

Nephrology Program

Regional Guide – Clinical Pathways



April 16, 2020

Background

This document is the result of the joint effort of various reference units in renal care and the satellite units (hemodialysis) within Vitalité Health Network. It is inspired by the risk mitigation plan developed specifically for the program, as well as all the complementary documents from the other teams within the Network.

We would like to thank all the professionals working within the team, including the patients and their families who, through their leadership and concern for everyone's collective well-being, contribute directly or indirectly to the implementation and respect of the best practices outlined in this guide, as well as the updates that may result during this pandemic period.

We would like to highlight the contribution of our partners, such as Dr. Louise Thibault, Dr. Luc Cormier and Dr. Rémi Leblanc, in completing this regional guide in nephrology clinical pathways.

The content that follows is generic and covers regional operating activities in nephrology for all the Network's zones, as well as the contingencies required during this COVID-19 pandemic. ***Since the current health situation is changing daily, it is likely that the information contained in this guide will be adapted and/or updated due to the changing nature of this issue.*** We encourage you to keep abreast of this information as it becomes available.

The safety of hospital staff and patients is always the priority.

Introduction

The Vitalité Health Network Nephrology Program includes clinical care activities both in hospital and non-hospital settings in the four zones of its territory. The breakdown is as follows:

	Zone 1B	Zone 4	Zone 5	Zone 6
<i>Inpatient unit</i>	√ (20 beds)			
<i>Hemodialysis in centres</i>	√	√		√
<i>Semi-independent hemodialysis</i>	√			
<i>Hemodialysis at home</i>	√	√		
<i>Intensive care hemodialysis</i>	√ + Moncton City Hospital	√		√ (Bathurst)
<i>Hemodialysis in satellite centres</i>	√ (Miramichi)		√ (Dalhousie)	√ (Tracadie)
<i>Specialized renal care clinics</i>	√	√		√ (Bathurst)

As a result of the increase in risk level and the announcements made regarding the health situation on March 12, 2020, a renal care risk mitigation plan was presented and approved on March 16, 2020 by the nursing and medical teams.

A work session including these same representatives was held on March 17, 2020 with Dr. Louise Thibault, Microbiologist and Infectious Disease Specialist, to identify certain clinical guidelines for infection prevention and control (IPAC).

With the objective to maintaining a healthy workplace during this quickly changing period, and responding to staff concerns, information sessions with Dr. Louise Thibeault were given in person, as well as by videoconference for the staff and interdisciplinary team.

The definition of a confirmed and/or suspected case for nephrology is the same as that provided by the New Brunswick Public Health Office.

Clinical Pathways

1.0- Hemodialysis

Hemodialysis patients (in centres and/or satellites) come from the following places:

- Home
- Nursing homes
- Hospitals (except for satellite units)
- Out-of-province (Quebec and Nova Scotia) patients already known to the program.

Patients known to the program who require hemodialysis will continue to receive treatment by the nephrology team (i.e., complications of underlying comorbidities).

1.1- Screening and result

A COVID-19 **pre-triage** process is performed at the main entrance of each facility and satellite units including the prevailing routine questions, as updates occur (i.e., fever, chills, new or worsening coughs). A **second** COVID-19 **triage** on the unit is integrated into the usual patient assessment, including a mandatory temperature check. For more information, please consult the following tool, and complete it as indicated in the directives: [COVID-19 Screening Tool - General Referral Form \(RA-193E\)](#). You must also complete form RC-204E. Here is the link: [Data Collection and Testing Form RC-204E](#)

When a patient is **hospitalized**, the team must proceed with a COVID-19 clinical assessment *before transporting* the patient to the hemodialysis unit. Consult the following tool (RC-196B): [COVID 19 - Screening Tool - Admitted Patients](#). If symptoms are present, the physician must clinically substantiate these before transferring the patient to hemodialysis with IPAC measures, if applicable. When a **confirmed or presumptive COVID-19** patient is hospitalized, Personal Protective Equipment (PPE) is worn by both care staff and patient for transportation of the patient directly into isolation in the hemodialysis unit.

In the event of a suspected case of COVID-19 in the walk-in setting (see the COVID-19 Screening tool in effect, general referral form), contact will be made with the physician to substantiate the clinical presentation. Depending on the result, COVID-19 screening may be prescribed, and performed directly in the unit in the hospital setting either by the nurse or physician. During screening, IPAC measures apply.

In the non-hospital units (Dalhousie and Miramichi), a prescription will be sent to the satellite unit by the physician. Staff is responsible for:

- ✦ Communicating with the local centre to make an appointment the same day.
- ✦ Faxing the prescription to the local clinic.
Restigouche (Dalhousie): 684-7789
Miramichi: 462-2040
- ✦ Informing the patient to report to the local COVID-19 screening clinic.
- ✦ Giving a copy of the prescription to the patient in case it is lost by the COVID-19 clinic.

While awaiting the screening result, IPAC measures will be used:

- ✦ Droplet/contact Isolation
- ✦ PPE
- ✦ Essential material only in the treatment area

1.2- Activities

Confirmed or suspected COVID-19 patient

- ✦ Droplet/contact isolation
- ✦ PPE (gown, gloves and surgical mask)
- ✦ Verification of outfit before entering the room
- ✦ Essential material only
- ✦ O2 saturation at all times

Non-COVID-19 patient

- ✦ Usual treatment

Out-of-province patients known to the program (Quebec and Nova Scotia)

- ✦ Plan usual treatment in preventive isolation/segregation.

In the affirmative of a COVID-19 case, IPAC measures remain in place until the clinical presentation is resolved as confirmed by the infection prevention and control staff or the physician. [Regional guide: Discontinuation criteria for COVID-19 patient isolation measures](#)

In the event of several confirmed and/or presumptive COVID-19 patients, the capacity to make cohorts will be assessed on a case-by-case basis.

1.3- Departure

In anticipation of departure from the hemodialysis unit, i.e., to go home, the following instructions are issued for the patient:

1.3.1- Returning home/to a nursing home

Confirmed or presumptive COVID-19

- ✦ PPE (yellow mask and gloves on departure from the unit)
- ✦ The patient must return for their next appointment with PPE.
- ✦ Self-isolation at home
- ✦ Reminder about handwashing at home (i.e., remove gloves)
- ✦ Accompaniment to the door (validation of a one-way path to the exit door)
- ✦ Full disinfection of the station including the device before the equipment is taken out of the isolation area

Non-COVID-19

- ✦ Handwashing
- ✦ Reminder to contact the unit if symptoms appear between two treatments

Specific directives may be issued by the Public Health team about managing people staying in nursing homes. These will be communicated as applicable.

1.3.2- Returning to the nursing unit

Confirmed or presumptive COVID-19

- ✦ PPE (gowns, gloves and surgical mask) for everyone. Patient may have a yellow mask to facilitate installation.
- ✦ Handwashing
- ✦ Use elevator dedicated for this purpose.
- ✦ Care transition report.

Non-COVID-19

- ✦ Handwashing.
- ✦ Return to the unit as planned.
- ✦ Care transition report.

2.0- Hemodialysis in intensive care

Only the Moncton (Z1B), Edmundston (Z4) and Bathurst (Z6) units will continue to respond to needs for outsourced treatments in the Intensive Care Unit.

2.1- Clinical and technical organization

2.1.1- Moncton (Z1B) – Dr. Georges-L.-Dumont University Hospital Centre (DGLDUHC)

- ✦ Rooms 9 and 10 (medical and surgical intensive care) will not be available for hemodialysis treatments. These rooms, especially room 10, will instead be used for intubation and/or other aerosol-generating activities (i.e., bronchoscopy).
- ✦ Rooms 6 and 7 (coronary intensive care, presence of integrated access to the main unit reverse osmosis system) are not for intubation purposes and/or aerosol-generating activities.
- ✦ Use of portable reverse osmosis systems WRO-300H (N10) will be used to medical surgical intensive care and on an individual basis to the coronary care unit.

2.1.2- Moncton City Hospital (intensive care only)

- ✦ Outsourced treatments will be performed as per the usual practice, such as outsourcing of staff, on an individual basis, with equipment (2 WRO-300H + two hemodialysis machines) and specialized supplies, already on reserve in this facility.
- ✦ As soon as the patient is stable and can leave intensive care unit, where renal care is still necessary, a request for transfer to DGLDUHC will be made by the physician, thus limiting transportation from one facility to another by ambulance.
- ✦ Staff outsourced for this type of treatment must follow the procedures issued by Horizon Health Network for IPAC (i.e., wearing N95 masks in intensive care). Every member of the team is responsible for knowing their type of mask, a complete upgrade of which was completed on April 17, 2020.

2.1.4- Edmundston (Z4)

- ✦ Rooms 1 and 2 of the Intensive Care Unit will be used for intubation and/or other aerosol-generating activities (i.e., bronchoscopy).
- ✦ Use of portable reverse osmosis systems WRO-300H (N2) will be used for this clientele.

2.1.5- Bathurst (Z6)

- ✦ All rooms (N10) of the Intensive Care Unit are already equipped with access to the reverse osmosis system integrated into the main unit.
- ✦ In parallel, all step-down unit rooms (N5) are already equipped with access to the reverse osmosis system integrated into the main unit.
- ✦ In the event that there is a need to add temporary treatment stations, four portable reverse osmosis systems are available.

2.2- Activities

Confirmed or suspected COVID-19 patient on mechanical ventilation

- ✦ Droplet/contact isolation
- ✦ PPE (gowns, visors, gloves and **N95** mask (due to mechanical ventilation)).
- ✦ Verification of outfit before entering the room
- ✦ Essential material only
- ✦ Disinfection of devices before being taken out of the room

Confirmed or suspected COVID-19 patient without mechanical ventilation

- ✦ Droplet/contact isolation
- ✦ PPE (gowns, gloves, surgical mask (no mechanical ventilation)).
- ✦ Verification of outfit before entering the room
- ✦ Essential material only
- ✦ Disinfection of devices before being taken out of the room

Non-COVID-19 patient

- ✦ Treatment as per usual.

2.3- Cardiopulmonary resuscitation (CODE BLUE)

It is customary practice in nephrology, especially in hemodialysis, for the cardiopulmonary resuscitation status, including the level of intensity of care, to be discussed openly with the patient and the family at the appropriate time. The information is found on file as stipulated by the policies to this effect.

Currently, cardiopulmonary resuscitation practices are adapted based on the confirmed/presumptive COVID-19 or non-COVID-19 status both in hospital and non-hospital settings.

Specifically in hospital settings, the following document indicates the procedure in this regard: [Guide to managing cardiac arrests in non-critical units or outside the COVID-19 Unit](#)

In addition to the information contained in this guide, the following specific points are recommended:

In the hemodialysis units (Moncton, Edmundston, Bathurst, Tracadie) - **confirmed/presumptive COVID-19:**

- ✦ Bring the resuscitation cart (Moncton and Bathurst only. The most common N95 masks are included directly in the carts).
- ✦ PPE before entering the room
- ✦ Emergency retransfusion.
- ✦ Keep vascular access open.
- ✦ Initiate cardiac massage when a staff member is properly equipped with PPE including an N95 mask, while waiting for the code team.

In non-hospital settings (satellite hemodialysis unit in Dalhousie or in Miramichi), the following guide provides instructions in this regard. [Regional Guide - Treating Cardiac Arrest in a Non-Hospital Facility](#). The principles of emergency retransfusion, as well as keeping vascular access open apply, allowing treatment by first responders.

2.4- Isolation rooms

Every hemodialysis unit within the program has access to one or more isolation rooms of variable geometry both in number and functionality. These are already used at several times for clients with multi-drug-resistant bacteria, C-difficile, Hepatitis B or HIV.

In the event of an increased presence of confirmed and/or presumptive COVID-19 cases, the assignment of isolation rooms will be adapted on a case-by-case basis, in co-operation with the IPAC team, with a risk management view in relation to the virulence of the clinical presentation.

See algorithm – Directory – Isolation rooms and hot zones – COVID-19.

2.5- Vascular access

To minimize non-essential appointments in the Network's facilities, the following criteria have been established to facilitate patient flow in interventional radiology and/or surgery.

Arteriovenous fistula/graft (AVF/AVG) angioplasty that MUST be done:

- ✦ No other access and AVF/AVG showing the following signs of thrombosis:
 - Difficulty accessing the fistula or graft
 - Less than optimal blood flow
 - High venous pressure that is unusual for the patient
 - KT/V of 1.2 or less
 - Hyperkalemia that is unusual for the patient

- ✦ AVF/AVG already used, but the hemodialysis (HD) catheter is still in place and showing signs of thrombosis (as described above)
 - The purpose of this is to prevent the thrombosis of an AVF in the course of maturation or of an already functional AVG

Non-urgent AVF/AVG angioplasty or fistulography:

- ✦ New creation of AVF that is not maturing
- ✦ An AVF/AVG that is not currently used

In these situations, the HD catheter will be used until further notice.

HD catheter change:

- ✦ An HD catheter that is non-permeable and unable to do HD treatment
- ✦ A fully visible Dacron cuff:
 - Slightly visible Dacron cuff must be assessed at each visit.
- ✦ Blood flow less than 250 mL/min:
 - Assess clinical values (i.e., KT/V, electrolytes) and the clinical condition of the patient.
- ✦ A patient who must start hemodialysis and who has no vascular access. In these situations, the decision to intervene must be made by the nephrologist/internist based on the clinical signs of the patient.

3.0-Home therapies

At-home therapies, i.e., hemodialysis at home and/or peritoneal dialysis, are performed under the supervision of the Moncton, Edmundston and Bathurst teams.

Every patient will continue to receive their treatments in the comfort of their home unless a clinical presentation requires treatment at the clinic or admission to hospital.

- ✦ For at-home hemodialysis (Home HD), clinical monitoring will continue to be performed by:
 - ✦ Telephone follow-ups.
 - ✦ Blood collection at home with specimen drop-off at the local laboratory for analysis purposes.

- ✦ Annual follow-ups normally scheduled in April will be postponed unless otherwise indicated.
- ✦ Administration of medications (i.e., iron IV) will be postponed insofar as possible.
- ✦ Visits to the centre will be as needed only, and approved by the physician.
- ✦ Clinical engineering support will be provided by:
 - Preventive maintenance performed in advance
 - Telephone follow-up to try to manage the situation
 - Emergency follow-up at home may be performed as a last resort. Assessment of COVID-19 screening criteria will be performed in advance, shared with the physician and the decision to send out the technician will be made based on the situation.
- ✦ Supplies will continue to be delivered to the patient's home.

For peritoneal dialysis (PD), clinical monitoring will continue to be performed by:

- ✦ Telephone follow-ups.
- ✦ Quarterly and/or six-month follow-ups (i.e. line changes) will be rescheduled to another time.
- ✦ PD training will continue to be done, to optimize patient autonomy, reduce the need for visits to the centre for 3 times/week (hemodialysis) and practise self-isolation.
- ✦ Supplies will continue to be delivered by the authorized supplier, including the presence of distancing measures.

In the event of the need to visit the centre and/or admission of a patient under this form of renal replacement modality, advance screening practices and IPAC measures will be implemented.

4.0- Specialized nephrology clinics

Specialized nephrology clinics include peritoneal dialysis, the transplant clinic and the renal protection clinic.

The clientele comes from home, nursing homes or out-of-province (Quebec and Nova Scotia) patients known to the program.

The centre's clinical activities have been reduced where a telephone follow-up and consultation process has been implemented. Routine blood tests will be adjusted based on clinical urgency in order to reduce community contact.

In the event there is a need to visit the centre, the following activities must take place:

- ✦ Pre-triage by telephone – 24 hours before the visit
- ✦ Pre-triage at the hospital's main entrance
- ✦ Triage in-person at the unit
- ✦ Reference tool: [COVID-19 Screening Tool - General Referral Form \(RA-193E\)](#)

Clinical activities will take into account the triage assessment before confirming an appointment. In the case of a negative result with the screening tool, the patient will follow the normal course for a clinic visit.

In contrast, if the patient is a confirmed or presumptive COVID-19 case, contact must first be made with the IPAC team, to determine the safe course of action for the patient for their appointment in an isolation room (droplets/contact), PPE, surgical mask for staff and patient.

5.0- Nurse staffing

Hemodialysis staffing scenarios are currently being refined, to assess the impact of a staff reduction of 10%, 30% and 50% in each zone.

Initially, replacement activities when necessary are being done on a daily basis, because infection rates are relatively low at this time.

In the event that an increase of community contamination affects specialized staff (RN and LPNs) in hemodialysis, the following phases will serve as a guide. Each situation will be dealt with on an individual basis.

	Phase 1 10% affected	Phase 2 30% affected	Phase 3 50% affected
<i>Reorganization of treatment schedule</i>	√	√	√
<i>Replacement of staff</i>	√	√	√
<i>Use of former HD nurses</i>		√	√
<i>Use of resource nurses</i>		√	√
<i>Condensed orientation (former HD nurses)</i>		√	√
<i>Reduction of Tx time</i>			√
<i>Reduction of # of treatments/week</i>			√
<i>Offer of Tx in another centre</i>			√

6.0- Interdisciplinary team

Interdisciplinary team members will recommend telephone follow-ups instead of in-person for their specific clientele. Visits to satellite settings will be suspended temporarily.

Physical distancing principles have also been implemented (i.e., procurement of medications from outsourced pharmacies).

7.0- Resumption of operating activities

The resumption of operating activities will take place in accordance with the Network’s directives to this effect.

Hemodialysis activities will continue their usual course. Specialized renal care clinical activities will resume their activities based on a prioritization of records.

References

Regional Guide to Adult Critical and Triage – SARS-CoV-2 (COVID-19), v. April 7, 2020.

Regional Guide - Treating Cardiac Arrest in a Vitalité Health Network Non-Hospital Facility During the COVID-19 Pandemic, v. April 15, 2020.

Guide to managing cardiac arrests in non-critical units or outside the COVID-19 unit, v. April 14, 2020.

Regional Guide – Code Blue at COVID-19 Units, v. April 9, 2020.

Regional Guide: Admission process for patients requiring hospitalization while waiting for a COVID-19 test result, v. April 8, 2020.

Regional guide: Discontinuation criteria for COVID-19 patient isolation measures, v. April 2, 2020.

Vitalité Health Network. Do-not-resuscitate GEN.3.80.31 (2018-09-04)

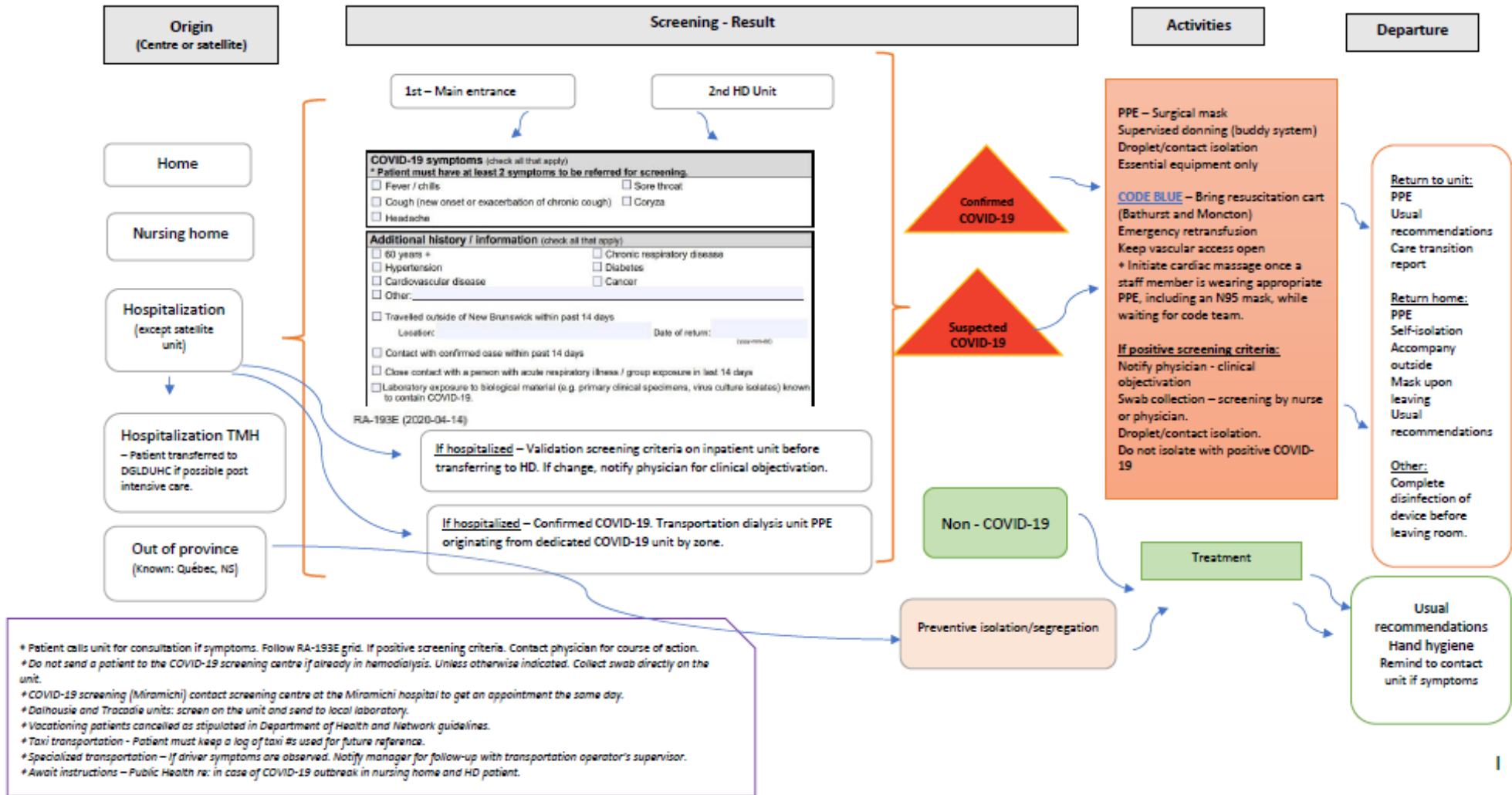
Vitalité Health Network. Intensity of care. GEN.3.80.32. (2015-11-26)

Algorithms

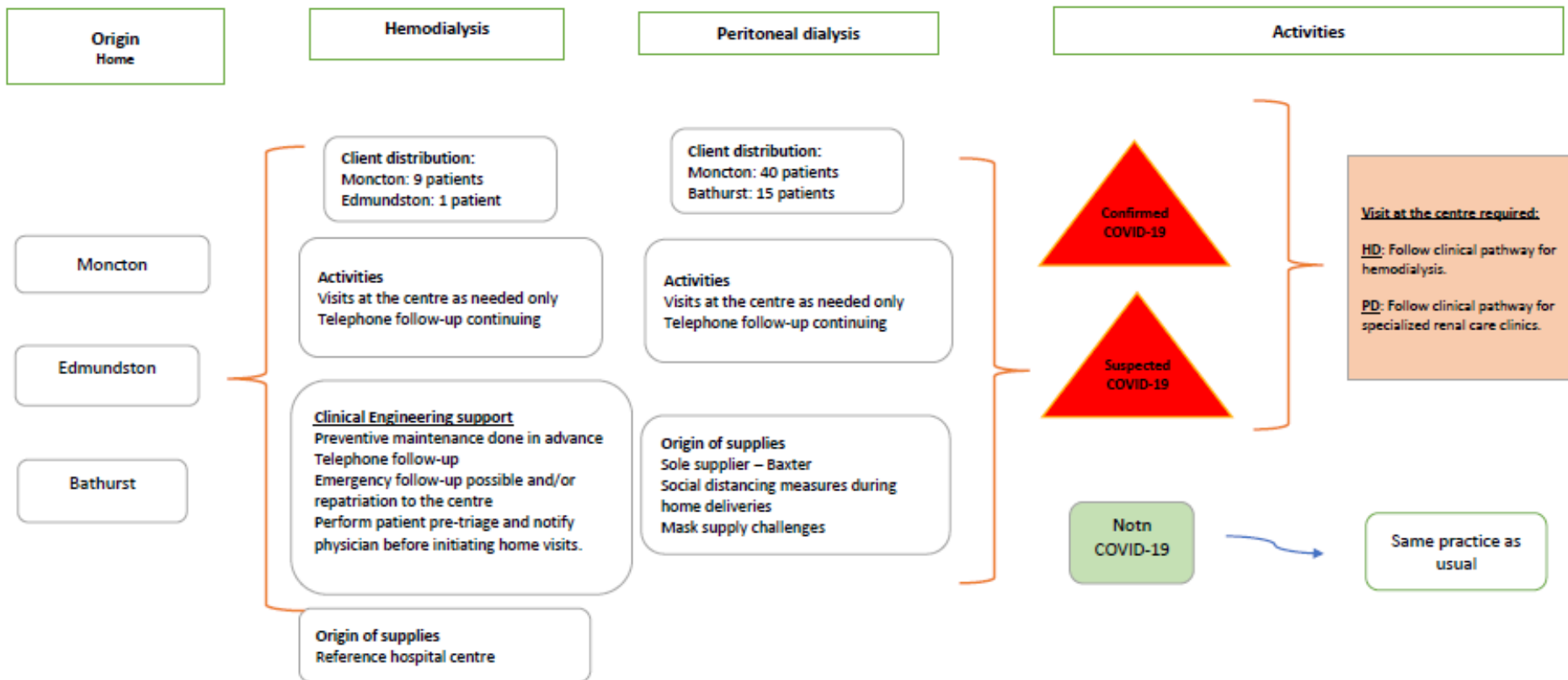
Patient Pathways



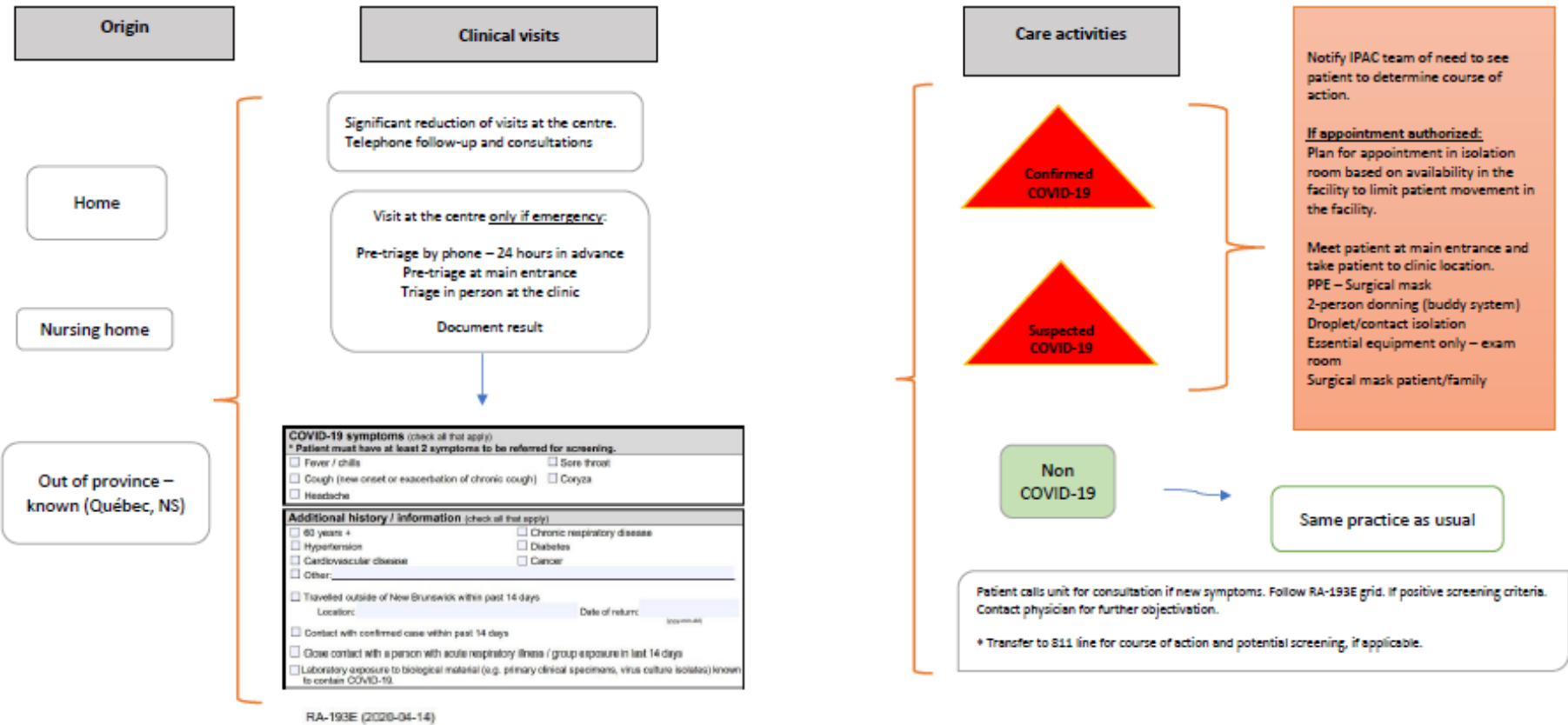
Nephrology Program – Clinical pathway Hemodialysis (HD) – COVID-19



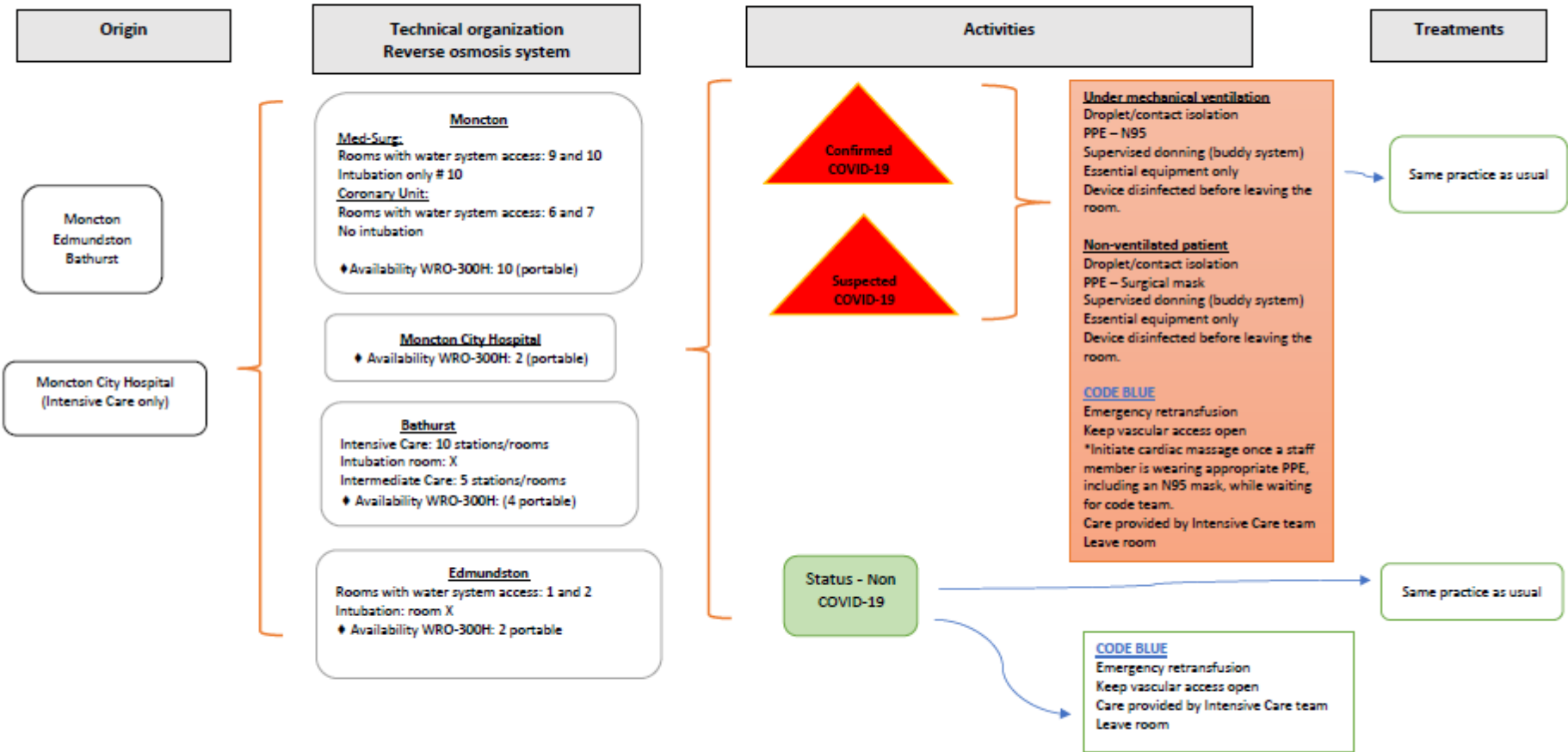
Nephrology Program – Clinical pathway
Home treatment
COVID-19



Nephrology Program – Clinical pathway
Specialized nephrology clinics (peritoneal dialysis, transplant, renal protection)
COVID-19



Nephrology Program – Clinical pathway Hemodialysis (HD) – Intensive Care – COVID-19



Nephrology Program – Clinical pathway Directory – Isolation rooms and hot zones COVID-19

