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Telehealth for patients with interstitial lung diseases (ILD): results of an international survey of clinicians

SUPPLEMENTARY APPENDIX

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Appendix 1. Clinician questionnaire

Tele-health for patients with interstitial lung diseases

Thank you for agreeing to take part in this survey

We really appreciate your time answering this anonymised service evaluation survey. Your responses will help us to better understand the value of tele-health in detecting deteriorations and/or progressions.

We define tele-health as home monitoring of symptoms and physiological parameters (e.g vital signs, spirometry) with regular automatic transmission of data from patient's home to the health-care provider.

The aim of this survey is to:

- **Evaluate clinician services**
- **Gather clinical opinion**
- **Identify the methods and practices that are most effective to detect deteriorations and/ or exacerbations in patients with ILD in regard to the use of tele-heatlh**

This survey is brief and will take less than 5 minutes to complete.
This research study is being led by Professor Joanna Porter, and Professor John Hurst, Professors of Respiratory Medicine at University College London. This survey is being run in collaboration with Doctor Anne-Marie Russell, University of Exeter College of Medicine and Health.

Thank you for taking time to consider this survey. The study coordinator is Mr. Malik Althobiani. Please email: malik.althobiani.20@ucl.ac.uk if you would like more information about this survey.

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* 1. **What is your age group?**

◯ 18-24

◯ 25-34

◯ 35-44

◯ 45-54

◯ 55-64

◯ 65+

◯ Prefer not to say

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* 2. What is your professional status?

- ( ) Consultant physician
- ( ) Trainee physician
- ( ) Nurse
- ( ) Physician associate
- ( ) Speech and language therapist
- ( ) Occupational therapist
- ( ) Physiotherapist
- ( ) Healthcare assistant
- ( ) Primary care physician
- ( ) Dietician
- ( ) Clinical research
- ( ) Respiratory therapist
- ( ) Other (please specify)

[   ]

* 3. In what country do you work?

- ( ) England
- ( ) Scotland
- ( ) Wales
- ( ) Northern Ireland
- ( ) Rest of Europe
- ( ) North America
- ( ) South America
- ( ) Australasia
- ( ) Asia
- ( ) Africa
- ( ) Middle East
- ( ) Other (please specify)

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* 4. Is tele-health (As defined above) used by your place of work to remotely monitor ILD patients?

◯ Yes

◯ No

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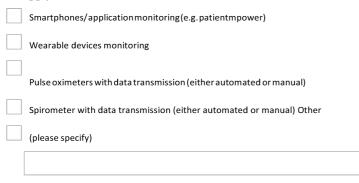## Tele-health for patients with interstitial lung diseases

* 5. Tele-health (remote monitoring) is used by your place of work: (Please check all that apply)

☐ To Provide early detection of exacerbation To

☐ identify disease progression

☐ To monitor quality of life

☐ To monitor use of medication including oxygen To

☐ help monitor recovery from exacerbations To

☐ avoid unnecessary in-person visit

☐ To provide psychological support

☐ Other (please specify)

[   ]

* 6. In your experience how effective is tele-health compared to face-to-face monitoring?

Not at all effective	Not particularly effective	Neither effective nor ineffective	Quite effective	Very effective
○	○	○	○	○

* 7. What technologies do you use at your centre to remotely monitor patients with ILD? (Please check all that apply)

☐ Smartphones/application monitoring (e.g. patient mpower)

☐ Wearable devices monitoring

☐ Pulse oximeters with data transmission (either automated or manual)

☐ Spirometer with data transmission (either automated or manual) Other

☐ (please specify)

[   ]

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* 8. What variables do you use at your centre to remotely monitor patients with ILD? (Please check all that apply)

☐ Symptoms Physical

☐ activity Oxygen use

☐

Oxygen saturation (SpO2)

☐

Spirometry

☐

Heart rate

☐ Respiratory rate

☐

The use of rescue medication

☐ Quality of life

☐

Cough (by audio detection)

☐ Other (please specify)

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* 9. Please tell us how useful you think the following tele-health options might be in monitoring patients with ILD? (Please check all that apply)

	Not at all useful	Slightly useful	Moderately useful	Very useful	Extremely useful
Remote monitoring for symptoms using electronic questionnaires	○	○	○	○	○
Home based monitoring using smartphone /tablet app	○	○	○	○	○
An online remote monitoring system using wearable sensor (e.g garmin, fitbit, apple watch)	○	○	○	○	○

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* 10. The main barriers to clinician participation in Tele-health are:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Lack of professional confidence	○	○	○	○	○
Lack of training	○	○	○	○	○
Lack of evidence for efficacy	○	○	○	○	○
Lack of time and/or work overload	○	○	○	○	○
Lack of organizational structure	○	○	○	○	○
Cost	○	○	○	○	○
Clinical governance issues	○	○	○	○	○
Technical issues	○	○	○	○	○

* 11. The main barriers to patient participation in Tele-health are:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Lack of confidence in tele-health	○	○	○	○	○
lack of knowledge of using smartphones	○	○	○	○	○
Lack of awareness	○	○	○	○	○
Lack of manual dexterity	○	○	○	○	○
Limited access to smartphones	○	○	○	○	○
Limited access to internet	○	○	○	○	○
Visual impairment (can not read LCD screens)	○	○	○	○	○
Mistrust of technology	○	○	○	○	○
Privacy and confidentiality concerns or issues	○	○	○	○	○
Language barriers	○	○	○	○	○

* 12. What would be the biggest help to you to set up tele-health in your institution?

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13. Do you have any further comments or suggestions regarding using tele-health programs?

14. Please enter your name and email, if you wish to see the survey results!(Optional)

Name

Email Address