

FINAL REPORT

PROVINCIAL POST-COVID REHABILITATION TASKFORCE

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EXECUTIVE SUMMARY

BACKGROUND. The majority of persons with COVID19 survive, yet they are often left with multiple physical, psychological, social and cognitive deficits that require rehabilitation [1–5]. Most COVID19 sequelae would benefit from rehabilitation services support in hospital and community settings. The breadth and diversity of these multiple sequelae is not typical of common rehabilitation diagnoses. At present, variations in rehabilitation services are recognized across the Zones and no provincial coordination addresses COVID19-related rehabilitation needs [6,7].

AIM. The Provincial Post-COVID Rehabilitation Taskforce (the Taskforce) was to develop a provincial approach to timely, standardized and coordinated rehabilitation for adult patients post-COVID19 across the care continuum.

APPROACH. The Taskforce examined key pathways and frameworks; conducted literature reviews and environmental scans; and, consulted with local and international experts.

RECOMMENDATIONS & IMPLEMENTATION. The Taskforce presents 19 recommendations that collectively enable timely, appropriate rehabilitation for adult patients with COVID19 across the care continuum. The recommendations distinguish patients hospitalized due to COVID19 (Population 1 (hospitalized)) and patients who experienced COVID19 in the community (Population 2 (community-only)). The following table overviews the number of recommendations, and summarizes the content across these recommendations.

Focus	#	Overview of Recommendations
Screening	2	-Introduce screening questions and tools to recognize potential rehabilitation needs and trigger focused discussion and assessment.
Rehabilitation	9	-Follow patient journey across care continuum. -Provide direction on prioritizing rehabilitation activities. -Use a principle-based approach in continuing care. -Emphasize importance of educational resources and self-management.
Transition Planning	4	-Detail a process to track and support patients with rehabilitation needs. -Develop triage processes to standardize inpatient rehabilitation criteria. -Develop education and communication processes to facilitate planning. -Incorporate rehabilitation needs with existing COVID19 discharge documents and pathways. -Align with the work of existing discharge/transition coordinators.
Longitudinal Follow-up	4	-Follow-up on rehabilitation needs at 3, 6 and 12 months. -Align with telehealth services (like Health Link®/Rehabilitation Advice Line (RAL)) for patient follow-up and communication with primary care. -Align with Physicians' Learning Program (PLP) for data analysis for quality improvement.

An Implementation Committee will guide implementation and resource considerations. Existing resources can be leveraged, including the Health Link®/RAL, PLP, MyHealth.Alberta, Community Rehabilitation, Primary Health Care Integration Network, Health Professions Strategy & Practice, and the Neurosciences, Rehabilitation and Vision Strategic Clinical Network™.

CONCLUSIONS. The long-term impacts of COVID19 are unclear, but early learnings suggest widespread and diverse rehabilitation implications that require attention. The Taskforce recommendations fit into existing care pathways and leverage existing resources and programs.

INTRODUCTION & ACKNOWLEDGEMENTS

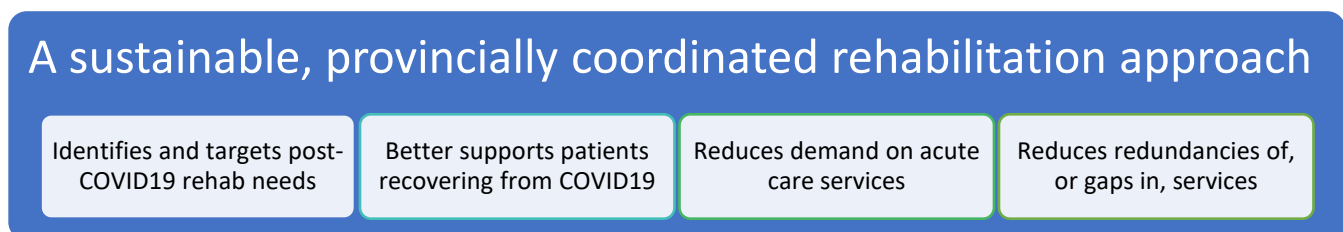
In Alberta, as of September 16, 2020, 16,274 people have contracted COVID19, of which 254 died and 750 have been hospitalized, of which 140 were admitted to an ICU [8]. Alberta has 1,134 active cases, with 46 patients with COVID19 in hospital [8]. Despite the many public health measures such as social distancing, we continue to see new patients with COVID19 across all five Zones, with the majority having unknown routes of acquisition [8]. COVID19 and its sequelae remain a responsibility of Alberta Health Services (AHS), including that of rehabilitation services, for the foreseeable future.

The majority of persons with COVID19 survive, yet they are often left with multiple physical, psychological, social and cognitive deficits that require rehabilitation [1–5]. External jurisdictions demonstrate that, as the COVID19 trajectory progresses, physical and psychosocial rehabilitation are necessary parts of post-COVID19 care [1–5]. Emerging evidence shows that COVID19 produces longstanding medical, functional and psychological sequelae across many domains: pulmonary (3-67%), neurological (30-84%), long-term fatigue (44%), neurocognitive impairment and impaired consciousness (36-80%), hyper-coagulation (30-80%), cardiovascular (8-33%), psychiatric (depression, anxiety, PTSD) (>48%), and post-intensive care syndrome and weakness (70-80%) [5]. These sequelae often require support from rehabilitation services.

In-hospital isolation protocols leave hospitalized patients with COVID19 without the needed rehabilitation (e.g. mobilization, cognitive stimulation, social interaction). The breadth of COVID19-specific sequelae, combined with restricted movements, leave hospitalized patients at risk of developing significant impairments (e.g. Post-ICU Syndrome) that continue well after discharge [6,7]. International experts predict that COVID19 will lead to significant morbidity 3-6 months post-diagnosis, and continue to place pressure on routine medical and rehabilitation services for 12 months and beyond [6].

Most of the COVID19 sequelae could be addressed by rehabilitation in hospital and community. The breadth and diversity of these multiple sequelae is not typical of common rehabilitation diagnoses. This requires a clear rehabilitation framework specific to COVID19 and education of the health care providers. At present, variations in rehabilitation services are recognized across the Zones and no provincial coordination or planning addresses COVID19-related rehabilitation needs [6,7]. A sustainable, provincially-coordinated rehabilitation approach could better target the spectrum of post-COVID19 rehabilitation needs; better support patients recovering from COVID19; reduce demand on acute care; and, improve efficiency (Figure 1). This approach must consider rehabilitation needs through the care continuum.

Figure 1. Intended Implications of a Provincially-Coordinated Rehabilitation Approach



APPROACH

Aims

The Provincial Post-COVID Rehabilitation Taskforce (the Taskforce) was established in May 2020 to develop a provincial approach to ensure **timely, standardized and coordinated rehabilitation for adult patients post-COVID19 across the care continuum**.¹ A concomitant system-level goal includes a long-term view of decreasing secondary complications from COVID19, hence lowering health care utilization rates. The care continuum includes acute care (e.g. ICU, acute medicine), inpatient and outpatient rehabilitation (e.g. Day programs, Choice Program, Community Rehabilitation, Day Hospital), subacute care, continuing care (e.g. long-term care, supportive living, and homecare), and primary care.

The Taskforce sought to develop a strategy based on the following guiding principles:

- (a) Based on evidence and principles of patient-centred care
- (b) Provincial in scope and engaging multiple disciplines across all Zones
- (c) Considers unique needs of diverse populations, but focused on adult patients
- (d) Ensures sustainability through leveraging available capacity, including existing pathways (e.g. the Presumed/Confirmed COVID19 Positive Primary Care Pathway).
- (e) Identifies patient flow across the care continuum
- (f) Generates information on long-term rehabilitation needs to inform clinical care planning.

The Taskforce commissioned four Working Groups (WGs), each with clinical-operational co-Chair dyads. These four WG addressed the following (Appendix 1 has detailed WG objectives):

- 1) **Screening** for rehabilitation needs (WG1)
- 2) Early **rehabilitation assessment and treatment** (WG2)
- 3) **Discharge and transition planning** for coordinated patient flow (WG3)
- 4) Criteria for **longitudinal follow-up** of patient functioning (WG4).

Governance

Taskforce co-chairs represented leadership from the Neurosciences, Rehabilitation & Vision (NRV) Strategic Clinical Network™ (SCN), Rehabilitation Operations, and Health Professions Strategy and Practice (HPSP). The Taskforce and its WGs had broad representation from provincial groups including Primary Care, Seniors Health, HPSP, Zone Operations, Connect Care and operational rehabilitation managers (Allied Health, Continuing Care, Peter Lougheed Centre, Red Deer Regional Hospital, Zone Medical Officer of Health), SCNs (Critical Care, NRV, Respiratory Health), clinical specialists (clinical neurosciences, critical care, dietetics and nutrition services, internal medicine, occupational therapy, psychiatry, physiotherapy, pulmonary medicine, public health, respiratory therapy, social work and speech language pathology), Physicians Learning Program, Quality Improvement and researchers (nursing, pulmonary medicine, rehabilitation). Appendix 2 contains the full membership for each WG. The Taskforce aimed to deliver its recommendations by September 2020, to allow implementation to commence in early Fall to support Albertans recovering from COVID19.

¹ Rehabilitation approaches for pediatric patients may be addressed in a separate initiative in the future.

Activities & Approach

Activities that informed the WG discussion and Taskforce recommendations included:

- Literature reviews and environmental scans to determine best practice, available services and programs as well as relevant tools for screening, rehabilitation interventions, transitions and long-term follow-up (Appendix 3 contains the evidence base of each WG)
- Alignment with key operational frameworks, pathways and documents to frame and inform strategies consistently across the organization, such as the following:
 - The Home to Hospital to Home (H2H2H) Transition Guidelines
 - The provincial COVID19 Pandemic Flowsheet
 - The Presumed/Confirmed COVID19 Positive Primary Care Pathway
 - The Primary Care COVID19 strategy
 - The AHS COVID19 Safe Discharge Checklist
 - The Post-COVID Respiratory Clinics
- Consultation with clinical experts across Alberta, Canada and internationally to gather advanced insights and comparable practices
- Discussions between WGs to ensure alignment, cohesiveness and no redundancies

Each WG refined its objectives based on group consensus and their described limitations and assumptions (Table 1). All WG considered implications for implementation related to sustainability and potential challenges.

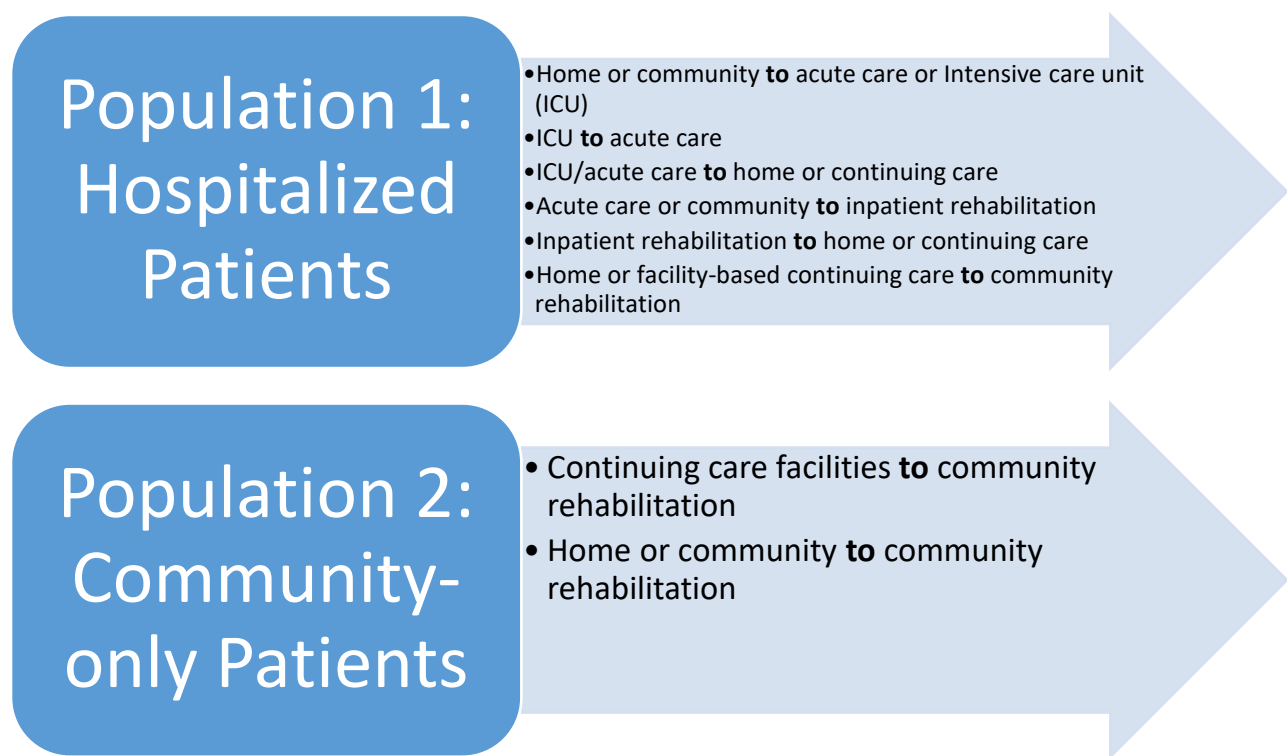
Table 1. WG Limitations & Assumptions.

Limitations & Assumptions
<ul style="list-style-type: none">• Recommendations were founded on core values: AHS Values, patient/family centred care, quality and safety, quadruple aim, collaborative and professional practice.• Recommendations recognize that rehabilitation requires a wide variety of professions: allied health, nursing and medical.• Three focal transition points were hospital to home or continuing care; home/community to rehabilitation; and continuing care to rehabilitation.• The primary aim of long-term follow-up is to identify clinical need for further rehabilitation. The secondary aim considered data collection for quality improvement.• Referrals triggered by rehabilitation screening are suggestions and do not replace individualized assessment and clinical recommendations.• Rehabilitation screening of hospitalized patients with COVID19 occurs in non-intensive care settings. Unique considerations are required for patients in need of critical care [5].• Comprehensiveness and feasibility must balance to recognize survey time burden and AHS' evolving capacity of rehabilitation programs.• By consulting key operational frameworks, there must also be alignment with key stakeholders with existing COVID19 pathways, especially for implementation.• The recommendations must be flexible. Rehabilitation needs post-COVID19 vary across recovery stages, between patients, and amidst evolving program capacity.

RECOMMENDATIONS

The Taskforce presents the following recommendations that would collectively enable timely, appropriate rehabilitation for adult patients with COVID19 across the care continuum. The **recommendations are separate** for **Population 1 (hospitalized)** and **Population 2 (community-only)** patients with COVID19. The differences in care trajectory, symptom severity and possible manifestation of COVID19 sequelae support this separate approach [9]. Figure 2 summarizes the different points of transition for these two populations. While these recommendations are specific to COVID19, the processes, infrastructure, staff awareness and education that will be created will create benefits for other patient types beyond COVID19.

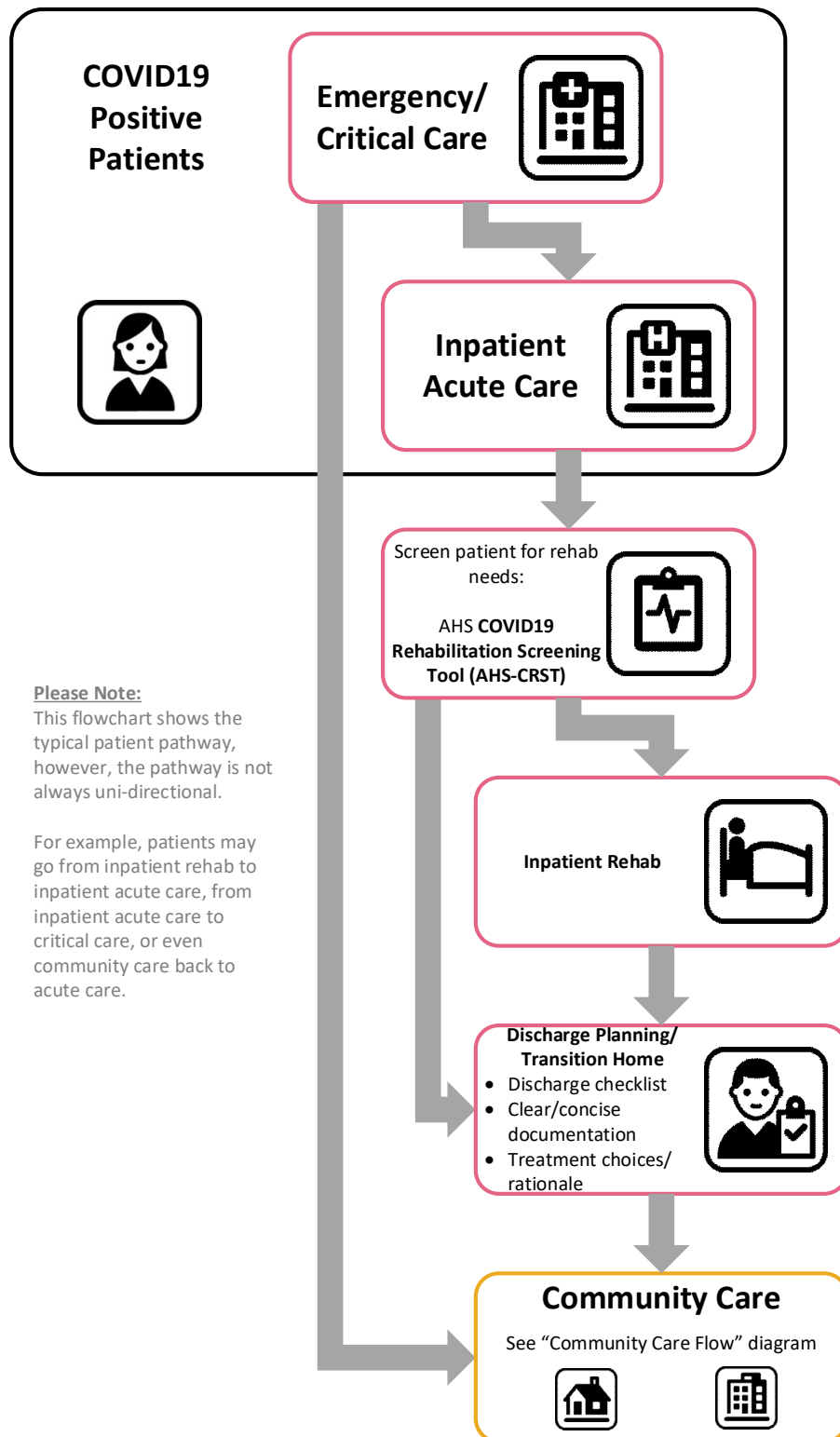
Figure 2: Points of Transition for Population1 and Population 2.



The recommendations for screening, rehabilitation, discharge/transition planning, and longitudinal follow-up are depicted visually in Figures 3 and 4 for Population 1 (Hospitalized) and Population 2 (Community-Only), respectively. These recommendations also align with specific, existing care pathways, particularly the Presumed/Confirmed COVID19 Positive Primary Care Pathway (Appendix 4).

Figure 3: Population 1 (Hospitalized) Patient Flow & Taskforce Recommendations

COVID19 Rehab: Acute Care Flow



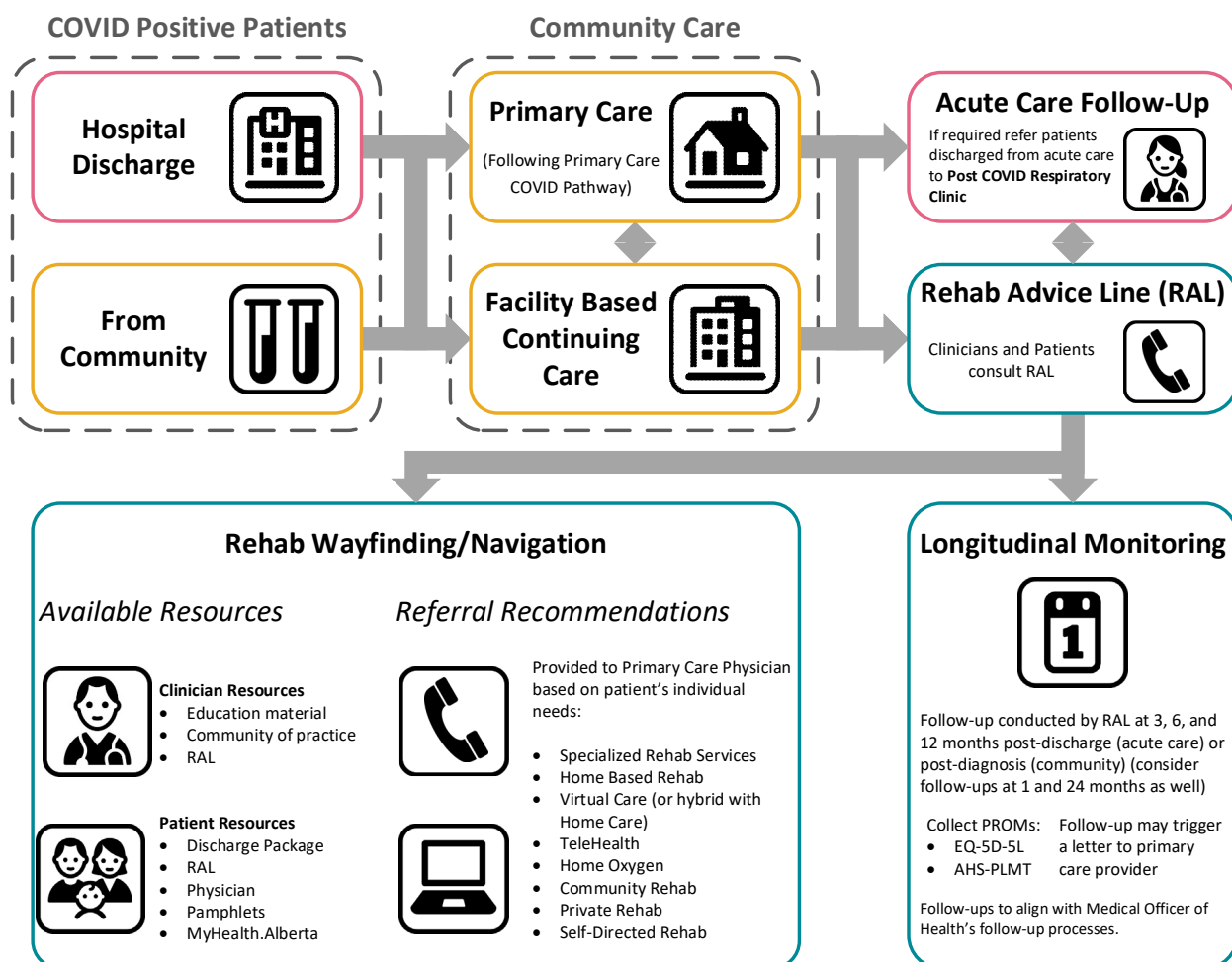
Please Note:

This flowchart shows the typical patient pathway, however, the pathway is not always uni-directional.

For example, patients may go from inpatient rehab to inpatient acute care, from inpatient acute care to critical care, or even community care back to acute care.

Figure 4: Population 2 (Community-Only) Patient Flow & Taskforce Recommendations

COVID19 Rehab: Community Care Flow



Screening

Key recommendations:

- Population 1 (hospitalized)** patients with COVID19 will be **screened** for potential rehabilitation needs at **each transition of care** using the **AHS COVID19 Rehabilitation Screening Tool (AHS-CRST)**, which is adapted from the COVID19 Yorkshire Rehabilitation Screening Tool (C19-YRS).
- Population 2 (community-only)** patients with COVID19 will be screened for potential rehabilitation needs using **four key screening questions** (to be finalized) that may be incorporated into **existing** screening and assessment **tools in primary care**, and **continuing care** (including home care and facility-based continuing care (long-term care and supportive living)).

The screening approach aims to provide information and advice to the care team to help them identify patient needs and provide appropriate care, which may include detailed rehabilitation assessment and management as appropriate with local rehabilitation services, the Rehabilitation Advice Line (RAL) or specialist teams. Appropriateness means contextualization of the rehabilitation plan, which is guided by the lead care team, the care setting (i.e. acute vs. primary vs. supportive living/long-term care), as well as patient needs and goals of care.

Neither the literature nor consultation with experts yielded an established, gold-standard screening or follow-up tool for rehabilitation needs. However, a frequently-acknowledged tool was the C19-YRS from the UK National Health Service [10] for patients discharged from their hospitalization due to COVID19. The C19-YRS has excellent face validity, is COVID19-specific, and has relatively comprehensive coverage of functional domains. C19-YRS limits were exclusion of nutrition and communication screening, uneven question framing, and exclusive focus on post-discharge patients.

For Population 1 (hospitalized), the proposed *AHS-CRST* builds on the C19-YRS, while addressing its limitations. The *AHS-CRST* screens for functional impairments related to breathing, heart palpitations, mobility, communication, swallowing, cognition, mental health, nutrition, and activities of daily living (Appendix 5). The tool asks patients to compare their functioning to pre-COVID19 capacity. As the patient progresses through hospital settings, clinical judgment may prioritize parts of the *AHS-CRST* over others to ensure flexibility, feasibility and appropriateness.

For Population 2 (community-only), four brief screening questions are proposed for direct incorporation into existing screening and assessment tools (e.g. Presumed/Confirmed COVID19 Positive Primary Care Pathway). Two questions target rehabilitation needs and two target respiratory needs (Figures 5 and 6). These questions are particularly planned for primary care and facility-based continuing care teams to implement and use. These questions would be posed by the provider tasked with administering the existing screening and assessment tool according to the timing of the existing pathways (i.e. when patient reports feeling unchanged or better). As above, positive responses to these screening questions will trigger further discussion and appropriate rehabilitation referrals or assessments.

Figure 5. Rehabilitation Needs Screening Questions for Population 2 (Community-Only).

Are you experiencing any new symptoms or problems since your COVID19 illness?	Are you back to doing your usual activities (walking, self-care, work, school, hobbies)? If not, what is preventing you from returning to those activities?
<ul style="list-style-type: none"> •Yes •No 	<ul style="list-style-type: none"> •Yes •No •N/A

Figure 6. Respiratory Needs Screening Questions for Population 2 (Community-Only).

Are you having more breathlessness than before you were diagnosed with COVID19?	Have you developed a cough, wheeze or chest discomfort that is new since you were diagnosed with COVID19?
<ul style="list-style-type: none"> •Yes •No •N/A 	<ul style="list-style-type: none"> •Yes •No •N/A

Rehabilitation

Key recommendations:

3. **Comprehensive rehabilitation assessments of identified issues** should be completed at **every level of care** where indicated by the rehabilitation screening. The assessments should include multi-system assessments that build on screening results.
4. Many rehabilitation issues can, and should, be addressed by **self-management**, which must be supported across the care continuum.

The Taskforce provides a detailed framework in the *AHS COVID19 Rehabilitation Strategies Document (ACRSD)*, including the types of rehabilitation issues to consider, the types of assessment tools to use, and the many relevant, available AHS resources and programs (Appendix 6). For Population 1 (**hospitalized**), the levels of care addressed are critical care, acute care, inpatient rehabilitation, community and outpatient rehabilitation, and self-directed recovery. For Population 2 (**community-only experience**), the levels of care addressed are community and outpatient rehabilitation and self-directed recovery.

As demonstrated in the literature and by this Taskforce, standardized rehabilitation assessments must consider the breadth of potential sequelae post-COVID19 including evaluations of physical function, respiratory function, cognition, nutrition, communication, swallowing, activities of daily living and psychosocial needs. The recommended screening strategies above will improve efficiency by highlighting the functional domains that require full assessment (and those that do not). Key rehabilitation resources include community rehabilitation, telehealth resources (i.e. Health Link®/RAL, Provincial Mental Health Help Line, MyHealth.Alberta), and virtual access to care wherever possible and appropriate.

The following highlights key rehabilitation recommendations specific to the care setting.

Population 1 Only: Hospitalized Patients

Critical Care

5. **Priority assessments** are required for patients in ICU who (a) require extended mechanical ventilation, sedation and/or prolonged bedrest; (b) are over 65 years of age; or (c) with chronic co-morbidities.

ICU teams should ensure continued best ICU rehabilitation practice including early and progressive mobility, delirium prevention (i.e. the ABCDEF delirium management and prevention

practice bundle), airway management, musculoskeletal and skin management approaches, as well as interventions for effective communication between patient/family and the providers.

Acute Care

6. Screening results direct rehabilitation assessments in acute care. These assessments may target the following:

- **Cognition** (e.g. Saint Louis University Mental Status Exam)
- **Physical function** (e.g. 6-Minute Walk Test, Timed Up and Go Test)
- **Activities of daily living** (e.g. dressing, feeding, toileting assessments)
- **Other outcomes** (e.g. pulmonary function using spirometry, mental health using Hospital Anxiety and Depression Screen (HADS)).

Inpatient Rehabilitation

7. Where patients have **multiple diagnoses** including COVID19, the **diagnosis with the most impairments** should determine the inpatient rehabilitation trajectory. Consultation with physiatry may facilitate this process.

Population 1 (Hospitalized) and 2 (Community-Only Experience)

Long-term Care & Supportive Living

8. A **principle-based approach** has patients living in facility-based continuing care following similar recommendations as those living in the community, but providers will customize based on patient needs and goals of care, as well as resources.

Community and Outpatient Rehabilitation

9. All patients should have **access to educational resources** on anticipated symptoms, exercises, and self-management (e.g. MyHealth.Alberta contains resources like the COVID19 discharge checklist).

10. Appropriate **rehabilitation programming** for patients will vary **based on patient functioning and goals**, as well as resource availability. Existing pathways will direct patients to community rehabilitation or home care based on eligibility and needs. Consideration of **hybrid models of virtual and in-person care** may be appropriate.

Self-Directed Recovery (particularly for patients never hospitalized for COVID19)

11. **Primary care** providers are the lead care providers of, and can share resources with, patients who are directing their own recovery. Existing educational resources can support patients, such as Health Link®/RAL and MyHealth.Alberta.

Appendix 4 demonstrates recommended care for rehabilitation screening and assessment can align with Presumed/ Confirmed COVID19 Positive Primary Care Pathway.

Discharge/Transition Planning

Key recommendations:

12. A **process to track and support patients with rehabilitation needs post-COVID19** should **align with the Medical Officer of Health** direction, and should ensure rehabilitation considerations in discharge documents, data monitoring, patient/family involvement, appropriate triage processes, education, evaluation strategies and communication strategies.

13. A central intake or **transition and discharge coordinator** should be embedded within existing services (including Health Link®/RAL or institutions) to identify rehabilitation needs in the community and support patients in wayfinding and transition.
14. **Patient education resource and support packages** should be compiled, particularly for Population 1 (hospitalized), at transition to community. This should include basic exercises, recommendations for recovery, strategies for well-being and mental health, referrals to appropriate community rehabilitation, as well as additional interventions (e.g. resources on smoking cessation², addictions, and vaccination).
15. **AHS Communications** should be **engaged** to raise public awareness and to develop and implement the communication strategies.

The process to track and support patients must consist of several facets around the rehabilitation needs of adult patients post-COVID19. Provision of timely, appropriate rehabilitation care post-COVID19 hinges on points of transition (Figures 2 and 7). Rehabilitation should be consistently embedded and addressed in discharge documents and processes, especially those specific to COVID19 (e.g. Patient Discharge handout, Discharge checklist). This will improve recognition of rehabilitation needs. Rehabilitation concepts are consistent with patient and family centred care. This embedding can be done in collaboration with CoACT/Collaborative Care, Connect Care, and Primary Care (e.g. Patient Discharge handout, Discharge check list, Guideline for monitoring patients in the community). These concepts complement the H2H2H Transitions Guideline, which advances communication across the patient's circle of care and the active participation of patients, family and caregivers.

Data should be collected and monitored, particularly for those in community and continuing care settings recovering from COVID19. Discharge and transition supports should focus on active involvement of patient and family. Transition documentation of screening and functional assessments should be shared between teams. Documentation for referral to community rehabilitation should include information on medical stability, and any precautions, contraindications or limitations for exercise. The appropriate triage processes should be in place, particularly to identify which Population 1 (hospitalized) patients recovering from COVID19 may require follow-up by outpatient respirology at 2-3 months post-hospital discharge (Post-COVID Respiratory Clinics).

Patients should be made aware, at discharge and through primary care, of Health Link®/RAL that offer direct access to rehabilitation professions and nursing, who can answer questions and link to resources in a timely fashion. These telehealth teams should be clear on the pathways to refer patients to more information (MyHealth.Alberta) and/or rehabilitation services (including Community Rehabilitation), as well as Health Link® Dietitians. This will include strong links and education to promote awareness. Education should be prioritized for the public, as well as Populations 1 and 2. Transition and discharge coordinators with knowledge in rehabilitation will be valuable, such as the Rehabilitation Navigators at the Glenrose Rehabilitation Hospital.

Communication strategies will be required to ensure patients recovering in the community and continuing care settings are aware of potential functional impairments post-COVID19 and how to access rehabilitation information and resources (Appendix 7). Some resources exist, but can be expanded upon (e.g. Rehabilitation and COVID19 handbook, online resources especially on MyHealth.Alberta). Expanded resources would be valuable in care planning, particularly if there

² For example, for smoking cessation, AHS has handouts, summary of evidence, and quick reference tools for clinicians <https://healthcareproviders.albertaquits.ca/resources/covid-19>

Consistent transition and referral criteria for rehabilitation services are required. These criteria must consider special or marginalized populations that may have unique needs (e.g. pediatrics, Indigenous populations, elderly patients, incarcerated populations, isolate and rural populations). Mental health issues should be considered in collaboration with Addictions and Mental Health, and referrals appropriate to Addictions and Mental Health services should be made (e.g. the Mental Health Help Line).

The diagram illustrates the continuum of care for a patient with a traumatic brain injury. It shows five stages of care, each with an icon and a label: Intensive Care (nurse icon), Acute Care (nurse with clipboard icon), Inpatient Rehab (three people icon), Community Rehab (person walking icon), and Continuing Care (hand icon). Arrows indicate the flow of care from Intensive Care to Continuing Care, with additional arrows showing transitions between stages. A large box at the bottom represents 'Home – primary provider' (person with clipboard icon).

Key recommendations:

17. Two needs-assessment tools are recommended:

- 16

18. Virtual **telehealth** services (e.g. Health Link®/RAL) will follow-up directly with patients to identify unmet rehabilitation needs under the longitudinal follow-up approach.
- The **telehealth clinicians** will **assess patients** recovering from COVID19.
 - Where the *AHS-PLMT* triggers further rehabilitation assessment, the clinicians will use the **Primary Care Referral Letters** to engage primary care clinicians to follow-up and determine appropriate clinical rehabilitation steps.
19. The **Physicians' Learning Program (PLP)** will undertake the analysis of longitudinal data for **quality improvement and program planning purposes**.

There is little consensus on which exact measures to use for long-term follow-up. Experts on COVID19 and other pandemic diseases (e.g. SARS, H1N1) support the use of standardized patient-reported outcome measures (PROMs), with additional validated health or functional outcome measurements. There is also little consensus on the length of follow-up, but current COVID19 registered clinical trials suggest follow-up for up to 2 years, at frequencies of 3-6 months (Appendix 3). Most studies focus on patients from Population 1 (hospitalized). Most long-term studies used numerous validated tools, rather than novel measurement instruments. The number of tools required for the multiple potential functional sequelae of COVID19 are operationally prohibitive.

The *AHS-PLMT* complements the *AHS-CRST*, with the same foundation (the C19-YRS) but additional questions. This needs-assessment tool acknowledges the multi-system rehabilitation needs of patients post-COVID19. Appendices 8 and 9 contain the baseline and follow-up versions of the *AHS-PLMT*. Appendix 10 contains the protocol for implementing the longitudinal follow-up. Telehealth clinicians (at Health Link®/RAL), with expanded capacity and leadership support, could proactively determine the patients requiring follow-up, contact patients, complete the needs assessment, and notify primary care as needed. Front-line clinicians will not be called upon to complete longitudinal follow-up, which advances feasibility. The protocol suggests that all Population 1 (hospitalized) patients be followed up with irrespective of timing of diagnosis, but implementation discussions will balance feasibility with clinical needs to determine the appropriate approach to follow-up with Population 1 (community-only) patients. The latter follow-up may mobilize multiple platforms including online surveys on MyHealth.Alberta (especially for patients out-of-window to the follow-up periods) and phone follow-up by Telehealth clinicians for a smaller cohort of in-window patients (defined by randomization or a particular time period).

COVID19 is unprecedented and its long-term implications on the rehabilitation needs of the Albertan population are unknown. Longitudinal follow-up is foremost directed at advancing patient care, and ensuring continuity along the care continuum. The wealth of data to be collected can advance understanding of the disease sequelae and the actual prevalence and nature of rehabilitation needs post-COVID19, and inform planning for rehabilitation services accordingly. The PLP currently collaborates internationally with the International Consortium of Healthcare Outcome Measurement in designing the latter's COVID19 Outcome set. This aligned interest on standardized COVID19 data collection, and the PLP capacity and leadership support, would ensure their success in data analysis and knowledge translation with key professions and groups for quality improvement.

IMPLEMENTATION CONSIDERATIONS

Many existing resources and processes in AHS and Primary Care will advance operationalization of these recommendations. The recommendations will be furthered with recognition of potential challenges, mitigation strategies, budget and resource considerations. As

detailed below, the key mitigation strategy is the establishment of an Implementation Committee in Fall 2020 to oversee and guide recommendation implementation. The Implementation Plan is anticipated to be finalized by December 2020.

Opportunities & Resources

Current AHS resources fall into two categories to support Taskforce recommendations: (1) pathways and tools that may be adapted; and, (2) resources that are readily available.

Adaptable Pathways and Tools

The following pathways and tools, which currently do not address rehabilitation, may be adapted to include rehabilitation-specific requirements or activities. As these pathways and tools are foundational to the AHS COVID19 response, it is critical that the Taskforce recommendations align with them and vice versa. The work of alignment has begun (Appendix 4), and the Primary Health Care Integration Network (PHCIN) has committed to incorporating rehabilitation information into the Patient Transition Resources.

- H2H2H Transitions Guideline (Primary Care)
- Provincial COVID19 Pandemic Flowsheet: Admission to Acute (from Emergency Department, Assessment Centre or Observational Unit)
- AHS COVID19 Provincial Pandemic Flowsheet: Patient Discharge from Hospital
- AHS COVID19 Safe Discharge Checklist
- My Discharge Checklist
- Presumed/Confirmed COVID19 Positive Primary Care Pathway
- COVID19 Assessment, Treatment & Stabilization in Place Guide (under development)
- Virtual Care Guidance for Allied Health Professionals

Readily-Available Resources and Programs

- **Health Link®/RAL** and the **Mental Health Help Line** could serve as telehealth resources for patients with COVID19 as well as their care providers in the community (e.g. primary care, community rehabilitation) or in continuing care settings (e.g. long-term care or supportive living clinicians). One of these teams could also serve as the hub for longitudinal follow-up, particularly patient needs assessment and communication with primary care.
- Community Rehabilitation services in Alberta, which can be found using the **Community Rehabilitation Directory**. These teams will provide the in-person and virtual rehabilitation care identified as necessary.
- **MyHealth.Alberta team**, could help ensure appropriate literacy of the *AHS-CRST* (screening) and *AHS-PLMT* (long-term follow-up) measurement instruments, while the **website** currently offers relevant educational resources (and could hold additionally developed resources). This resource or AHS RedCap could be used to deliver some longitudinal follow-up surveys electronically to complement the phone follow-up.
- **Post-COVID19 Respiratory Clinics** in Edmonton and Calgary will follow all hospitalized patients with protracted respiratory needs post-COVID19 (consider at 2-3 months post-discharge). Clinic medical leaders are supportive of referrals detected through the Taskforce recommendations where patients have protracted respiratory needs post-COVID19.
- The **PLP** creates actionable clinical information and engages with physicians, teams, patients, and partners to co-create sustainable solutions to advance practice. The PLP could support audit and feedback of key outcome and process data to care providers and support them to

interpret this information, identify opportunities and plan practical and effective improvements to patient care delivery for COVID19 patients.

- The **PHCIN** will help implement recommendations in primary care, including embedding screening questions and rehabilitation concepts into Patient Transition Resources.
- Existing **discharge and transition coordinators** on teams could incorporate recommendations and thus support the transition of patients in their post-COVID19 functional recovery.
- The **NRV SCN**, in collaboration with key stakeholders, provides, and will continue to provide, leadership and organizational support of the Taskforce and subsequent implementation activities, respectively.

These resources and their connection to the recommendations herein to advance timely, appropriate rehabilitation post-COVID reveal the relatively high feasibility of the recommendations.

Challenges & Potential Mitigation Strategies

The feasibility of implementing these recommendations depends on the anticipation and resolution of existing barriers and challenges.

Key Mitigation & Implementation Strategy:

- The establishment of an **Implementation Committee** will guide implementation of the aforementioned recommendations in a manner that can be sustained over time by AHS and its partners across Alberta, and that will ensure consideration of mitigation strategies. The Implementation Committee should **include** patient/family advisors, frontline clinicians, operational leaders across the Zones, content experts, NRV SCN leadership, SCN partners, HPSP leadership, primary care, Medical Officer of Health, clinicians along the care continuum, Health Link®/RAL, and data analytics.
- **Data management** for longitudinal follow-up will require discussion with stakeholders in data analytics, the Medical Officer of Health, and Health Link®.

The expected tasks of the Implementation Committee are listed in Table 2, along with the barriers that they address. The membership of this Implementation Committee will seek input from key stakeholders early in the process to ensure building on their expertise, involving their networks, and clarifying ongoing responsibilities. With respect to the **data management plan**, it must ensure that the RAL can access necessary datasets to determine, retrospectively and prospectively, when patients are at appropriate time-points. **Data flow considerations** must enable independent, timely data collection by the RAL; available information for the health care team including primary care; and available information for PLP for data analysis for quality improvement.

Table 2. Mitigation Strategies & the Barriers They Address

Mitigation Strategy for Implementation Committee	Barrier at Issue
Workflow and capacity implications of these recommendations will be clarified. Particular considerations include the following: <ul style="list-style-type: none"> • What is required for the long-term (6+ months) sustainability of currently-available resources (e.g. RAL, PLP)? 	-Taskforce recommendations call for adoption and adaption of current resources and

<ul style="list-style-type: none"> • How can the proposed strategies (and their implications) be realized in collaboration with primary care, long-term and supportive care, Zone Rehabilitation Services, HPSP, AHS Communications, MyHealth.Alberta, and other stakeholders? • How can a seamless process be ensured for primary care provider access to specialist resources and advice lines? • Who will, and how can, identified programs (e.g. Rehabilitation Navigators) and pathways (e.g. COVID19 Discharge Checklist) be adapted to support the Taskforce strategies? For example, who on the PHCIN will inform and embed recommendations into existing tools and processes and how can they reasonably be supported by their workflow? • What will be the exact timing of (and who will be responsible for) screening, assessment and longitudinal follow-up activities to ensure balance between comprehensive care that is not overly-burdensome to patients and clinicians? How will the timing of implementation vary between Population 1 (hospitalized) and Population 2 (community-only) patients? For longitudinal follow-up, should a random sample of Population 2 (community-only) patients be followed to determine patient population needs and appropriateness of follow-up timing (as the current literature only informs long-term sequelae for hospitalized patients post-COVID19)? 	<p>programs across four areas. There could be overlap or gaps without careful, broad oversight.</p> <p>-Without public and provider awareness of the potential sequelae of COVID19 and the available resources at AHS, Taskforce strategies will fall flat from disuse.</p>
<p>The <i>AHS-CRST</i> and <i>AHS-PLMT</i> must be examined by key informant groups and pilot tested for validity across care settings and for different patient populations.</p> <ul style="list-style-type: none"> • Patient and family advisors will examine tools for acceptability • MyHealth.Alberta staff will examine tools for literacy level • Key experts from primary care, acute care, inpatient rehabilitation, home care, continuing care, and the RAL will give feedback on utility, feasibility and comprehensiveness. • The longitudinal follow-up proposal (Appendix 10) contains methods for a pilot study on <i>AHS-PLMT</i> reliability and validity. 	<p>-Taskforce proposes novel tools that are not validated.</p> <p>-The feasibility of use of these very comprehensive tools is unknown.</p>
<p>The scope, function and resourcing of the RAL must be clearly identified and articulated. Further elaboration on the links between the RAL and other programs must be clarified and confirmed (e.g. continued support and platform from Health Link ®).</p>	<p>The RAL team supports their broad role across the recommendations, but the RAL long-term sustainability is unclear.</p>
<p>Further discussion and planning is required for populations with diverse considerations affected by COVID19, and those communities should be included in such discussion and planning. These populations include continuing care, pediatric populations, incarcerated populations, populations with low socioeconomic status, cross cultural/immigrant populations, Indigenous populations, and, Hutterite communities. Initial considerations were discussed briefly in the <i>ACRSD</i> by WG2 (Appendix 6).</p>	<p>-Taskforce recommendations do not consider all populations.</p>
<p>Confirmation is required on the suitability and required augmentation of patient and provider educational resources. These resources will</p>	<p>-Taskforce recommendations will</p>

<p>support transitions and self-management for patients with COVID19. Particular considerations include the following:</p> <ul style="list-style-type: none"> • How to develop clear guidelines and materials (e.g. infographics) to accompany the <i>AHS-CRST</i> to support clinicians in operationalizing recommended screening strategies and tools? • Whether cost-effective, online exercise programs integrated on MyHealth.Alberta are an appropriate investment? • Whether, and what, further post-COVID19 rehabilitation-related content is required on MyHealth.Alberta (e.g. videos, podcasts, reliable internet resources for different levels of health literacy and style of learning)? 	<p>require some capacity to prioritize, design and disseminate educational resources.</p> <p>-Introduction of new tools and processes requires concomitant education and support for effective implementation.</p>
<p>Implementation strategies are required to enable fuller realization of virtual care opportunities and strategies. HPSP has developed guidance for allied health professionals in providing virtual care. The provincial Virtual Health team is another key resource. These resources support virtual care provincially, including that of rehabilitation post-COVID19.</p>	<p>-Existing resources to advance virtual care in rehabilitation are not fully implemented.</p>

BUDGET & RESOURCE IMPLICATIONS

The Taskforce recommendations emphasize feasibility and efficiency. Based on current activities and discussions with stakeholders, the Taskforce anticipates in-kind contributions from many key programs and teams who will be essential to implementation of the recommendations, including the following:

- Data analytics and Health Link® (around the data management strategy)
- The PHCIN, Discharge and Transition Planning, MyHealth.Alberta, PLP as well as clinical and programmatic teams in hospital and community (around development of educational materials, and incorporation of recommendations into existing pathways and tools)
- AHS Communications (around communications plan)

As a whole, these recommendations are primarily revenue neutral. Only one of the 19 recommendations may implicate budgetary changes because it calls for a novel activity: the proactive longitudinal follow-up at 3, 6 and 12 months. This strategy will first target Population 1 (hospitalized) within a few months, and then follow-up with all patients who tested positive for COVID19 in Alberta. Recent findings from Italy that followed hospitalized patients with COVID19 reported that, at 2-months post-discharge, 32% of patients had 1-2 symptoms, 55% had three or more symptoms, and only 12% of patients had no symptoms [11]. In longitudinal follow-up, it is reasonable to expect around 10% attrition at each follow-up time-point as not all patients can be reached due to patient mobility, disinterest and other causes [12].

Our understanding is that there may be potential capacity on the provincial Mental Health Help Line operated by Health Link® to support implementation of long-term follow-up as this initiative supports the psychosocial health needs of patients recovering from COVID19. Further discussion by the Implementation Committee will be required to determine the actual logistics (including frequency of calls, phasing of calls based on population types, professional discipline of follow-up clinician, and appropriateness of a phone-online hybrid model of follow-up) and final staffing required.

CONCLUSIONS

Literature reviews and expert consultations demonstrate that, locally and internationally, the long-term rehabilitation needs of adult patients recovering from COVID19 can be diverse, wide-spread, and of unknown duration. A global pandemic that remains unchecked around its long-term consequences, particularly related to functioning and mental health, will introduce greater population-wide morbidity, increased health service and pharmaceutical utilization, and decreased productivity.

The development of a provincial strategy is needed to ensure timely, standardized and coordinated rehabilitation for adult patients post-COVID19 across the care continuum. This approach will ensure the identification, assessment and management of rehabilitation needs post-COVID19 along the care continuum. The approach builds towards self-management, living well in the community, reduced use of acute care, and a comprehensive, efficient nature.

The Taskforce strategy includes 19 recommendations. These recommendations (a) introduce questions and tools for screening and long-term follow-up that will feedback to the care team to support further discussions and assessments; (b) provide insight in how to prioritize rehabilitation assessments and management across the care continuum; and, (c) strategize how discharge and transition planning processes can advance care of rehabilitation needs post-COVID19. An Implementation Committee should shepherd these recommendations into operational to forestall the vast rehabilitation implications of COVID19 for Albertans.

These recommendations fit in existing care pathways and leverage existing resources and programs, particularly the Health Link®/RAL, the Mental Health Help Line, PLP, Post-COVID19 Respiratory Clinics and MyHealth.Alberta. These existing pathways and resources, along with their associated leadership and teams, demonstrate why AHS is well-positioned to implement this strategy.

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APPENDIX 1: WORKING GROUP OBJECTIVES

Working Group Description (Number, Name / Focus, & Co-Chairs)	Objectives to Develop	Scope
1. Screening (Shayne Berndt & Peter Sargious)	<ul style="list-style-type: none"> • Evidence-based systematic criteria for initial identification of, or screening for, rehabilitation issues / needs for persons with COVID19 <ul style="list-style-type: none"> ○ Identify/develop screening tool ○ Ensure tool is efficient and feasible ○ Consider clinical recommendations and guidelines for screening ○ Consider pre-existing co-morbidities ○ Capacity for tool to be completed by any clinician and/or patient/family member 	<ul style="list-style-type: none"> • Across care continuum from acute care to community care • Screening may begin in acute care settings and move to community services
2. Rehabilitation Strategies (Carol McCarthy & Christopher Grant)	<ul style="list-style-type: none"> • Setting-specific, evidence-based clinical recommendations and guidelines for early post-COVID19 rehabilitation assessment and treatments • Criteria / assessment tool for different levels of care and clinical considerations for specialty care • Implementation recommendations for rehabilitation interventions to prevent unnecessary emergency department utilization and hospital (re-) admission 	<ul style="list-style-type: none"> • Across care continuum from acute care to community care
3. Discharge & Transition (Laura Benard & Mareika Purdon)	<ul style="list-style-type: none"> • Coordinated approach to patient flow through acute care / rehabilitation / community • Discharge and transition criteria specific to rehabilitation needs for persons post-COVID19 across the care continuum • Provincial patient and family resources for COVID19 rehabilitation 	<ul style="list-style-type: none"> • Across care continuum from acute care to community care
4. Longitudinal Monitoring (Elisavet Papathanassoglou & Cyndie Koning)	<ul style="list-style-type: none"> • Criteria for longitudinal monitoring of functional independence of persons with COVID19 • Evaluation framework to assess the impact of the above strategies at the patient, clinician and health systems levels 	<ul style="list-style-type: none"> • Focus on post-discharge monitoring in the community • Recommended to start with patients who received care in acute care settings

APPENDIX 2: MEMBERSHIP

Overall Taskforce

Taskforce Position	Name	Position	Department	Zone
Co-Chair	Catherine Hill	Acting Senior Operating Officer	Glenrose Rehabilitation Hospital	Edmonton
Co-Chair	Elaine Finseth	Associate Chief Allied Health Officer, AHPPE	Health Professions Strategy & Practice	Central
Co-Chair	Petra O'Connell	Senior Provincial Director	NRV & DON SCN	Calgary
SCN support	Brooke Blythe	Practice Lead	Critical Care SCN	North
Member	Carol Kirkland	Physiotherapy Practice Lead	Red Deer Regional Hospital	Central
Member	Carol McCarthy	Program Manager	Rehabilitation & Allied Health Services	Edmonton
Member	Chester Ho	Senior Medical Director	NRV SCN	Edmonton
Member	Christopher Grant	Physiatrist	ICU Recovery Clinic	Calgary
Member	Cyndie Koning	Healthcare Improvement Specialist	Glenrose Rehabilitation Hospital, Healthcare Improvement Team	Edmonton
Member	Darren Ness	Director	Allied Health Calgary Zone	Calgary
Member	Doug Kremp	Respiratory Therapy Clinical Lead, North Zone	Respiratory	North
Member	Doug Pratt	Program Manager	Community Rehabilitation (Adults) - Calgary Zone	Calgary
Member	Elisavet Papathanassoglou	Scientific Director	NRV SCN	Edmonton
Member	Giovanni Ferrara	Respirologist	Pulmonary / Respiratory Medicine	Edmonton
SCN support	Glenda Moore	Senior Consultant	NRV & DON SCN	Calgary
Member	Jason Daoust	Physical Therapy, North Zone Clinical Lead	Allied Health	North
Member	Jason Knox	Manager	Clinical Neurosciences	Calgary
Member	Jim Silvius	Senior Medical Director	Seniors Health SCN	Calgary
Member	June Norris	Senior Practice lead Physiotherapy	Health Professions, Strategy & Practice	Edmonton
Member	Laura Benard	Senior Practice Consultant	Allied Health Professional Practice & Education	Calgary
SCN support	Jeanna Morrissey	Manager	Critical Care SCN	Calgary

SCN support	Kiran Pohar Manhas	Assistant Scientific Director	NRV SCN	Calgary
Member	Lindsay Stark	Manager	Allied Health	Edmonton
Member	Lisa Warner	Director	Community Rehabilitation	Edmonton
Member	Lisa Waselenchuk	Operations Manager	Facility & Supportive Living, Allied Health & Specialty Services	Edmonton
Member	Lois Ward	Senior Operating Officer	Peter Lougheed Hospital	Calgary
Member	Mareika Purdon	Clinical Quality Consultant - Patient Flow	Integrated Quality Management	Edmonton
Member	Nancy Fraser	Senior Provincial Director	Critical Care SCN	Calgary
SCN support	Nicole McKenzie	Manager	NRV SCN	Calgary
Member	Patrick Mitchell	Respirologist	Respiratory / Pulmonary Medicine	Calgary
Member	Peter Sargious	Senior Medical Director	Internal Medicine, Calgary Zone	Calgary
Member	Raiyan Chowdhury	Intensivist, ENT Specialist	Edmonton Zone Post-ICU Follow-up Clinic, Critical care, Otolaryngology - Head & Neck Surgery	Edmonton
Member	Risa Olsen	Manager	Occupational Therapy (South Zone-West)	South
Member	Shantel Farncombe	Interim Manager	Integration, Innovation, Provincial Primary Health Care	South
SCN support	Selvi Sinnadurai	Executive Director	NRV SCN	Edmonton
Member	Shayne Berndt	Manager	OT South Zone-East: Stroke Support Team & Home Rehabilitation Team	South
Member	Sherri Kashuba	Executive Director	Critical Care SCN	Edmonton
Member	Tom Hufkens	Manager	Rural Allied Health	Calgary
Member	Tricia Miller	South Zone Manager	Speech Language Pathology, Audiology, Children's Allied Health	South
Member	William Tung	Professional Practice Leader - Physiotherapy	Rehabilitation Services, Royal Alexandra Hospital	Edmonton

Working Group #1 - Screening

WG Position	Name	Position	Department	Zone
<i>Clinical Lead Co-Chair</i>	<i>Peter Sargious</i>	<i>Senior Medical Director</i>	<i>Internal Medicine, Calgary Zone</i>	<i>Calgary</i>
<i>Operational Lead Co-Chair</i>	<i>Shayne Berndt</i>	<i>Manager</i>	<i>Occupational Therapy South Zone-East: Stroke Support Team & Home Rehabilitation Team</i>	<i>South</i>
SCN Support	Glenda Moore	Senior Consultant	NRV SCN	Calgary
Member	Shantel Farncombe	Interim Manager	Integration, Innovation, Provincial Primary Health Care	South
Member	Eileen Keogh	Senior Practice Consultant	Allied Health Professional Practice & Education	Edmonton
Member	June Norris	Senior Practice Lead Physiotherapy	Health Professions, Strategy & Practice	Edmonton
Member	Melani Gillam	Provincial Practice Lead - Standards & Practice	Nutrition Services	Calgary
Member	Shawna McGhan	Senior Planner	Primary Health Care	Edmonton
Member	Hilary Gray	Clinical Educator	Allied health	Calgary
Member	Doug Kremp	Respiratory Therapy Clinical Lead, North Zone	Respiratory	North
Member	Ashley Bissett	Health Educator - Occupational Therapy	Allied Health & Specialty Services	
Member	Doug Woodhouse	Medical Director	Physician Learning Program	Calgary

Working Group #2 – Rehabilitation Strategies

WG Position	Name	Position	Department	Zone
<i>Clinical Lead Co-Chair</i>	<i>Christopher Grant</i>	<i>Physiatrist</i>	<i>ICU Recovery Clinic</i>	<i>Calgary</i>
<i>Operational Lead Co- Chair</i>	<i>Carol McCarthy</i>	<i>Program Manager</i>	<i>Rehabilitation & Allied Health Services</i>	<i>Edmonton</i>
SCN Support	Brooke Blythe	Practice Lead	Critical Care SCN	North
Member	Mike Stickland	Pulmonologist	EGH Respiratory Rehab / UAH Pulmonary Division	Edmonton
Member	Marlis Atkins	Director	Adult & Seniors Health/Patient Education Resources & Documentation Provincial Strategy, Standards & Practice Nutrition Services	Edmonton
Member	Stephanie Oviatt	Clinical Practice Lead (PT)	Allied Health	Calgary
Member	Megan Terrill	Senior Practice Consultant	Provincial Rehabilitation	Red Deer
Member	Nicole Morin	Occupational Therapist	UofA Hospital	Edmonton
Member	Alison Foxford	Speech Language Pathologist	Glenrose	Edmonton
Member	Melani Gillam	Provincial Practice Lead - Standards & Practice	Nutrition Services	Calgary
Member	Kristin Christensen	Professional Practice Lead	Covenant Health Physiotherapy	Edmonton
Member	William Tung	Professional Practice Lead	Physiotherapy	Edmonton
Member	Hilary Gray	Clinical Educator	Allied health - Calgary Zone	Calgary
Member	Laura Cunliffe	Social Worker	UAH / MAZ	Edmonton
Member	Lauren Singh	Physiotherapist	Community Accessible Rehabilitation	Calgary
Member	Tracey Telenko	Professional Practice Lead	Respiratory Services UAH, MAHI & RAH	Edmonton

Working Group #3 - Discharge & Transition Planning

WG Position	Name	Position	Department	Zone
<i>Operational Lead Co-Chair</i>	<i>Mareika Purdon</i>	<i>Clinical Quality Consultant - Patient Flow</i>	<i>Integrated Quality Management</i>	<i>Edmonton</i>
<i>Rehabilitation Lead Co-Chair</i>	<i>Laura Benard</i>	<i>Senior Practice Consultant</i>	<i>Allied Health Professional Practice & Education</i>	<i>Calgary</i>
SCN Support	Jeanna Morrissey	Manager	Critical Care SCN	Calgary
Patient & Family Advisor	Janice MacRae	Patient & Family Advisor	N/A	Calgary
Patient Advisor	Ron Bradley	Patient Advisor	N/A	Edmonton
Member	Raj Padwal	Professor of Medicine & Co-Director	Clinical Epidemiology, Clinical Pharmacology & General Internal Medicine Professor of Medicine & Co-Director, Hypertension Dyslipidemia Clinic	Edmonton
Member	Jennifer Lee	OT, Senior Quality Consultant	Seniors, Palliative & Continuing Care	Calgary
Member	Shantel Farncombe	Interim Manager	Integration, Innovation, Provincial Primary Health Care	South
Member	Mike Stickland	Pulmonologist	EGH Respiratory Rehab \ UAH Pulmonary Division	Edmonton
Member	Nicole Morin	Occupational Therapist	UofA Hospital	Edmonton
Member	Lisa Waselenchuk	Operations Manager	Facility & Supportive Living, Edmonton Zone, Allied Health & Specialty Services	Edmonton
Member	Debbie Boudreau	CORE lead patient access	Patient Access, Connect Care - Clinical Operations	Calgary
Member	Catherine Johansen	Manager	Respiratory Health & Outpatient Cardiology	South
Member	Marlis Atkins	Director	Adult & Seniors Health/ Patient Education Resources &, Nutrition & Food Services	Edmonton
Member	Melissa Sztym	Team Lead	Covenant Health Professional Practice Lead, OT & Team Lead for Stroke ESD Program	South
Member	Doug Pratt	Program Manager	Community Rehabilitation (Adults) - Calgary Zone	Calgary

Member	Risa Olsen	Manager	Occupational Therapy, South Zone-West	South
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Working Group #4 - Longitudinal Monitoring & Tracking

WG Position	Name	Position	Department	Zone
<i>Co-Chair</i>	<i>Elisavet Papathanassoglou</i>	<i>Scientific Director</i>	<i>NRV SCN</i>	<i>Edmonton</i>
<i>Co-Chair</i>	<i>Cyndie Koning</i>	<i>Healthcare Improvement Specialist</i>	<i>Glenrose Rehabilitation Hospital, Healthcare Improvement Team</i>	<i>Edmonton</i>
SCN Support	Kiran Pohar Manhas	Assistant Scientific Director	NRV SCN	Calgary
Member	Giovanni Ferrara	Respirologist	Pulmonary Medicine	Edmonton
Member	Katie Churchill	Senior Practice Lead	Health Professions Strategy & Practice	Calgary
Member	Adalberto Loyola Sanchez	Physiatrist	Assistant Professor Division of Physical Medicine & Rehabilitation Department of Medicine Faculty of Medicine & Dentistry Glenrose Rehabilitation Hospital	Edmonton
Member	Jia Hu	Zone Medical Officer of Health	Medical Officer of Health	Calgary
Member	Elizabeth Mackay	Facility Medical Director	Peter Lougheed Centre	Calgary
Member	Doug Woodhouse	Medical Director	Physician Learning Program	Calgary
Member	Jason Daoust	PT, North Zone Clinical Lead	Allied Health	North
Member	Jo Harris	Senior Analytics & Project Consultant	Critical Care Strategic Clinical Network	Calgary
Member	Sue Buhler	Research & Academic Lead	Nutrition Services	Edmonton
Member	Tom Briggs	Senior Program Officer	Planning & Performance	Calgary
Member	Patrick Mitchell	Respirologist	Respiratory / Pulmonary Medicine	Calgary

APPENDIX 3: DETAILS ON BACKGROUND FOR WG1, WG3 & WG4

The following provides more details on the background, and understanding of current practice, which select Working Groups (WGs) developed in addressing their stated objectives. This appendix is limited to WG1, WG3 and WG4 because WG2's background is embedded in their final report.

WG1: Screening

- Background: COVID19 Scientific Advisory Group Rapid Evidence Report (May 19/20); Primary Care COVID19 Management Pathways (Central & Calgary Zone) including the Guideline for Monitoring and Managing COVID19 Patients in the Community; COVID19 Yorkshire Rehab Screen (C19-YRS) (1); EQ-5D-5L (2); Canadian Nutrition Screening Tool (3); Dyspnea Breathlessness Scale (4) were reviewed.
- Literature Review: *British Society of Rehabilitation Medicine – Responding to COVID19 and Beyond* (5), including the PICUPS tool (6) and PICUPS Plus Tool; The Stanford Hall Consensus Statement for Post-COVID19 Rehabilitation; *Poverty: A Clinical Tool for Primary Care Providers* (7)
- Grey Literature: *AHS Connect Care-Social Determinants of Health Care Domains* (8); *AHS Connect Care Functional Independence Adults Orders Decision Making Pathway* (9)

Current Practices or Strategies

- Patients admitted to hospital (acute care unit or ICU) for treatment of COVID19 are currently being followed by a primary care provider or hospitalist physician, specialists and/or multidisciplinary team based upon typical referral pathways. This same team is responsible for the assessment, treatment and transition of this patient to community healthcare professionals as part of the discharge plan. See, *Provincial COVID19 Pandemic Flowsheet: Admission to Acute (from Emergency Department, Assessment Centre or Observational Unit), AHS COVID19 Provincial Pandemic Flowsheet: Patient Discharge from Hospital, AHS COVID19 Safe Discharge Checklist, Home to Hospital to Home Transitions Guideline*.
- Patients recuperating within the community are currently being followed up by their primary care provider according to their COVID19 pathway guidelines; referrals made to homecare and other services as required. See *Presumed/Confirmed COVID19 Positive Primary Care Pathway, COVID19 Assessment, Treatment & Stabilization in Place Guide (under development)*
- COVID19 clinics are under development in larger centres within Alberta Health Services
- Residents of continuing care facilities are also followed by their primary care provider but access to rehabilitation services varies with each site; those providers can refer to ambulatory rehabilitation services if the resident has a means of transportation to those services
- AHS is in discussion with establishment of a COVID19 registry.
- Rehabilitation Advice Line went live (May 12, 2020) in the province to assist individuals within the community with navigation of the healthcare system, specifically in regards to rehabilitation services available to them.

WG3: Discharge & Transition Planning

What are the principles of a successful rehabilitation discharge and transition?

Home to Hospital to Home Guideline:



if-hp-phc-phcin-ht
hth-guideline.pdf

This guideline presents leading operational practices, change management, tools and resources and information for 6 key components of successful transitions from home to hospital to home:

- Confirmation of the Primary Care Provider
- Admit Notification
- Transition Planning
- Referral and Access to Community Supports
- Transition Care Plan
- Follow-Up to Primary Care

Rehabilitation discharge and transitions can be threaded throughout the H2H2H document including community supports. Of note for rehabilitation transition planning are some core concepts that align with key rehabilitation documents. These include: Preparing patients, family and caregivers for their recovery at home is at the heart of transition planning. This process should occur as early as possible after admission for all patients. **Successful planning requires the active participation and involvement of patients, family and caregivers and the circle of care team.** This step can help the patient navigate many of the challenges associated with transitions in care.

There are a number of different factors required for effective transition planning, including an individually tailored, easy-to-understand transition care plan. This plan provides a comprehensive set of resources that will support a safe transition in care.

Key challenges:

1. lack of **informational continuity** between hospital and patients' circle of care;
2. discrepancies in medication lists before and after discharge;
3. inadequate **preparation with patients, family and caregivers prior to discharge.**

These challenges can increase the burden of care, confuse patients, family and caregivers and lead to undesirable outcomes (e.g. hospital readmissions, emergency department visit, etc.).

Rehabilitation Model of care:



Rehabilitation MoC
Guide-Feb2019.pdf



R-
MoC-CR-Imp-Guide-



1. Safe Transitions
Primer Final.pdf

Safe Transitions are defined as: *A process with defined standards, actions and resources to ensure safe, streamlined and coordinated care at points of transition between healthcare*

providers, services or service sectors. Safe transitions are based on a **customized care plan that is co-created with patients, families and care teams**. The care plan addresses patient care needs and goals, utilizes available resources and **incorporates self-care education and strategies**. From the initial visit, healthcare providers proactively plan with and support patients & families through treatment and points of transition to ensure continuity of care.

Standards associated with safe transitions include:

1. **Patients and families are engaged partners** in all phases of care, including goal-setting, care planning, treatment and transitions to the level and degree desired by the patient / family.
2. **Goal-setting and treatment planning begins during the initial visit**, incorporates previous care planning and includes proactive planning for care transitions.
3. **Information transferred at care transition includes a customized care plan** co-created with the patient/family and healthcare providers - considering individual environment, circumstances, family context and community context.
4. Healthcare providers use a standardized tool/s for documenting and transferring information.
5. Standardized information for a safe and streamlined transition is up-to-date and complete, documented, and presented in a way that is easily understood by the patient/family and healthcare providers.
6. **Communication occurs between the current healthcare provider/s and the receiving healthcare provider/s.**
7. **Patient/family is aware of and understands the transition plan and has contact information for the sending and receiving healthcare provider/s or service.**
8. **Patients/ families receive information and education required to make decisions and use self-care strategies as applicable.**

Rehabilitation Conceptual Framework:



tms-prs-prov-rehab
-conceptual-framew

The RCF enables teams to conceptualize, design and deliver rehabilitation services where rehabilitation is guided by the philosophy of “enhancing function for meaningful living.” The key principles and beliefs of rehabilitation include:

People are at the centre of rehabilitation in AHS

Services focus on ability - through capacity building, prevention, fostering resourcefulness, and enhancing or restoring function

Rehabilitation contributes to wellness across the continuum of health, the lifespan and generations - impacting the health and wellbeing of the whole person and their community

Rehabilitation enables and encourages people to identify, reach and maintain their cognitive, communicative, emotional, physical, psychological, social and spiritual health goals

Rehabilitation services are planned and provided using a continuous learning process

People are matched to service options based on their needs at different times of life

Quality rehabilitation comes from professional practice that is person centred, wholistic, integrated and guided by evidence

Client Advisor perspective:

Acknowledge that we are still learning about COVID1919 and don't know everything and that new **information** may come available in the future.

Provide **information** about what might be needed.

Focus on building the patient's ability to support themselves, build their **confidence, self-efficacy, and their ability to self-manage**.

Human interaction is needed, patients need to feel safe and confident with the person they are talking to. **Limit the number of contacts** a patient needs to make.

Family members or others in the patient's home are important supports as well as the patient's **primary care provider**.

Lack of patient focused **information**.

Patient **information** should focus on **wellness** and be more collaborative rather than directive using adult learning principles.

Client contracts can be used to further promote wellness and self-management.

Considerations –

- Embed rehabilitation concepts and language into transition documents across AHS and primary care when new documents are created or when documents are open for revisions. (e.g. H2H2H, COVID1919 D/C check list, COVID1919 patient discharge handout) with a focus on active involvement of the client and family, information sharing and communication.
- Discharge and transition supports should focus on active involvement of the client and family including goal setting, information sharing and communication and enhancing function including supporting self-care or self-management.
- Central place for COVID1919 patients to receive rehab care virtually.
- Patient education/resource materials also available on an accessible web page.

What existing resource are there that support discharge and transition? Or that can inform a provincial approach to access across the province?

Home to Hospital to Home guideline

Rehabilitation advice line

Fracture liaison service

Rehab navigator role (GRH)

Virtual care resources

Virtual Hospital

COVID1919 discharge checklist

My discharge checklist

Ontario's Rehabilitation Care Alliance Guidelines for Frail seniors in the context of COVID1919.

RAAPID

Integrated Operations Centre (IOC) Edmonton Zone

Rehabilitation Model of Care

Community Rehabilitation Directory

Alberta Referral Directory

Guideline for monitoring COVID1919 patients in the community

211, 811 Health Link®

Early Supported Discharge (stroke)

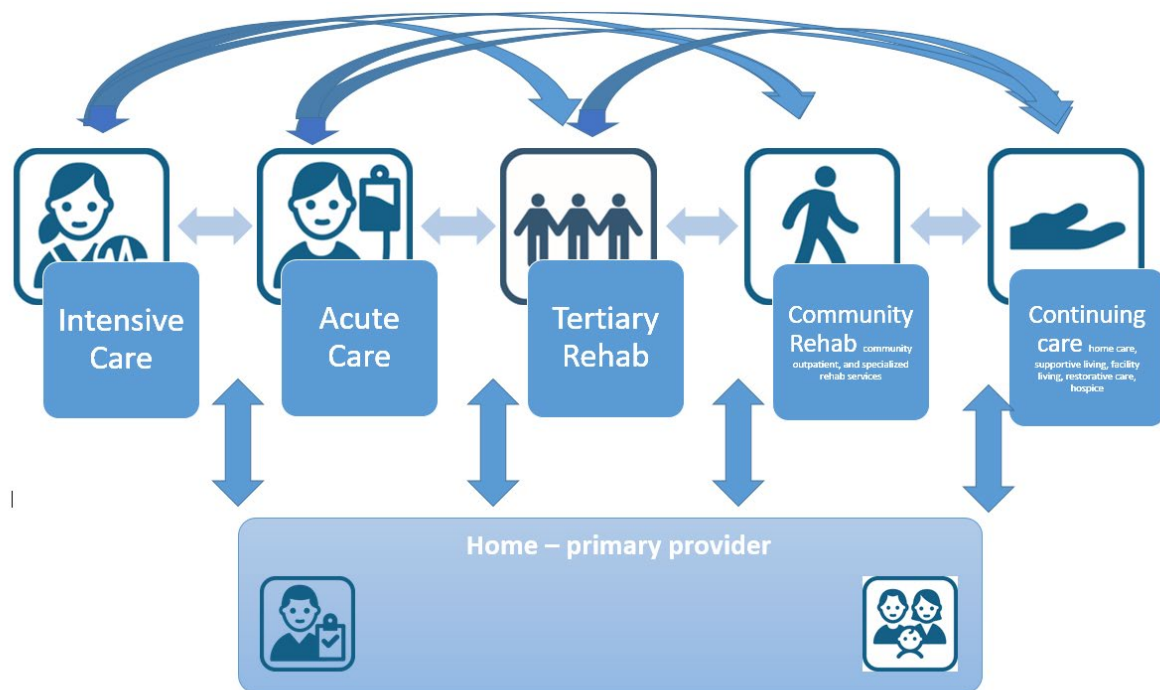
AHS virtual care resources.

Considerations:

- Leverage existing program information such as job descriptions, evaluation plans and key performance indicators to develop a strong evaluation plan.
- Exercise caution to avoid duplication or overlap with existing services.

What are the transition points across the continuum of Care?

Rehabilitation transitions are not linear and often skip across the continuum of care. The volume and variability of transitions across the continuum of care combined with the variability of programs and services across Alberta make defining a consistent approach difficult. The diagram below identifies the multiple areas of transition that exist across the continuum of care. While the number of different types of transitions for rehabilitation patients is high an approach that follows key principles of transition and focuses on key areas of transition for patients with or recovering from COVID19 is possible.

**Specific transition points identified for COVID19 patients:**

Hospital to home/community - consider home care and community options, collaboration with primary care.

Home/community to rehabilitation - consider home care and community options, collaboration with primary care.

Continuing care – potential for change in function requiring rehabilitation, consider home care and supportive living needs.

WG4: Longitudinal Outcome Monitoring

RAPID LITERATURE REVIEW

In brief, a rapid literature review yielded 27 articles and 12 registered clinical trials that inform what outcomes, measurement tools, and methodological strategies are used to longitudinally follow-up persons with COVID19 (or other coronavirus illnesses). In what follows, we overview the review methods, describe the overarching framework, and then synthesize the literature around recommended outcomes, tools and methods for longitudinal follow-up of persons with COVID19 in post-acute and community experience groups.

Rapid Review Methods

The rapid literature review commissioned for WG4 (and completed by Nicole Loroff, AHS Knowledge Resource Services), involved three specific questions:

- 1) What outcomes and measurement tools are considered in the longitudinal follow-up of post-acute COVID19 patients, particularly related to functional outcomes and independence?
- 2) What research methods are proposed, or being utilized, to longitudinally monitor the post-acute outcomes of COVID19 patients?
- 3) What strategies have health systems used in post-pandemic settings to longitudinally monitor the outcomes for persons who experienced the pandemic illness? Pandemics of relevance include COVID19, SARS, MERS, and H1N1.

The concomitant search strategy included eight databases (MEDLINE (via Ovid), PubMed, TRIP Pro, LitCOVID1919, WHO COVID19 Research Database, OTseeker, PEDro, Google Scholar, and Clinical Trials.gov). Search terms related to the concepts of coronavirus, longitudinal follow-up, rehabilitation and post-acute. There was no limit on study design, but only English-language papers were included.

This search strategy yielded 77 peer-reviewed articles, four grey literature articles, and 13 registered clinical trial summaries. These 94 documents were screened by two reviewers at the title-abstract level. Thereafter, 28 articles and 12 registered clinical trials were included for full-text extraction. Data extracted from each article included country, pandemic illness of interest, types of patients examined, multiple versus single domains of interest, types of outcomes, number of outcome measurement tools used or proposed, tool names, whether mapped to the International Classification of Functioning, Disability and Health (ICF) framework and methodological details (e.g. duration and frequency of follow-up).

Framework of Approach

Research considering the current needs of COVID19 patients post-discharge suggests that outcomes must be viewed from a framework that considers their mental health, physical health, and their participation within their home, social, and work environments [13–16]. Longitudinal monitoring of COVID19 patients within these parameters facilitates direct patient care that improves quality of life. The ICF, produced by the World Health Organization, provides a framework to examine the disabling effects of COVID19 by establishing the impairments, activity limitations and participation restrictions that result from the interaction between the persons with COVID19 and their environment [17].

While most screening and long-term measurement studies, both for COVID19 and other disease pandemics such as SARS and H1N1, address areas of body function and structure (e.g., pain, immunological and respiratory systems, movement, mental health), fewer address more than a few areas of activity and participation. Some notable gaps which may be considered would include participation beyond engagement in work (employment) to include engagement in other activities such as learning, interpersonal relationships, and community life. In addition, there also

appears to be gaps in measurement related to personal and environmental factors impacting rehabilitation, such as caregiver support, housing, or access to rehabilitation services.

Synthesis of the Literature & Registered Clinical Trials

Most published articles were from Hong Kong (n=8), with the rest originating from China (n=3), international groups (n=3), the UK (n=4), Australia (n=2), Canada (n=2), USA (n=2), as well as individual articles from Germany, Ireland, and Spain (two articles had unclear origins). These articles focused on different pandemics: COVID19 (n=12), SARS (n=10), H1N1 (n=3), and multiple pandemics (n=3).

Most articles focused solely on persons discharged from the ICU (n=19) or hospital generally (n=23). Seven articles considered the follow-up of non-hospitalized positive patients (i.e. the community experience group). Seven studies focused on a single category of outcomes (e.g. only psychological outcomes, only cardiac outcomes, or only pulmonary implications), while the remaining studies considered multiple categories of outcomes (e.g. physical, psychological, and pulmonary implications).

Measurement Tools

Of the 19 articles that clearly described measurement tools or strategies to longitudinally follow pandemic survivors, the mean, median and mode number of tools described were 4.7, 3, and 1 (minimum 0, maximum 18), respectively. Articles generally prescribed data collection using patient-reported outcomes measures (n=24), diagnostic imaging (n=12), laboratory testing (n=4), and health services utilization data (n=4).

WG4 prepared a more fulsome report that (a) details the conceptual focus of the measurement tools described, how many tools within each conceptual focus, the total number of articles that cite that tool, and the most frequently cited tool; and (b) lists all the specific tools by name. There were 16 distinct conceptual focuses described, such as quality of life, physical function, depression/anxiety, respiratory function, impact on caregiver, and COVID19-specific tools (Figure 1). For each focus, the mean (standard deviation) and median number of tools were 3.5 (2.42) and 3, respectively (minimum 1 and maximum 8). The focuses with the most tools described included physical function (n=8), depression/anxiety (n=8), with exercise tolerance (n=6) and fatigue (n=6) close behind.

For each focus, the mean (standard deviation) and median number of citations were 6.9 (6.85) and 4.5, respectively (minimum 1 and maximum 20). The most frequently cited tools were the SF-36 for quality of life (12 citations), the 6-minute walk test (12 citations), and the Hospital Anxiety and Depression Scale (9 citations). Four papers proposed novel, COVID19-specific tools, which each targeting a spectrum of potential sequelae. No pilot or validation data was offered for COVID19 specific tools.

Methodology for Follow-up

Methodologically, there was great heterogeneity across the identified studies around the methods, duration and frequency of data collection for longitudinal outcomes. Seven articles include only high-level considerations for, not implementation of, longitudinal follow-up of COVID19 survivors. In articles focused on the sequelae of SARS and H1N1 pandemics, (a) an observational cohort design was used; (b) hospitalized pandemic patients were the focus; (c) study duration was 1, 1.5, 2 or 4 years post-discharge; and (d) the frequency of follow-up ranged from one time to every three months [18–29]. For the articles addressing the COVID19 pandemic, some were focused on clinical follow-up, while others described the need for longitudinal research without specifying methodology [13–17,30–36]. Frequency and duration of follow-up is described in weeks (every 2, 3 or 4 weeks) and months (up to 2), respectively.

The full WG4 report lists the currently registered clinical trials focused on the long-term outcomes of COVID19 survivors. Almost all clinical trials address either COVID19 positive persons who received critical care or in-patient acute care. Most trials examine multiple potential

sequelae. Methodologically, most studies are observational cohorts that prioritize patient-reported outcome measures with monitoring duration and frequencies of up to 24 months and at 3-6 month intervals, respectively. Most measurement tools have been used and validated previously. New COVID19-specific measurement instruments are not proposed by these registered clinical trials.

Summary:

This review suggests that monitoring of post-COVID19 patients should address both disease-related impairments and their impact on activities and participation in life. The literature supports the use of standardized patient-reported outcome measures (PROMs), with additional specific health/functional measurements. There is little consensus on which measures to use. Most research does suggest inclusion of a health-related quality of life measure and a mental-health measurement tool. There is little consensus on the length of follow-up, but current clinical trials suggest follow-up for up to 2 years. Observational cohorts, which describe the patient population, rather than compare them to other populations, appear to be the most frequently used methodology.

CURRENT PRACTICE OR STRATEGIES

While a systematic longitudinal monitoring program is not in place in Alberta for COVID19 positive persons, there are planned programs and strategies, as well as current data repositories, which relate to, and could advance, the longitudinal monitoring of post-discharge and community-experience persons with COVID19.

Planned Programs & Strategies

Once persons are diagnosed with COVID19, four programs and strategies may relate to long-term monitoring. First, the primary care pathway for COVID19 indicates that patients are called every 1 or 2 days for at least 14 days upon diagnosis to assess symptoms and needs. For patients who experience COVID19 and did not require hospitalization, follow-up stops at 14 days. If further symptoms develop, primary care uses SpecialistLink to facilitate rapid access to specialists (e.g. infectious disease, respiratory assessment and intervention, public health). On rare occasions, community paramedics are available to perform wellness checks in person as required. Remote patient monitoring using pulse oximetry is being considered.

Second, where patients with COVID19 are hospitalized in intensive care units, they may be followed post-discharge by an ICU Recovery clinic (Foothills Calgary), a specialized clinic on feeding and swallowing (Edmonton) or the dysphagia clinic (Calgary). Online resources are also available (e.g. mental health, available rehabilitation resources, relevant websites). The post-ICU clinic collects data on the symptoms and experiences of patients.³ But, to date, the number of post-COVID19 patients who have visited this clinic is low despite the number of ICU-hospitalizations in Calgary Zone; and, the clinic cannot offer provincial longitudinal monitoring.

Third, newly-initiated post-COVID19 clinics in Edmonton and Calgary intend to follow all patients requiring long-term medical care for the respiratory sequelae of COVID19. The Edmonton post-COVID19 clinic is physician-led with support from respiratory therapists; referrals are accepted upon discharge from hospital teams, from family physicians and all other specialty physicians. The Calgary post-COVID19 clinic is similar, but includes nursing and a link to mental health support. The clinics will facilitate close monitoring, timely investigation and prompt intervention for respiratory problems. Initial follow-up will be at 3 months unless earlier is deemed necessary. A REDCap database has been developed to track process outcomes and collect patient data (i.e. full pulmonary function tests, 6-minute walk test, blood work, chest x-ray, and

³ <https://www.albertahealthservices.ca/info/Page15597.aspx>

several patient-reported outcome measures). Because the sequelae of COVID19 extend beyond respiratory conditions to include other bodily systems and structures, the provincial longitudinal monitoring of outcomes for post-acute (and post-community) recovered COVID19 patients should link with, but extend beyond, the post-COVID19 clinic dataset.

Fourth, the Rehabilitation Advice Line (RAL) was launched on May 12, 2020. This telehealth line is housed under Health Link®; is operated by occupational therapists and physical therapists; and offers education, self-management support and wayfinding for rehabilitation-related questions. The RAL specifically targets the rehabilitation needs related to musculoskeletal, neurological and COVID19 disability. Currently, the RAL involves clinicians answering calls directly or performing call backs to callers to other lines (e.g. Health Link®) or after hours. RAL clinicians are licensed allied health professionals who discuss past medical history, current functional issues, social support and living arrangements, and community access. There is an opportunity for, and RAL leadership interest in, the RAL clinicians using the call back feature to implement follow-up longitudinal monitoring surveys with the post-discharge (Phase 1) and community-experience (Phase 2) persons diagnosed with COVID19. The availability and in-kind contribution of the RAL clinician time may promote the feasibility and sustainability of the longitudinal monitoring of the functional outcomes of persons diagnosed with COVID19.

Data Repositories & Tools

A brief review of currently available databases and tools do not suggest that there is systematic tracking of post-discharge and community-experience persons diagnosed with COVID19. Tableau data demonstrates population-level understanding especially of the health service utilization, but little systematically tracked data on functional outcomes.

For example, the Tableau data on patients discharged from ICU includes median Acute Physiology and Chronic Health Evaluation Scores, Sequential Organ Failure Assessment, and Clinical Frailty Score.⁴ Another Tableau dashboard reveals types of care provided to persons who had a critical stay within their hospital stay (e.g. duration of invasive ventilation, continuous renal replacement therapy, delirium eligibility).⁵ Linking these data with longitudinal outcomes would be helpful both clinically and administratively in planning individual and population-level care. A broader dataset on all persons diagnosed with COVID19 is available online, and includes active cases by region, total deaths, and patient characteristics (e.g. age, gender, health care worker location, number of co-morbidities, location of patients, laboratory testing, and rate of hospitalization and ICU admission).^{https://www.alberta.ca/stats/COVID19-alberta-statistics.htm} These datasets are important building blocks to any longitudinal monitoring strategy.

The rapid literature review described above depicts the various measurement instruments used in long-term follow-up of post-pandemic patients. In Alberta, further instruments currently in use may be of value for longitudinal monitoring. For example, the Canadian Nutrition Screening Tool (CNST) is a screening tool to assess if a patient is at risk for malnutrition. This is critical for hospitalized patients, as the Canadian Malnutrition Task Force found that 45% of patients hospitalized at acute care hospitals across Canada were malnourished or at risk for malnutrition [37]. This two-question tool has demonstrated validity and reliability in Canadian hospitalized patients. In Alberta, it is built into the Connect Care admission package, and it triggers a dietitian referral for further assessment. Weight loss and appetite changes and taste alterations are associated with COVID19 infections. Malnourished patients have higher rates of complications including re-admission within 30 days so it is imperative these patients are screened and followed

⁴https://tableau.albertahealthservices.ca/#/views/CriticalCareCOVID19/Admissions?:showAppBanner=false&:display_count=n&:showVizHome=n&:origin=viz_share_link&:iid=1

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https://tableau.albertahealthservices.ca/#/views/CriticalCareCOVID19/DischargesTable?:showAppBanner=false&:display_count=n&:showVizHome=n&:origin=viz_share_link&:iid=1

up by a dietitian if found at risk [38]. Nutrition Services has developed two education resources for persons diagnosed with COVID19 that could be provided as a first intervention, and referrals to Health Link® Dietitians could facilitate more in depth assessment and follow up by outpatient dietitians

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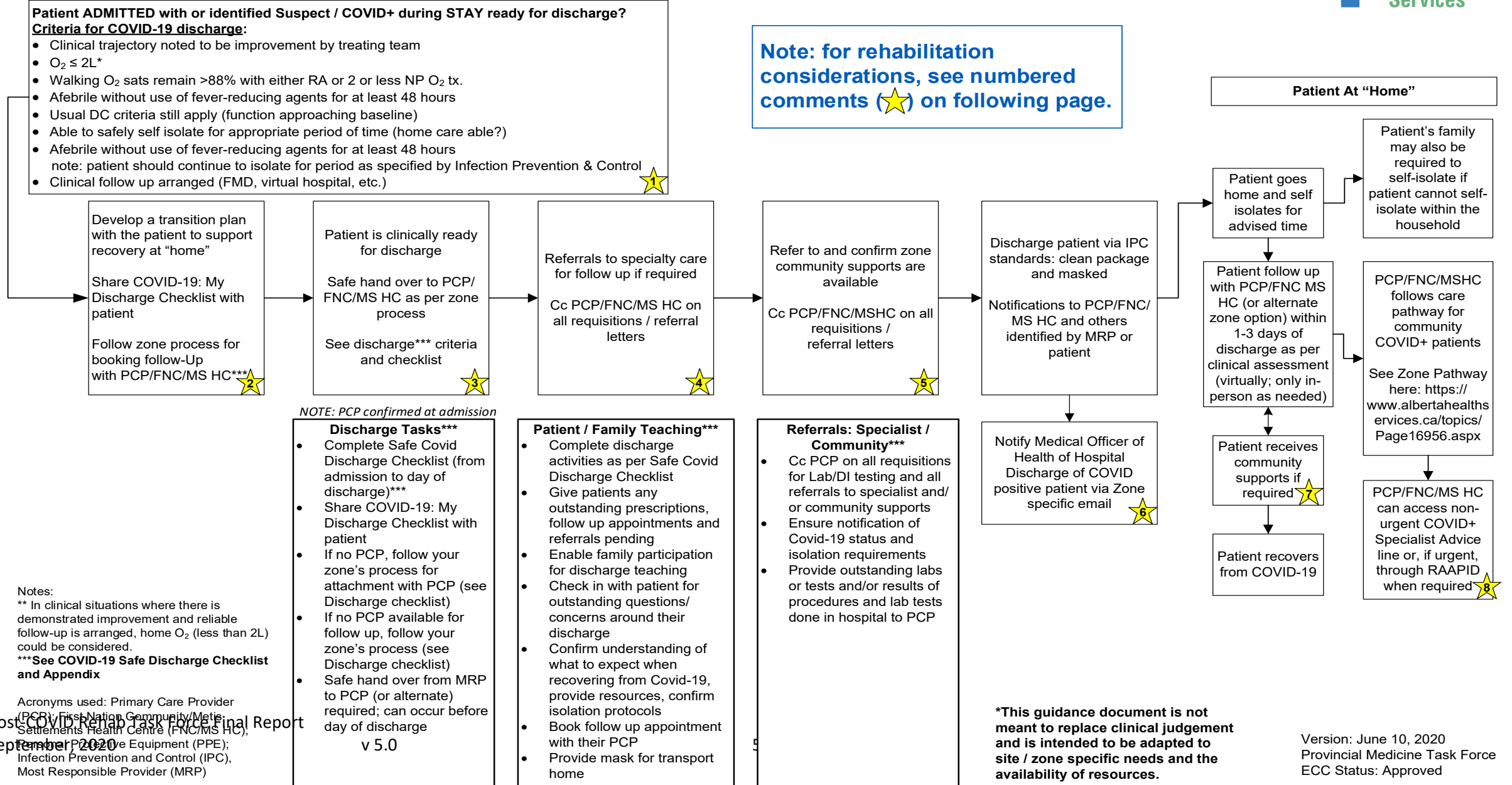
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APPENDIX 4: COVID19 PROVINCIAL PANDEMIC FLOWSHEET




COVID-19 Provincial Pandemic Flowsheet
Patient Discharge from Hospital*



COVID-19 Provincial Pandemic Flowsheet: Rehabilitation Considerations:

-  **1. Patient ADMITTED with or identified Suspect / COVID+ during STAY ready for discharge?**
Opportunity for alignment: incorporate rehabilitation and psychosocial considerations in discharge checklist. **Rehabilitation** is consistently embedded and addressed in **discharge documents** and processes, especially those specific to COVID19 (e.g. Patient Discharge handout, Discharge checklist). Incorporate psychosocial assessment in additional to functional.
-  **2. Complete rehab sections of discharge plan**
Opportunity to incorporate info about RAL, contact info for RAL in discharge checklist, and information about referrals related to rehabilitation on the discharge checklist (ie. potential referral to pulmonary clinic). Include patient education handouts about rehabilitation at home. Rehab home discharge resources/instructions etc.
-  **3. Patient is clinically ready for discharge**
Opportunity to communicate psychosocial and functional status with PCP/FNC/MS HC and recommended follow up plan. Opportunity to communicate potential ICU syndrome (long term impact of ICU stay).
-  **4. Referrals to specialty care for follow up if required**
Including rehabilitation specialists as needed (ie. physiatry, pulmonary specialists, cardiac rehab)
-  **5. Refer to and confirm zone community supports are available**
Opportunity to include into about RAL.
-  **6. Notify Medical Officer of Health of Discharge**
Opportunity to develop a robust process in alignment with the Medical Officer of Health (MOH) to track and support patients with rehabilitation needs and to inform key points of transition and transition needs as we learn more.
-  **7. Longitudinal monitoring follow-up** of all patients with COVID19 at the **3, 6, and 12 month post hospital-discharge** will meet the primary aim of long-term monitoring: recognition of the need for further rehabilitation assessment and management.

Ensure community supports include rehabilitation as needed.
-  **8. PCP/FNC/MS HC resources**
Incorporate PCP/FNC/MS HC can access RAL and when PCP/FNC/MS HC can call his resource.

APPENDIX 5: AHS COVID19 REHABILITATION SCREENING TOOL (AHS-CRST)

Alberta Health Services is using a consistent method of screening patients who are COVID19+ in order to review common symptoms and struggles they been having while in hospital. The purpose of this screen is to help us plan your ongoing care right now and in the future. We will document your responses on your medical record.

This survey will take about 10 minutes to complete. It can be completed on your own, by a family member that knows you well or with someone's help (e.g. family member, health care provider).

If there are topics you do not wish to comment on or you are not currently or ever experienced them, please indicate n/a.

Start, by telling us who is completing this screen: ☐ Patient ☐ Family Member

Symptom Screening Questions:

<i>Instructions: The following questions are about how this illness may have caused <u>changes</u> in your health. Indicate if these symptoms are <u>worse</u>, <u>same</u> or <u>better</u> than before your illness by marking an X in the columns below?</i>			
Symptoms	Worse than Before	Same as Before	Better than Before
Having breathlessness:			
At rest? <input type="checkbox"/> n/a			
Upon dressing yourself? <input type="checkbox"/> n/a			
When walking up a flight of stairs? <input type="checkbox"/> n/a			
Having a troublesome cough or noisy breathing? <input type="checkbox"/> n/a			
Having chest pounding or chest pain at rest? <input type="checkbox"/> n/a			
Difficulty controlling the movement of your body such as it moving when you did not intend to? <input type="checkbox"/> n/a			
Any problems with fainting or losing awareness? <input type="checkbox"/> n/a			

Any changes in your voice such as difficulty being heard, your voice tiring by the end of the day or an inability to change the pitch of your voice? <input type="checkbox"/> n/a			
Any difficulties eating, drinking, or swallowing such as coughing, choking or avoiding any food or drinks? <input type="checkbox"/> n/a			
Any difficulties seeing? <input type="checkbox"/> n/a			
Any difficulties hearing? <input type="checkbox"/> n/a			
Any difficulties smelling? <input type="checkbox"/> n/a			
Any issues with controlling your:			
Bowels? <input type="checkbox"/> n/a			
Bladder? <input type="checkbox"/> n/a			
Any issues with pain or discomfort? <input type="checkbox"/> n/a			
Any issues with:			
Concentrating or thinking such as following a conversation or TV show? <input type="checkbox"/> n/a			
Remembering things from day to day such as details of an article you read or a TV show you watched? <input type="checkbox"/> n/a			
Tiring more easily? <input type="checkbox"/> n/a			
Experiencing anxiety? <input type="checkbox"/> n/a			
Experiencing depression? <input type="checkbox"/> n/a			
Experiencing:			
Unwanted memories? <input type="checkbox"/> n/a			
Unpleasant dreams? <input type="checkbox"/> n/a			
Thoughts of hurting yourself? <input type="checkbox"/> n/a			

Functional Activity Screening:

<i>Instructions: These next questions are about how this illness may have caused <u>changes</u> in your daily activities. Indicate if these daily activities are <u>worse</u>, <u>same</u> or <u>better</u> than before your illness by marking an X in the columns below?</i>			
Functional Activities	Worse than Before	Same as Before	Better than Before
Walking around as you need? <input type="checkbox"/> n/a			
Doing your own washing and dressing? <input type="checkbox"/> n/a			
Doing your usual activities such as housework, leisure, work, childcare, or study? <input type="checkbox"/> n/a			
Communicating with others such as making sense of things said to you, putting your own thoughts into words, difficulty reading or having a conversation? <input type="checkbox"/> n/a			
Ability to working or volunteering outside the home prior to your illness? <input type="checkbox"/> n/a			
Challenges with making ends meet at the end of the month? <input type="checkbox"/> n/a			
Have you lost weight in the past 6 months without trying to lose this weight? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Have you been eating less than usual for more than a week? <input type="checkbox"/> Yes <input type="checkbox"/> No			
How would you rate your overall health?			

Final Questions:

Are you experiencing any other new problems since your illness that we have not asked you about?
If you completed this independently or with your health care provider, do you think your family or caregivers would have anything to add?
Any other thoughts you wish to share?

AHS COVID19 Rehabilitation Screening Tool Guidelines (AHS-CRST)

This screen can be completed by the patient and/or family member with(out) the assistance of a health provider at each transition point within the hospital setting following COVID19 diagnosis. For example, upon transfer out of ICU to acute care ward and/or upon transfer to a tertiary rehabilitation unit. Italicized areas provide a background and instruction for the screen.

The symptoms gathered within the screening tool and the impact on the patient's quality of life will prove useful in ensuring the appropriate services are in place based upon the patient's identified needs. Consider referrals to the indicated health services below based upon the patient/family responses.

Symptoms	Patient Responses	Potential Health Service Resources
Breathlessness	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Respiratory Therapy • Occupational Therapy • Physiotherapy • Pulmonologist
Airway	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Pulmonologist • Respiratory Therapy
Chest Pain & Palpitations	<i>Need to establish triggers for referrals</i>	<ul style="list-style-type: none"> • Cardiology • Family Physician • Internal Medicine
Controlling Body Movements	<i>Need to establish triggers for referrals</i>	<ul style="list-style-type: none"> • Family Physician • Neurology
Loss of Consciousness	<i>Need to establish triggers for referrals</i>	<ul style="list-style-type: none"> • Family Physician • Internal Medicine • Neurology
Voice	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Speech-Language Pathology
Swallowing	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician

		<ul style="list-style-type: none"> • Speech-Language Pathology • Occupational Therapy • Nutrition Services
Vision	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Occupational Therapy • Ophthalmology • Optometry
Hearing	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Audiology • Family Physician • Neurology
Smell	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Neurology
Continence	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Nursing • Physiotherapy
Pain & Discomfort	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Physiatry • Occupational Therapy • Physiotherapy
Cognition	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Occupational Therapy
Fatigue	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Occupational Therapy • Physiotherapy
Anxiety	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Mental Health • Occupational Therapy • Psychiatry • Psychology • Social Work
Depression	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Mental Health • Occupational Therapy

		<ul style="list-style-type: none"> • Psychiatry • Psychology • Social Work
Post-Traumatic Stress Disorder	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Family Physician • Mental Health • Occupational Therapy • Psychiatry • Psychology • Social Work
Mobility	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Physiotherapy • Occupational Therapy
Personal Care	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Occupational Therapy • Physiotherapy
Usual Activities	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Occupational Therapy • Physiatry • Physiotherapy • Psychology • Recreation Therapy • Social Work
Communication	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Speech-Language Pathology • Occupational Therapy
Employment & Finances	<i>Need to establish triggers for referrals.</i>	<ul style="list-style-type: none"> • Occupational Therapy • Physiotherapy • Psychology • Recreation Therapy • Social Work
Nutrition	Answers Yes to <u>both</u>	<ul style="list-style-type: none"> • Family Physician • Nutrition Services

APPENDIX 6: REHABILITATION STRATEGIES DOCUMENT

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Glossary (*)

- Rehab: In this document, it includes Nurses, Occupational Therapists, Physicians, Psychologists, Physical Therapists, Recreation Therapists, Registered Dieticians, Recreation Therapists, Speech Language Pathologists, Social Workers, Spiritual Care
- Transition of Patient Care: May include one of the following:
 - Acute care: ICU to regular units, between regular units, between acute hospitals
 - Acute care to post-acute settings (Sub-acute, Rehab, Restorative Care Unit, Brain Injury Centre, etc.)
 - Acute / Post-acute care settings to Community Care (in person and or via virtual visit)
 - Public: Home Living (Home with Home Care, Supportive Living, Facility Living), Rehab OPD (i.e. CAR in Calgary, SROP at Glenrose, Pulmonary Rehab, etc.)
 - Private: Private rehab clinics, private hired rehab clinicians, personal / home help aides
 - Home program with family/caregiver or independent with no formal supervision, fitness centre/gym (i.e. YMCA)
 - Transfer of patients between provinces
- Rehab Navigator: A person who can help guide patients who have Rehab needs to access pertinent resources, complete appropriate documentation, make referrals to appropriate rehab settings across the continuum of care, track medical and rehab appointments, follow up after care, liaise with public health, and also be their advocates in the system. (i.e. [Glenrose Rehab Navigators](#)).

Introduction

COVID19 is a multi-system disease with the potential for respiratory, cardiovascular, neurological and multi-organ damage which may cause a variety of impairments. Patients with COVID19 are more likely to have pre-existing medical conditions. The complexity and variability of impairments caused by COVID19 combined with pre-existing medical conditions means that there is no single, COVID19 specific method to determine the patient's rehabilitation needs ([Wade 2020](#)). Therefore, rehabilitation principles and processes are to be upheld including having a collaborative, patient-centred approach utilizing the biopsychosocial model of care.

Patients recovering from COVID19 may have unique varied rehabilitation needs ([AHS 2020](#)). Thus, care providers should be screening for a variety of impairments ranging from difficulties with mobility, cognition, mood, psychosocial, nutritional, etc. Early identification for rehabilitation concerns pivots identification of the impairments and communicating these impairments across the spectrum of care. In addition, patients recovering from COVID19 will also have different rehabilitation needs at different stages in their recovery.

It is recommended that comprehensive rehabilitation assessments are completed at every level of care along the patient's care journey when identified through recommended screening processes and hand-over. The comprehensive assessments should include multi-system screening with in-depth evaluation of identified impairments.

Care settings

Critical Care

Patients requiring critical care support as they recover from COVID19 are anticipated to have the largest rehabilitation needs. Although there are unique elements to critical illness treatment for coronavirus infection, from a rehabilitation perspective, the care provider can anticipate that patients will be working to recover for significant periods of time their stay on an intensive care unit (ICU) ([Needham 2011](#)). Coronavirus patients present unique challenges with respect to infection control and personal protective equipment, but in terms of rehabilitation, these patients will typically have similar needs to those recovering from Acute Respiratory Distress Syndrome (ARDS) ([Mikkelsen 2009](#)), extra-corporeal life support, critical illness myopathy and the spectrum of disorders encompassed within Post-Intensive Care Syndrome (PICS).

Particular attention should be directed to patients who:

- required extended mechanical ventilation, sedation and/or prolonged bed rest. These may result in a range of impairments including ***physical deconditioning, respiratory, swallow, cognitive, nutritional deficiencies and mental health impairments***.
- are over the age of 65 and have other chronic medical conditions/those with comorbidities, who may have more complex requirements

In ICU, patients with coronavirus should undergo routine, standardized screening assessments. Typically, these assessments would evaluate physical function, respiratory function, cognition, nutrition, communication, swallow, activities of daily living, and psychosocial needs.

Practices may vary between critical care units depending on staffing levels, surge states, and past practice patterns. Consider adopting local best practices by conferring with Alberta Health Service (AHS) practice mentors. Alternatively, new strategies can be developed by referencing existing guidelines (i.e. National Institute for Health and Clinical Excellence 2009, [Rehabilitation after critical illness](#)) or leveraging off of existing published frameworks for COVID19 rehabilitation (ICS 2020, the Post-ICU Presentation Screen ([PICUPS tool](#))).

Hospital Units

On acute care units, the challenges that care providers might face, again are not unique to coronavirus. Care providers need to ensure that they are actively screening for impairments, that a clear rehabilitation plan is implemented and that this plan is communicated to the patient and their community care providers as they transition home. Even though coronavirus infection prompting hospitalization is typically triggered by respiratory needs, the rehabilitation resources needed will need to be customized to the patient based on their impairments (i.e. it is likely that very few general hospital admissions for coronavirus will require outpatient specialized pulmonary rehabilitation referrals). The unit provider needs to be aware of resources available in the community, and match these resources to each patient's needs.

In general, all patients admitted to an acute unit for coronavirus infection should be screened for cognitive changes, physical function, activities of daily living, and functional outcomes.

Examples of assessments that could be included are:

- Cognitive Screening Outcome Measures:
 - [Montreal Cognitive Assessment](#)
 - [Folstein Mini-Mental State Exam](#)
 - [Saint Louis University Mental Status Exam](#)
 - [Johns Hopkins Adapted Cognitive Exam](#) (ACE)
 - Executive Functioning (Trails A and B)
- Endurance Screening
- Basic Activities of Daily Living (ADL) Assessment - washing, dressing, bathing, feeding, toileting, ambulation
- Subjective Global Assessment (SGA) - to assess for malnutrition if a patient was screened to be at risk for malnutrition.
- Mobility/Endurance Outcome Measures:
 - [6 minute walk test](#)
 - [Timed Up and Go Test](#)
 - [Dynamic Gait Index \(4 item\)](#)
 - [Community Balance and Mobility Score](#)
- Pulmonary Function:
 - Spirometry
 - [Modified Medical Research Council \(MRC\) - dyspnea scale](#)
 - Maximum inspiratory pressure, maximum expiratory pressure

Patients with diagnosed COVID19 who were hospitalized should receive follow-up with a respirologist (consider at 1-3 months post discharge), to assess for ongoing respiratory impairment. Since evidence is emerging, consult with pulmonary service about pertinent details ([Respiratory Management of Adult Patients with Confirmed or Suspected COVID19](#)).

Patients may have ongoing generalized functional limitations post-acute care. Patient reported outcome measures that may be used to measure and monitor functional status include:

- [Patient-Reported Outcomes Measurement Information System \(PROMIS\) Physical Function \(PF\)](#) or the
- [World Health Organization's Quality of Life \(HOQOL\)](#) instruments or
- Any other generalized measurement tool that assesses physical function and/or multiple domains.

Guidelines have been published for some disciplines (i.e. “Physiotherapy management for COVID19 in the acute hospital setting: clinical practice recommendations” [Thomas et al., 2020](#)), but this is an evolving field. Evidence and consensus for practice patterns are still emerging.

Inpatient Rehabilitation

Two key considerations for inpatient rehabilitation in the context of coronavirus infection are infection control practices and patients with multiple diagnoses (i.e. coronavirus with acute stroke, or polytrauma patients who happen to swab positive). In general, the diagnosis with the most impairments will determine the inpatient rehabilitation trajectory. Using the example of a patient with concurrent stroke and coronavirus, the patient's stroke rehabilitation needs would likely determine the rehabilitation path.

All Albertans should have a similar level of access to rehabilitation resources, but in practice, infection control policies are a key consideration. Some inpatient rehabilitation facilities are within the same building footprint as long term care facilities. There is currently variability in policy within Alberta Health Services (AHS), Carewest, and Covenant Health on the requirements and standards for accepting patients with coronavirus. Consultation with physiatry (where available) can be helpful. Clear communication with the rehabilitation service is key.

Actual rehabilitation practice within the inpatient rehabilitation ward is unlikely to vary from current best practices. Whole-person, patient-centre functional rehabilitation remains the standard-of-care.

Community and Outpatient Rehabilitation

All patients should have access to educational resources, such as information pamphlets regarding anticipated symptoms, exercises, and self-management and guidance for caregivers. Some resources do exist on MyHealthAlberta (i.e. [COVID19 discharge checklist](#), [care instructions](#)) but further content needs development (i.e. videos/podcasts, reliable internet resources may also be helpful for different learners/health literacy).

Where long-term impairments exist that are associated with severe respiratory illness, patients may benefit from [Pulmonary Rehabilitation Programs \(or the Breathe Easy Program\)](#) in the community. In general though, typically a patients will experience more generalized, multi-system symptoms (i.e. post-intensive care syndrome, persisting fatigue, reduced exercise tolerance and difficulty with activities of daily living, etc.) and in these cases referrals to more general rehabilitation services (as opposed to pulmonary rehabilitation specifically) might be more applicable. For example, in Edmonton this might mean a referral to [Specialized Rehabilitation Outpatient Program \(SROP\)](#), [Community Rehabilitation Interdisciplinary Services programs](#), Community Physiotherapy, or Homecare Rehabilitation Therapy.

Telehealth (also referred to as telemedicine or tele-practice) has become essential for continuity of care, especially in patients with outpatient rehabilitation needs.

Private rehabilitation resources can also be an important consideration.

Creating a provincial online platform with rehabilitation best practice guidelines and updates is a useful consideration. Ontario has developed these sorts of resources (i.e. [Rehabilitative Care Alliance - COVID19 Rehab Resources](#)), but an analog in Alberta is not yet established.

All patients (regardless of their hospitalization status or course) should have access to education and information resources for self-management. The newly launched [Rehabilitation Advice Line](#) can be a key mediator in this process. Health Link ® can also help in this process.

Patient Pathways

Consider Ontario's [Draft Referral Decision Tree](#)

Critical Care Pathways

For patients admitted to the ICU, rehab care in the unit should follow typical best principles (i.e. early mobility, delirium prevention, musculoskeletal (MSK) and skin management approaches).

Functional assessments at discharge from ICU are recommended, and where feasible, the results of these assessments should be documented in the medical chart available to the receiving team (i.e. in the receiving ward's Electronic Medical Record (EMR), or in paper form if the patient is transferring to a different facility from where they received ICU care).

Where available (i.e. Calgary, Edmonton) patients who were admitted to ICU with COVID19 who experienced ARDS and/or prolonged mechanical ventilation could be referred to local [ICU Recovery Clinics](#). Of note, such clinics presently only exist in Calgary.

Acute Unit Pathways

There are no unique rehabilitation approaches specific to patients with coronavirus, beyond requirements for infection control. Patient rehabilitation plans should be tailored to the patient's function and impairments. There may be some utility for cognitive screening for impairments while an inpatient to better direct the client on discharge to the appropriate outpatient treatment/resources.

Some patients' impairments may centre on their pulmonary status which might prompt services such as home oxygen prescription etc., but most patients will experience more generalized concerns (fatigue, weakness, cognitive fog, mood and anxiety concerns). If home oxygen is indicated, there are [provincial guidance documents](#) available as a resource. Requirements around home oxygen prescription are relaxed in the context of a coronavirus infection (see [page 9](#)) and there are specific rules around funding through Alberta Aids to Daily Living (AADL) (see [AADL Bulletin #80](#)).

All patients admitted to hospital for coronavirus infection, should be referred for outpatient respirology follow-up at 1-3 months post-hospital discharge. Patients leaving acute hospital units should be provided with resources and education on recovery strategies post-coronavirus. This may include providing them with written information, bridging home exercise programs and referrals to appropriate community rehabilitation programs. Please not that even though coronavirus is primarily a pulmonary disease, this does not mean that pulmonary rehab

programs will be the best community rehabilitation resource to access. For settings with inpatient rehabilitation medicine consultation services, consider physiatry consultation while still an inpatient to facilitate and develop a rehabilitation plan.

If discharged from Acute Care, clients should be provided a post-COVID19 resource package including basic exercise and recommendations for recovery. At discharge, interventions such as smoking cessation resources, addictions resources, information regarding influenza vaccinations etc., should be provided as appropriate. Consider assisting patients to reduce their use of smoked and vaped products. The current lifetime maximum limit for all over the counter smoking cessation products listed in the Alberta Human Services Drug Benefit Supplement has been temporarily increased to \$1,000 per participant, per lifetime. AHS also has handouts, summary of evidence, and quick reference tools for clinicians.

<https://healthcareproviders.albertaquits.ca/resources/COVID19>

Inpatient Rehabilitation Pathways

Choose the inpatient rehabilitation resource that meets their specific functional needs. If, for example, a patient is admitted with coronavirus but then experiences a stroke, the best inpatient resource may be a stroke rehabilitation ward (regardless of their coronavirus infection). Where available, consider a consultation to physiatry to help facilitate this process. Attention needs to be made regarding individual facilities' policies as to whether and when they accept patients with coronavirus.

When discharged from Inpatient Rehabilitation, clients should be provided a post-COVID19 resource package including basic exercise and recommendations for recovery.

Community Rehabilitation Pathways

AHS could create/utilize zone-specific navigators for post-COVID19 clients to assist with transition of care and flow through AHS services. These could be accessible through 811, the Rehab Advice Line or assigned to clients during their hospital stay.

Healthcare providers completing a referral to the community for post-COVID19 rehabilitation should include information on medical stability and any precautions, contraindications or limitations for exercise. Patients wanting to access community care (i.e. AHS funded clinics like Community Accessible Rehabilitation (CAR)) must meet the program criteria: have significant functional, cognitive, pulmonary or neurological deficits with goals related to independent/improved function.

Using the already mandated outcome measure in AHS (the EQ-5D-5L) clients could be tracked/grouped for future data analysis. The EQ-5D-5L is an appropriate global health outcome measure for this client group and tracks the most common issues: mobility, self-care, return to usual activities, pain/discomfort and anxiety/depression.

High level/functioning clients, not eligible for covered services, should be informed that community rehab services can be accessed through private pay or private insurances.

Low level clients unable to physically attend outpatient rehab but needing rehab services could be referred to Home Care and then transitioned to outpatient rehab when appropriate. A hybrid model of virtual and in-person care could be used. Community rehab programs may include Home Care services in some rural areas, as can the RAL.

The Respiratory Home Care Association of Alberta (RHCAA) has developed an expedited central provincial intake process for community oxygen therapy for adult patients in the community, secondary assessment sites, and other non-acute care centres. The dispatch number 780-603-3248 and referral form (<https://www.rhcaa.ca/resources>) should be used. This expedited service may also become available to acute care during any surge activation.

Supportive Living and Long Term Care

Self-directed recovery

Provision of resources for home based self-directed treatment could be provided either on discharge from acute care or inpatient rehab, or provided through Health Link® (811), the Rehab Advice Line or through a family physician.

If needing to access more services, clients could be referred back to community rehabilitation services through the Rehab Advice Line or their family physician

Health Link ® (811) provides access to a Health Link ® dietitian that can offer nutrition advice and resources. They can also assess the need for further nutrition intervention and make referrals to dietitians based on zone procedures.

Transition and Handover

When transitioning care of patients with COVID19 across the care continuum, Rehab* clinicians should be familiar with the availability and admission criteria of different resources in their cities/zones ([Alberta Referral Directory](#)).

A timely transfer of information should be done between the referring and receiving clinicians (including Rehab Practitioners, Rehab Navigators* (if available) and Transition Coordinators, and the receiving clinicians in other provinces if the patients are repatriated back to their home province).

Considerations For Clinicians, Upon Transition of Patient Care*

- Assessment of readiness of patients transferring to the next care setting:
 - Include medical stability, functional impairment, patient tolerance to Rehab intervention (i.e. based on [AHS ICU Mobility Readiness Tool](#), [Chelsea critical care physical assessment tool \(CPAx\)](#), mental health, nutrition status (i.e. for patients assessed to be malnourished), psychosocial and financial status).
 - Collaborate with patients and their families, the interprofessional teams of the sending and receiving unit, site or program to support seamless transition. [Patient and Family Centered Care](#).
 - Be prepared of the potential unpredictable progress of patients with COVID19.
 - Be prepared to continue, scale down, increase or advance intervention at the current site/program in case of any delay in the transition of care or disruption of services.

- Clear and concise documentation (electronic/paper) and communication:

- Via electronic documentation system (i.e. Connect Care, Sunrise Clinical Manager (SCM), Meditech, etc.), written documentation, referral forms, verbal handover (i.e. using [iDRAW](#), [Situation, Background, Assessment Recommendation tool \(SBAR\)](#)).
- Complete referral form specific to sites/programs [AB Referral Directory](#).
- Document (transfer notes) as per College and site documentation guidelines which may include:
 - Pertinent history, rehab related diagnoses, current problems list (based on the International Classification of Functioning, Disability and Health [ICF](#)), concerns, precautions and needs.
 - Physical, mental and psychosocial limitation which may impact Rehab intervention.
 - Brief summary of the course of interventions, highlight major events, specific tests (i.e. diagnostic imaging, swallowing study, swab test) and procedures completed.
 - Patient current condition, interventions, outcome measures ([Rehab Measures Database](#)), specific equipment required, and their response to treatment patient centered intervention plans and goals (short and long terms which have been shared with patients, families and or caregivers).
 - Current and potential psychosocial barrier or need (i.e. income and food security, adjustment focused counselling, social connection or special needs).
 - Education and resources provided to patients or family (i.e. [AHS Rehab Advisory Line](#), [Health Link](#), [Community and Social Services Help Line \(211\)](#), handouts from [My Health Alberta](#), prescribed exercise programs).
 - Follow up rehab plan and related scheduled appointments [AHS COVID19 Patient Discharge Checklist](#).
- Provide patients with choices of interventions and rationales:
 - In person vs. virtual visit
 - Intervention at AHS sites/programs (i.e. CAR in Central Zone, Community Rehabilitation Interdisciplinary Services (CRIS) in Edmonton Zone, Home Living Rehab Team) vs. private/contracted clinics programs ([Adult Rehab Community Programs](#), contracted services at Home Living, [AHS Contracted PT Clinics list](#))
- Responsible clinicians are expected to be contacted or consulted by the receiving or referring site/program regarding patients under care. It may also apply to patients being repatriated back to their home provinces.
- Follow pathway guidelines set by WG #2 regarding screening patients to capture their potentially changing needs at each care setting and to ensure timely and appropriate care.
- Follow guidelines set by working group (WG) #3: Complete patient discharge checklist or tracking tool including clinicians contact info, scheduled appointments, handouts, long term follow up (WG #4), when to seek for medical help in case of emergency, etc.

Other Recommendations

- Our province could build a strong community of practice and learn from fellow clinicians about the care of patients with COVID19 in Alberta, across the nation or internationally. Regular updates or education could potentially be organized by the Neurosciences, Rehabilitation and Vision Strategic Clinical Network™ or Health Professions Strategy and Practice (HPSP) Allied Health Education Team and on the [AHS Allied Health COVID19 Resources](#) page.
- Our province could expand the “Rehabilitation Navigator*” position which can help and guide our patients with COVID19 (or other conditions) to access pertinent resources, complete appropriate documentation, make referrals to appropriate rehab settings across the continuum of care, track medical and rehab appointments, follow up after care, liaise with public health, and also be their advocates in the system (i.e. [Glenrose Rehab Navigators](#)). Could also build on existing services such as [H2H2H2](#), [Rehabilitation Advice Line](#), [811 Health Link](#), and [211 Alberta](#).
- Our province should invest in a cost effective online exercise program for exercise prescription integrated to our documentation system (i.e. Connect Care) where patients can see their prescribed exercise or advice via patient portal on MyHealthAlberta.
- This taskforce should consider developing a standard discharge education/info package for patients with COVID19 (i.e. includes info/links about [MyHealthAlberta](#), [Rehab Advice Line](#), [AHS Nutrition Guidelines](#) [Nutrition Education Materials](#), etc.).
- If individual is in community setting, recommend community services based on needs (i.e. if patient has low income, recommend financial subsidy/assistance).

Existing Resources that Support Discharge and Transition

- Please refer to supplement for comprehensive list of existing resources.

Care Delivery Model: Virtual Health

Organizational Considerations for Implementation of Virtual Care in Alberta

Alternate methods of care have been integral to maintaining essential services and continuity in care for Albertans during COVID19. A continued shift to a Virtual Health delivery model will require consideration of the following:

Resource Prioritization

- Make the necessary administrative and financial adjustments to support delivery of rehabilitation through telehealth ([WHO, 2020](#)).
- Reconfigure resources and care principles to facilitate a rapid scale-up of virtual health as much as appropriate and possible ([Wade, 2020](#)).
- Prioritize exploring and mitigating infrastructure barriers associated with technology, devices, network, training, cybersecurity and costs within AHS ([Virtual Care Rapid Review](#), [Bettger et al., 2020](#)).

Information Technology (IT)

- Create a Patient/Client IT support system to assist with virtual health troubleshooting and to delegate work to appropriate personnel ([Bettger et al., 2020](#)).
- Designate site champions, super users, or implement 'Train the Trainer' models to improve standardized uptake of Virtual Health interventions across AHS ([Wosik et al., 2020](#), [Bettger et al., 2020](#), [WHO, 2020](#)).

Human Resources

- Upscale virtual health in inpatient settings to reduce virus transmission, stretch human and protective equipment resources, maintain patient and staff safety and improve connection for isolated patients ([Wosik et al., 2020](#)).
- Implement agile work environments where appropriate to allow rehabilitation personnel to work from outpatient clinics, or their homes to deliver virtual health intervention to reduce staff infection risk and accommodate surge capacity ([WHO, 2020](#)).

Advocacy

- Advocate for AHS to interface with government to ensure equitable provincial access to widespread and stable internet connectivity ([Bettger et al., 2020](#)).
- Build partnerships with the broader rehabilitation community (private and public) to enhance access to safe and effective rehabilitative strategies to mitigate the consequences of COVID19 and reduced service capacity within the public system ([Bettger et al., 2020](#)).
- Collect longitudinal data regarding the types, volumes and outcomes of virtual health encounters. This should also capture impaired access to virtual health. ([Virtual Care Rapid Review](#)).

Resources for Implementation of Virtual Care in Rehabilitation

Virtual Navigation

- Utilize existing AHS process resources to support Virtual Health implementation ([AHS Virtual Health Resources](#)).
 - [Virtual Consent](#)
 - [Virtual Health Support Kit for Zoom](#)
 - [Virtual Practice Guidance for Allied Health Professionals](#)

Considerations for Use

- Adopt a 'Virtual First' model of care to maximize rehabilitation service continuity and reduce infection risk ([WHO, 2020](#)).
 - [Virtual First](#)
 - [Zoom Screening Tool](#)
- Develop a [clinical decision-making framework](#) for determining in-person intervention vs. virtual intervention.
 - Consider a *Safe Access Approach* for equitable rehabilitation access (i.e. risk assessment completed on a case by case basis for those in whom virtual care is not feasible or has proven not effective. Risk assessment would involve assessing risk to the patient, and risk to the provider vs. the risk of **not** receiving adequate rehabilitative care on functional outcomes, mental health of patient and caregivers).

- Clinicians should familiarize themselves with their respective college's position on Virtual Care (Virtual Practice Guidance for Allied Health Professionals).
- Identify the necessary rehabilitation and technological equipment required by the patient groups accessing virtual health services (WHO, 2020).
- Clinicians should adapt standard assessment methods where possible in order to optimize virtual health.
 - Checklists and Virtual Clinical Toolkits
 - Physicians and Virtual Care
 - Virtual Respiratory Assessment
 - Virtual Orthopedic Exam
 - Virtual Neurologic Exam

Practice Support and Education

Patient and Family Resources

Support in the form of education, resources and services are required to help patients and family (caregivers) as patients recover from COVID19 and transition through the rehabilitation process. Current and suggested supports are:

- Alberta Support programs such as Health Link (811), Community and Social Services Help Line (211), and the Rehab Advice Line.
- The creation of a comprehensive patient information package.
 - Can be utilized and given to patients and families by all provincial health professionals.
 - Content is appropriate for current state but also provides patients and families information on possible recovery events and when to seek further assistance. The content will help EMPOWER the patient (limits vs needs).
 - Covers physical, cognitive, psychosocial, financial, speech, pharmacology, nutrition information and resources. This information will augment what is available on [AHS COVID19 patient resources](#).
 - Creation of a comprehensive resource package of already existing support programs, apps and services available for patients and families. Resource package created by the Critical Care SCN could be adapted.
- MyHealthAlberta to create a comprehensive education package on COVID19 for patient and family education. Topics that could be included are:
 - Infection Prevention and Control (IPC) guidelines
 - Health progression
 - Information on resources and services available for both the patient and family support.
 - Utilize and build on existing work such as [ICU Steps- COVID 19](#), [Intensive Care: A Guide for You and Your Family](#).
- The creation of a Rehab Navigator - As stated in *Recommendations for Transition and Handover* section of this document.
- Uniting and leveraging community partners
 - Creating a clear line of communication with partners to understand their services and the process required to obtain services for COVID19 patients and families.
- The creation of a Mental Health support network which can be virtually accessed by patients and families throughout the province (i.e. support groups, counseling).
- Creation of a robust Alberta provincial media campaign on COVID19 recovery to educate the public on what it means to “survive” and “recover” from COVID19.

Clinician Resources

Support in the form of education, resources and services are required for clinicians to treat and support patients recovering from COVID19 and transitioning through the rehabilitation process. Current and suggested supports are:

- The creation of a virtual community that creates a positive environment of learning and collaboration across the province and care settings for allied health teams. Recommend building on what already exists).
 - A Practice Wise / Q and A / panel education forum (care setting specific).
 - A coordinated education program to share knowledge gained.
 - Education regarding the most up-to-date IPC practices, and delayed symptoms and manifestation of COVID19.

- Use of the already existing [Rehabilitation SharePoint](#) and extend to all allied health professionals as a base for accumulated documents and knowledge for allied health staff involved in rehabilitation. Include additional documents as appropriate.
- Guidance / provincial direction for supporting patients that do not have coverage for the required rehabilitation
- Guidance / support/resources/ provincial approach across all care programs for supporting our vulnerable populations and allocating appropriate resources and supports.
- Facilities including rehabilitation needs and a coordinated approach for restarting services in their surge plans.

Current Support / programs that can be utilized

Please refer to the supplement at end of document which provides a current list of supports/programs. This list will be updated periodically as new information becomes available.

Special populations

Pediatrics

Information and evidence on coronavirus infection in children is evolving. Early experience in Calgary is that most children do not experience severe respiratory symptoms. Some children do require critical illness support for inflammatory responses to coronavirus infections, but ICU stays appear to be relatively short. Rehabilitation approaches for admitted children follow routine practices with particular attention to facilitating return-to-school and addressing community re-integration in the context of a recent infectious disease.

Indigenous

The disproportionate rate of chronic disease and systemic inequities experienced among [Indigenous peoples](#) places their community members into high risk groups with respect to COVID19. The virus exposes existing infrastructure deficits which limits effective implementation of public health recommendations (i.e. overcrowding housing, non-potable water, decreased access to healthcare services, widespread unstable internet).

Lack of access to appropriate rehabilitation services, continuity in care and culturally safe practices will lead to widen the health inequity gap that exists. The [Truth and Reconciliation Commission Calls to Action](#) highlights “availability of appropriate health services” as a quality indicator for health outcomes between Indigenous and non-Indigenous Canadians. With the transition to rapid discharge, required social-isolation, visitor restrictions for long term rehabilitation, remote delivery of care and reliance on technological equipment and internet, the distinct health needs of Indigenous peoples must be addressed.

The following recommendations serve to address questions that must be answered for equitable care to be provided:

- AHS should interface with government pillars to ensure equitable care is provided. ([Calls to Action 19](#)).
- Practice reciprocity and liaise with [AHS Wisdom Council](#) for recommendations to support Indigenous health priorities.

- Collect inventory of existing resources to understand service gaps for on-reserve, off-reserve, and Metis communities.
- Virtual health implementation may require infrastructural and equipment support from local resources and health centres.
- Virtual health users should respect the [relationship building process](#) with Indigenous peoples.
- Clinicians should understand the [NIHB program](#) and required signatories, timelines, and restrictions associated with the program.
- Advocate for NIHB to support [virtual health technology as medical equipment](#).
- Clinicians should seek [Indigenous-specific trauma information](#) to practice [trauma-informed care with Indigenous patients](#) who may struggle with isolation requirements.

Elderly patients transitioning back to a facility

- Elderly populations are at risk due to multiple comorbidities, facility living, delirium, general deconditioning and increased frailty.
- Elderly patients often present with atypical symptoms that may omit them from regular screening protocols leading to under-diagnosis in this population.
 - [Delirium: a missing piece in the COVID19 pandemic puzzle](#)
 - [COVID19 in older people: a rapid clinical review](#)
- Elderly patients often require additional resources to support their rehabilitation requirements.
 - [Frail Seniors Guidance on Best Practice Rehabilitative Care in the Context of COVID19](#)
 - [Seniors Wellness in Challenging Times](#)
 - [Guide for treating older people post COVID19 in hospital, post-acute care and the community](#)
 - [COVID19 Resources Clinical guidance, tools, and links for health providers caring for older adults during the COVID19 Pandemic.](#)
- Patients transitioned back to continued living facilities could experience escalations in preexisting or new cognitive conditions. Social isolation will also impact this population due to social distancing measures in place, reduced family visitations, and altered care practices.
 - [Coronavirus disease \(COVID19\) and people living with dementia](#)
 - [Transfer Trauma](#)
- Logistic issues could arise that prevent them from being transitioned back to their facility during pandemic times and they may spend increased time in acute care.
 - [Medical Officer of Health Guidelines for Transfers, Discharges and Admissions During COVID19 Pandemic](#)

Incarcerated Populations

This population has unique considerations, which should be elaborated and considered by the Implementation Committee.

Isolated and Rural Populations

This population has unique considerations, which should be elaborated and considered by the Implementation Committee. May consider following resources:

[Joint Statement: Alberta Health Service and the Hutterian Safety Council response to guide Hutterite communities through the COVID19 pandemic](#)
[Harm Reduction and COVID19 Guidance Document for Community Service Providers](#)

Supplement: Discharge and Transition

Clinician Resources

- General Clinical Resources:
 - [Alberta Referral Directory](#) - This link is also available on Connect Care
 - [HPSP Clinical Resources](#)
 - [HPSP Provincial Professional Council Insite Page](#)
 - [PT Clinician Contact Resource List](#)
 - [Professional Practice Consultation Services](#)
 - [Strategic Clinical Networks Main Page](#)
 - [Neurosciences, Rehabilitation and Vision Strategic Clinical Network](#)
- COVID19 Clinical Resources:
 - [AHS COVID19 Info for Staff](#)
 - [AHS Allied Health COVID19 Resources](#)
 - [COVID19 FAQ All Staff](#)
 - [COVID19 Allied Health FAQ July 2020](#)
 - [Greater Toronto Rehab Network COVID19 Resources](#)
 - [COVID19 Scientific Advisory Group Rapid Evidence Report on Rehab Needs for COVID19 May 2020](#)
 - [Acute Care PT and COVID19](#)
- Documentation Resources:
 - [Sample of Rehab Discharge Summary – University Health Network](#)
 - [Dos and Don'ts of Transfer Summary](#)
- ICU Care:
 - [AHS Delirium Initiatives Tools and Resources](#)
 - [AHS Rehab ICU Quick Reference Guide](#)
- IPC Resources:
 - [IPC Home Page](#)
 - [IPC Resources Manual](#)
 - [Point of Care Risk Assessment](#)
 - [PPE - AGMP Guidance Tool](#)
- Other:
 - [Choosing Wisely](#)
 - [PhysioEx.com](#), [HEP2go](#) (free online exercise prescription program)

Patient and Family Resources

- Clinical Resources:
 - [Adult Community Rehabilitation](#)
 - [AHS Know Your Options page](#)
 - [Home Care](#)
 - [My Discharge Checklist](#)
 - [My Health Alberta - COVID19 related info search](#)
 - [My Health Alberta - Videos](#)
 - [WHO - Support for Rehabilitation: Self-Management After COVID19 Related Illness](#)
 - [Alberta Quits](#)
 - [Becoming Tobacco Free](#)
 - [Using Oxygen at Home](#)
- COVID19 Info:
 - [COVID19 Info Page for Albertans](#)
 - [Smoking, Vaping and COVID19](#)
- Other Resources:
 - 811(Health Link)
 - [211 - Resources for Albertans](#) - Info to help and guide patients/families on many topics including meal-based programs (i.e. Meals on Wheels, assisted cooking programs) and grocery services.
 - [Alberta Healthy Living Program](#) (Calgary Zone)
 - [Rehabilitation Advice Line](#)
- Other useful websites
 - [Health Canada](#),
 - [Dietitians of Canada](#)
 - [Nutrition Education Materials](#)
 - [AHS Nutrition Guidelines](#)
 - [Physiotherapy Alberta](#)
 - [Society of AB OT](#)

Current Support/ Programs

General COVID19 Information

- <https://www.albertahealthservices.ca/topics/Page16997.aspx> - Information for Albertans on the novel coronavirus (COVID19)
- [AHS COVID19 page](#) - Novel Coronavirus (COVID19)
- [Alberta Health COVID19 page](#) - COVID19 Information for Albertans (Government of Alberta)
- [811](#) Health link for general information from a registered nurse and general nutrition information from a registered dietitian.
- [211 Alberta](#) - Connects community resources and services to Albertans. Has information and resources on COVID19.
- [AHS COVID19 Info Page for staff](#) - Information for AHS staff and health professionals on COVID19.
- [AHS Scientific Advisory Group COVID19 Recommendations](#) - Review emerging evidence and guidance of national and international bodies to provide information on COVID19 for AHS physicians, staff, health professionals, patients and families.
- <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html> - Government of Canada COVID19 website.
- Coronavirus disease (COVID19): For health professionals: (Government of Canada site) - <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals.html>
- For information about [Food Safety](#) visit [Canada.ca](#) and search *COVID19 and Food Safety*.
- [Johns Hopkins Hospital COVID19 Resources Center](#) - Coronavirus Resource Centre

Critical Care, Acute Care and Non-Home Care Settings

- [Alberta Critical Care Research Network](#)
- [ICU Steps- COVID19](#) - Information for both public and health professionals on COVID19 during and after ICU stay.
- [AHS ICU COVID 19 Telesupport](#)
- [AHS Infection Prevention and Control webpage](#)
- [Care of the Critically Ill Adult COVID patient](#)
- [Respiratory Management of Adult Patients with Confirmed or Suspected COVID19](#)
- [Respiratory Illness. Assessing the need for further precautions](#)
- [Resource for Specific Health Condition COVID 19](#)
- [Interim IPC Recommendations COVID19](#)
- Rapid Review - [Are there criteria or simple tools that can be used to determine which patients with suspected / confirmed COVID19 are stable and appropriate for safe discharge from hospital or an alternate care centre? What follow-up is required?](#)

Patients and Families

- [ICU Recovery Patients and Families](#) Provides patients and families discharged from ICU with resources.
- [AHS COVID19 Discharge Checklist](#) - COVID19 My Discharge Checklist - Document on discharge plans for patient and/or family/ caregiver to help manage patient health after hospital discharge.
- [COVID19 Patient Resources - A guide to Albertans](#) - COVID19 Patient Resources A Guide for Albertans

- [My Health Alberta COVID19 Care Instructions](#) - Overview and care instructions for Albertans on COVID19.
- [Other My Health Alberta info related to COVID19](#) - Additional COVID19 information for Albertans.
- [811](#) Health link for general information from a registered nurse and general nutrition information from a registered dietitian. The Health Link dietitian can refer the patient and family for additional nutritional help, if additional need is assessed.
- [211 Alberta](#) - Connects community resources and services to Albertans.
- [AHS Rehab Advisory Line](#) (1-833-379-0563) - Allied health clinicians offer rehabilitation information, help callers access services.
- [AHS Indigenous Health](#) AHS support and guidance page.
- [Government of Canada Benefits](#) Online information regarding benefits available from the Canadian Government.
- Mental Health Support
 - [COVID 19 Tool Kit](#)
 - [Wellness Together Canada](#)
 - [Integrating e-Mental Health into Practice](#) - Using online and virtual mental health support.
 - [Mobile tools for Mental Wellness](#) - Mental health supports available on mobile devices.
- [Seniors Wellness in Challenging Times](#) Supporting seniors during the pandemic.
- [Multi-Faith Resources: Alienation and Separation During a Pandemic](#) A resource for multi-faith during COVID.
- [COVID 19 and Sexual Health](#) - What is safe sex during COVID and alternative actions.
- <https://www.who.int/publications/m/item/support-for-rehabilitation-self-management-after-COVID19-related-illness> - World Health Organization leaflet: Support for Rehabilitation: Self-Management after COVID19 Related Illness.

Rehabilitation

- [AHS Allied Health COVID19 Resources SharePoint Site](#) - The SharePoint site which houses many useful information and resources for clinicians working across the continuum
- [AHS COVID19 Rehab Needs Rapid Review](#) (Scientific Advisory Group Rapid Review Report on 29 May 2020)
- Practice wise presentations: <https://insite.albertahealthservices.ca/hpsp/Page7518.aspx>
- HPSP Allied Health Practice and Education email contact: practice.consultation@ahs.ca (for practice, resources, education consultation)
- Community of Practice (i.e. [HPSP Resources](#), [AHS Professional Practice Council Insite page](#), [PT Clinician Resources Contact List](#),) Clinicians can consult their colleagues in the similar fields/settings/specialties regarding resources, assessments or intervention ideas
- [H2H2H2 \(one pager\)](#) - One pager on the Home to Hospital to Home Guideline for Alberta. Guideline is currently under development.
- [GTA Rehab Network](#) - Greater Toronto Area Rehab Network - Rehab Resources Specific to COVID19.
- [End PJ Paralysis](#) A program to reduce hospital deconditioning.
- Communication tool kit for professionals to utilize when there are communication barriers [COMMUNICATION ACCESS - Provider Learning and Resources](#).
- Scope of practice for Allied Health Team Members [ALLIED HEALTH SKILLS TO SUPPORT COVID19 ACROSS THE CONTINUUM](#)

- [Transfer Trauma](#) May develop as patients move from one health care setting to another.
- [Canadian Association of Physical Medicine and Rehabilitation](#) A composition of physio, COVID19 measures and insurance coverage information.

Nutrition

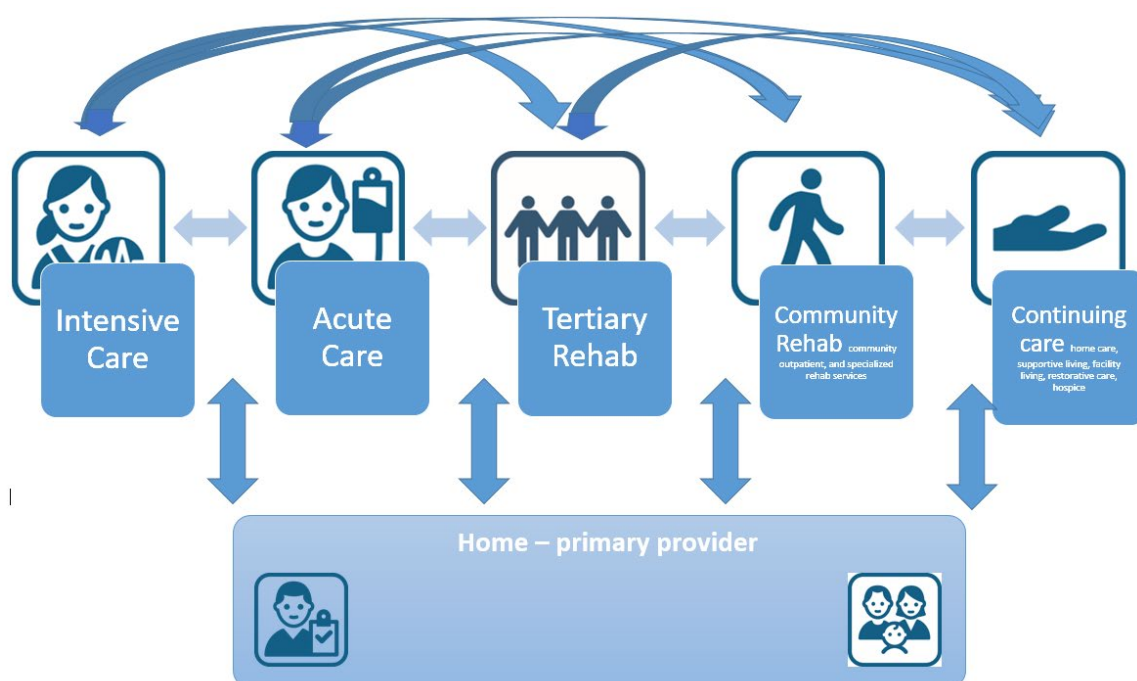
- Patient handouts on Healthy Eating during COVID:
 - <https://www.albertahealthservices.ca/topics/Page16947.aspx?team=nutrition>
Has links to:
 - COVID19: Nutrition for Recovery
(<https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-COVID19-nutrition-for-recovery.pdf>)
 - Nutrition and COVID19
(<https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-nutrition-COVID19-general.pdf>)
 - Nutrition and COVID19: School-aged Children
(<https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-nutrition-COVID19-school-aged-children.pdf>)
 - Stay Strong with Nutrition: Seniors and COVID19
(<https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-COVID19-stay-strong-with-nutrition-seniors.pdf>)
- Patient handouts from Healthy Eating Starts Here (healthyeatingstartshere.ca) that could also help with post-COVID recovery and recovery in general:
 - Adding Calories and Protein to Your Diet
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-adding-calories-and-protein-to-your-diet.pdf>)
 - Adding Calories and Protein to Your Child's Diet
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-adding-calories-protein-to-your-childs-diet.pdf>)
 - High Protein High Calorie Meal and Snack Ideas
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-high-protein-high-calorie-meal-and-snack-ideas.pdf>)
 - Snacks for Children (Pictorial)
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-snacks-for-children.pdf>)
 - Making Smoothies with More Calories and Protein
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-making-smoothies-with-more-calories-and-protein.pdf>)
 - Nutrition Supplements (<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-nutrition-supplements.pdf>)
 - Eating Well When Your Taste and Smell Changes
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-eating-well-when-you-have-taste-and-smell-changes.pdf>)
 - Tips to Eat and Swallow Safely
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-tips-to-eat-swallow-safely.pdf>)
 - Healthy Drinks, Healthy Kids: 2-18 Years
(<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-healthy-drinks-kids.pdf>)

- Quick and Easy Meals (<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-quick-and-easy-meals.pdf>)
- Other Nutrition Education Materials for patients: <https://www.albertahealthservices.ca/nutrition/Page11115.aspx>)
- For patients: *Free Food in Alberta*: Access healthyeatingstartshere.ca and search for *Free Food in Alberta*.
- For patients and health professionals: Dietitians of Canada: <https://www.dietitians.ca/>
- For health professionals: Primary Health Care Resource Centre Nutrition Guidelines: <https://www.albertahealthservices.ca/info/Page8249.aspx>
- Continuing education on COVID19 and nutrition (for health professionals): <https://nutritioncareincanada.ca/resources-and-tools/COVID19-and-nutrition>
 - Includes information on when to make an RD referral (i.e. if a patient has trouble eating or has lost weight).

APPENDIX 7: POST-COVID19 REHABILITATION DISCHARGE & TRANSITION PLANNING

What are the transition points across the continuum of care?

Rehabilitation transitions are not linear and often skip across the continuum of care. The volume and variability of transitions across the continuum of care combined with the variability of programs and services across Alberta make defining a consistent approach difficult. The diagram below identifies the multiple areas of transition that exist across the continuum of care. While the number of different types of transitions for rehabilitation patients is high an approach that follows key principles of transition and focuses on key areas of transition for patients with or recovering from COVID19 is possible.



Specific transition points identified for COVID19 patients:

- **Hospital to home/community** - consider home care and community options, collaboration with primary care.
- **Home/community to rehabilitation** - consider home care and community options, collaboration with primary care.
- **Continuing care** – potential for change in function requiring rehabilitation, consider home care and supportive living needs.

Considerations:

- Determine the number of patients in the community and in continuing care recovering from COVID19 who have rehabilitation needs.
- As rehabilitation screening and long term monitoring begins, monitor the number of clients in the community and continuing care including the rehabilitation services provided to help identify future needs and surge planning.
- Determine triage and priority of COVID19 patients amongst the existing rehabilitation needs of Albertans.
- Identify a process to address the needs of unattached patients.
- Share data (from #1 above) with the general public to further educate about the longer term impacts of COVID19 and the need to contact a health care provider if functional concerns persist.
- Develop an ongoing evaluation strategy and feedback loop (to acute and primary care) to determine the impact and needs of patients recovered from COVID19 and to ensure that providers have up to date information on the anticipated rehabilitation journey.
- Develop a communication strategy to ensure that clients recovering in the community and continuing care are aware of rehabilitation needs and how to access.
- Leverage existing data collection initiatives e.g. patient interviews to determine from the patient perspective what their needs have been.

What are the transition factors to consider for COVID19 patients?**Key COVID19 related articles/references:**

Wade Article Rehab
and COVID 04 2020



Simpson.pdf



Guideline -
Guideline for Monit

Considerations:

- Medical readiness to participate in rehabilitation
- Triage criteria
- Infection prevention and control guidelines in alignment with AHS and ambulatory care guidelines Need to plan for surge capacity and how will a large increase in volume will be addressed.
- Include interpretation needs for clients who are English Language Learners.
- Identify virtual care supports that can be leveraged to support care.
- Establish consistent discharge and referral criteria for rehabilitation services in collaboration with working group #1 screening and working group #4 long term monitoring.

What immediate actions can be taken to improve discharge and transition for COVID19 patients in Alberta?

Considerations:

- Develop patient, family and caregiver education resources that address rehabilitation needs (revisions to the COVID19 patient discharge handout, what to expect in your recovery, when and how to seek help) a patient and family handbook and a web site specific to rehabilitation.
- Create a care navigator or mentor to take a client through the process, acknowledging that we don't know what the future holds.
- Identify special or marginalized populations that may have unique needs (Pediatrics, Indigenous Health, Elderly patients, Incarcerated Populations, Isolated and Rural and Remote Populations) including social determinants of health in regards to COVID19 patients.
- Incorporate the mental health component and patient mental needs in collaboration with Addictions and Mental Health. Include the psychosocial and spiritual needs as well as the physical needs.
- Identify current barriers and facilitators to addressing the needs of patients post COVID19.
- Understand the variability of services within and across zones both with AHS rehabilitation services but with continuing care rehabilitation services and Primary Care Networks Allied Health services. Specific navigation supports may need to be localized.
- Engage Communications to raise public awareness about the sequela of COVID19 and the rehabilitation needs.

Final recommendations

In order to implement and sustain the following recommendations it will be critical to maintain involvement of working group members.

1. Ensure rehabilitation concepts are embedded into discharge documents and processes in collaboration with CoACT, Connect Care, and Primary care (e.g. COVID19 Safe Discharge Checklist, COVID19 My Discharge Checklist).
2. In collaboration with working group #1 (screening) and working group #4 (long term monitoring) develop a robust process in alignment with the Medical Officer of Health (MOH) to track and support patients with rehabilitation needs and to inform key points of transition and transition needs as we learn more.
3. Establish a central intake and a rehabilitation navigator or transition coordinator role that is embedded within existing services (such as the Rehabilitation Advice Line and existing rehab navigator roles). This would help to identify rehabilitation needs in the community and support patients as they recover. This alignment will be of particular importance to address needs in the community and continuing care as we learn more about the long term impacts of COVID19. This structure would need to be aligned with other rehab initiatives in order to optimize current resources such as FTE, space and position scope.

4. Develop a communication strategy including easily accessible patient education resources and province wide communications regarding rehabilitation (e.g. Rehabilitation and COVID19 handbook, online resources and resources added to MyHealthAlberta). These tools would be of particular importance to support surge planning. The opportunity to collaborate and incorporate all health services within these documents and their respective logos would promote further integration across the province (AHS, Covenant and Primary care).

Additional information and links.

- [COVID19 Primary Care Management Pathway](#) and [Explanation of Pathway](#) (Video)
- [Provincial Pandemic Flowsheet: Patient Discharge from Hospital](#)
- [Transitions Checklist for Primary Care](#) (Alberta Medical Association)
- <https://www.gov.uk/government/publications/coronavirus-COVID19-hospital-discharge-service-requirements>
- <https://www.hackneycitizen.co.uk/wp-content/uploads/Post-COVID19-information-pack-5.pdf>
- <https://www.who.int/publications/m/item/support-for-rehabilitation-self-management-after-COVID19-related-illness>
- <https://www.bmj.com/content/369/bmj.m1787>
- <https://www.nytimes.com/2020/06/17/nyregion/coronavirus-recovery-hospital.html>
- <https://medicalxpress.com/news/2020-06-rehab-facilities-covid-crunch-patients.html>
- <https://blogs.bmj.com/bmj/2020/06/15/COVID19-will-be-followed-by-a-deconditioning-pandemic/>

APPENDIX 8: AHS POST-COVID19 LONGITUDINAL MONITORING TOOL (AHS-PLMT) (BASELINE)

Alberta Health Services is getting in touch with people who have had a diagnosis of coronavirus infection (COVID19). This survey will take about 15 minutes.

The purpose of this call is to find out if you are having any problems that you might be experiencing related to your recent illness with COVID19. We will document this information in your health record. This information will be available to your healthcare team to help them provide care to you, and to AHS for quality improvement purposes.

You do not have to answer any question if you do not want to, and we can stop the conversation at any point.

Do you have any questions about the purpose of this survey or how the answers you provide will be used?

Do you agree to talk to me about how you feel today?	YES	or	NO
--	-----	----	----

We will begin this survey by asking you general questions about how you are doing, and then we will ask more specific questions related to COVID19 infection.

Sections:

- 1) Opening Questions
- 2) EQ-5D-5L (for general quality of life)
- 3) Post-COVID19 Long-term Monitoring Tool (for specific potential sequelae)
- 4) Closing Questions

Opening Questions

Before we begin, can you please confirm your name and date of birth?

Name: _____

Date of Birth (DD/MM/YYYY): __/__/____

Please specify who is completing this survey:

1=Patient

2=Partner

3=Other Relation

4=Friend/close acquaintance

5=Health provider/Professional Caregiver

6=Other (please specify: _____)

Now we will turn to a general survey about your quality of life.

**EQ-5D-5L Health Questionnaire
SCRIPT FOR TELEPHONE INTERVIEW**

INTRODUCTION TO EQ-5D

(Note to interviewer: please read the following to the respondent)

We are trying to find out what you think about your health. I will first ask you some simple questions about your health TODAY. I will then ask you to rate your health on a measuring scale. I will explain what to do as I go along but please interrupt me if you do not understand something or if things are not clear to you. Please also remember that there are no right or wrong answers. We are interested here only in your personal view.

EQ-5D DESCRIPTIVE SYSTEM: INTRODUCTION

First I am going to read out some questions. Each question has a choice of five answers. Please tell me which answer best describes your health TODAY. Do not choose more than one answer in each group of questions.

(Note to interviewer: it may be necessary to remind the respondent regularly that the timeframe is TODAY. It may also be necessary to repeat the questions verbatim.)

EQ-5D DESCRIPTIVE SYSTEM

MOBILITY

First I'd like to ask you about mobility. Would you say that:

- 1. You have no problems in walking about?**
- 2. You have slight problems in walking about?**
- 3. You have moderate problems in walking about?**
- 4. You have severe problems in walking about?**
- 5. You are unable to walk about?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

SELF-CARE

Next I'd like to ask you about self-care. Would you say that:

- 1. You have no problems washing or dressing yourself?**
- 2. You have slight problems washing or dressing yourself?**
- 3. You have moderate problems washing or dressing yourself ?**
- 4. You have severe problems washing or dressing yourself?**
- 5. You are unable to wash or dress yourself?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

USUAL ACTIVITIES

Next I'd like to ask you about your usual activities, for example work, study, housework, family or leisure activities. Would you say that:

- 1. You have no problems doing your usual activities?**
- 2. You have slight problems doing your usual activities?**
- 3. You have moderate problems doing your usual activities?**
- 4. You have severe problems doing your usual activities?**
- 5. You are unable to do your usual activities?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

PAIN / DISCOMFORT

Next I'd like to ask you about pain or discomfort. Would you say that:

1. You have no pain or discomfort?
2. You have slight pain or discomfort?
3. You have moderate pain or discomfort?
4. You have severe pain or discomfort?
5. You have extreme pain or discomfort?

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

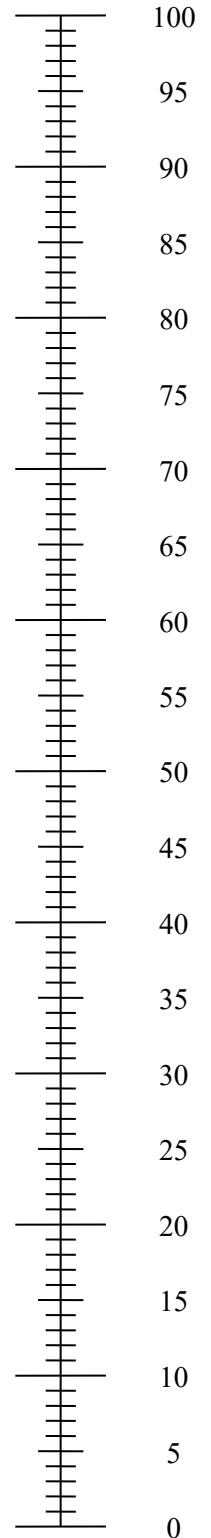
ANXIETY / DEPRESSION

Finally I'd like to ask you about anxiety or depression. Would you say that:

1. You are not anxious or depressed?
2. You are slightly anxious or depressed?
3. You are moderately anxious or depressed?
4. You are severely anxious or depressed?
5. You are extremely anxious or depressed?

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

The best health
you can
imagine



The worst
health you can
imagine

EQ VAS: INTRODUCTION

(Note for interviewer: if possible, it might be useful to send a visual aid (i.e. the EQ VAS) before the telephone call so that the respondent can have this in front of him or her when completing the task)

Now, I would like to ask you to say how good or bad your health is TODAY.

I'd like you to try to picture in your mind a scale that looks rather like a thermometer. Can you do that? The best health you can imagine is marked 100 (one hundred) at the top of the scale and the worst health you can imagine is marked 0 (zero) at the bottom.

EQ VAS: TASK

I would now like you to tell me the point on this scale where you would put your health today.

(Note to interviewer: mark the scale at the point indicating the respondent's 'health today')

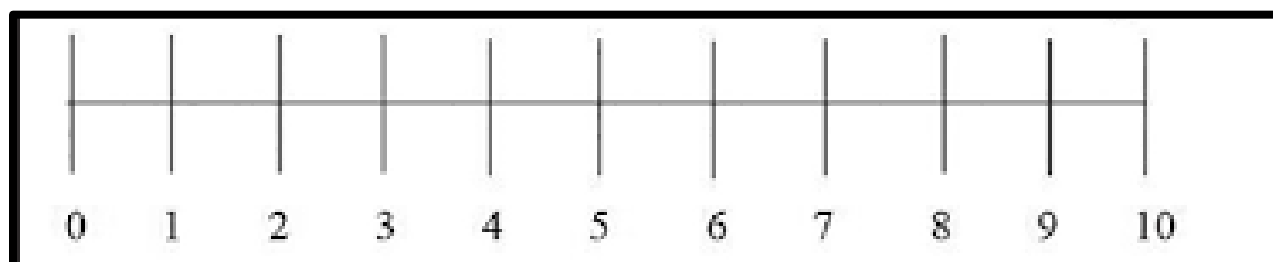
Thank you for taking the time to answer these questions.

We will now ask you questions about issues related specifically to your COVID19 infection. For each question, please select only one response that best describes how you are doing.

For the upcoming questions, we will ask you to rate how are you doing now using a rating scale of 0 to 10, with 0 meaning No difficulties (i.e. doing good) and 10 meaning extreme difficulties or cannot do (i.e. doing bad). 5 is the mid-point meaning moderate. Like the previous general survey, imagine a ruler with 0 (low) at one end and 10 (perfect) at the other end.

Since this is our first follow-up with you, we would like you to compare how you are today relative to how you were before you experienced COVID19. The pre-COVID19 question uses three categories: better, the same, or worse.

No Difficulty	Moderate Difficulty	Extreme or Cannot Do
------------------	------------------------	-------------------------



Activities (Activity Limitations)		
For each question, please describe how much difficulty you have on a scale of 0 to 10, zero being none and ten being extreme or cannot do:		
Standing up from sitting down?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Standing for periods such as 30 minutes?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Moving around inside your home?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Walking a long distance (such as a kilometer)?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Washing your whole body?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Getting dressed?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Communicating with others in an efficient way?	Today	Before COVID19

	0-10: _____	<input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Remembering things , for example, your ability to remember details about recent events?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Concentrating on doing something for 10 minutes ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Learning a new task , for example, learning how to get to a new place?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse

Participation (Participation Restrictions)		
Taking care of your household responsibilities? Doing your most important household tasks well?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Taking care of your employment responsibilities or other non-household job responsibilities (e.g. volunteer work)?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Maintaining a friendship ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Dealing with people you do not know?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Engaging in hobbies or activities for relaxation or pleasure ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse

Environment (Environmental Barriers)		
Joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Because of barriers or hindrances in the world around you?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Living with dignity because of the attitudes or actions of others?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Meeting financial obligations or paying your bills ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Obtaining adequate support for your caregiver ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse

Body Functions & Structures (Impairments)		
For each of the following questions, please describe how much problems are you having with the described function or symptom on a scale of zero to 10, zero being no problem and 10 being extreme problems (cannot do)		
Shortness of Breath: At rest?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
When dressing yourself?	0-10: _____	<input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse

With walking up a flight of stairs?	0-10: _____	<input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Cough?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Chest pain: At rest?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Being active (e.g. walking)?	0-10: _____	<input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Having noisy breathing ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Voice volume and quality?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Swallowing or choking?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Controlling your movements ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Controlling your bladder ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Controlling your bowel ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Unwanted, distressing memories or dreams about your hospitalization or COVID19 illness?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Unpleasant dreams about your hospitalization or COVID19 illness?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Sleeping?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Anxiety?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Depression or low mood?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Fatigue , feeling tired or low energy?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Seeing?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Hearing?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Smelling?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Changes to your skin (e.g. rash, itchiness)?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse
Changes to your nails or toes ?	Today 0-10: _____	Before COVID19 <input type="checkbox"/> Better <input type="checkbox"/> Same <input type="checkbox"/> Worse

Additional Questions	
We are nearly finished with our survey questions. For the next three questions, please select from the list described the option that best describes your experience.	
Thoughts of harming yourself , suicide or that your life is not worth living?	<input type="checkbox"/> Yes *trigger pathway <input type="checkbox"/> No
Where do you currently live or find shelter ?	<input type="checkbox"/> 1 – House <input type="checkbox"/> 2 – Apartment/Condo <input type="checkbox"/> 3 – Group Living without Nursing (e.g. Seniors Housing, etc.) <input type="checkbox"/> 4 – Group Living with Nursing Support (e.g. Assisted Living, long-term care) <input type="checkbox"/> 5 – Hospital <input type="checkbox"/> 6 – Insecure (Temporary residence) <input type="checkbox"/> 7 – Street <input type="checkbox"/> 8 – Other (Please specify: _____)
Have you lost weight in the past 6 months without trying to lose this weight?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if patient reports a weight loss but gained it back, consider it as NO weight loss)
Have you been eating less than usual for more than a week ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Closing Questions

1. Are you experiencing any other new problems since your illness that we have not mentioned? If yes, please describe:
2. [if self-completed] Do you think your family or caregivers would have anything to add?
3. Is there any else that you would like to share? If yes, please describe:

Thank you so much for your time.

[Discuss referrals where triggers were initiated by REDCAP algorithms. Share with patient that where trigger initiated a referral letter will be sent to their primary care physician.]

[Describe planned follow-up process]: Alberta Health Services aims to follow-up with you at regular intervals over the next year (likely 3, 6 and 12 months since your discharge) to see how you are doing.

But, please reach out to your healthcare team or Health Link® at 811 if you experience any health problems.

APPENDIX 9: AHS POST-COVID19 LONGITUDINAL MONITORING TOOL (AHS-PLMT) (FOLLOW-UP)

Alberta Health Services is getting in touch with people who have had a diagnosis of coronavirus infection (COVID19). This survey will take about 15 minutes.

The purpose of this call is to find out if you are having any problems that you might be experiencing related to your recent illness with COVID19. We will document this information in your health record. This information will be available to your healthcare team to help them provide care to you, and to AHS for quality improvement purposes.

You do not have to answer any question if you do not want to, and we can stop the conversation at any point.

Do you have any questions about the purpose of this survey or how the answers you provide will be used?

Do you agree to talk to me about how you feel today?	YES or NO
--	-----------

We will begin this survey by asking you general questions about how you are doing, and then we will ask more specific questions related to COVID19 infection.

Sections:

- 1) Opening Questions
- 2) EQ-5D-5L (for general quality of life)
- 3) Post-COVID Long-term Monitoring Tool (for specific potential sequelae)
- 4) Closing Questions

Opening Questions

Before we begin, can you please confirm your name and date of birth? Name: _____ Date of Birth (DD/MM/YYYY): __/__/____
Please specify who is completing this survey: 1=Patient 2=Partner 3=Other Relation 4=Friend/close acquaintance 5=Health provider/Professional Caregiver 6=Other, please specify:

Now we will turn to a general survey about your quality of life.

**EQ-5D-5L Health Questionnaire
SCRIPT FOR TELEPHONE INTERVIEW**

INTRODUCTION TO EQ-5D

(Note to interviewer: please read the following to the respondent)

We are trying to find out what you think about your health. I will first ask you some simple questions about your health TODAY. I will then ask you to rate your health on a measuring scale. I will explain what to do as I go along but please interrupt me if you do not understand something or if things are not clear to you. Please also remember that there are no right or wrong answers. We are interested here only in your personal view.

EQ-5D DESCRIPTIVE SYSTEM: INTRODUCTION

First I am going to read out some questions. Each question has a choice of five answers. Please tell me which answer best describes your health TODAY. Do not choose more than one answer in each group of questions.

(Note to interviewer: it may be necessary to remind the respondent regularly that the timeframe is TODAY. It may also be necessary to repeat the questions verbatim.)

EQ-5D DESCRIPTIVE SYSTEM

MOBILITY

First I'd like to ask you about mobility. Would you say that:

- 6. You have no problems in walking about?**
- 7. You have slight problems in walking about?**
- 8. You have moderate problems in walking about?**
- 9. You have severe problems in walking about?**
- 10. You are unable to walk about?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

SELF-CARE

Next I'd like to ask you about self-care. Would you say that:

- 11. You have no problems washing or dressing yourself?**
- 12. You have slight problems washing or dressing yourself?**
- 13. You have moderate problems washing or dressing yourself ?**
- 14. You have severe problems washing or dressing yourself?**
- 15. You are unable to wash or dress yourself?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

USUAL ACTIVITIES

Next I'd like to ask you about your usual activities, for example work, study, housework, family or leisure activities. Would you say that:

- 16. You have no problems doing your usual activities?**
- 17. You have slight problems doing your usual activities?**
- 18. You have moderate problems doing your usual activities?**
- 19. You have severe problems doing your usual activities?**
- 20. You are unable to do your usual activities?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

PAIN / DISCOMFORT

Next I'd like to ask you about pain or discomfort. Would you say that:

- 21. You have no pain or discomfort?**
- 22. You have slight pain or discomfort?**
- 23. You have moderate pain or discomfort?**
- 24. You have severe pain or discomfort?**
- 25. You have extreme pain or discomfort?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

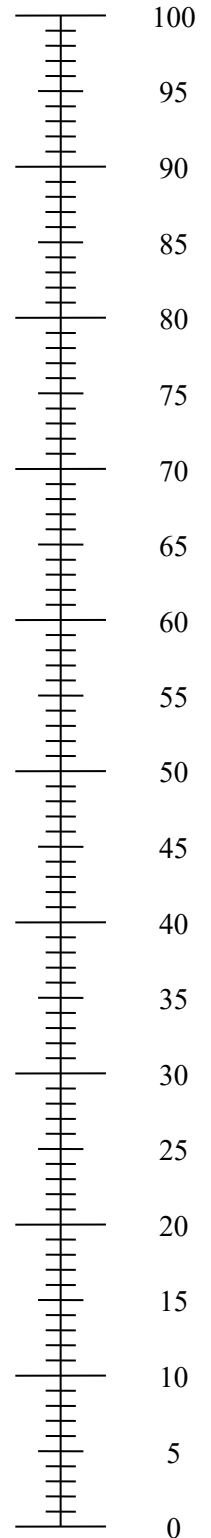
ANXIETY / DEPRESSION

Finally I'd like to ask you about anxiety or depression. Would you say that:

- 26. You are not anxious or depressed?**
- 27. You are slightly anxious or depressed?**
- 28. You are moderately anxious or depressed?**
- 29. You are severely anxious or depressed?**
- 30. You are extremely anxious or depressed?**

(Note to interviewer: mark the appropriate box on the EQ-5D questionnaire)

The best health
you can
imagine



The worst
health you can
imagine

EQ VAS: INTRODUCTION

(Note for interviewer: if possible, it might be useful to send a visual aid (i.e. the EQ VAS) before the telephone call so that the respondent can have this in front of him or her when completing the task)

Now, I would like to ask you to say how good or bad your health is TODAY.

I'd like you to try to picture in your mind a scale that looks rather like a thermometer. Can you do that? The best health you can imagine is marked 100 (one hundred) at the top of the scale and the worst health you can imagine is marked 0 (zero) at the bottom.

EQ VAS: TASK

I would now like you to tell me the point on this scale where you would put your health today.

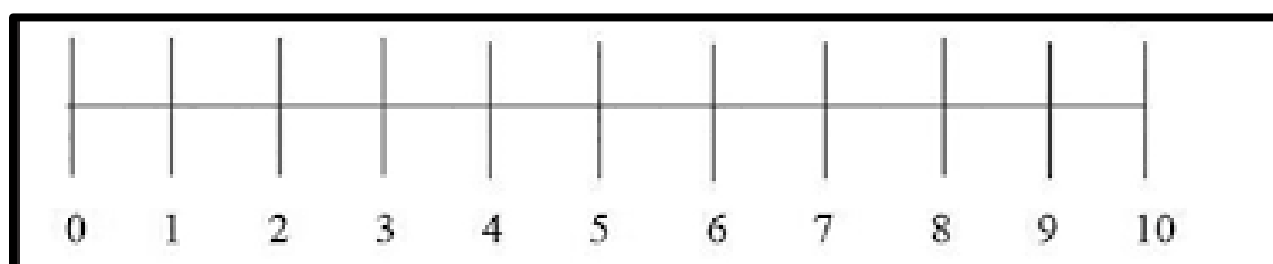
(Note to interviewer: mark the scale at the point indicating the respondent's 'health today')

Thank you for taking the time to answer these questions.

We will now ask you questions about issues related specifically to your COVID19 infection. For each question, please select only one response that best describes how you are doing.

For the upcoming questions, we will ask you to rate how are you doing now using a rating scale of 0 to 10, with 0 meaning No difficulties (i.e. doing good) and 10 meaning extreme difficulties or cannot do (i.e. doing bad). 5 is the mid-point meaning moderate. Like the previous general survey, imagine a ruler with 0 (low) at one end and 10 (perfect) at the other end.

No Difficulty	Moderate Difficulty	Extreme or Cannot Do
------------------	------------------------	-------------------------



Activities (Activity Limitations)	
For each question, please describe how much difficulty you have on a scale of 0 to 10, zero being none and ten being extreme or cannot do:	
Standing up from sitting down?	Today 0-10: _____
Standing for periods such as 30 minutes?	Today 0-10: _____
Moving around inside your home?	Today 0-10: _____
Walking a long distance (such as a kilometer)?	Today 0-10: _____
Washing your whole body?	Today 0-10: _____
Getting dressed?	Today 0-10: _____
Communicating with others in an efficient way?	Today 0-10: _____
Remembering things , for example, your ability to remember details about recent events?	Today 0-10: _____
Concentrating on doing something for 10 minutes?	Today 0-10: _____
Learning a new task , for example, learning how to get to a new place?	Today 0-10: _____

Participation (Participation Restrictions)	
Taking care of your household responsibilities? Doing your most important household tasks well?	Today 0-10: _____
Taking care of your employment responsibilities or other non-household job responsibilities (e.g. volunteer work)?	Today 0-10: _____
Maintaining a friendship ?	Today 0-10: _____

Dealing with people you do not know?	Today 0-10: _____
Engaging in hobbies or activities for relaxation or pleasure ?	Today 0-10: _____

Environment (Environmental Barriers)	
Joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	Today 0-10: _____
Because of barriers or hindrances in the world around you?	Today 0-10: _____
Living with dignity because of the attitudes or actions of others?	Today 0-10: _____
Meeting financial obligations or paying your bills?	Today 0-10: _____
Obtaining adequate support for your caregiver?	Today 0-10: _____

Body Functions & Structures (Impairments)	
For each of the following questions, please describe how much problems are you having with the described function or symptom on a scale of zero to 10, zero being no problem and 10 being extreme problems (cannot do)	
Shortness of Breath: At rest? When dressing yourself? With walking up a flight of stairs?	Today 0-10: _____ 0-10: _____ 0-10: _____
Cough?	Today 0-10: _____
Chest pain: At rest? Being active (e.g. walking)?	Today 0-10: _____ 0-10: _____
Having noisy breathing ?	Today 0-10: _____
Voice volume and quality ?	Today 0-10: _____
Swallowing or choking ?	Today 0-10: _____
Controlling your movements ?	Today 0-10: _____
Controlling your bladder ?	Today 0-10: _____
Controlling your bowel ?	Today 0-10: _____
Unwanted, distressing memories or dreams about your hospitalization or COVID19 illness?	Today 0-10: _____
Unpleasant dreams about your hospitalization or COVID19 illness?	Today 0-10: _____
Sleeping ?	Today 0-10: _____
Anxiety ?	Today 0-10: _____
Depression or low mood?	Today 0-10: _____
Fatigue , feeling tired or low energy?	Today 0-10: _____
Seeing ?	Today 0-10: _____
Hearing ?	Today 0-10: _____
Smelling ?	Today 0-10: _____
Changes to your skin (e.g. rash, itchiness)?	Today 0-10: _____
Changes to your nails or toes ?	Today 0-10: _____

Additional Questions	
We are nearly finished with our survey questions. For the next three questions, please select from the list described the option that best describes your experience.	
Thoughts of harming yourself , suicide or that your life is not worth living?	<input type="checkbox"/> Yes *trigger pathway <input type="checkbox"/> No
Where do you currently live or find shelter ?	<input type="checkbox"/> 1 – House <input type="checkbox"/> 2 – Apartment/Condo <input type="checkbox"/> 3 – Group Living without Nursing (e.g. Seniors Housing, etc.) <input type="checkbox"/> 4 – Group Living with Nursing Support (e.g. Assisted Living, long-term care) <input type="checkbox"/> 5 – Hospital <input type="checkbox"/> 6 – Insecure (Temporary residence) <input type="checkbox"/> 7 – Street <input type="checkbox"/> 8 – Other (Please specify: _____)
Have you lost weight in the past 6 months without trying to lose this weight?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if patient reports a weight loss but gained it back, consider it as NO weight loss)
Have you been eating less than usual for more than a week ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Closing Questions

1. Are you experiencing any other new problems since your illness that we have not mentioned? If yes, please describe:
2. [if self-completed] Do you think your family or caregivers would have anything to add?
3. Is there any else that you would like to share? If yes, please describe:

Thank you so much for your time.

[Discuss referrals where triggers were initiated by REDCAP algorithms. Share with patient that where trigger initiated a referral letter will be sent to their primary care physician.]

[Describe planned follow-up process]: Alberta Health Services aims to follow-up with you at regular intervals over the next year (likely 3, 6 and 12 months since your discharge) to see how you are doing. But, please reach out to your healthcare team or Health Link® at 811 if you experience any health problems.

APPENDIX 10: LONGITUDINAL MONITORING & TRACKING OF COVID19 REHABILITATION OUTCOMES

Strategy Overview

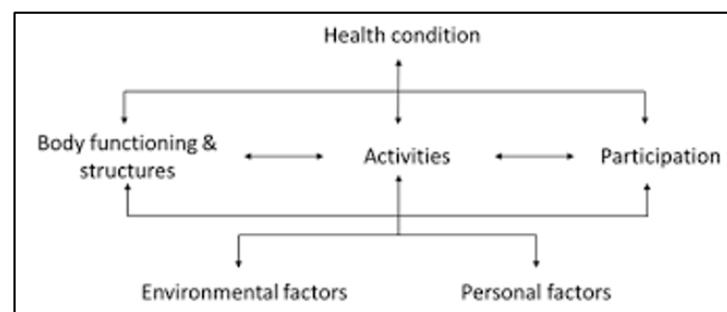
WG4 recommends longitudinal outcome monitoring with the primary aim of identifying impairments, activity limitations and participation restrictions for persons diagnosed with COVID19 to trigger, and inform, healthcare responses by primary care. This monitoring should be under the purview and direction of a multidisciplinary implementation committee that includes patient and/or family advisors. WG4 proposes a repeated-measures, longitudinal monitoring approach using a combination of validated and bespoke patient-reported outcome measures (PROMs). We suggest a process implemented in two phases to, given considerations related to feasibility, leveraging opportunities and the need for rapid follow-up of high-risk populations and those who experienced COVID19 near the start of the pandemic.

1. Phase 1: Follow-up for adults (aged ≥ 18 years at first follow-up) with history of COVID19-related hospitalization (Population 1, hospitalized)
2. Phase 2: Follow-up adults with history of COVID19, but no related hospitalization (Population 2, community-only)

We recommend follow-up at the 3, 6 and 12 months post-discharge (Phase 1, Population 1 (hospitalized)) or post-diagnosis (Phase 2, Population 2 (community-only)). We suggest further discussion (including comparison with WG1 screening protocols) to determine the appropriateness of 1-month and 24-month follow-up. We recommend that the RAL clinicians administer the longitudinal surveys; that data is captured in the ECHO platform to ensure flow to Netcare; and that the clinicians use Primary Care referral letters when triggers for further follow-up are noted during the survey. We suggest an initial pilot of the prescribed survey tools to ensure validity and reliability in this novel population. The following section details our WG4 recommendations according to a methodological plan, including conceptual framework, population, data collection, data analysis and ethics.

Conceptual Framework

Adoption of an inclusive, validated conceptual framework will enhance the comprehensiveness and methodological rigor of the approach to longitudinal monitoring. The International Classification of



Functioning, Disability and Health (ICF) is the World Health Organization's framework for health and disability. <https://www.who.int/classifications/icf/en/>

The ICF has been broadly used in health research, and was recently proposed as a framework for post-COVID19 follow-up. The ICF is commensurate with the COVID19 Yorkshire Rehab Screen (C19-YRS tool), <https://www.acnr.co.uk/2020/06/c19-yrs/> which partly informed the longitudinal monitoring approach proposed herein, and the British Society of Rehabilitation Medicine rehabilitation framework, <https://bjsm.bmj.com/content/54/16/949> which is to date one of the most comprehensive practice frameworks for the aftermath of COVID19. The ICF also describes the range of impairments associated with the Post Intensive Care Syndrome (PICS). Persons with COVID19 who experienced intensive care treatments are expected to have the most significant and persistent disability; hence, an approach using the ICF is highly reasonable. Based on the literature reviewed and current practice recommended within Alberta Health Services, PROMs that consider the spectrum of activity limitations, participation restrictions, bodily impairments, and environmental and personal barriers will provide clinicians with the essential information to support patients' quality of life and functioning, as well as their physical, mental, and social health.

Population

All adult individuals residing in Alberta with confirmed COVID19 at any time, will be included in longitudinal follow-up, according to the phased approach described above: (1) Phase 1 limited to Population 1 (hospitalized), and (2) Phase 2 inclusive of Population 2 (community-only).

Data Collection

We recommend a phased data collection process that relies on scheduled telephone survey administration using the call-back feature of the RAL. Licensed allied health professionals (occupational therapists and physical therapists) will call identified persons who experienced COVID19 according to the following methodological plan that includes timeline, population identification, measurement instruments, pilot data study, data collection, data analysis and ethical considerations.

Timeline

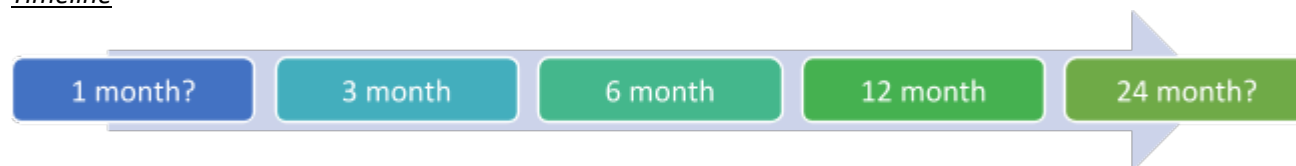


Figure 1. Timeline for Longitudinal Monitoring

We recommend discussions at the implementation committee level about the appropriateness of a 1-month follow-up. This discussion could be informed by the strategies recommended by other working

groups (e.g. screening WG1) and possibly a review of the data after the 50 persons with COVID19 are followed-up at 1 month.

Initial phone contact by the RAL clinicians will be 1 (or 3) months post-discharge (Phase 1, Population 1 (hospitalized)), or post- first positive COVID19 test in the community (Phase 2, Population 2 (community-only)). The relative timing of Phase 1 and 2 must be finalized by the implementation committee. We propose that persons who complete the baseline follow-up be informed of, and asked for willingness to be contacted for ongoing monitoring according to the timeline. The implementation committee should consider the results of the pilot survey study, the experience during the first year of follow-up, as well as the literature to date, to determine the appropriateness, and content, of a 24 month follow-up.

Population Identification

In Phase 1, AHS Analytics should support identification of eligible individuals using the Discharge Abstract Database to identify those who were discharged from hospital either following an admission for COVID19 or following a hospitalization involving hospital-acquired COVID19. In Phase 2, analysis of the Alberta Public Health (C-DOM) and/or Primary Care Registries should identify persons diagnosed with COVID19 but who were not hospitalized due to that disease. Access will be requested as part of a high priority quality improvement process.

Measurement Instruments

WG4 recommends longitudinal follow-up that addresses the following recognized potential post-COVID19 impairments, activity limitations, restriction in participation and environmental and personal barriers:

- Impairments: respiratory, cardiovascular, cerebrovascular, vascular, central/ peripheral nervous system (CNS/ PNS), liver, musculoskeletal, pain, emotional and cognitive.
- Activity limitations: mobility and activities of daily living.
- Participation Restrictions: employment, leisure and recreation.
- Personal and Environmental barriers: low social capital, supportive environment, social isolation, low access to care, food, and services Internet/ phone, and use of specialized testing/ imaging that pose impact on health. (i.e., respiratory and cardiovascular effects).

Based on the above literature review, current practices in Alberta and Canada, and consultation with experts on WG4, we propose the utilization of a validated quality of life tool used broadly across AHS (the EQ-5D-5L) alongside a novel, comprehensive longitudinal survey instrument: the Alberta Post-COVID Long-Term Monitoring Tool (APCOLM). The APCOLM currently comprises about 46 questions addressing aspects of disease burden on: a) body functions (impairments), b) activities (activity limitations); c) participation (participation restrictions); d) environment and personal (environmental barriers). Our recommendations consider the literature; previously-validated, or commonly-used, tools; feasibility; the need for comprehensiveness with a novel disease and uncertain sequelae; and, the need to incorporate survey items into primary-care accessible medical records such as NetCare.

Development

The longitudinal monitoring approach has been informed by (a) the World Health Organization Disability Assessment Schedule (WHODAS 2.0), developed by WHO to provide a standardized method for measuring health and disability [28]; (b) the *COVID19 Yorkshire Rehabilitation Screening (C19-YRS)* tool, which was developed by multi-disciplinary rehabilitation teams in the UK to assess post-COVID19

symptoms and guide rehabilitation interventions [27]; (c) the 5-level EQ-5D (EQ-5D-5L) [29]; and (d) the ICF [30]. We deemed the C19-YRS approach to be compatible with that of WHODAS 2.0 as both are commensurate with ICF; albeit the former not by design, but by subsequent mapping of its items to ICF constructs. In addition, clinicians on both Working Group 1 and 4 recommended the C19 YRS, based on strong face validity. Concerns, however, about comprehensiveness and inconsistencies in language and question framing deterred our direct recommendation of the C19-YRS. The EQ-5D-5L is already incorporated in the health care information system in Edmonton Zone and is endorsed by AHS, which bodes well for internal consistency across the organization.

The structure and wording of the APCOLM items is informed by the WHODAS 2.0 and the CY19-YRS. Specifically, for the initial assessment, each item has two parts, the first addressing current post-COVID19 state, and the second addressing their pre-COVID status (i.e. whether or not this area of function or symptomatology is better, same, or worse). A 0 to 10 numeric rating scale (NRS) is suggested to assess current functioning, with 0 denoting absence of disability, higher values denoting increasing level of disability, and a score of 10 the perceived maximum possible level of disability. The APCOLM aims to use consistent question framing and consistency in NRS use throughout (with minor exceptions). At initial contact, both parts (pre-COVID19 and current status) will be used; whilst subsequent follow-up will query current status only. The 0-to-10 NRS allows detection of subtle changes and a broader spectrum of responses for respondents to rate their experience.

Consideration of Limitations

By constructing a novel tool, we bypassed noted limitations of previous tools for the specific context of COVID19 survivors, while also increasing the survey comprehensiveness and specificity. For example, a limitation of the C19-YRS is that it has been developed for follow-up post-hospitalization only; it omits important aspects of common post-COVID19 impairments; not all relevant aspects of the ICF are addressed; and data on its reliability and validity are not yet available. Without psychometric testing, the C19-YRS does not present an advantage over the novel APCOLM. The C19-YRS assumes individuals can be accessed by phone, and does not address conditions of unsteady housing and homelessness. We draw attention to the fact that our proposed instrument (APCOLM) is a longitudinal screening tool, aiming to capture new or persistent problems and disabilities, which should be further followed up clinically. No diagnostic capacity of the proposed tool should be assumed, and it cannot replace validated diagnostic tools and expert clinical assessments.

Data Collection

We recommend initial contact for Phase 1 (Population 1 (hospitalized)) and 2 (Population 2 (community-only)) to involve call-backs by phone by RAL clinicians. The implementation committee may consider variety in subsequent follow-up to use by phone or self-administered electronic surveys via a secure link. This variation must consider individual preferences, consent and other specific criteria (i.e. access to internet and compatible electronic device, cognition, and communication impairment). This approach will require specific training on the aims and tools of the longitudinal monitoring post-COVID19. Intermittent auditing may be considered to ensure approach consistency and inter-rater reliability. Persons with COVID19 should be offered the opportunity to complete the survey by themselves, or by proxy.

Where the survey data is implemented must be discussed in detail by the implementation committee. There are two major options: the AHS instance of REDCap (distinct from patient health records, but offers opportunity for online self-administration) or using the RAL ECHO platform (able to link to Netcare and

patient health records, but no opportunity for online self-administration). The current RAL platform allows collection of, and connection with, the patient's Alberta Personal Health Number.

Pilot Testing for Psychometric Validity & Reliability of the APCOLM

We recommend that the implementation committee consider the survey design in more detail and the implementation of a small quality improvement pilot study of the APCOLM to examine its appropriateness, reliability and validity. We recommend a sample size of n=30 consenting individuals meeting Phase 1 criteria. The data collection process would be as recommended, through the RAL. We provide a potential methodology for consideration.

Validity and inter-rater reliability could be further tested with samples at each of the 3 data collection phases. Test-retest reliability would be tested through re-administering the tool after a two-day interval, for both phone interview and self-administration via an internet link to assess the relative and absolute reliability of the APCOLM through the estimation of intra-class correlation coefficient and standard error of measurement, respectively. Acceptability and clarity of the tool could be tested in the same pilot. This pilot could also examine the validity of EQ-5D-5L for the specific context of COVID19 survivors.

Face validity would be established through a group of experts representing relevant disciplines and patient representatives. There may be some utility in conducting focus groups with patient representation to discuss the survey content, framing and length. We recognize the tool is quite lengthy, and pilot testing will offer the rigor to determine what questions could be removed appropriately. The construct, discriminant and concurrent validities of the new instrument would be assessed during a pilot study using the different dimensions of EQ-5D-5L as gold standard. Predictive ability could be assessed with the results of the Pre-COVID19 assessments (in the APCOLM), exploring cut-off scores and their respective sensitivity and specificity to define real COVID19-related impairments, activity limitations, participation restrictions, as well as environmental and personal barriers.

Data Analysis

Analysis of the collected data can inform clinical as well as quality improvement pathways. The exact trigger points and level should be confirmed by the implementation committee. We offer some suggestions as starting points.

Clinically, a system for flagging COVID19-related new, persistent or clinical alarm symptoms, and notifying appropriate clinicians needs to be instituted, and an algorithm for subsequent decision-making to be established. For example, the online survey may trigger the RAL clinician to prepare a Primary Care Referral letter wherever the post-COVID19 respondent (a) indicates their current state is worse than pre-COVID, or (b) their rating on the 0-10 NRS scale is less than 6, or (c) they indicate yes or a low response (less than 4) to a high-risk question (e.g. homelessness, suicidal thoughts). This screening strategy is planned to be highly sensitive to detect COVID19-related functioning problems even if sacrificing specificity (i.e. increase chances to flag ALL true positives even at the cost of including some true negatives). These triggers are starting points and will require requiring further analysis and discussion after the pilot data has been obtained.

Quality-improvement-wise, the Physician Learning Program lead Doug Woodhouse has offered to analyze the data into meaningful clinical information and to help engage clinicians in interpreting and using this longitudinal data for quality-improvement purposes and patient care activities (e.g. audit and feedback). We recommend the implementation committee to explore this leveraging opportunity. We

suggest the collected data be analyzed using descriptive and inferential statistics. There may be utility to pursuing longitudinal predictive models to identify populations at risk for increased severity of post-COVID19-related impairments and impact on well-being and quality of life. For Phase 1 (Population 1 (hospitalized), data from hospitalization will be linked to survey data to support predictive modelling. Free text qualitative comments will be captured and analyzed thematically.

We recommend the implementation committee consider how data will be shared and reported. For continuity and accountability purposes, we propose the survey could be incorporated into either a Tableau dashboard (for those with AHS access) and posted to Netcare (for non-AHS providers). We anticipate that access to individual responses on the survey will be available through Netcare for primary care physician follow-up.

Ethical Considerations

We propose that longitudinal monitoring, including the pilot validation, be initiated as a quality-improvement process as soon as possible so that the most affected groups will benefit. The implementation committee should discuss whether broader learnings and dissemination are desired. If so, then a research ethics board review application could be submitted concomitantly, asking for waiver of consent based on the nature of data collection. Participants will be informed that this is a practice improvement process aiming to improve the care and well-being of individuals affected by COVID19, and that results will be reported to AHS, and possibly shared at an aggregate-level with the scientific community (e.g. journal and conference papers). Confidentiality of participants, families and healthcare settings will be assured. Any quotes will be anonymized. Patients should be able to opt-out of using their information for research and dissemination purposes, without impacting the ability to collect information for clinical and quality-improvement purposes.