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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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.

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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	1 (2.44%)	1 (1.96%)
Six months of home monitoring		
Total No. of FVC readings	2946	4984
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 readings	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