Approach to assessment and management of long-term COVID-19 symptoms in primary care

This guidance is intended for family physicians and primary care nurse practitioners. It is based on known evidence as of August 5, 2021. Evidence on this topic is limited and rapidly evolving.

Scope

This guidance document outlines an initial approach to the assessment and management of adult patients (age ≥19 years) who have had COVID-19 infection (patients who either tested positive or were suspected by their primary care provider to have had COVID-19) and are still experiencing persistent symptoms more than 12 weeks post-infection. Medical complications of acute COVID-19 infection are out of scope of this guidance.

Key Recommendations

- Consider a broad differential for etiology of symptoms. Rule out red flags first, see Table 3 for more information.
- Educate patients about the typical recovery trajectory and range of experiences (variable symptoms and timeframe).
    - Most people experience slow and steady recovery over time. The prognosis is not well understood yet.
- Validate patients' concerns and provide reassurance.
    - Explain that the understanding of post-COVID conditions remains limited. More is being learned over time about the long-term impacts of COVID-19 infection.
- Address symptoms:
    - Assess and address impact on the patient's function.
    - Assess and address impact on the patient's mental health.
    - Incorporate the patient's and family's cultural and social context into your recommendations.
- Many post-COVID symptoms can be managed by primary care providers, with the incorporation of patient- and family-centered approaches to optimize quality of life and function.[1]
    - Connect patients with existing, validated resources for COVID-19 recovery.
    - Refer as indicated to Post-Covid Recovery Clinics and other specialist and community services according to the patient's condition, complexity and access.
- Ensure COVID-19 diagnosis is documented in the patient's past medical history for future reference.

- Recommendations and guidelines will change over time as the evidence evolves.[1]

Definitions

Currently there is no standardized definition of post-COVID-19 recovery. In general, signs and symptoms up to 12 weeks after COVID-19 infection are considered acute and ongoing COVID-19 infection, and signs and symptoms after 12 weeks are attributed to prolonged recovery.[2]

Table 1. Definitions in use in different settings for long-term signs and symptoms of COVID-19

Term	Definition	Source
Post-COVID-19 syndrome	Signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an alternative diagnosis.[2]	U.K. National Institute for Health and Care Excellence (NICE) Rapid Guideline[2]
Post Acute COVID Syndrome (PACS)	A syndrome characterized by persistent symptoms and/or delayed or long-term complications beyond four weeks from the onset of symptoms.[3]	Nalbandian et al.[3]
Post Acute Sequelae of SARS-CoV-2 (PASC)	A collective term for the constellation of symptoms some patients experience after recovery from the initial stages of COVID-19 illness.[4] This term is still being defined.	National Institutes of Health (NIH)[4]
Long COVID	Commonly used to describe signs and symptoms that continue or develop after acute COVID-19. It includes both ongoing symptomatic COVID-19 (4-12 weeks) and post-COVID-19 syndrome (defined above).[2]	Patients experiencing symptoms. These patient-defined terms increased in use through advocacy groups (who identified and collected data on this condition) and the media[5]
Long-hauler	Some people experiencing long-term symptoms of COVID-19 may self-identify as "long-haulers."	

Demographics and Risk Factors

- **Age:** The median age of patients being seen by Post-COVID Recovery Clinics in B.C. is 55 years.[6]
- **Gender:** Some research has shown that prevalence is higher in women.[7] So far in B.C., all genders appear to be equally affected.[6]
- **Risk Factors:** There is currently no consensus or confirmed evidence on risk factors for development of long-term COVID-19 symptoms. Possible suggested risk factors may include older age, obesity and female sex.[8]

Signs and Symptoms

Patients have experienced a substantial burden of diverse and fluctuating patterns of signs and symptoms.[1,2,6]

Table 2. Most common signs and symptoms associated with post-COVID-19 recovery[1]

System	Signs and Symptoms
Generalized	• Persistent fatigue interfering with daily life • Post-exertional malaise and/or poor endurance • Fever • Pain • Impaired daily function and mobility
Respiratory	• Cough • Dyspnea or increased respiratory effort
Cardiovascular	• Chest tightness or pain • Palpitations and/or tachycardia
Gastrointestinal	• Abdominal pain • Diarrhea • Nausea • Reduced appetite
Dermatological	• Rash • Hair loss[9,10]
Neurological	• Headaches • Sleep problems • Difficulty with problem-solving or cognitive impairment • Paresthesia
Reproductive	• Menstrual cycle irregularities
Psychiatric	• Mood changes (depression, anxiety symptoms)
Musculoskeletal	• Arthralgia • Myalgia
Ear, nose and throat	• Sore throat • Dizziness • Loss of sense of smell or taste

Consider a broad differential for etiology of symptoms.

- COVID-19 infection impacts nearly all body systems (cardiovascular, renal, gastrointestinal, respiratory, psychiatric, neurologic, dermatologic and immunologic systems).[11]
- The pathophysiology of long-term symptoms is not yet understood. It may include immune system and inflammatory impacts of infection, prolonged post-viral illness and expected impacts associated with pandemic events and intensive care unit (ICU) support (e.g., post-traumatic stress disorder, post-intensive-care syndrome).[3,12]

[1] Based on the NICE and CDC guidelines and the experience of the BC Post-COVID Recovery Clinics[1,2,6]

Assessment

Take a complete past medical and social history. Assess severity using a stepwise approach. First rule out red flags (clinical risk factors). Then consider and address yellow flags (psychosocial risk factors that can indicate likelihood of delayed recovery) and need for medical support with returning to work.[13–15]

Table 3. Red flags and yellow flags for assessment

Red flags include:	**Yellow flags include:**[13–15]
• Escalating chest pain* • Shortness of breath* • Unilateral leg swelling • Change in exercise tolerance • Marked change in mental function • Neurologic findings • Atypical severe headache • Deterioration in renal function • Severe psychiatric symptoms including risk of self-harm or suicide[2]	• Fear and avoidance of activity • Fear and withdrawal from social interaction • Not participating in self-management (e.g., taking a passive approach to the problem) • Negative attitudes and beliefs about the problem (e.g., that the symptoms are harmful and severely disabling) • Work-related stress

*Refer to Canadian Cardiovascular Society Guidance Long COVID-19: A Primer for Cardiovascular Health Professionals for cardiac complications of COVID-19, and investigation, referral and treatment recommendations.[16]

Diagnostic Testing

Many long-term COVID-19 symptoms are medically unexplained. Objective diagnostic findings should not be used as the only measure or assessment of a patient's well-being. Lack of objective abnormalities does not invalidate the existence, severity or importance of a patient's symptoms or conditions.[1]

- **Diagnostic testing for assessment and monitoring:** Diagnostic testing should be performed as clinically indicated based on the patient's history, physical exam and presentation. The role of diagnostic testing is to inform management and rule out serious causes. At this time there are no specific validated testing protocols for diagnosis or assessment of the long-term pattern of COVID-19 symptoms.
- **Serology testing:** At this time, COVID-19 antibody testing is not available in B.C. for routine clinical use, nor is it recommended for clinical diagnostic purposes in outpatient populations. Accurate serology testing does not provide a diagnosis or change clinical management. It is not indicated to determine a patient's past exposure because serology results are highly variable between patients. For more information, refer to: BCCDC Guideline for the appropriate use of COVID-19 serology testing.

Management

Most patients can be managed by primary care providers and do not require specialist referral.[17] Management is based on addressing symptoms and supporting patients to self-manage. Consider the following principles:

- Assess and address impact on function.

    - Approach treatment by focusing on specific symptoms (e.g., headache) or conditions (e.g., dysautonomia).
- Assess and address impact on mental health.
- Educate patients about the typical recovery trajectory and range of experiences (variable symptoms and timeframe).
    - Most people experience slow and steady recovery over time. The prognosis is not well understood yet.
- Incorporate patient and family's cultural and social context into recommendations.
- Provide education and information, and support patients to implement self management strategies, using the resources developed by the Provincial Health Services Authority's (PHSA) Post-COVID Recovery Clinics
    - Use shared decision-making to set achievable goals.[1]
- Patients benefit from multidisciplinary care. Access support from allied health professions including occupational therapy and social work if available.
    - Consider building a comprehensive management plan that addresses improving physical, mental and social wellbeing.[1]
- Provide validation:
    - Ask the patient about their experience of their symptoms and any feelings of worry or distress.
    - Listen with empathy and acknowledge the impact of the illness on their activities of daily living, social activities, work and education and wellbeing.[2]

Post-COVID Recovery Clinics

There are four PHSA Post-COVID Recovery Clinics in the province. Information is available here. The main goals of the clinics are to provide reassurance, monitor the patient's recovery with regular tests, provide the patient and their health-care team with information to support recovery and collect research data to better understand COVID-19 recovery.

Eligibility criteria

Referrals are only accepted for patients who have unexplained, persistent symptoms for more than 12 weeks post-symptom onset, thought to be related to COVID-19, AND who were

- confirmed COVID positive (NAAT or serology),
- official epi-linked cases, OR
- symptomatic in January to May 2020 and did NOT have access to a COVID-19 test.

These clinics are **NOT** for cases requiring urgent care.

Patients must be referred to a clinic using the post-COVID recovery clinic referral form.

Uncertainties in Diagnosis and Care

Evidence about COVID-19 recovery is limited and emerging. There is currently no consensus on the definition of a post-COVID-19 syndrome, and its pathophysiology is not well understood. Research is ongoing to understand its characteristics, effective treatments, and whether it is different from typical post-viral syndromes. Patients who experience this constellation of symptoms require support and continuity of care regardless of the etiology of their condition.

Long-term symptoms of COVID-19 appear to be a separate phenomenon from myalgic encephalomyelitis/chronic fatigue syndrome. Although the symptom profile can overlap, the differences are that long-term COVID-19 symptoms occur after a confirmed trigger (COVID-19 infection) and appear to improve over time for most patients.

Practitioner Resources

- Support for Health Professionals: including the Rapid Access to Specialist Consultant app, electronic Consultative Access to Specialist Expertise, referral resources, evidence syntheses and webinars.
- BC ECHO for Post-COVID-19 Recovery
- The Provincial Post-COVID-19 Recovery Pathway is posted as a tool on Pathways.
- UBC Continuing Professional Development webinar recording (January 28, 2021): The Journey to Recovery – Post-COVID-19 Care in BC

Patient and Caregiver Resources

- The PHSA Post-COVID Recovery webpage includes fact sheets, links and resources designed to support patients to understand and manage their COVID-19 recovery.
- All patients who have had COVID-19 have the opportunity to be included in COVID-19 research through the post COVID-19 recovery clinics or REACHBC.ca.

How this Document was Created

This guidance is based on the approach and recommendations developed by the Post-COVID Interdisciplinary Care Network (PC-ICCN) and PHSA Post-COVID Recovery Clinics. It is adapted from the NICE Rapid Guideline: *Managing the long-term effects of COVID-19*[18] and the US Center for Disease Control's Interim Guidance: *Evaluating and Caring for Patients with Post-COVID Conditions*[1], supplemented with targeted literature review and expert clinical opinion of the B.C. clinical reference group (CRG).

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