EVIDENCE SYNTHESIS BRIEFING NOTE

TOPIC: **THE ASSESSMENT AND TREATMENT OF POST-COVID-19 CONDITION**

Information finalized as of April 11, 2022.[a] This Briefing Note was completed by the Research, Analysis, and Evaluation Branch (Ministry of Health), with some information provided by a member of the COVID-19 Evidence Synthesis Network. Please refer to the <u>Methods</u> section for further information.

Purpose: This briefing note provides a summary on the assessment and treatment of post-COVID-19 condition.

Key Findings and Implications:

- **Models of Care**: Three care models for post-COVID-19 condition were identified, of which two use virtual modalities:
  - <u>Primary Care Provider (PCP) Model</u>: This care model uses PCPs to assess symptoms, manage medication, and refer patients to specialists if needed. Noted strengths include patient familiarity, while lack of PCP training/resources and fragmented care resulting from complicated care coordination processes with specialists may be limitations.
  - <u>Hybrid Care Model</u>: This care model uses inter/multidisciplinary teams to deliver treatment through virtual modalities and overall reports mixed findings in the United Kingdom (UK) and United States (US). Noted strengths include streamlined resources, timely access to care, coordinated care, and strategically delegated responsibilities. Virtual modality limitations include difficulty establishing consistent and geographically equitable pathways of referral, and digital poverty and illiteracy hindering access to telemedicine appointments.
  - <u>Post-COVID-19 Clinic Model</u>: This care model uses specialized clinics to treat patients with post-COVID-19 condition and overall reports mixed findings in the UK and US. A noted strength includes improved patient ratings after post-COVID-19 rehabilitation, while limitations include higher no-show rates to treatment programs, patient difficulty using telemedicine, longer wait times due to the need for translators, and unintegrated electronic medical records.
- **Waitlists**: There are long waitlists (i.e., seven to nine months) for treating patients with post-COVID-19 condition noted in Italy, UK, and US due to: 1) limited post-COVID-19 clinics due to insufficient funding; 2) low staffing at post-COVID-19 clinics, resulting in months-long waitlist; 3) lengthy triage processes from referral to therapy (e.g., three months); and 4) limited access to treatment (e.g., three months wait).
- **Insurance Assessments**: There are five barriers to post-COVID-19 condition insurance assessments identified across three population types (low-income, marginalized, and the general population) in India, the UK, and US. To address these barriers, studies in the US noted the importance of government intervention (i.e., policy and Congress) advocating for the inclusion of post-COVID-19 condition in billing codes. Barriers are noted below:
  - 1) <u>Limited Medical Evidence</u>: Denying disability claims due to insufficient medical evidence (i.e., the lack of a positive COVID-19 test); 2) <u>Asymptomatic COVID-19 Symptoms</u>: Symptoms such as fatigue, brain fog, and depression are "invisible", making it difficult for long-haulers to "prove" they are sick; 3) <u>Unreliable Insurance Policies</u>: Insurance companies denying post-COVID-19 disability claims even when symptoms and evidence are provided; 4) <u>Billing Infrastructure</u>: Inconsistent insurance reimbursement and billing codes; and 5) <u>Classification of Health Conditions</u>: Difficulty obtaining health coverage for COVID-19, as it is considered a pre-existing condition with ambiguous symptomology.

Implementation Implications:

- **Models of Care**: Virtual modalities have become a leading method of delivering treatment for particular post-COVID-19 conditions through most care models, and consideration should be given to the context and population being served to address potential accessibility and operational limitations.
- **Waitlists**: Long waitlists for post-COVID-19 care can be addressed by establishing more clinics and increasing medical/administrative staffing to shorten the triaging and time to receive treatment.
- **Insurance Assessments**: Post-COVID-19 symptomology, insurance policies, and billing structures should be standardized by insurance providers to deliver equitable assessments and coverage.

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[a] This briefing note includes current available evidence as of the noted date. It is not intended to be an exhaustive analysis, and other relevant findings may have been reported since completion.

Objectives and Search Methods

This briefing note examines research and jurisdictional reports on post COVID-19 condition pertaining to: 1) models of care and their reported outcomes; 2) waitlists for post-COVID-19 care; and 3) insurance assessments for post-COVID-19 care. In particular:

This briefing note is an update of a Science Advisory Table's (SAT) report on [Understanding the Post-COVID-19 Condition (Long COVD) and the Expected Burden for Ontario](Sept 14, 2021). The literature search was limited to sources published from October 1, 2021 to April 2022; however, where applicable, information was included outside of this date range, if it was not present in the previously completed SAT report noted above.

Limitations

- Most scientific and jurisdictional evidence on post-COVID-19 insurance assessments addressed the coverage and insurability of individuals diagnosed with COVID-19, rather than post-COVID-19 condition. As a result of the limited information on this topic, articles from various non-peer-reviewed sources (e.g., Financial Post, Texas Medical Association) were included.
- No information was identified on all topics of interest for Ontario. Limited information on post-COVID-19 care models from a CADTH report (Sept 2021) was identified for Canada, but no Canadian information on the other topics of interest was identified.
- The clinical recommendations and/or methodological quality of most of the sources identified are unclear as the Research, Analysis, and Evaluation Branch does not have the expertise to make such assessments; methodological assessments published by other research groups are reported where available.

Supporting Evidence

Table 1 below summarizes scientific evidence and jurisdictional experiences on the assessment and treatment of post-COVID-19 condition. Jurisdictional information is presented from Canada, India, Italy, United Kingdom (UK), and United States (US). Additional details are provided in Table 2 (Models of Care for Post-COVID-19 Condition), Table 3 (Waitlists for Post-COVID-19 Condition), and Table 4 (Insurance Assessments of Post-COVID-19 Condition) in the Appendix.

Table 1: Scientific Evidence and Jurisdictional Experiences on the Assessment and Treatment of Post-COVID-19 Condition

Scientific Evidence	• **Models of Care**: Two post-COVID care models reported mixed findings on addressing post-COVID condition among patients in the UK and US.[1,2,3,4,5,6,7,8] ○ **Hybrid Care Model**: Studies in the US (New York) highlighted hybrid care models that addressed post-COVID-19 condition. Most of the identified hybrid care models used inter/multidisciplinary teams and partnerships (e.g., physiatrist, physical therapist, neuropsychologist, clinical psychologist, pharmacy, social work, welfare support) to facilitate post-COVID rehabilitation.[9,10] No reported outcomes were identified in these studies. Descriptions of the models' inter/multidisciplinary teams are noted below. ▪ <u>University of Texas Southwestern Medical Center COVID Recover Program (Dec 2021, US)</u>: To help post-COVID-19 patients restore muscle, lung, and brain function, as well as psychological wellbeing, this program uses the principles of multidisciplinary rehabilitation derived from clinical practices for cardiac and pulmonary rehabilitation, rehabilitation of complex medical issues including critical illness myopathy (i.e., disease affecting the muscles that control movement), and the management of persistent symptoms after concussions and mild traumatic brain injuries. Partnerships were developed with autonomic laboratory testing, pulmonology, cardiology, and psychiatry.[11] ▪ <u>Centers for Excellence (Oct 2021, US)</u>: In addition to comprehensive primary care services, the Centers' staff include mental health professionals, cardiologists, and pulmonologists. Diagnostic equipment is used for Post-acute Sequelae of COVID-19 (PASC) evaluation and general patient care, include pulmonary function testing, transthoracic echocardiograms, and chest radiography. Furthermore, the Centers can refer to acute hospital facilities as indicated for nephrology, hematology, and other subspecialties depending on a patient's sequelae.[12] ○ **Care Models with Virtual Components**: Hybrid care and post-COVID-19 clinic models with virtual components/modalities were identified from the UK and US. The identified studies reported mixed findings on the effectiveness of both care models.[13,14,15,16,17,18] ▪ <u>Hybrid Care Models with Virtual Components</u>: Three studies in the UK and US noted their models use an inter/multidisciplinary team to deliver treatment through virtual modalities. Mixed findings were reported on their effectiveness to address the post-COVID-19 condition. Noted strengths included streamlined resources, timely access to care, coordinated care, and strategically delegated responsibilities. Virtual modality limitations included difficulty establishing consistent and geographically equitable pathways of referral, as well as digital poverty and illiteracy hindering access to telemedicine appointments.[19,20,21] For example: • *Integrated Rehabilitation Pathway (Jan-Dec 2021, UK):* This initiative implemented post-COVID-19 syndrome assessment clinics across England, supporting the medical assessment and rehabilitation of patients. The Pathway uses a three-tier service model, including a Specialist Multidisciplinary Teams (MDT) Service which brings together various disciplines with specialist skill sets to provide targeted virtual

interventions such as virtual resources (e.g., [Your COVID-19 recovery)](#) to support self-management and virtual rehabilitation COVID-19 groups.[22]

- o *Strengths*: Resources are directed where most appropriate and those with complex ongoing symptoms are seen by post-COVID specialists who have access to a medical MDT consultant. The tier system delegates responsibilities at each level, giving health care professionals working in general practitioner surgeries and hospitals clarity on which interventions to offer, and when referrals are necessary for post-COVID-19 MDT.[23]
- o *Limitations*: A significant challenge is achieving consistent and geographically equitable pathways of referral and access across the city.[24]

- *Multidisciplinary Care (Nov 2021, US/UK):* A review of a multidisciplinary model that includes the key elements of multidisciplinary care (including physical medicine and rehabilitation, pharmacy, social work and welfare support, and primary care) and emphasizes the importance of achieving equitable provision of care identified the following:[25]
  - o *Limitations*: While telemedicine, which was rapidly adopted during the COVID-19 pandemic, can overcome transportation barriers, digital poverty and illiteracy can hinder access to telemedicine appointments. Hence, where possible, a hybrid model that incorporates both virtual and in-person clinic options are optimal.[26]

- Post-COVID-19 Clinics with Virtual Components: Three studies in the UK and US reported mixed findings on the effectiveness of specialized post-COVID rehabilitation that were delivered and/or included virtual modalities. A noted strength included improved patient ratings after post-COVID-19 rehabilitation. Virtual modality limitations included higher no-show rates to treatment programs, difficulty using telemedicine, longer wait times due to the need for translators, unintegrated electronic medical records, and patient inaccessibility to the internet and applications.[27,28,29]

- *Virtual Rehabilitation Course (Dec 2021, UK):* This pilot was a seven-week virtual rehabilitation course for people suffering from post-COVID-19 syndrome offered in October 2020. This course takes a whole-system approach to understanding COVID-19 and post-viral fatigue (PVF) and is delivered by an interdisciplinary team.[30]
  - o *Strengths:* The study examined 149 individuals who enrolled in the "Recovering from COVID" course and completed the EQ-5D-5L (i.e., self-assessed, health related, quality of life questionnaire) to assess health-related quality of life (HRQoL) across five dimensions (i.e., problems with mobility, self-care, usual activities, pain/discomfort, and anxiety/depression). Overall, 76 individuals who completed these measures at the end of the rehabilitation course demonstrated significantly improved patient ratings.[31]

- *University of Texas Health San Antonio Program (Dec 2021, US):* Adult and pediatric patients, including ethnic minority groups, were evaluated at a university clinic-based rehabilitation medicine outpatient practice and a community safety net clinic. Individuals who demonstrated functional impairments were referred to the virtual home-based COVID-19 physical

therapy program for up to 12 weeks.[32]

- *Limitations*: The visits to the community safety net clinic demonstrated: higher no-show rates, difficulty using telemedicine, longer wait times due to the need for translators, and the assessments were not integrated into the electronic medical record. Barriers included patient inaccessibility to the internet, inability to download the patient portal, and communication barriers.[33]

- **Waitlists:** The identified studies noted long waitlists (e.g., seven weeks) for treating post-COVID-19 condition in Italy and the UK. Studies noted the lack of established post-COVID-19 clinics and the lengthy triage care process contributing to long waitlists for care.[34,35,36]
  - **Limited Post-COVID Clinics (Italy)**: A research article (Jan 2022) on how Europe is approaching post-COVID-19 indicated that in Italy, no government funded clinics for post-COVID-19 have been established. Some hospitals have follow-up day clinics for patients who have had COVID-19; however, the waiting lists are high.[37]
  - **Lengthy Triage Care Process (UK)**: The Integrated Rehabilitation Pathway noted that the average timeframe from initial referral to receiving the completed screening questionnaire is four weeks. The majority of patients are placed on a waiting list for therapy for an average of seven weeks.[38]

- **Insurance Assessments**: The identified studies noted post-COVID-19 condition insurance assessment barriers across three population types (low-income, marginalized [e.g., uninsured, undocumented immigrants, homeless, people of colour], and the general population) in India, the UK, and the US.[39,40,41] To address these barriers, studies in the US noted the importance of government intervention (i.e., policy and Congress) advocating for the inclusion of post-COVID-19 condition in billing codes.[42,43] Barriers are noted below:
  - **Low-Income (UK/US):** A review (Nov 1, 2021) on addressing PASC noted the importance of achieving equitable provision of care, including the implementation of care in low-income and middle-income countries.[44] The review identified the following barriers and interventions:
    - Billing Infrastructure Barriers: In some health care systems, billing infrastructure – including inconsistent insurance reimbursement and billing codes – presents a significant barrier to the follow-up of services.[45]
    - Government Intervention: A US Congressional hearing advocated for billing codes to capture PASC, allowing tracking of needs and services, and incentivizing the provision of services for low-income populations. Furthermore, the review indicated that addressing the barrier of inconsistent insurance reimbursement and billing codes requires changes in policy to reflect the extension of support for acute COVID-19 care to cover PASC.[46]
  - **Marginalized (US)**: A study (Jul 20, 2021) on planning for post-COVID syndrome noted that uninsured, lower-income, and minority patients have higher rates of underlying health conditions and obesity, all of which increase the probability of severe COVID-19 symptoms and long-term complications. Undocumented immigrants, people experiencing homelessness, and other marginalized groups (e.g., people of colour) may experience gaps in health coverage and forego needed care.[47] The study identified the following barriers and interventions:

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- Classification of Health Condition Barriers: The study noted that COVID-19 should not be considered a "pre-existing condition," and explained that the condition may be more difficult to obtain health coverage.[48]
- Government Intervention: Substantive policy changes at various levels can alleviate the potential burden of post-COVID-19 syndrome. Congress can enact additional legislation to direct national resources to clinics and community centres for mental health professionals, physical therapists, and primary care clinicians to care for individuals with post-COVID-19 condition.[49]
  - **General Population (India):** A study (2022) on the impact of COVID-19 on the Indian health insurance sector and post-COVID-19 management identified two COVID-19 health insurance policies, Corona Rakshak and Corona Kavach, that cover medical expenses and the cost of personal protective equipment (PPE) kits, gloves, and masks among others during COVID-19 treatment.[50]
    - Limited Clinical and Financial Information Barrier: Details on COVID-19 prognosis, morbidity, costs, and patient profiles are unavailable, making it difficult for insurance companies to decide who will qualify for COVID-19 treatment coverage. Until more information becomes available about COVID-19 treatments and prognoses, insurers will not have data on patients' profiles, treatment, and cost.[51]

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International Scan

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- Waitlists: The identified articles noted long waitlists (e.g., seven to nine months) for treating post-COVID-19 condition in the UK and US. The articles suggest that limited access to treatment and low staffing at post-COVID-19 clinics contribute to long waitlists for care.[52,53,54]
  - **Limited Access to Treatment (UK):** An article (Mar 29, 2022) on addressing the long-term symptoms of COVID-19 identified recent data showing 40% of patients awaiting access to post-COVID services in England for more than three months from an initial assessment.[55]
  - **Low Staffing at Clinic (US):** An article (Feb 3, 2022) on long-COVID patients and waitlists suggested that long waits are partly due to care centres/clinics only treating people who have a laboratory-confirmed COVID-19 diagnosis with limited staff. For example:
    - Stanford's Post-Acute COVID-19 Syndrome Clinic: The article explained that each patient is examined by a physician at this clinic, and if necessary, is referred to a specialist. The article noted that while the clinic analyzes five or six new patients each week, it still has a months-long waitlist.[56]
- Insurance Assessments: An article (Sept 28, 2021) on the denial of long-term disability benefits among those affected by post-COVID-19 condition noted that, long-haulers in the US, including those who contracted the virus in the first wave, remain unable to return to work in the same capacity as before they became ill.[57] The article noted three insurance barriers that impact the working age population from recovering from COVID-19 and post-COVID-19 condition:
  - **Limited Medical Evidence**: Insurers frequently deny disability claims due to insufficient medical evidence, for example, the lack of a positive COVID-19 test, especially in the earlier waves of the pandemic, when testing was not widely available.[58]
  - **Asymptomatic COVID-19 Symptoms**: Symptoms such as fatigue, brain fog, and depression are "invisible" or subjective symptoms, making it difficult for long-

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	haulers to "prove" they are sick. Insurance companies use this ambiguity to deny or reject claims/coverage.[59] ○ **Unreliable Insurance Policies**: If the symptoms experienced by a long-hauler meets the definition of a disability, as set out in an insurance policy, and there is medical evidence to support this, payouts should be guaranteed. However, it is noted that insurance companies continue to deny post-COVID disability claims.[60]

Canadian Scan	• **Models of Care**: A CADTH report (Sept 24, 2021) on an overview of post-COVID-19 condition noted three models of post-COVID care, including the strengths and limitations of each.[61]
	
	    ○ **Primary Care Provider (PCP) Model:** The PCP model carries out standardized assessments of symptoms, refers to and coordinates with specialists based on symptoms and needs, manages medications and comorbidities, and provides self-management support.[62]
	
	        ▪ <u>Strengths</u>: PCPs are familiar with their rostered patients' health and preferences. People affected by post-COVID-19 may feel more comfortable with their regular PCPs than going to a new clinic with unfamiliar care providers.[63]
	
	        ▪ <u>Limitations</u>: PCPs may feel uncomfortable treating post-COVID-19 condition due to a lack of training or resources, especially for complex cases. Further, coordination and continuity of care across multiple specialists may be complex, which could lead to fragmented care (e.g., contradictory advice).[64]
	
	    ○ **Hybrid Care Model:** The hybrid model incorporates specialized clinics and primary care based on a person's needs. For instance: 1) people with mild and typical symptoms being treated in primary care; 2) people who are hospitalized and/or have moderately complex needs being treated by community therapy teams; and 3) people with symptoms at three or more months and/or have complex needs being treated by a specialized clinic.[65]
	
	        ▪ <u>Strengths</u>: The hybrid model may be more feasible and accessible than treating all cases of post-COVID-19 condition in specialized clinics. It also allows for people with complex needs to receive the intensive care that would be more difficult to receive in a primary care-based model.[66]
	
	        ▪ <u>Limitations</u>: People with complex needs living far from specialized clinics may not be able to access needed care. Moreover, this model requires effective coordination of care across multiple providers.[67]
	
	    ○ **Post-COVID-19 Clinics with Virtual/Online Care Components:**
	
	        ▪ <u>Specialized Care Model</u>: These clinics have dedicated groups of health care providers, often multidisciplinary groups, to treat post-COVID-19 condition. These clinics have been set up in multiple countries, including Canada.[68]
	
	            • *Strengths*: This model may be an efficient way to develop expertise on treating post-COVID-19, as providers see a higher number of people affected by the condition and can learn the effectiveness of different treatment strategies. Further, coordination and continuity of care between multiple care providers may be smoother in dedicated teams.[69]
	
	            • *Limitations*: There is the potential for long waiting lists, difficulties training providers, accessibility issues for those who live far from clinics, and uncertainty about cost-effectiveness.[70]

	▪ <u>Virtual/Online Care Model</u>: This model uses technologies, such as virtual visits, to help easily access multiple specialists, especially for people experiencing fatigue who may find it difficult to make multiple clinic visits.[71]
Ontario Scan	• No information identified.

Methods

The COVID-19 Evidence Synthesis Network is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision makers as the pandemic continues. The following member of the Network provided an evidence synthesis product that was used to develop this Evidence Synthesis Briefing Note:

- Canadian Agency for Drugs and Technologies in Health (CADTH). (March 2022). Clinical Classification and Interventions for Post–COVID-19 Condition: A Scoping Review (Draft).
- Vu, T., & McGill, S. C. (2021). An Overview of Post–COVID-19 Condition (Long COVID). Canadian Journal of Health Technologies, 1(9).

For more information, please contact the Research, Analysis and Evaluation Branch (Ministry of Health).

Table 2: Models of Care for Post-COVID-19 Condition

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations
Primary Care Provider (PCP) Model		

Canada
 	
Canadian Agency for Drugs and Technologies in Health (CADTH)
 	
Horizon Scan (Sept 2021)
	• **Primary Care Provider (PCP) Model:** PCPs carry out standardized assessments of symptoms, refer to and coordinate with specialists based on symptoms and needs, manage medications and comorbidities, and provide self-management support.[72]	• **Reported Outcomes:**
		  ○ Strengths: PCPs are already familiar with their rostered patients' health and preferences. Furthermore, people affected by post–COVID-19 may feel more comfortable with their regular PCPs rather than going to a new clinic with unfamiliar care providers.
		  ○ Limitations: PCPs may feel uncomfortable treating post–COVID-19 condition due to a lack of training or resources, especially for complex cases. Moreover, coordination and continuity of care across multiple specialists may be complex, which could lead to fragmented care (e.g., contradictory advice).[73]

Hybrid Care Model		

Canada
 	
CADTH
 	
Horizon Scan (Sept 2021)
	• **Hybrid Care Model:** This model incorporates specialized clinics and primary care based on a person's needs. For example, in Leeds, England people with mild and typical symptoms are treated in primary care; people who were hospitalized and/or have moderately complex needs are treated by community therapy teams; and people with symptoms at three or more months and/or have complex needs are treated by a specialized clinic.[74]	• **Reported Outcomes:**
		  ○ Strengths: This model may be more feasible and accessible than treating all cases of post–COVID-19 condition in specialized clinics. It also allows for people with complex needs to receive the intensive care that would be more difficult to receive in a primary care–based model.
		  ○ Limitations: People with complex needs living far from specialized clinics may not be able to access needed care. Further, this model requires effective coordination of care across multiple providers.[75]

US
 	
Single Study (Dec 2021)
	• **UT Southwestern Medical Center COVID Recover Program:** This program uses the principles of multidisciplinary rehabilitation and is derived from clinical practices for cardiac and pulmonary rehabilitation, rehabilitation of complex medical issues including critical illness myopathy, and the management of persistent symptoms after concussions and mild traumatic brain injuries. Partnerships were developed with the autonomic testing laboratory, pulmonology, cardiology, and psychiatry.
	  ○ Referrals: Referrals for the COVID Recover Program are made directly from an acute hospital care team before discharge from community-based providers (such as primary care providers or specialist clinics), or direct patient self-referral.
	  ○ Patient Eligibility: The eligibility criteria for the clinic are self-reported symptoms with a clinical or serologic diagnosis of COVID-19. There are no temporal criteria for evaluation related to time of illness or chronicity of symptoms.
		• **Reported Outcomes:**
		  ○ Measuring Program Effectiveness: The following outcome measures are collected at initial and subsequent patient visits: Satisfaction with Life Scale, Patient Health Questionnaire 9, Generalized Anxiety Disorder 7, PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), Composite Autonomic Symptom Score, and when indicated, the Post-Intensive Care Syndrome Questionnaire.
		  ○ Ongoing research using deidentified data will examine recovery trajectories, risk factors for post-acute sequelae of SARS-CoV-2 (PASC), mental health comorbidities, and autonomic function.[77]

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations
	o <u>PM&R Evaluation</u>: Initial evaluation is provided by designated physiatrists to facilitate sharing of best practices including a symptom inventory list based on reported most common symptoms. o <u>Treatment:</u> An individualized and symptom-focused treatment plan is developed with specialty referrals as needed for physical, cognitive (e.g., speech language pathology or neuropsychological testing), and/or behavioural symptoms (i.e., a four-session psychoeducational wellness groups that focus on lifestyle and coping strategies).[76]	
US **New York City** **Study** **(Oct 2021)**	• **Centers of Excellence:** NYC Health+ Hospitals designed a primary care post-COVID-19 care model created in spring 2020. Three COVID-19 Centers of Excellence were built in areas of New York City—Bronx, Queens, and Brooklyn.[b] Details of these Center's include: o <u>Physical Clinic Layout</u>: Each community health center (CHC) includes a group of negative pressure examination rooms to accommodate current and potential future pandemic surges and patient entry and exit patterns to minimize infection transmission. These rooms dually function as regular examination rooms outside of a pandemic scenario. o <u>Clinic Services</u>: In addition to comprehensive primary care services, staff include mental health professionals, cardiologists, and pulmonologists. Diagnostic equipment is used for PASC evaluation and general patient care, including pulmonary function testing, transthoracic echocardiograms, and chest radiography. o <u>Referrals:</u> The Centers can refer to acute hospital facilities as indicated for nephrology, hematology, and other subspecialties depending on a survivor's sequelae. Local area voluntary hospitals began to design highly specialized post-COVID-19 clinics that include additional subspecialties, plus physical and occupational therapies. Most individuals with PASC, however, have their health needs met in a CHC setting.[78]	• **Recommendations:** Providing high-value care to COVID-19 survivors with PASC in a CHC setting requires an approach that focuses on: o Patient experience (e.g., clinicians not dismissing patient chronic symptoms); o Clinical service (e.g., planning based on local public health and health care market data to understand potential patient volume by geography including meeting the demand for mental health services); o Financial sustainability (e.g., consider building modifications to enhance patient care and diagnostic testing for potential future COVID-19 or similar outbreaks); and o Collect population health data (e.g., use electronic health records to identify survivors and use registries and queries to track disease complications and recovery especially for racialized populations).[79]
Post-COVID-19 Care Models with Virtual Components		
Canada **CADTH** **Horizon Scan**	• **Specialized Care Model:** Specialized clinics that have dedicated groups of health care providers, often multidisciplinary groups, to treat post–COVID-19 condition. These clinics have been set up in multiple countries including Canada. A pre-post study reported improved outcomes of people	• **Reported Outcomes - Post-COVID Clinics:** o <u>Strengths:</u> May be an efficient way to develop expertise on treating post–COVID-19, as providers see a higher number of people affected by the condition and can learn the effectiveness of different treatment strategies. Further, coordination and continuity of care between multiple

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[b] A 'center of excellence' is defined as a clinical setting created with content-specific expertise, best practices, research initiatives, a broad scope of services, and a continuous performance improvement mindset.

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations
(Sept 2021)	receiving rehabilitation at a post–COVID-19 clinic in Italy.[c] • **Virtual/Online Care Model:** This model uses technologies such as virtual visits to help easily access multiple specialists, especially for people experiencing fatigue who may find it difficult to make multiple clinic visits.[80]	care providers may be smoother in dedicated teams. o Limitations: Potential for long waiting lists; Difficulties training providers; Accessibility for those who live far from clinics; and Uncertainty about cost-effectiveness.[81] • **Reported Outcomes - Virtual Care:** No information identified.
Hybrid Care Model with Virtual Components		

UK
 	
Single Study
(Jan-Dec 2021)
	• **Integrated Rehabilitation Pathway:** The Integrated Rehabilitation Pathway aligns with NHS England's "five-point plan" to embed post-COVID-19 syndrome assessment clinics across England, supporting the comprehensive medical assessment and rehabilitation intervention for patients in the community.[d] The pathway comprises of a three-tier service model:
	o 1) Specialist Multidisciplinary Teams (MDT) Service: This service is for patients with prolonged COVID-19 symptoms for more than three months requiring input from two or more professionals. The MDT service brings together various disciplines with specialist skill sets to provide targeted individualized interventions using a specific core set of outcome measures including C19-YRS (Yorkshire Rehabilitation Scale). As recommended by NHS England, outcome measures are taken at baseline, eight weeks, and six months
	  ▪ *Home Visits and Virtual Supports*: Home visits for assessments and reviews, COVID-19-specific virtual pulmonary rehabilitation, and facilitated virtual COVID-19 rehabilitation groups.
	o 2) Community Therapy Teams: For post-COVID-19 hospital discharges with low/moderate complexity needs arising from other pre-existing conditions and met by one disciplinary input.
	  ▪ *Interventions*: Various types of therapy (i.e., occupational, physiotherapy, diet, speech, and language).
	o 3) Self-Management: For patients with typical symptoms lasting one to two months and likely to resolve with supported self-management.
	  ▪ *Virtual Resources*: "Your COVID-19 recovery" website, Leeds COVID rehabilitation guide, Royal College Occupational Therapy fatigue management advice.
		• **Reported Outcomes:**
		o Strengths: This model of care aligns to the most recent criteria set by NHS England and improvement guidance for post-COVID-19 assessment and treatment clinics, integrating multidisciplinary intervention, access to diagnostic tests, accessible to all patients recovering from COVID-19, and having a local communication plan in place to raise awareness of both clinicians and the public.
		  ▪ The key benefit of the three tiered model of care is that patients receive intervention from the appropriate service and clinician. Resources are directed where most appropriate; those with complex ongoing symptoms are seen by COVID specialist clinicians and have timely access to the medical MDT consultant discussions where necessary. The regular specialist MDT meetings have provided an effective forum for discussions around individual patient management, bringing specialists together to disentangle the complexities of post COVID-19 presentations, consider differential diagnoses and treatment strategies.
		o The tier system also delegates responsibilities at each level, giving health care professionals working in GP surgeries and hospitals clarity around which interventions to offer, and when referral is necessary into the post-COVID-19 MDT.
		o Limitations: A significant challenge is achieving and establishing consistent and geographically equitable pathways of referral and access across the city. On-going communications work with GP links are supporting this issue.
		  ▪ Service evaluation on patient satisfaction is underway using the Person-Centered Coordinated Care Experience Questionnaire (P3C-

[c] For details of this study, see Curci C, Negrini F, Ferrillo M, et al. Functional outcome after inpatient rehabilitation in postintensive care unit COVID-19 patients: findings and clinical implications from a real-practice retrospective study. European Journal of Physical and Rehabilitation Medicine. 2021;57(3):443-450.

[d] NHS England and NHS Improvement's five-point plan for Long-COVID support was announced in October 2020 to boost NHS support for patients experiencing long-term effects of COVID-19 (NHS, n.d.).

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations
	▪ *Virtual Fatigue Management Course*: An eight-week group therapy program conducted on Microsoft Teams, lasting a maximum of one hour each divided into two sections. Topics include energy management, quality rest, optimal nutrition, and physical maintenance.[82]	EQ)[e] however, feedback from individual patients (written and verbal) has been extremely positive, especially around the emotional and fatigue management support received. Likewise, outcome data and health informatics are also being gathered by the service to map patient trajectories and service impact. There have been few discharges since the service was established, indicating that this patient group are likely to remain under the care of the service for prolonged episodes, compared to usual community therapy services. ○ As referral numbers increase further, this may pose capacity challenges to the service, however recent funding has been provided to increase capacity and reduce waiting times for patients. • **Recommendations:** Community and primary care teams worldwide need such an integrated multidisciplinary comprehensive model of care to deal with the growing number of cases of post-COVID-19 syndrome effectively and in a timely manner.[83]
US **Single Study (Dec 2021)**	• **VA Greater Los Angeles Healthcare System:** The interdisciplinary post–COVID-19 rehabilitation clinic at the VA Greater Los Angeles housed within the department of Physical Medicine & Rehabilitation (PM&R) was developed in response to the growing need for continued care for veterans with persistent physical, cognitive, and psychological impairments after SARS-CoV-2 viral infection. The interdisciplinary team members include a physiatrist, physical therapist, neuropsychologist, and a clinical psychologist. Referrals may include medical specialties (e.g., cardiology, pulmonology, neurology, nutrition, etc.) ○ Eligibility: Medically stable, diagnosis with COVID-19 six weeks before referral, and community residency. ○ Treatment: Those with cognitive impairments participate in a memory skills group, are treated by a speech language pathologist, or are referred to neuropsychology for further testing. Veterans with new onset or worsened mental health symptoms are referred either to the post-COVID support group or to a mental health provider for individual treatment.[84]	• No information identified.

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[e] The measure was developed in 2015, so that there could be a measure that provided extensive coverage of the domains of Person-Centred Care and Coordination. The development process involved adding additional questions to the original measure that addressed evolving healthcare concepts, such as coordination and the use of personalized care plans. Despite its very broad coverage, the measure is concise and efficient. It probes most domains of P3C in 11 questions (with the only exceptions being continuity of care and consistency of care (Measures for Person-Centered Coordinated Care, n.d.).

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations

United Kingdom (UK) US
 	
Review
(Nov 2021)
	• This review includes the key elements of multidisciplinary care,[f] including physical medicine and rehabilitation, pharmacy, social work and welfare support, and primary care and emphasizes the importance of achieving equitable provision of care, including implementation in low-income and middle-income countries (LMICs). Clinics in Europe, the Americas, and the Asia-Pacific were developed for survivors of critical illness and address PASC survivorship for both acute and non-hospitalized patients with COVID-19. Hybrid care considerations are noted below:
	○ Equitable Care Modalities: To overcome challenges of equitable access for poorer communities of Black, Asian, and minority ethnic groups in high-income regions such as Europe and North America, clinicians should be flexible in their approach. While telemedicine, which was rapidly adopted during the pandemic, can overcome transportation barriers, digital poverty and illiteracy can hinder access to telemedicine appointments. Hence, where possible, a hybrid model that incorporates both virtual and in-person clinic options are optimal.
	○ Multidisciplinary Approach: A multidisciplinary program of care should include access to rehabilitation services, social work and welfare support, pharmacy, subspecialty care via direct inclusion or targeted referrals, and structured peer support programmes with trained moderators; coordination with primary care is essential.
	○ Equitable Provision of Care: This includes access to care for under-served populations and the development of care pathways in low-income and middle-income countries. Strategies to help vulnerable communities access health-care services have been reported, most notably the following:
	  ○ Addressing the social determinants of health through screening and information provision, signposting health-care users to appropriate community services, and encouraging community stakeholders to support individualised service delivery according to the needs of patients;
	  ○ Adopting new and innovative virtual care strategies (e.g., through various forms of telehealth);
	  ○ Designing global budget payments to support hospitals located in areas delivering services to vulnerable communities; and
		• **Recommendations:** PASC clinics offer research opportunities that should be used to inform knowledge of survivorship trajectories after SARS-CoV-2 infection, and to improve service innovation and delivery. No further information was identified.[86]

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[f] Due to the range of symptoms and potential impact on multiple organ systems for post–COVID-19 condition, people may benefit from receiving services from various specialists coordinating and selecting appropriate care based on each person's unique set of symptoms.[f]

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations
	o Using an inpatient–outpatient transformation strategy that more closely integrates hospital-based and community-based services, and adapts each, to meet the needs of individual communities.[85]	
Post-COVID-19 Clinics with Virtual Components		
UK **Study** **(Dec 2021)**	• **Virtual Rehabilitation Course:** The Primary Care Wellbeing Service (PCWBS)[g] in Bradford District Care National Health Service (NHS) Foundation Trust developed and piloted a seven-week virtual rehabilitation course for people suffering from post-COVID-19 syndrome in October 2020. o Recovering from COVID Course: This course takes a whole system, biopsychosocial approach to understanding COVID-19 and post-viral fatigue (PVF) and is delivered by an interdisciplinary team consisting of a clinical psychologist, physiotherapist, occupational therapist, dietitian, speech and language therapist, assistant psychologist, and a personal support navigator with support from a team administrator. The course focuses on understanding PVF, sleep optimization, nutrition, swallowing, activity management, energy conservation, stress management, breathing optimization, managing setbacks, and signposting to appropriate resources and services. [87]	• **Reported Outcomes:** o Strengths: Since October, PCWBS has delivered seven courses to support over 200 people suffering from post-COVID-19 syndrome. One hundred and forty-nine individuals that enrolled on the "Recovering from COVID" course completed the EQ-5D-5L to assess Health-related quality of life (HRQoL) across five dimensions, including problems with mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Subsequently, 76 individuals completed these measures at the end of the rehabilitation course showing that patient ratings were significantly improved. • **Recommendations:** In response to the National Institutes for Health Research (NIHR) recommendation for rapid evaluation of different service models for supporting people with post-COVID-19 syndrome, this data offers support that rehabilitation is effective in reversing some of the difficulties faced by people living with the long-term effects of COVID-19.[88]
UK **Longitudinal Service Evaluation Study** **(May 2021)**	• **Rehabilitation Program:** This study describes a long-term evaluation that will examine the effectiveness of a 12-week community rehabilitation program for COVID-19 patients who have been discharged following in-patient treatment. This program consists of two six-week phases: o An entirely remote service, delivered via digital applications; and o Patients transition into a gym-based setting for supervised group-based rehabilitation. Trained rehabilitation specialists will coach patients across areas such as goal setting, exercise prescription, symptom management and emotional well-being.[89]	• **Reported Outcomes:** o Measuring Program Effectiveness: Outcomes will be collected at zero, six, and 12 weeks and at six- and 12-months. ▪ *Primary Outcome Measures*: These will assess changes in health-related quality of life (HR-QOL) and COVID-19 symptoms using EuroQol Five Dimension Five Level Version (EQ-5D-5L) and Dyspnea-12, respectively. ▪ *Secondary Outcome Measures*: The Duke Activity Status Questionnaire (DASI), 30 sit to stand test, General Anxiety Disorder-7 (GAD-7), Patient Health Questionnaire-9 (PHQ-9), Patient Experience Questionnaire (PEQ), and Quality Adjusted Life Years (QALY) will allow for the evaluation of outcomes, mediators and moderators of outcome, and cost-effectiveness of treatment.

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[g] PCWBS is a psychology-led specialist interdisciplinary team of health professionals specializing in persistent physical symptoms and chronic fatigue syndrome / Myalgic Encephalomyelitis with an emphasis on holistic integrated care (Harenwall et al., 2021).

Jurisdiction Institution or Type of Source Document Type of Care Model	Description of Model(s) of Care	Reported Outcomes/Recommendations
		o No outcomes have been reported to date.[90]
US **Single Study** **(Dec 2021)**	• **UT Health San Antonio Program:** Adult and pediatric patients including ethnic minority groups are evaluated in two locations, a university clinic-based rehabilitation medicine outpatient practice and a community safety net clinic. o Insurance: The community clinic delivers health care services to patients without insurance who have increased medical and social vulnerabilities. o Eligibility: Patients are either self or physician-referred if lingering symptoms remain. A positive COVID-19 test is not required and no time limitations from acute infection is imposed. o Online Support for Functional Treatment: Those who demonstrate functional impairments are referred to the virtual home-based COVID-19 physical therapy program for up to 12 weeks. o PM&R Evaluation: A full systematic assessment and workup are initiated by the PM&R team, linking to an asynchronous multidisciplinary team when referrals are necessary.[91]	• **Reported Outcomes:** o Strengths: No information identified. o Limitations: The visits to the community have a higher no-show rate, more difficulty with using telemedicine, take longer as there can be a need for translators, and the assessments are not integrated into the electronic medical record. Barriers include patient inaccessibility to the Internet, inability to download patient portal, and communication barriers.[92]

Table 3: Waitlist for Post-COVID-19 Care

Jurisdiction Type of Source Document	Description of Post-COVID-19 Care	Waitlist Information
UK **Study** **(Dec 2021)**	• **Treatment:** According to a study (Dec 1, 2021) on the demand for rehabilitation after COVID-19, study participants discharged from the University of Leicester between March and December 2020 were followed up on a rehabilitation pathway. All individuals with a positive COVID-19 PCR test or clinical diagnosis of COVID-19 were screened. The study noted that 386 individuals identified rehabilitation needs (25% of all screened) and were added to a waiting list. Overall, 166 participants added to the waiting list were contacted by the end of January 2021 and offered the rehabilitation program, and the remainder of participants remained on the waitlist. This study revealed that 25% of all individuals hospitalized with a positive test or clinical diagnosis of COVID-19 identified rehabilitation needs.[93]	• **Reduced Waitlist Potential:** This study (Dec 1, 2021) notes that rehabilitation services could expect volumes of up to 25% of all those hospitalized with a positive COVID-19 swab, placing a demand on pre-existing services or the development of new services. There may be a greater uptake of rehabilitation as waiting list time reduces, however, those identifying rehabilitation needs may reduce as acute treatment becomes more effective. The impact of lockdown easing and returning to usual activities may assist recovery, or identify areas where individuals are struggling to manage their symptoms.[94]

Europe
 	
Study
(Jan 2022)
	• **Symptomology:** According to a BMJ article (Jan 2022) on how Europe is approaching long-COVID, studies noted the increased impact of long-COVID in Europe. For example:
	  ○ In a study of 130 cases, 40% of patients reported "persistent fatigue" 60 days after their first symptoms, while 30% reported breathlessness.
	  ○ A study of 143 patients in Italy, revealed 55% had three or more symptoms 60 days after they were discharged from hospital.
	  ○ A preprint study of an ongoing study of 70,000 Norwegian patients listed altered smell or taste, poor memory, fatigue, and shortness of breath as common symptoms in the country's first wave (in early 2021), while those infected from fall 2021 onwards identified muscle and joint pain more. The data suggested that symptoms were experienced for 11-12 months after infection in the first wave and for one to two months in the second.[95]
		• **Long Waitlist:** The BMJ article (Jan 2022) noted that in Italy, no government funded clinics for long COVID have been established, although some hospitals have day clinics for following up with patients who were admitted to the hospital during the acute stage of COVID-19. A few of the day clinics include patients who have no history of hospital admission for COVID-19, however, the waiting list is reported to be high.[96]

United States **Article** **(Feb 2022)**	• **Symptomology:** A magazine article (Feb 3, 2022) on long-COVID patients and waitlists noted that people with long-COVID have reported more than 200 distinct symptoms, often requiring care from clinicians in multiple specialties (e.g., pulmonology, neurology, gastroenterology, psychiatry). • **Treatment:** The article reported that Stanford's Post-Acute COVID-19 Syndrome Clinic, efficiently uses its limited staff through a hub-and-spoke model. Each patient is examined by one of the clinic's	• **Long Waitlist:** The article (Feb 3, 2022) suggested that long waits are partly due to care centers/clinic only treating people who have a laboratory-confirmed COVID-19 diagnosis. However, people with lingering symptoms—particularly those who got sick in the spring of 2020, before tests were widely available—never received a positive COVID-19 result. The article further identified that while Stanford's Post-Acute COVID-19 Syndrome Clinic analyzes five or six new patients each week, it still has a months-long waitlist.[98]

Jurisdiction Type of Source Document	Description of Post-COVID-19 Care	Waitlist Information
	staff physicians and, if necessary, is then referred to a specialist. [97]	
United Kingdom **Article** **(Mar 2022)**	• **Treatment:** A UK article (Mar 29, 2022) on addressing the long-term symptoms of COVID-19 reported that Nuffield Health, the UK's largest health care charity, devised a free-to-access COVID-19 Rehabilitation Program. The program is the only publicly available service to be included in the latest National Institute for Health and Care Excellence (NICE) guidance on managing the long-term effects of COVID-19, and runs in over 40 sites across the country. [99]	• **Long Waitlist:** The article (March 29, 2022) noted recent data showing that 40% of patients awaiting access to post-COVID services in England are having to wait more three months for an initial assessment, further building pressure on the National Health Service's (NHS) resources. Analysis by Nuffield Health has also shown this varies widely across the country, with over two thirds (67%) of patients living in the South East and over half (52%) of patients living in the North East having to wait longer than three months compared to just 21% in the East of England. Nonetheless, the program has noted some successes including: o Helping to further understand of recovery from the virus, with patients completing the 12-week course seeing an average 64% improvement in mental wellbeing and 39% improvement in functional capacity. o Reaping wider societal benefits, such as an average decrease of 11 sick days, 1.68 weekly care hours, and 1.48 general practitioner appointments per patient.[100]
UK **Study** **(Jan-Dec 2021)**	• **Integrated Rehabilitation Pathway:** The integrated rehabilitation pathway aligns with NHS England's "five-point plan" to embed post-COVID-19 syndrome assessment clinics across England, supporting the comprehensive medical assessment and rehabilitation intervention for patients in the community.[h] The pathway was first of its kind in the UK and comprises of a three-tier service model: o Specialist Multidisciplinary Teams (MDT) Service: For patients with prolonged COVID-19 symptoms for more than three months requiring input from two or more professionals; o Community Therapy Teams: For post-COVID-19 hospital discharges with low/moderate complexity needs primarily arising from other pre-existing conditions and met by one disciplinary input; and o Self-Management: For patients with typical symptoms lasting one-two months and likely to resolve with supported self-management.[101]	• **Long Waitlist:** The average timeframe from initial referral to receiving the completed screening questionnaire is four weeks. The patient is then contacted by a Pathway Coordinator via phone who discusses key symptoms further and advises on the appropriate next steps. The majority of patients are placed on a waiting list for therapy to commence (on average seven weeks), and given self-management advice and materials to follow in the interim. Where fatigue is a key persisting symptom, patients are offered a place on the virtual fatigue management course.[102]
Texas **Article**	• **Symptomology:** According to a Texas Medical Association article (Mar 18, 2022) on long-COVID clinic waitlists, long-COVID represents a wide range of symptoms – including fatigue, shortness	• **Long Waitlist:** The article (Mar 18, 2022) noted that there are limited resources and long waitlists for these patients. Two long-COVID clinic in San Antonio which opened in August 2020 have wait times of seven to nine months. [104]

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[h] NHS England and NHS Improvement's five-point plan for Long-COVID support was announced in October 2020 to boost NHS support for patients experiencing long-term effects of COVID-19 (NHS, n.d.).

Jurisdiction Type of Source Document	Description of Post-COVID-19 Care	Waitlist Information
(Mar 2022)	of breath, heart palpitations, brain fog, and depression – that can last for weeks or months after someone is first diagnosed with COVID-19 and may impair physical or mental function. The American Academy of Physical Medicine and Rehabilitation estimates more than 23 million Americans have been affected by long COVID, with nearly two million of those cases in Texas. [103]	

Table 4: Post-COVID-19 Condition Insurance Assessment

Jurisdiction Source Document Population	Post-COVID-19 Condition and Insurance	Insurance Assessment Details
UK, US **Review** **Low-Income Populations**	• **Context:** This review focuses on the key elements of multidisciplinary care,[i] including physical medicine and rehabilitation, pharmacy, social work and welfare support, and primary care and emphasizes the importance of achieving equitable provision of care, including implementation in low-income and middle-income countries (LMICs).[105]	• **Insurance Details:** In some health care systems, billing infrastructure—including inconsistent insurance reimbursement and billing codes—presents a significant barrier to the creation of follow-up services. Addressing this barrier requires changes in policy to reflect extension of support for acute COVID-19 care to cover PASC as well. A recent US Congressional hearing included advocacy for billing codes to capture PASC, allowing tracking of needs and services rendered, and incentivizing the provision of services for this population. For the time being, existing billing structures can capture the type of care provided in the US (e.g., transitional care codes are designed specifically to capture the complexity and high need of the post-hospital period).[106]
United States **Study** **Marginalized Populations**	• **Context:** A study (Jul 20, 2022) on planning for post-COVID syndrome, noted that while nearly all public and private health insurance companies indicate that they would waive cost-sharing for COVID-19 testing and related treatments, it is unclear whether and how these "related treatments" extend to delayed and long-term complications from COVID-19. This ambiguity and potential for substantial out-of-pocket expenditures in the aftermath of COVID-19 recovery are especially burdensome for patients who are uninsured or underinsured. A poll noted in the study found that 14% of Americans reported likely forgoing medical care for COVID-19 symptoms due to their inability to pay. While they may receive treatment for COVID-19 itself at minimal or no cost, they remain liable for cost-sharing expenses associated with the long-term physical and mental health complications they may develop. • **Population:** COVID-19 has disproportionately affected lower-income individuals and people of colour, who may not have the financial reserves to meet the demands of their future health needs. Uninsured, lower-income, and minority patients also have higher rates of underlying health conditions and obesity, all of which increase the probability of severe COVID-19 symptoms and, presumably, its long-term complications. Undocumented immigrants, people experiencing homelessness, and other marginalized groups may be most likely to see these gaps in health coverage and, thus,	• **Insurance Details:** The study (Jul 20, 2020) noted that insurers can reduce the risk of long-term COVID-19 complications which includes access to physical therapy for patients with prolonged hospitalization, mechanical ventilation, or ICU care; mental health services for those at increased risk of depression, anxiety, or post-traumatic stress; and timely treatment of complications that may develop in the course of managing COVID-19. These services should be offered to the broadest range of people possible, and at minimal cost, to ensure that the most vulnerable are not excluded. The study suggests that COVID-19 and its complications should not be considered as a "pre-existing condition," whose presence may make it more difficult to obtain health coverage if protections enacted as part of the Affordable Care Act are reversed. • **Recommendations:** Substantive policy changes at various levels can help alleviate the potential burden of post-COVID syndrome. State governments and departments of health can make it easier for survivors to receive physical therapy and physical and mental health evaluations by allowing patients to access these services at no cost within the first year of diagnosis. The study recommends that Congress enact additional legislation to direct national resources to clinics and community centers for mental health professionals, physical therapists, primary care clinicians, and others to care for millions of Americans with long-term COVID-19-related needs. Similarly, employment support and retraining programs may be needed to help patients with new disabilities identify alternative employment opportunities that accommodate their needs.[108]

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[i] Due to the range of symptoms and potential impact on multiple organ systems for post–COVID-19 condition, people may benefit from receiving services from various specialists coordinating and selecting appropriate care based on each person's unique set of symptoms (Parker et al., 2021).

Jurisdiction Source Document Population	Post-COVID-19 Condition and Insurance	Insurance Assessment Details
	forego needed care. The impact of inadequate health insurance coverage will be felt most strongly in states that have not expanded its Medicaid coverage and, thus, have the highest rates of the uninsured. These states have existing disparities in health outcomes among minority and low-income populations, which are anticipated to become exacerbated in the aftermath of COVID-19.[107]	
India **Study** **General Population**	• **Context:** This study (2022) on impact of COVID-19 on the Indian health insurance sector and post-COVID-19 management notes that 30-40% of people in India are making inquiries into health insurance options, which is creating new insurance product innovation. Several insurers introduced the COVID insurance product in March of 2020, and as a result of its success, other companies introduced similar products.[109] • **Population:** General population. No further information identified.	• **Insurance Details:** The study (2022) identified two COVID health—Indian Corona Rakshak and Corona Kavach policies.[j,k] These policies covered medical expenses and the cost of PPE kits, gloves, masks among others, used during COVID-19 treatment. There are still details surrounding COVID and prognosis, morbidity, as well as costs and patient profiles, that are not available, and insurance companies cannot make insurance decisions on who will be a candidate for COVID-19 treatment or who will respond to it based on this information. Until more information becomes available about COVID-19 treatments and prognoses, insurers will not have data on patients' profiles, treatment, and cost.[110] • **Reported Outcomes:** The study notes that this type of insurance programs last for a short period of time, offers customers a relatively small level of reimbursement, and has limited long-term benefits.[111]

United States
 	
Article
 	
Working Age Adults
	• **Population:** According to an article (Sept 28, 2021) on the denial of long-term disability benefits among those affected by long-COVID, long-haulers, including those who contracted the virus in the first wave over 18 months ago remain unable to return to work in the same capacity as before they became ill. Studies have shown that the physical and mental stress of returning to work before one feels ready can cause a relapse, or onset of new symptoms, likely resulting in more time off work. In these situations, disability benefits are noted to offer relief, allowing long-haulers the time and financial security to recover.[112]	• **Insurance Details:** When short-term disability benefits run out, long-haulers who are covered by their employer's group insurance plan are encouraged to apply for long-term disability benefits.[113]
		• **Reported Outcomes:** The article (Sept 28, 2021) suggests that in the case of COVID-related disability claims, insurers are frequently denying disability claims due to insufficient medical evidence, for example, the lack of a positive COVID-19 test.
		  o Many long-haulers lack a positive test to produce as evidence as tests were not widely available in the early days of the pandemic.
		  o Individuals who caught the virus from a member of their household who received a positive test often were not given tests themselves, as it was simply assumed they had it as well. Some were asymptomatic and did not

[j] Corona Rakshak Policy is a standard benefit-based health insurance plan that offers protection to the insured for treatment required due to a positive diagnosis of COVID-19. It is a short-term policy that provides a lump sum benefit equal to 100% of the sum insured on the positive diagnosis (InsuranceDehko, n.d.).

[k] Corona Kavach, HDFC ERGO Policy is designed to pay for medical expenses arising due to Coronavirus infection. Insurance Regulatory and Development Authority of India (IRDAI) has announced the launch of Corona Kavach Policy and made it mandatory for all General & Standalone health insurance companies in India to offer this policy to its customers. Corona Kavach Policy aims at covering hospitalisation, pre-post hospitalisation, home care treatment expenses and AYUSH treatment in case anyone is tested positive of COVID-19 infection (HDFC ERGO General Insurance Company Ltd., n.d.).

Jurisdiction Source Document Population	Post-COVID-19 Condition and Insurance	Insurance Assessment Details
		even realize they had the virus. ○ Additionally, because many of the symptoms such as fatigue, brain fog, and depression are "invisible" or subjective symptoms, it can be difficult for long-haulers to "prove" they are as sick as they truly are. Insurance companies take advantage of this.[114] • If the symptoms experienced by a long-hauler meet the definition of disability, as set out in the policy, and there is medical evidence to support this, payouts should be guaranteed. However, it is noted that insurance companies continue to deny Long COVID disability claims.[115]

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