NICE National Institute for Health and Care Excellence

Expert testimony to inform NICE guideline development

Section A: Developer to complete	
Name:	Ben Kenny Aidan Innes Jodie Breach
Role:	Expert Witness – Practitioner Director, Research Outcomes and Science Research Associate & Outcomes Analyst Senior Physiotherapist
Institution/Organisation (where applicable):	Nuffield Health
Guideline title:	Managing the long-term effects of COVID-19: update
Guideline Committee:	Expert Advisory Panel for the update of NG188
Subject of expert testimony:	Interventions and rehabilitation
Evidence gaps or uncertainties:	What pharmacological and non-pharmacological What monitoring is helpful to assess deterioration or recovery in people with ongoing physical and mental health symptoms and problems of functioning and disability following acute COVID-19? What symptoms or signs indicate that referral to specialist care is needed for assessment or management of post-COVID-19 syndrome? What components should be included in a service model for the delivery of services to adults, children and young people with post-COVID-19 syndrome?

The following questions were agreed by the expert advisory panel as being most important for the expert testimony to address:

1. What assessments (in primary care) and information on the referral form do you need to have before a person starts their rehabilitation?
2. Who do you accept referrals from?
3. What are the barriers to starting rehabilitation (e.g. blood tests not completed in primary care)?
4. Do you provide any advice for management of people in primary care (for example, where waiting lists are long and there is a delay in accessing specialist management and rehabilitation?)
5. How do you identify people who are appropriate for your rehab programme and how do you identify those who need to be referred to other care pathways for management of their symptoms?

6. What assessment do you undertake prior to starting a rehabilitation programme (face to face or virtual)?
7. What are the components of the rehab programme you offer (length of time, virtual or face to face, how many sessions), is it multimodality and what healthcare professionals are involved?
8. What ranges of symptoms do you see, have you seen 'clusters' of symptoms (phenotypes) and what approaches have you used/ have worked well/ what were the outcomes with different symptom clusters?
9. How do you take account of fluctuating symptoms within the rehab programme (e.g. can the person re-access if they relapse, or does it require a new referral)?
10. What are the criteria for discharge from your programme and subsequent follow-up?
11. Are there any data about outcomes from your programme (number entered, completed, withdrawn [why?] any improvement on QoL seen? Which outcome tools are you using (clinical tools and patient reported outcomes)?

Section B: Expert to complete

Summary testimony:

The programme developed by Nuffield Health for the rehabilitation of ongoing symptoms of COVID-19 was presented.

There are four main steps to the rehabilitation service:

1. Referral: via GP, Consultant, Physiotherapy clinics, occupational health, and, recently, self-referral.

Inclusion/exclusion criteria apply: no uncontrolled medical conditions that would be exacerbated by exercise, have had either confirmed or suspected COVID, must not have active acute COVID symptoms, able to independently walk a minimum of 20 metres and climb a single flight of stairs, have the use of a smartphone, tablet or computer with a camera and internet access, are aged 18 or over.

2. Those referred complete a digital preassessment questionnaire on their clinical history and current health status and functional capacity.

3. Telephone triage consultation with a trained physiotherapist. This in-depth conversation on the patient's COVID history is guided by the results of the preassessment questionnaire. It allows for screening of health conditions which are not suitable for the rehab programme, e.g., myocarditis or VTE that are not treated yet. Risk of cardiovascular, respiratory and fatigue symptoms is assessed to check whether further medical assessment is required (people are free to return after discussion on these symptoms with a medical professional). Clinical reasoning is used to determine if Dysautonomia is too severe to participate in some upright exercise.

If appropriate and safe a 30 sec sit/stand test is used to assess what level of activity should be recommended.

4. Programme: Weeks 1–6 are fully remote and consist of weekly one-to-one calls, build your own activity, online group exercise and access to online resources, including advice as well as being sent a COVID-rehab handbook that contains further advice and log/diary for participants to track progress.

Weeks 7–12 mirrors week 1-6, with the exception of group exercise which is in person (gym-based). Patients are also encouraged to complete 'build your own' activity in the gym setting also. At week 12 participants are discharged but can continue to access the online resources and the gym for a further 3 months.

Should a patient request or require a more gradual progression through the programme they have an option to remain on a digital only pathway until they are sufficiently prepared to advance into a gym setting.

The one-to-one weekly calls are with upskilled personal trainers who have undertaken CIMSPA accredited CPD. If needed, a patient's situation can be escalated to discussion at a fortnightly multidisciplinary team (MDT) meeting. Participants can have their activity levels adjusted to accommodate fluctuating symptoms, or even drop out and re-refer later. The MDT consists of cardio-pulmonary specialist, physician, mental and physical health practitioners.

Outcomes

To date there have been 1700 referrals over 41 sites. 78% female and 84% Caucasian. Average age: 45

Based on 150 people who have completed the programme, after 12 weeks patient-reported outcomes showed the following improvements:

- 39% improvement in breathlessness, 70% improvement in emotional wellbeing, 45% improvement in functional capacity, 41% improvement in fitness. 3% reported no improvement in any clinical outcome.

- Dropout rate was 27% primarily due to work commitments preventing attendance of gym sessions in weeks 7-12. There were no serious adverse events.
- Participant feedback was that they valued the comprehensive, individualised programme, which was easy to understand, and they could build a relationship with their rehabilitation specialist.

Questions from panel

Q. As it is technology-based, is the population representative of our sociodemographic? What is the economic impact for corporate colleagues in terms of return to work?

A. Only have postcode data, but the sociodemographic is broadly in line with national data. Being technology based hasn't been flagged as a barrier.

There is a huge demand from corporate clients. Use of Nuffield services has risen.

Q. Do you have confidence intervals, measures of precision for the data? This is a before and after study with no controls.

A. Confidence intervals can be provided. Difficult to find control data, so planning to use a waiting list control in future analyses. Happy to re-analyse if NHS control data can be provided.

Q. Who pays for the therapy, particularly the gym membership? Is cost a factor for the high level of dropout?

A. It is fully funded by Nuffield Health and therefore free for participants. The main reason for the high dropout rate is that by weeks 7–12 participants are returning to work and other commitments prevent them from attending classes.

Q. What is a rehabilitation specialist in this context?

A. Exercise professionals who have been upskilled/trained to deliver rehabilitation by completing CIMSPA accredited CPD developed by Nuffield Health.

Q. Part of the programme is run as a group (group exercise classes). What have been the benefits of group work, and has that been fully realised?

A. Participants have formed informal groups within the programme, but this has not been formalised or evaluated.

Q. What is the cost per participant for rolling out?

A. £200-300 per capita for the 12 weeks based on initial cost-benefit-analysis of pilot cohort but will be re-evaluated against larger data set in September 2021.

References to other work or publications to support your testimony' (if applicable):

https://www.frontiersin.org/articles/10.3389/fpubh.2021.628333/full protocol paper

https://www.isrctn.com/ISRCTN14707226?q=14707226&filters=&sort=&offset=1&totalResults=1&page=1&pageSize=10&searchType=basic-search

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None
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