

Insights from STIMULATE-ICP -and Evolving UK NHS Post Infection Condition Services

27th August 2026. ISLC-PAIS Conference Amsterdam

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On behalf of the STIMULATE Consortium

To cover

- Key insights from the STIMULATE-ICP Programme of work 2021-2025
- Creating future-proof NHS pathways and ongoing access to clinical trials for Long COVID and other Post-Infection Conditions

No conflicts of interests to declare



STIMULATE-ICP

Symptoms, Trajectory, Inequalities and Management: Understanding Long-COVID to Address and Transform Existing Integrated Care Pathways

NIHR COV-LT2-0043

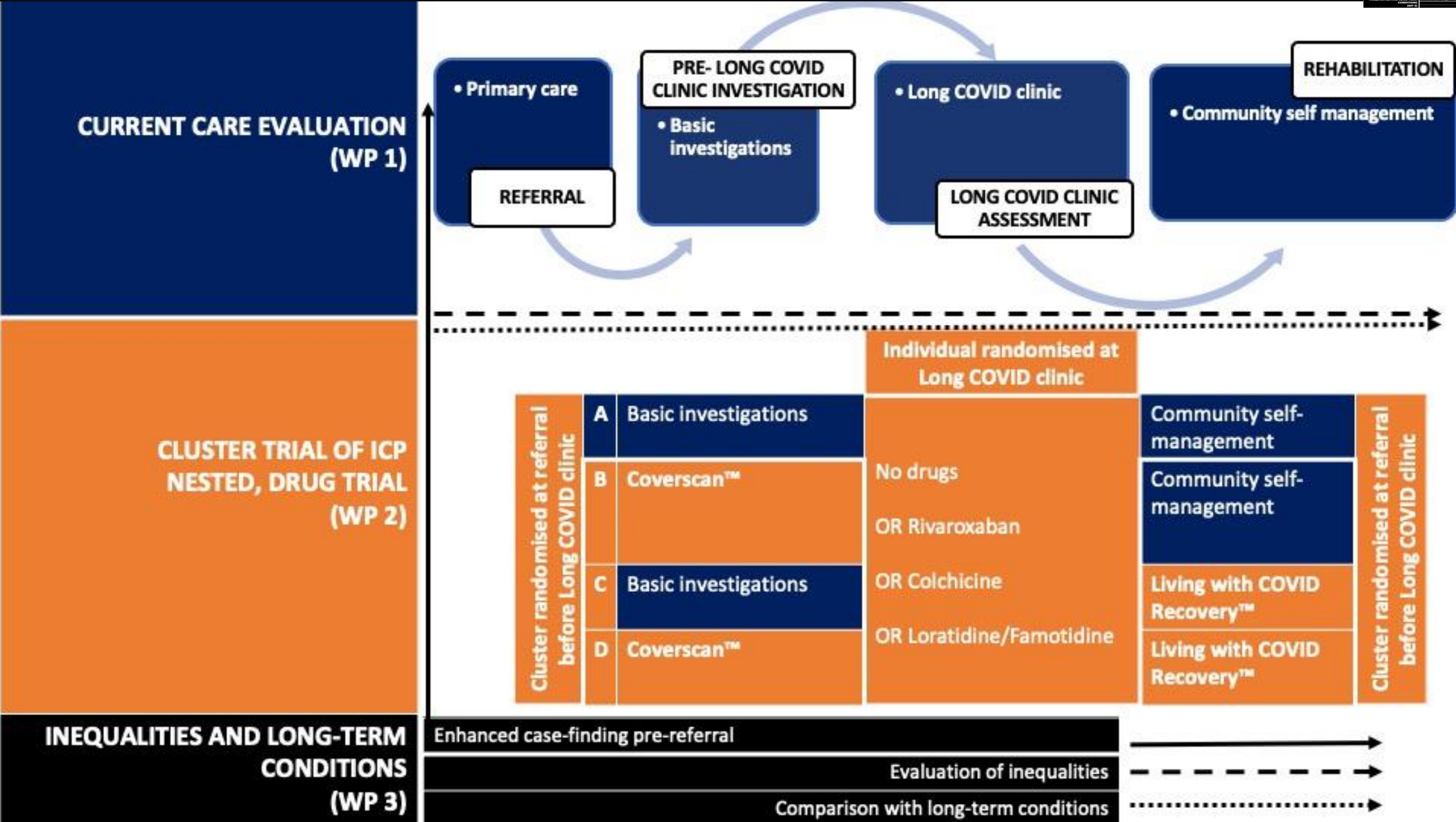
Grant awarded July 2021. Clinic started in April 2020 UCLH

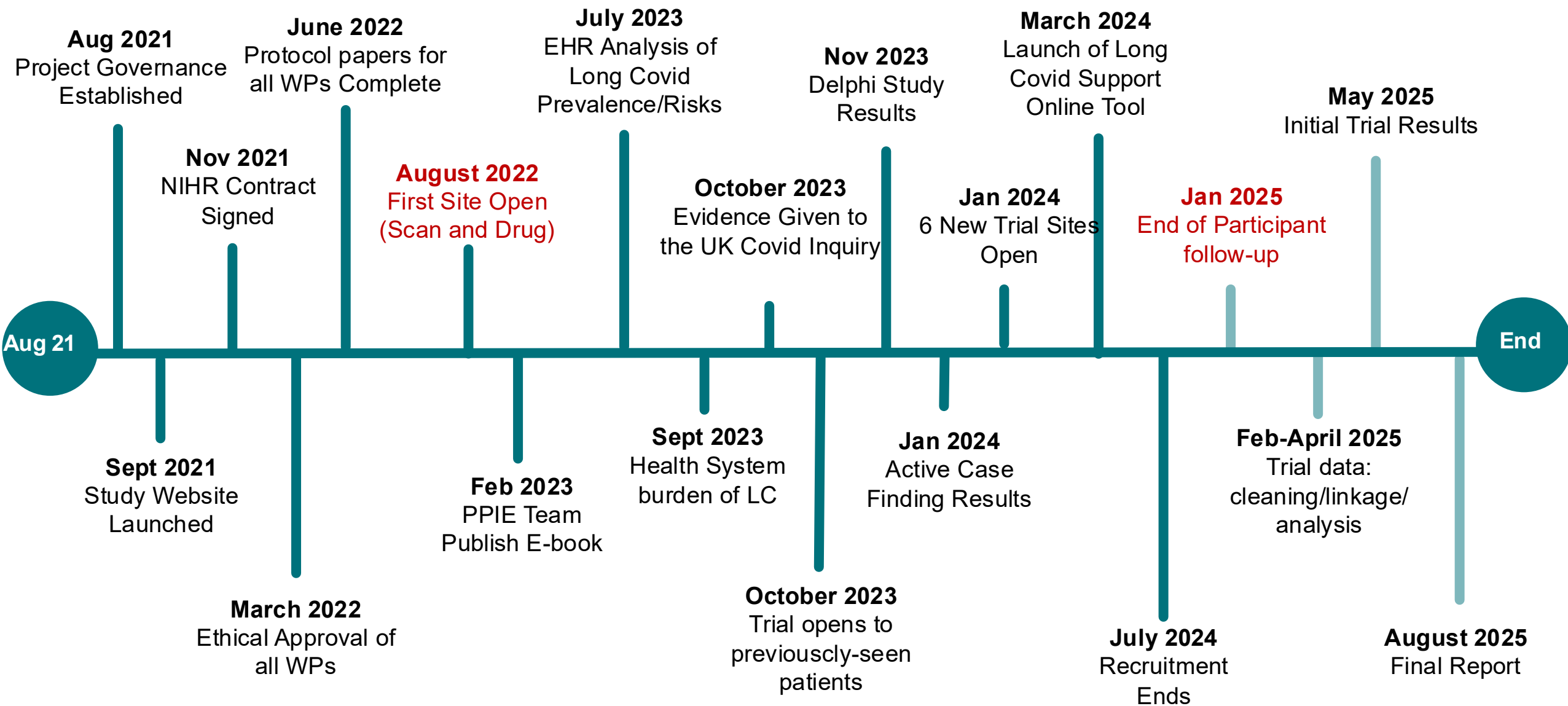
<https://www.stimulate-icp.org/>

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Health and Care Research



Symptoms, Trajectory, Inequalities and Management: Understanding Long-COVID to Address and Transform Existing Integrated Care Pathways





WP1 Care Needs and Outcomes

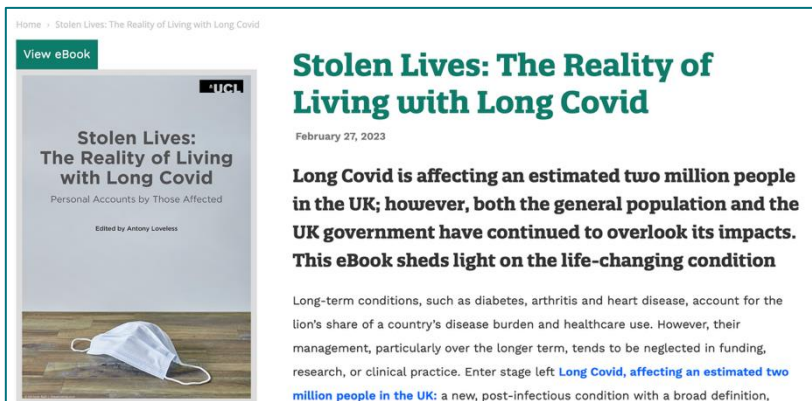
- 7.4% of those requiring medical attention following acute COVID-19 had at least one long-COVID symptom. However, **only 0.5% had long-COVID diagnostic codes recorded in the electronic medical record**
- **Prevalence, Risk Factors, and Characterization of Individuals with Long COVID Using Electronic Health Records in Over 1.5 Million COVID Cases in England** Han-I Wang, Christina Van der Feltz-Corenlis et al (Value in Health)
<https://www.sciencedirect.com/science/article/pii/S1098301523041839?via%3Dihub>
- **Healthcare utilization is high and varies by UK nation. LC services may reduce this**
- £6681.6 v £2039.9 in Wales (3.27-fold) and £3378.3 v £1355.8 in England (2.49-fold)- with excess cost of £2501 per person per year in Wales
- **Healthcare utilisation and cost among individuals with Long COVID in England and Wales: potential value of specialised post-COVID services (JSRM)**) <https://journals.sagepub.com/doi/10.1177/01410768261476537>
- After assessment in a post-COVID service, mean ED attendances/ year decreased by 0.12 (-0.14 to -0.12, $p<0.001$) with reduction in cost of £16.49 (-£17.89 to -£15.10); the number of outpatient appointments reduced by 1.10 (-1.14 to -1.07, $p<0.001$), with cost reduction of £225.83 (-£232.71 to -£218.98, $p<0.001$) (n=107 874- NHSE LC Registry- unpublished submitted)
- **Healthcare utilisation of 282,080 individuals with long COVID over two years** Yi Mu, Ashkan Dashtban, Ami Banerjee et al (JRSRM) <https://journals.sagepub.com/doi/10.1177/01410768241288345>

WP1 Care Needs and Outcomes

Patients experience **significant barriers to accessing experienced care** with significant national variation. Dedicated services bring validation and more consistent approaches to care

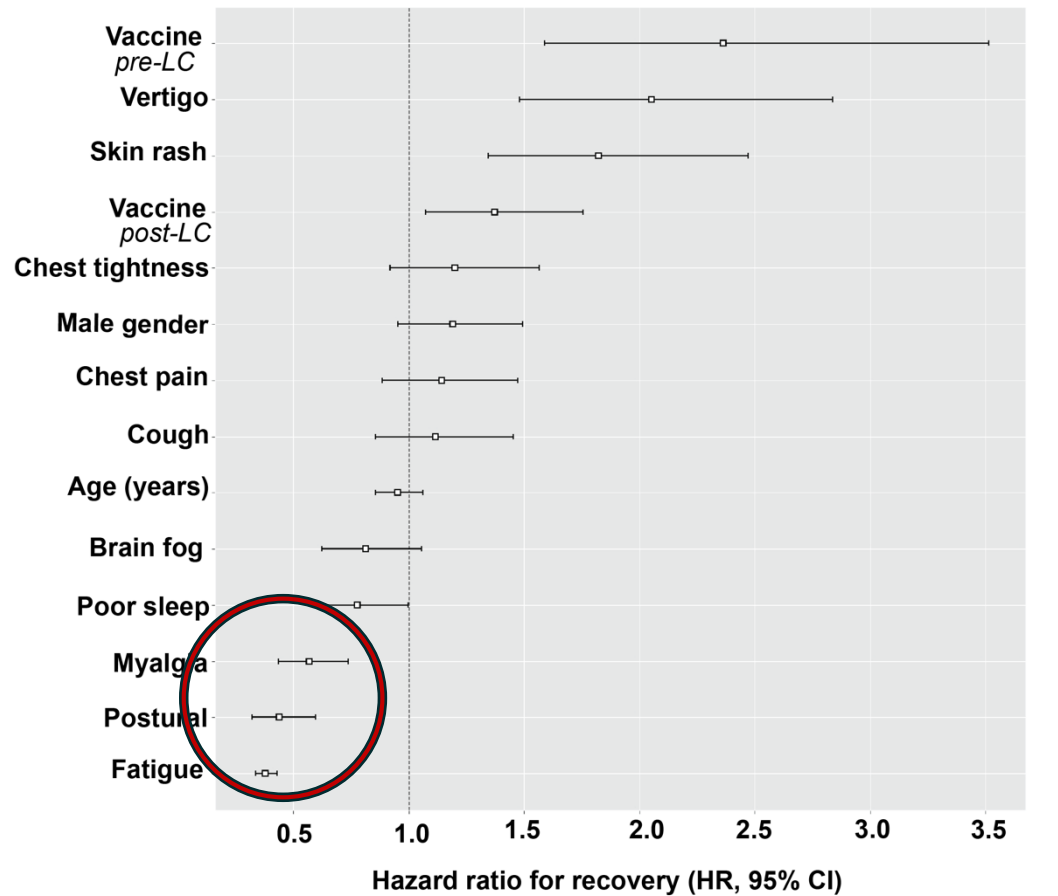
Long COVID symptoms & demographic associations: A retrospective case series study using healthcare application data
Sunkersing, Banerjee et al (JRSM) <https://journals.sagepub.com/doi/10.1177/20542704241274292>

What is current care for people with Long COVID in England? A qualitative interview study. David Sunkersing, Melissa Heightman et al (BMJ Open) <https://bmjopen.bmj.com/content/14/5/e080967.full>



WP1 Care Needs and Outcomes

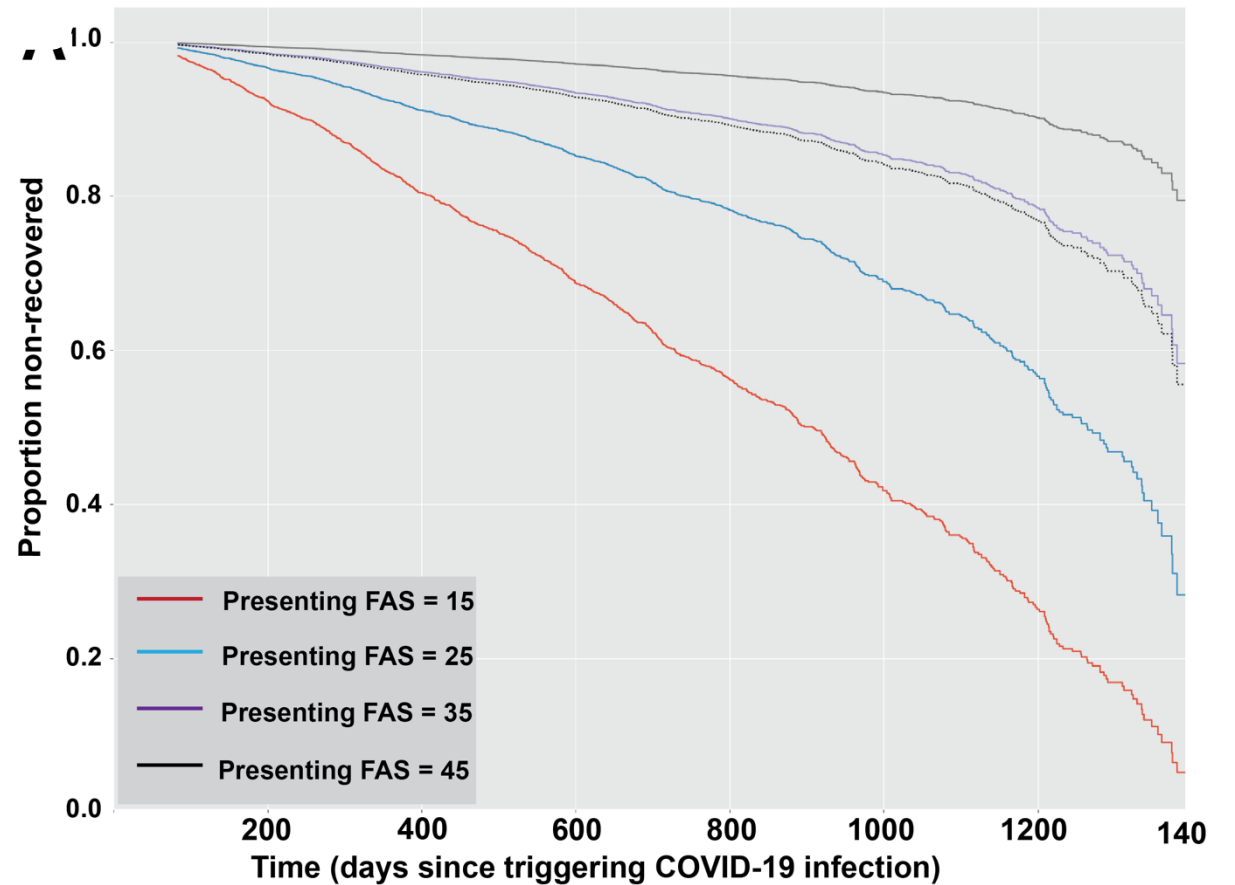
5234 patients UCLH Long COVID referral clinic 202



Non-recovery ← → Recovery

Proportionate cox hazards regression model

24. Recovery = >75% self-reported 'best health'



Trajectory, healthcare utilisation and recovery in 3590 individuals with long covid: a 4-year prospective cohort analysis. Jai Prashar, Melissa Heightman, Ami Banerjee et al (BMJ Open)

<https://bmjopen.bmj.com/content/16/1/e103884>

Supporting Long Covid Care



Illustrations by [Tom Bailey](#)

Take part in our evaluation

Learn more about how you can help us evaluate and improve the SLCC (Supporting Long Covid Care) webtool.

Long Covid (also known as [post-COVID-19 condition](#) and [post-COVID-19 syndrome](#)) is the experience of still being unwell in the weeks, months or even years following a COVID-19 infection.

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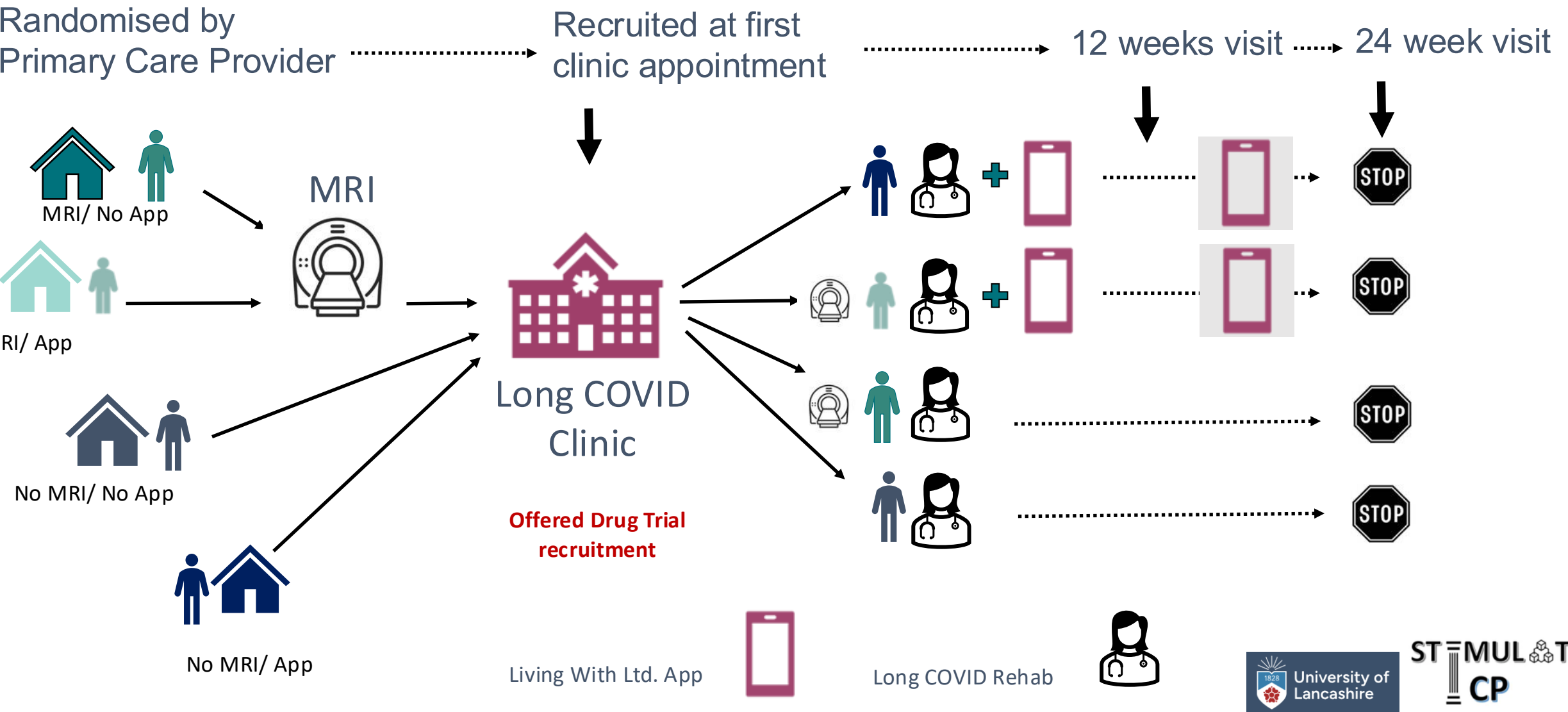
[Next steps](#) and getting support

Need [additional support](#)?

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STIMULATE-ICP Consortium. Integrated care pathway in individuals with Long COVID: STIMULATE-ICP, a cluster-randomized, phase 3 trial. *Nat Med* **32**, 3040–3047 (2026). <https://www.nature.com/articles/s41591-026-04552-x.pdf>

Cluster Trial Protocol: 6 UK sites, Aug 2022- Jan 2025



WP2- Trial of integrated pathway elements



- Phase 3, cluster randomised 2x2 factorial trial, cluster randomising at primary care network level (stratified for deprivation and list size)
- Delivering Multi-organ MRI and or digital rehab as an uplift to usual care
- 6 UK Long COVID clinics. Participants were also offered recruited to the drug trial at their first clinic visit
- 6,934 potential participants screened 22 August 2022 and 7 August 2024
- 1,152 adults consented across 122 PCN clusters 22 Aug 2022 to 7 Aug 2024

Findings

- Severe baseline fatigue: mean FAS 35.8 (SD 8.2), 66.4% female; median symptom duration 394 days (IQR 238–717)
- FAS improved by 4.5 points to 31.3 across all arms (12.6% reduction).
- At 12 weeks there was no significant difference vs. usual care: MRI–0.18 (95% CI–0.72, 1.09; P=0.69) or digital rehabilitation–0.53 (–1.42, 0.36; P=0.25)
- At 24 weeks, digital rehabilitation showed a small but significant benefit for fatigue (–1.14, P=0.023) and quality of life (EQ-VAS +2.74, P=0.045). Extent of time spent interacting with the digital platform did not impact extent of improvement seen. No serious adverse events were related to any ICP intervention
- Further secondary outcome analysis is underway including evaluation of healthcare utilisation

Reflections on the ICP trial

- Large pragmatic trials of integrated pathway elements are feasible and should guide iterative pathway design for Long COVID and other post infective conditions
 - Specialist long covid care is associated with improved fatigue over short time frames. Future trial design could incorporate a no care control
 - Digital rehabilitation may offer additional longer term benefit (but should not be a substitute for specialist care)
 - Multiorgan MRI does not change treatment approaches at present in NHS management. And end-organ change associates with fatigue severity but does not appear to influence initial outcomes from usual care approaches. Not therefore recommended for routine use at present.
-
- Multi-organ impairment and long COVID: a 1-year prospective, longitudinal cohort study Andrea Dennis, Ami Banerjee et al (JRSM) <https://journals.sagepub.com/doi/10.1177/01410768231154703>
 - Living With COVID Recovery: <https://livingwith.health/covid-recovery/>

WP2- Trial of repurposed medicines

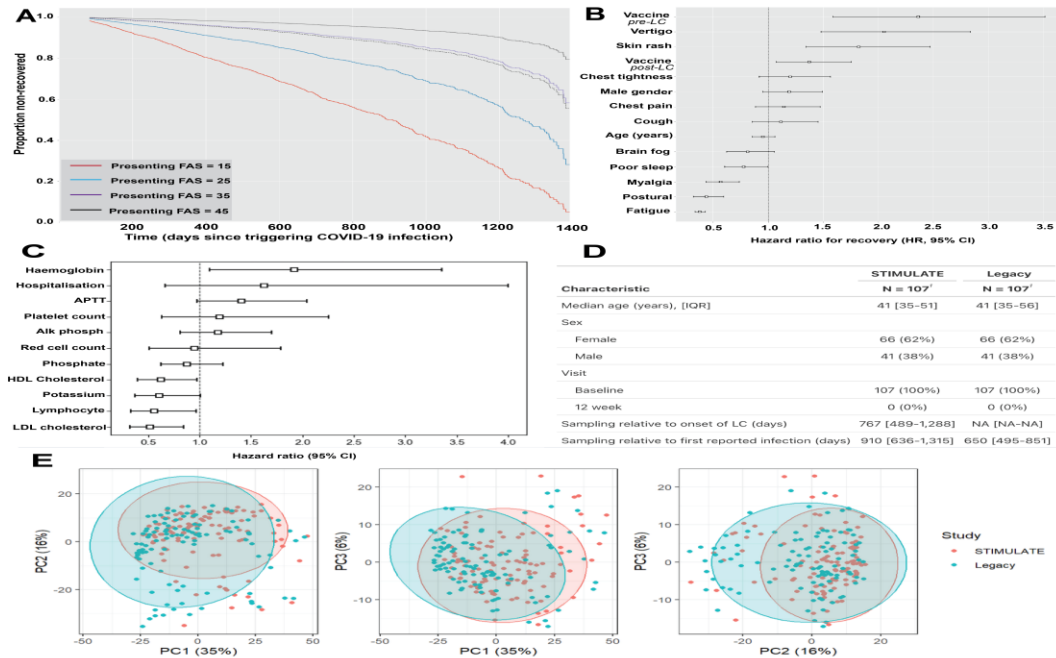


Figure 1: (A) Kaplan-Meier plot showing the proportions of patients that do not report recovery from LC (<75% best health) in UCLH NH-LC patients (n=2198, unpublished data), stratified by Fatigue Assessment Score (FAS) group recorded at the first clinic visit: (10-15, no fatigue, 16-25 minimal fatigue, 26-35 marked fatigue, 36-45 severe fatigue). **(B):** Cox proportional hazards regression model showing factors associated with spontaneous recovery from LC at first assessment (n=2811). Recovery is defined as subjective attainment of >75% of best health between first and most recent assessment indicates association with recovery. HR = hazard ratio, points indicate HR estimate, bars indicate 95% CI. HR (95% CI) >1.0 suggests independent association with recovery. **(C):** Cox proportional regression model testing laboratory variables associated with spontaneous recovery. Higher LDL cholesterol independently associates with non-recovery. **(D):** Table comparing demographic details of matched participants in the validation data from our proof-of-concept proteomics study comparing the plasma proteome between Legacy (HC) and STIMULATE-ICP (NH-LC) - total n=195, discovery n=88, validation n=107 **(E)** Principal component analysis of the entire plasma proteome in the validation data (n=107) (unfiltered, n=2920 proteins detected). Each dot represents a sample (salmon = STIMULATE-ICP (NH-LC), blue = Legacy HC). We found no significant separation of the samples when analysing PC1-3 against each other.

Wall E, Prescott G, Heightman M, Dehbi H, Banerjee A et al.
Efficacy and safety of rivaroxaban, colchicine, and famotidine-loratadine with specialist supportive clinical care for fatigue in patients with post-COVID-19 condition in the UK: a multisite, open-label, randomised controlled trial

The Lancet Infectious Diseases, 2026;

<https://www.thelancet.com/journals/laninf/article/PIIS1473-3099%2826%2900242-2/fulltext>

WP2- Trial of repurposed medicines

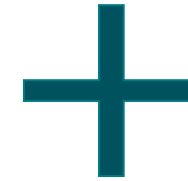
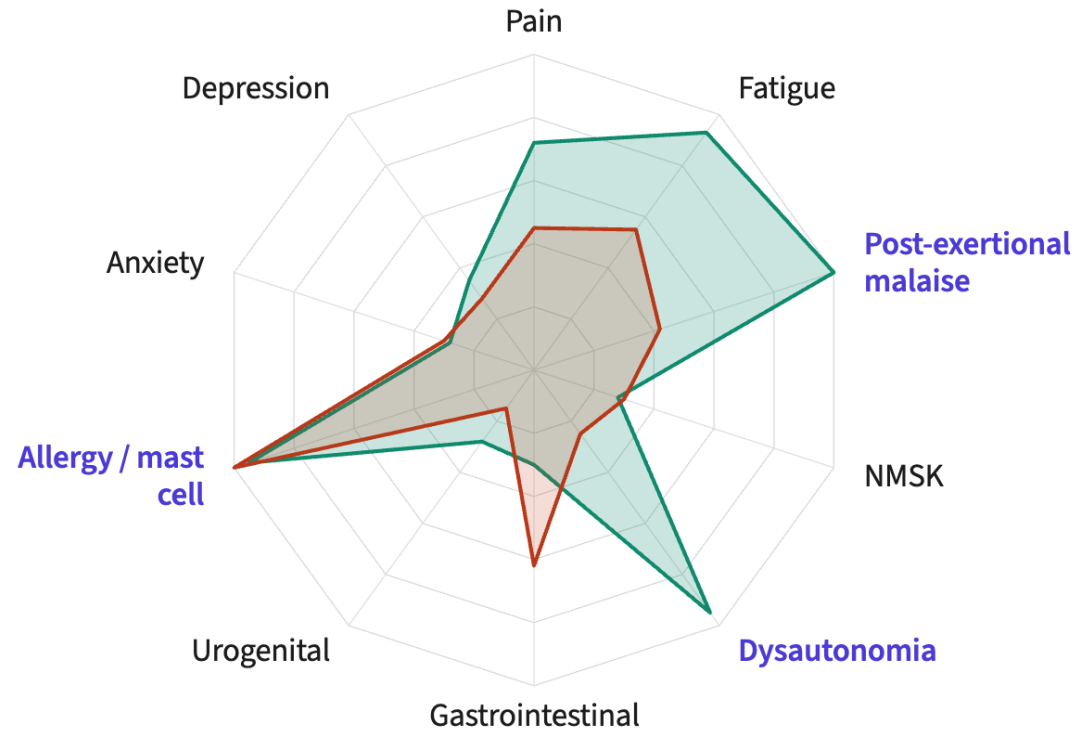


- Phase 3, 4-group open-label study of Colchicine 500µg bd, Loratadine+Famotidine, Rivaroxaban 10mg od
- 12 UK sites, 12 weeks of intervention and monitored for 24 weeks
- 776 non hospitalised individuals on NHS commissioned pathway for LC, 383 of which were also enrolled in the integrated care pathway trial (6035 eligible participants)
- Severe fatigue at baseline: FAS 36·8 [SD 7·49] and median symptom duration 775 days
- Clinically relevant mean FAS reduction in all groups of 4·3 points to 32·5 (SD 9·13) at 12 weeks
- Statistically significant FAS reductions at 12 weeks in:
 - colchicine (−1·49 points [95% CI −2·92 to −0·06], $p=0·041$)
 - and famotidine–loratadine (−1·48 points [−2·88 to −0·08], $p=0·038$) groups,
 - but not in the rivaroxaban group (−1·06 points [−2·47 to 0·35, $p=0·139$), compared to no drug
- The small impacts on FAS were not sustained after drug removal
- Safety: 14% of participants GI adverse events with colchicine, 13% minor bleeding or menorrhagia with rivaroxaban. No serious adverse event attributed to the trial medication.
- Secondary outcomes: EQ5D, WSAS, PHQ/ GAD7, SF12
- No difference in outcomes between those within the ICP trial and without (but different symptom duration)

Reflections on the drug trial

- Challenging context for clinical trials
 - no FDA approved treatments,
 - no validated disease specific outcome measures for use in trials
 - biomarker patterns are heterogeneous and correlate inconsistently with phenotypes
 - PROMs are subjective and the condition is a fluctuating one
- Open label design was pragmatic and preferred by patients but future placebo-controlled trials justified with these agents
- Recruitment felt slow (but was at >10% of those screened). Fatigue was a barrier
- FAS was a reasonable primary outcome choice in 2021 but too simplistic for 2026
- Future trials should have more refined assessment of LC sub-phenotypes
- Retain ability to consider the synergy between medical treatments and non-pharmacological interventions.

Future trial design could combine:



Assessment of non-pharmacological strategies used

- pacing (wearables)
- patient activation and confidence
- psychology support
- vocational rehab

Assessment of symptom subgroups

- Profile A – PEM / dysautonomia predominant
- Profile B – allergy / mast cell predominant

WP3 Inequalities/ Integrated care

Supporting Long Covid Care



Illustrations by Tom Bailey

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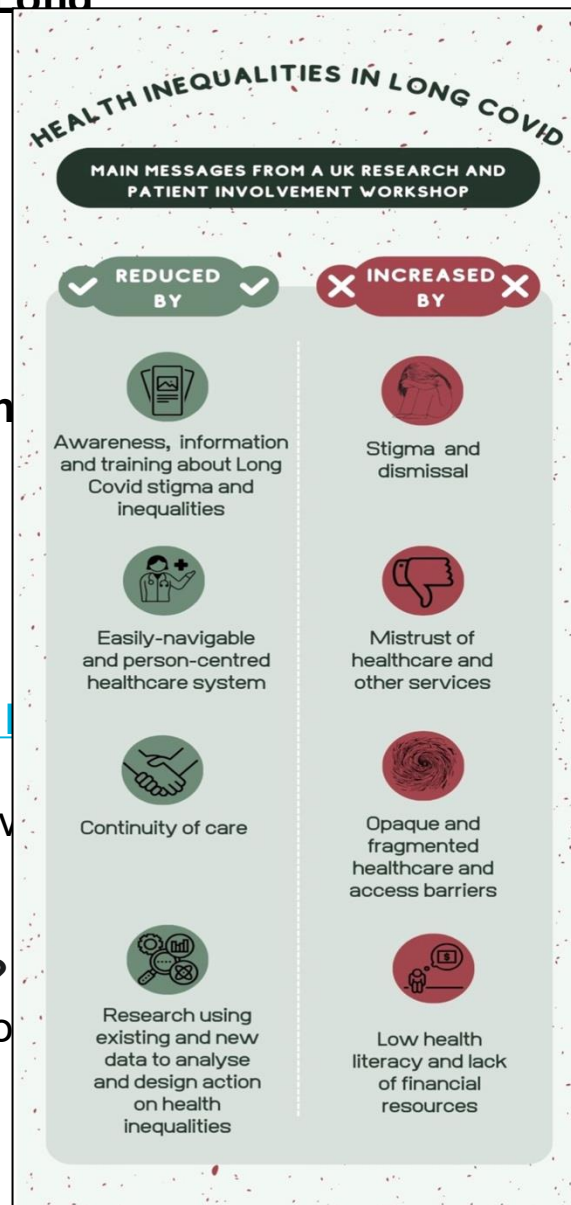
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e Scientific Reports)

nts and healthcare
Feltz-Cornelis et

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[.org.uk](#)



- Greatest barrier was in access to specialist input
- Challenges in the extent to which primary care could “hold” the patient long term
- NHS waiting times
- Inconsistencies in the extent of integration between primary and secondary care

Delphi Consensus Points to similar priorities in LTCs and LC

-180 clinicians and 461 patients

Statements	Long COVID N=197					Long term Conditions N=197				
	Median ^a	IQD 50% (Q3- Q1)	IQD 70% (85%- 15%)	Rank Sum	Priority	Median ^a	IQD 50% (Q3- Q1)	IQD 70% (85%- 15%)	Rank Sum	Priority
1. Ensure the person is listened to, acknowledged, supported and believed, thus validating their experience and knowledge	1	0	1 ^b	935	1	1	0	1 ^b	1017	1
2. Provide appropriate diagnostic assessment, which is person-centered to rule out other conditions, aiming to confirm a diagnosis	1	1	1 ^b	1085	2	1	1	1 ^b	1018	2
3. Provide evidence-based treatment and recommendations	1	1	1 ^b	1143	3	1	1	1 ^b	1204	5
4. Ensure services have sufficient and appropriate resources, including funding	1	0	1 ^b	1182	4	1	0	1 ^b	1160	3
5. Ensure clinicians and services provide knowledge and understanding of symptoms and services available to patients	1	1	1 ^b	1189	5	1	1	1 ^b	1177	4
6. Offer timely, consistent and easy access to multidisciplinary care	1	1	1 ^b	1235	6	1	1	1 ^b	1241	6
7. Include long term care with reviews of health, care provision, personalized care plans and provide a care coordinator	1	1	1 ^b	1597	7	1	1	1 ^b	1446	7
8. Provide self-management advice and support in line with individual needs and abilities	1	1	1 ^b	1606	8	2	1	1 ^b	1801	9
9. Provide personalized evidence-based fatigue management	1	1	1 ^b	1660	9	1	1	1 ^b	1810	10
10. Offer personalized continuity of care	1	1	1 ^b	1753	10	1	1	1 ^b	1627	8

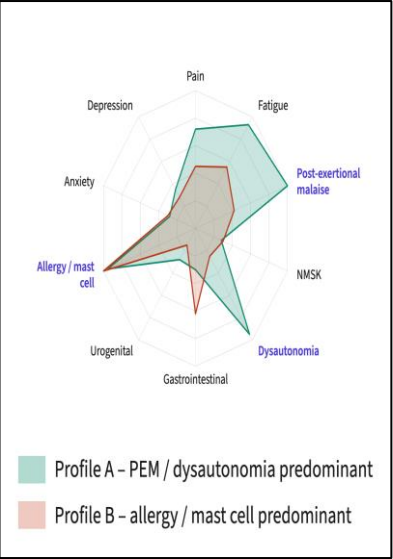
Integrated Care Priorities for Complex, Multi-System, Long-Term Conditions and for Long COVID.
Christina van der Feltz-Cornelis, Ami Banerjee et al (Nature Scientific Reports)
<https://rdcu.be/dKHfP>

The future for Long COVID service provision and clinical trials in the UK?

- Uncertain! But commissioning guidance from NHSE still stands [NHSE Commissioning guidance](#)
- DHSC final delivery plan ME/CSF <https://www.gov.uk/government/publications/mecfs-the-final-delivery-plan> no new funding
- Need to influence ICB strategy to secure ongoing clinical care
- Consolidating pathways makes sense given overlapping needs and workforce constraints
- NIHR Funding recently awarded to develop platform interventional trials *across* PIC
- Small numbers of UK researchers in this field- how to stabilize their ongoing work
- Need to optimize use of existing biobanks through collaboration
 - (Please contact ami.banerjee@ucl.ac.uk if of interest. Mechanistic work being led by Prof Emma Wall- Francis Crick institute emma.wall@crick.ac.uk)

Post COVID pathways – steep learning curve NHS 2021-4

How to maintain consistency, expand and continue to improve.



nature medicine

Article

<https://doi.org/10.1038/s41591-026-04552-x>

Integrated care pathway in individuals with Long COVID: STIMULATE-ICP, a cluster-randomized, phase 3 trial

Received: 15 October 2025

Accepted: 29 June 2026

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Check for updates

STIMULATE-ICP Consortium*

Combining multidisciplinary care plans into integrated care pathways (ICPs) is scalable, generalizable and effective for several long-term conditions, but not evaluated in Long COVID (LC). Our phase 3, cluster-randomized, multicenter clinical trial investigated the effectiveness of ICP interventions for LC. Recruitment of adults ≥ 18 years with LC was conducted in 6 National Health Service LC clinics in England with specialist ICPs. The intervention arms were (i) multi-organ magnetic resonance imaging (MRI; Coverscan), (ii) digital rehabilitation (Living with COVID Recovery), (iii) both multi-organ MRI and digital rehabilitation, and (iv) neither multi-organ MRI nor digital rehabilitation (usual care); cluster randomizing at primary care network (PCN) level to deliver interventions as ‘standard of care’ in that area. The primary endpoint was mean Fatigue Assessment Scale (FAS) at 12 weeks. Secondary endpoints included FAS at 24 weeks and EQ-5D-5L visual assessment scale at 12 and 24 weeks. A total of 1,152 participants from allocated PCNs consented to data collection, and 122 PCN clusters were allocated to the multi-organ MRI (33 PCNs), digital rehabilitation (32 PCNs), ‘both’ (27 PCNs) and ‘neither’ (30 PCNs) arms. Baseline FAS was equivalent across groups (mean 35.8, s.d. 8.21, 66.4% female). Overall, the primary outcome was achieved in all arms, with scores improving by 4.5 points to

Efficacy and safety of rivaroxaban, colchicine, and famotidine–loratadine with specialist supportive clinical care for fatigue in patients with post-COVID-19 condition in the UK: a multisite, open-label, randomised controlled trial

STIMULATE-ICP consortium*

Summary

Background Post-acute sequelae of COVID-19 or post-COVID-19 condition (also known as long COVID) affects 1–5% of adults globally, most commonly with fatigue, and no evidence-based therapies are available. We aimed to evaluate the efficacy of repurposed medications in fatigue management in adults with long COVID.

Methods We did a phase 3, four-group, randomised, controlled, adaptive platform, open-label drug trial nested within a pragmatic, multicentre, cluster-randomised trial of an integrated care pathway (ICP) for long COVID across 12 UK National Health Service (NHS) specialist long COVID care clinics in the UK. Participants had to be adults (≥ 18 years) with long COVID who had not been hospitalised with COVID-19. In addition to NHS specialist-led long COVID care (hereafter, usual care), participants in the ICP trial could receive multiotherg MRI and clinical decision support and/or app-based rehabilitation. Initially, participants in the ICP trial were invited to enroll in the drug trial, but later recruitment to the drug trial led to establishment of additional drug-only trial sites. Participants enrolled in either ICP trial sites or drug-only trial sites were randomly assigned (1:1:1:1) to receive colchicine 500 µg twice daily, rivaroxaban 10 mg once daily, famotidine 40 mg with loratadine 10 mg once daily, or no drug for 12 weeks. All participants received usual care. Randomisation was done electronically in blocks (various block sizes) and stratified by site, birth sex, ICP trial group allocation, and being a new or previous patient of a drug-only site. The primary endpoint was 12-week fatigue, assessed with the Fatigue Assessment Scale (FAS), with scores ranging from 0 (no fatigue) to 39 (debilitating fatigue), and a $\geq 10\%$ change considered clinically meaningful among randomly assigned individuals who had available baseline and 12-week data, adjusting for baseline fatigue and clinically relevant covariates. Secondary endpoints included 24-week FAS. The nested drug trial is registered, ISRCTN1066760. The trial is complete.

LC Rehab

Principles of care for Long COVID

Patients should be managed according to current clinical guidance such as that published and updated by NICE. Where possible, patients should be given access to any ongoing suitable programmes of research such as trials of treatment or rehabilitation.

Personalised care

An individual personalised care plan is one of the most important aspects of supporting recovery for people living with long COVID. Actively listening to people and asking, ‘what matters to you?’ supports planning and shared decision-making based.

• Staff training can be accessed via the [Personalised Care Institute \(PCI\)](https://www.nhs.uk/long-covid-recovery/) which provides PCI accredited e-learning website and access to accredited training providers and programmes and resources. More information can be found at [NHS Long COVID e-Learning](https://www.nhs.uk/long-covid-recovery/).

Multidisciplinary support and rehabilitation

The skilled long COVID clinical multidisciplinary team should enable:

- The development of individual care plans for physical, mental, and social needs, which may include digital programmes such as [Living with COVID Recovery](https://www.nhs.uk/long-covid-recovery/) and [ELAPUS](https://www.nhs.uk/long-covid-recovery/) C19-3535.
- Provision of the multifaceted care rehabilitation offer.
- Access to clinical review and more specialist advice or rehabilitation when needed, typically via MDT case discussion meetings.
- Care co-ordination for streamlined care.

Supporting and enabling self-care including digital supported self-management

Individuals should be provided with information in a way that is accessible to them as digital tools may not be suitable for all. Options include:

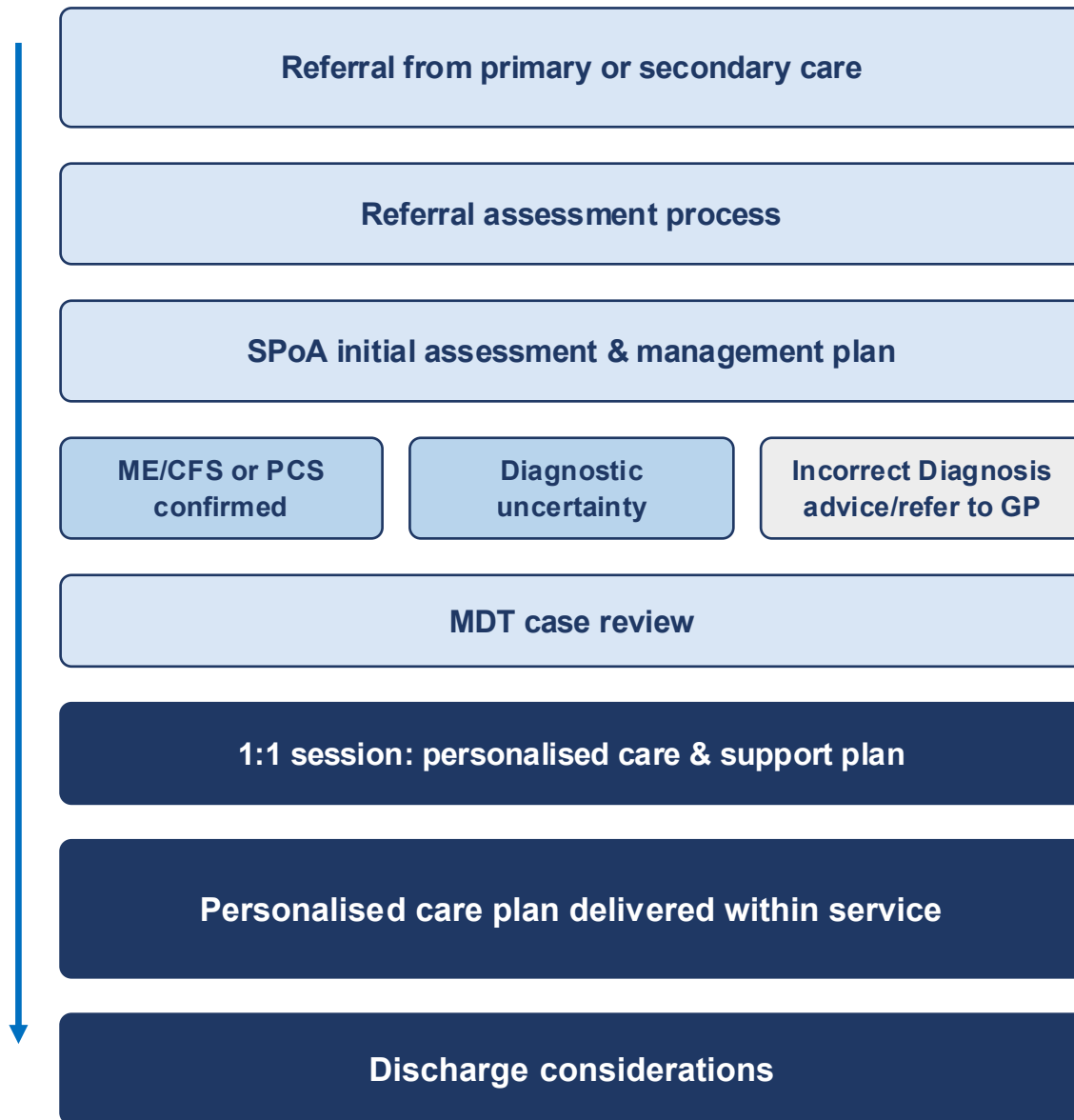
- Signposting to the [Your COVID Recovery](https://www.nhs.uk/long-covid-recovery/) website. [Your COVID Recovery](https://www.nhs.uk/long-covid-recovery/) is an NHS supported online information platform designed for and with people with Long COVID offering



University College London Hospitals

NHS Foundation Trust

Service Specification for Post Infection Conditions

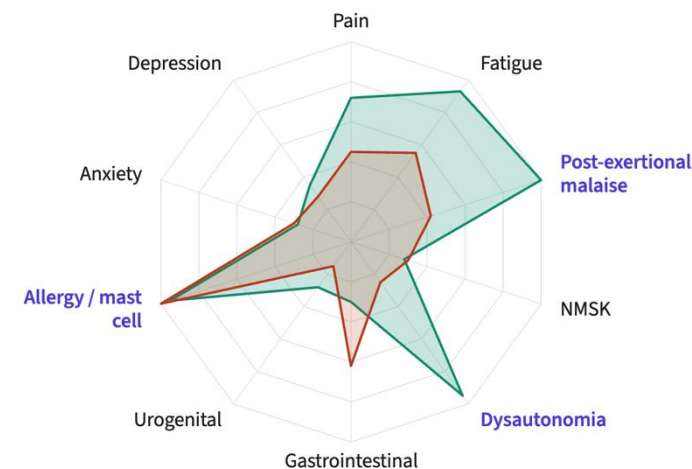


What to include?

- MECSF
- Post COVID Syndrome
- Fibromyalgia
- POTs

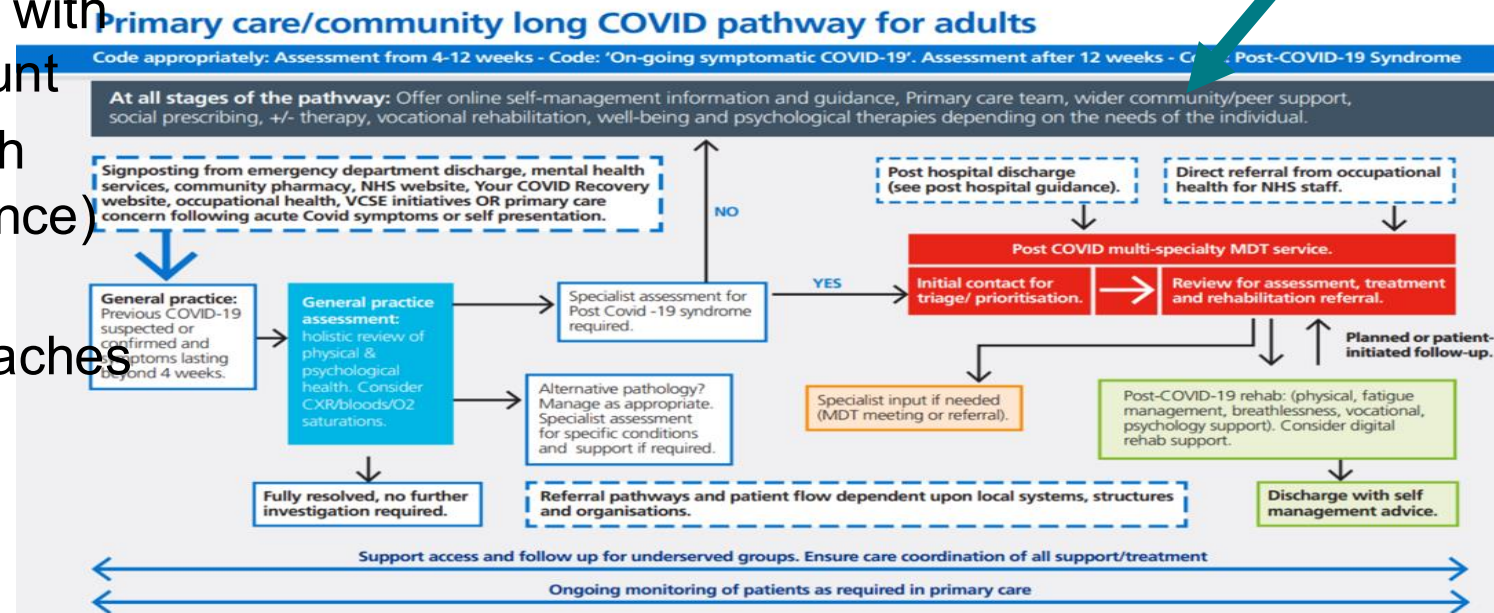
Need to maintain diagnostic integrity
(think research)

Sub-phenotype evaluation



Embedding care within neighbourhood health strategy

- In the UK the NHS 10-year plan encompasses 3 shifts
 - From Sickness to Prevention
 - From Hospital to community
 - From Analogue to Digital
- Local NHS systems are focused on establishing integrated neighbourhood teams
- Need to ensure needs of people with PAIS / PIC are taken in to account
- INTs need to work effectively with specialist teams (skills transference)
- Increased diagnostic coding will support population health approaches







Acknowledgements



Measure	Baseline	Target	Actual	Notes
1. Proportion of people with frailty, complex needs, and social inequalities who are assessed and supported by a multi-agency care coordination team	0	100	100	100%
2. Proportion of people with frailty, complex needs, and social inequalities who are supported by a multi-agency care coordination team	0	100	100	100%
3. Proportion of people with frailty, complex needs, and social inequalities who are supported by a multi-agency care coordination team	0	100	100	100%
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10. Proportion of people with frailty, complex needs, and social inequalities who are supported by a multi-agency care coordination team	0	100	100	100%

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Long COVID SOS
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Kamlesh Khunti
Laren O'Mahoney

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University of Exeter
David Strain

University of Hull
Michael Crooks
Angela Green

Industry partners
Living with your COVID recovery
Chris Robson

Perspectum
Rajarshi Banerjee
Mike Brady
Cat Kelly
Rob Suriano

University of Liverpool
Dan Cuthbertson
Dan Wooton
Mark Gabbay
Gregory Lip
Nefyn Williams

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STIMULATE



Thank you to our clinical teams, researchers and lived experience partners

ICP intervention 1: Digital Rehabilitation



- Co-designed with NHS clinicians, UCL and NIHR funded
- Symptom based information
- Questionnaires for monitoring
- Push Notifications and Clinician message dashboard
- Widespread NHS adoption in LC services
- Clinician-led onboarding

Remotely assess, manage and rehabilitate more patients in less time across multiple conditions.

One platform, one app: numerous patient pathways.



Perspectum Ltd.



Dennis *et al*/ Multi-organ impairment and long COVID: a 1-year prospective, longitudinal cohort study, J R Soc Med, 2023. <https://doi.org/10.1177/01410768231154703>

