

## COVID-19 (SARS-CoV-2): Interim Recommendations on Preventive Workplace Measures for Pregnant and Nursing Workers



SAT COVID-19 Working Group

March 12, 2020  
Version 1.0

### Summary

Context for early case identification and containment	1
References	7
Documents consulted	8

### Context for early case identification and containment

Since December 31, 2019, the outbreak of acute respiratory infections and atypical pneumonia caused by the SARS-CoV-2 virus has been evolving rapidly.

On March 11, 2020, the World Health Organization (WHO) called the outbreak a pandemic.

Epidemiological data on the global situation is available on the WHO website: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

Canadian and Québec data are available at the following addresses:

- <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>
- <https://www.msss.gouv.qc.ca/professionnels/maladies-infectieuses/coronavirus-2019-ncov/> (in French)

The available information demonstrates the rapid evolution of the number of cases. At the time of drafting of these recommendations, there was no documented community transmission in Québec. However, there is already a risk of exposure to the virus since imported cases have been identified. It is therefore necessary to provide for appropriate measures

Current scientific and epidemiological evidence supports the fact that transmission of SARS-CoV-2 appears to occur predominantly via droplets during prolonged close contact. However, opportunistic airborne transmission (through fine aerosolized droplets of respiratory secretions) is also reported under specific conditions such as in enclosed spaces and during activities that may increase aerosolization.

This possibility of airborne transmission must therefore be taken into account since it can have a significant impact in the healthcare setting.

The Ministère de la Santé et des Services sociaux (MSSS) has mandated the Institut national de santé publique du Québec (INSPQ) to establish a working group to develop interim recommendations for workplaces and in the context of the application of preventive withdrawal and reassignment of pregnant or breastfeeding workers.

The working group brings together physicians and professionals at the INSPQ with varying backgrounds in public health, occupational health and infectious diseases, two medical communities of practice that are part of the Québec Health Network in Occupational Health (Réseau de santé publique en santé au travail du Québec, RSPSATQ), namely the “Communauté médicale de pratique d’harmonisation Pour une maternité sans danger (CMPH-PMSD)” and the “Communauté médicale de pratique en santé au travail du Québec (CMPSATQ)”, as well as the Québec Minister of Health and Social Services (MSSS).

These recommendations are based on the reference framework for public health risk management in Québec (INSPQ, 2016).

They are intended to support designated physicians and the RSPSATQ’s regional and local occupational health teams in making decisions regarding requests for preventive reassignment of pregnant or breastfeeding workers under the “Pour une maternité sans danger program” (AOHS, CQLR c S-2.1, sections 40 and 46).



The information presented in this document will be updated as scientific knowledge on SARS-CoV-2 and the epidemiology of COVID-19 evolve and as new knowledge on its impacts on pregnancy and on unborn and breastfed children arise.



This document should be consulted along with the other documents produced by the Institut national de santé publique du Québec on COVID-19.

The latest versions of these documents are available on the INSPQ website.

## 1. Epidemiological and clinical characteristics

The reader may refer to the documents produced by the INSPQ: <https://www.inspq.qc.ca/covid-19> (in French).

COVID-19: Caractéristiques épidémiologiques et cliniques du COVID-19

[https://www.inspq.qc.ca/sites/default/files/documents/maladies-infectieuses/2020-02-28\\_covid-19\\_fiche\\_tableau\\_clinique\\_inspq.pdf](https://www.inspq.qc.ca/sites/default/files/documents/maladies-infectieuses/2020-02-28_covid-19_fiche_tableau_clinique_inspq.pdf)

## 2. Adverse pregnancy outcomes

There is not much literature currently available on the effects of SARS-CoV-2 infection in pregnant women with respect to adverse pregnancy outcomes.

The currently implicated strain of coronavirus (SARS-CoV-2) is the most recent of seven coronavirus strains that cause disease in humans. Of the remaining six strains, four cause only minor respiratory symptoms, and two have been associated with serious and sometimes fatal illnesses: severe acute respiratory syndrome (SARS) in 2003 and Middle East respiratory syndrome (MERS-CoV) since 2012.<sup>1</sup>

There is, however, proximity between the genome of the current SARS-CoV-2 and SARS-CoV-1 (SARS agent).

For SARS-CoV-1, a study published in February 2020 reported on 12 pregnant women infected during the 2002–2003 epidemic (seven women in the first trimester of pregnancy and five women in the second and third trimesters). In the first trimester, four of the seven women experienced spontaneous abortions (SA), and in the second and third trimesters, two of the five women had intrauterine growth retardation and four of the five women delivered prematurely.<sup>2 3 4</sup>

The CDC<sup>5</sup> also mentions SA cases observed with SARS-CoV-1 and MERS-CoV.<sup>6</sup>

In a study of nine pregnant women with COVID-19 (between the 36<sup>th</sup> and 39<sup>th</sup> week of pregnancy), there were no documented intrauterine infections.<sup>7</sup> There was also no intrauterine transmission with SARS-CoV-1.

A retrospective study of 10 newborns (including two twins) to mothers who had developed confirmed SARS-CoV-2 pneumonia during pregnancy was conducted between January 20 and February 5, 2020. The pregnant women had symptoms of fever and cough in four of the nine cases before delivery, in two cases at the time of delivery and in three cases after delivery. It should be noted that one pregnant woman also had diarrhea.

Four children were full term and six children were born prematurely; two infants were born with low birth weight (LBW); a number of children were born with respiratory problems (6), fever (2), thrombocytopenia with abnormal liver function (2), tachycardia (1), vomiting (1) and pneumothorax (1). At the time of article publication, on February 10, 2020, five children had been discharged from the hospital, one child had died and four children were still in the

<sup>1</sup> Coronavirus COVID-19 – Professionnels de la santé – MSSS, February 23, 2020.

<sup>2</sup> Favre, Guillaume et al., *2019-nCoV epidemic: what about pregnancies?* The Lancet, February 6, 2020.

<sup>3</sup> Rasmussen, S. et al., *Coronavirus Disease 2019 (COVID-19) and Pregnancy: What obstetricians need to know*, American Journal of Obstetrics & Gynecology, February 18, 2020.

<sup>4</sup> Qiao, J. *What are the risks of COVID-19 infection in pregnant women*, The Lancet, February 12, 2020.

<sup>5</sup> CDC: *Centers for Disease Control and Prevention: the primary U.S. federal agency for public health protection.*

<sup>6</sup> CDC, *Coronavirus Disease 2019 and pregnancy QR*, February 21, 2020.

<sup>7</sup> Chen, Huijun et al., *Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records*, The Lancet, February 12, 2020.

hospital in stable condition. Causal association is unlikely with LBW but possible for preterm delivery (PTD) and newborn respiratory distress.

The pharyngeal swabs of nine out of the ten children, one to nine days after birth, were negative. The authors concluded that perinatal COVID-19 infection may cause problems in the newborn, but that vertical transmission remained to be confirmed.<sup>8</sup>

A case study<sup>9</sup> of a pregnant woman who tested positive for SARS-CoV-2 reported that she was symptomatic (fever), travelled to a risk area and delivered a healthy newborn baby prematurely at 30 weeks' gestation. The samples taken from the child and the caregivers remained negative.

A final study reported on 13 pregnant women (maternal age between 22 and 36 years) hospitalized for fever accompanied by fatigue, three of whom had respiratory problems. The gestational age ranged from 28 to 36 weeks.

The clinical presentation of COVID-19 in these pregnant patients ranged from asymptomatic to serious complications including pneumonia requiring intensive care. Adverse pregnancy outcomes were reported: premature rupture of membranes, stillbirth, newborn respiratory distress. However, no serological evidence of vertical transmission of SARS-CoV-2 was documented.<sup>10</sup>

Knowledge of the diseases associated with the other two coronaviruses is currently the main source of information on adverse pregnancy outcomes and reports of serious complications: SA, PTD, complications in pregnant women and newborns (disseminated intravascular coagulation, renal failure, secondary bacterial pneumonia, sepsis (SARS), prematurity, intrauterine growth retardation (IUGR) and stillbirth (MERS)).<sup>11 12</sup>

In addition, vertical transmission is still a subject of study.

### 3. Risk assessment and prevention and control measures in care settings and the community

The reader may refer to the documents produced by the INSPQ:

<https://www.inspq.qc.ca/covid-19> (in French).

CINQ : 2019-nCoV : Recommandations intérimaires sur les mesures de prévention et de contrôle des infections pour les milieux de soins aigus.

Comité permanent MRSI : COVID-19 (SARS-CoV-19) : Recommandations intérimaires sur les mesures de prévention et contrôle des infections à appliquer en présence d'une personne sous investigation, d'un cas probable ou confirmé ou d'un contact étroit dans la communauté.

CINQ : Évaluation et gestion du risque : Avis du CINQ : Gestion du risque pour la protection respiratoire en milieux de soins aigus.

<sup>8</sup> Zhu, H. et al., Clinical analysis of 10 neonates born to mothers with 2019-n-CoV pneumonia, *Translational Pediatrics*, February 6, 2020.

<sup>9</sup> Wang, X. et al., A case of 2019 novel coronavirus in a pregnant woman with preterm delivery, Department of Hepatology and Gastroenterology, Soochow University, China, February 2020.

<sup>10</sup> Liu Y. et al., Clinical manifestations and outcome of SARS-CoV-2 infection during pregnancy, *Journal of Infection*, February 27, 2020.

<sup>11</sup> Rasmussen, S. et al., Coronavirus disease 2019 (COVID-19) and pregnancy: What obstetricians need to know, *American Journal of Obstetrics & Gynecology*, February 18, 2020.

<sup>12</sup> Favre, G. et al., Guidelines for pregnant women with suspected SARS-CoV-2 infection, *The Lancet*, March 3, 2020.

#### 4. Recommendations for pregnant workers

In Québec, pregnant or nursing workers can take advantage of preventive reassignment under the “Pour une maternité sans danger program” provided for under the Act respecting occupational health and safety (AOHS)<sup>13</sup>.

The following recommendations are made in this legal context and are based on the following considerations:

**In the current context of early case identification, containment and lack of community transmission:**

Whereas:

During pregnancy, immunity is reduced<sup>14</sup> and physiological and immunological changes make pregnant women more vulnerable to respiratory infections, including COVID-19;<sup>15</sup>

SARS-CoV-1 and MERS-CoV are associated with adverse pregnancy outcomes, and SARS-CoV-2 is related to SARS-CoV-1 and MERS-CoV in its genome, raising concerns that it may also be the cause of adverse pregnancy outcomes;<sup>16</sup>

Currently available knowledge on COVID-19 and pregnancy is limited to infections acquired in late pregnancy and is insufficient to suggest the absence of adverse pregnancy outcomes;

There is uncertainty about the impact of infection with SARS-CoV-2 in the early months of pregnancy;

There is a relatively rapid deterioration in some more vulnerable patients with respiratory problems in the course of an infection with SARS-CoV-2;<sup>17</sup>

The current assessment of risk to the pregnant woman and the fetus is based on previous experience with SARS and MERS, the studies available since the beginning of the SARS-CoV-2 outbreak, and the risk assessments issued by various national and international authorities;

Preventing the infection from being transmitted to others by a person under investigation for COVID-19, or by a probable or confirmed case of COVID-19 requires the implementation of administrative measures (e.g. triage and pre-triage, reduction in the number of personnel assigned to patient care), group protective measures (e.g. respiratory etiquette, isolation of cases), and protective measures such as adherence to basic practices and additional precautions, as well as the wearing of recommended personal protective equipment depending on the mode of transmission of infection;

No specific vaccine or treatment is currently available.

**The precautionary principle**<sup>18</sup> must therefore guide the current recommendations.

<sup>13</sup> An Act respecting occupational health and safety CQLR c S-2.1, sections 40 and 46.

<sup>14</sup> Blackburn S., *Maternal, Fetal, & Neonatal Physiology*, Elsevier, 5<sup>th</sup> edition, 2017.

<sup>15</sup> CDC, *Coronavirus Disease 2019 and pregnancy QR*, February 21, 2020.

<sup>16</sup> SOGC, <https://www.sogc.org/en?> January 28, 2020.

<sup>17</sup> CDC, *Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 (COVID-19) in Inpatient Obstetric Healthcare Settings*, March 2020.

<sup>18</sup> La prudence se traduit par la précaution dans le cas des risques potentiels et par la prévention dans le cas des risques avérés (INSPQ, *Gestion des risques en santé publique au Québec : cadre de référence*, 2016).

## 5. Recommendations for pregnant workers in care settings including dedicated medical clinics

### In the current context of early case identification, containment and lack of community transmission:

We recommend that, for the duration of the pregnancy, workers be immediately reassigned in order to eliminate:

- Being in the same room (treatment room, etc.) with persons under investigation for COVID-19 or probable or confirmed cases of COVID-19;
- Having to perform care, sampling, medical examinations, paraclinical examinations and treatment of persons under investigation for COVID-19 or probable or confirmed cases of COVID-19;
- The transportation of persons under investigation for COVID-19 or probable or confirmed cases of COVID-19;
- Tasks related to the cleaning and disinfection of the environment, equipment and personal belongings that have been in contact with a person under investigation for COVID-19, or a probable or confirmed case of COVID-19;
- Handling the bodies of persons who were under investigation for COVID-19 or who were probable or confirmed cases of COVID-19;
- Contact with or care or treatment of persons under investigation for COVID-19 or probable or confirmed cases of COVID-19 in home or residential confinement;
- All tasks in sectors or establishments declared to be under isolation for COVID-19 by the authorities of those establishments.

## 6. Recommendations for pregnant workers in other workplaces

Assessment of the worker's situation will have to consider the epidemiological situation, scientific knowledge and recommendations issued by the national public health authorities at the time of the assessment

## 7. Recommendations for workers who are breastfeeding

Assessment in progress according to the evolution of the epidemiological situation and scientific knowledge.

## 8. Risk factor in the « *Système d'information en santé au travail* »

In an effort to harmonize the processing of requests for preventive reassignment of pregnant or nursing workers, the biological risk factor *SARS-CoV-2 COVID-19* was added to the drop-down menu of risk factors in the occupational health information system known as SISAT ("*Système d'information en santé au travail*"). This tool would also allow for the monitoring of claims where this risk factor has been identified by designated medical practitioners (DMPs) in the assessment of the position and work tasks of pregnant workers.

## References

Public Health Agency of Canada:

<https://www.canada.ca/en/public-health.html>

Blackburn, S., *Maternal, Fetal, & Neonatal Physiology*, 2017, Elsevier, 5th edition.

CDC, *Frequently Asked Questions and Answers: Coronavirus Disease 2019 (COVID-19) and Pregnancy*, February 21, 2020.

CDC COVID-19, *Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 (COVID-19) in Inpatient Obstetric Healthcare Settings*, March 2020.

Chen, H. et al., *Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records*, *The Lancet*, February 12, 2020.

Favre, G. et al., *2019-nCoV epidemic: what about pregnancies?* *The Lancet*, February 6, 2020.

Favre, G. et al., *Guidelines for pregnant women with suspected SARS-CoV-2 infection*, *The Lancet*, March 3, 2020.

Ministère de la Santé et des Services sociaux:

<https://www.msss.gouv.qc.ca/professionnels/>

World Health Organization:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

Rasmussen, S. et al., *Coronavirus disease 2019 (COVID-19) and pregnancy: What obstetricians need to know*, *AJOG*, February 18, 2020.

<https://doi.org/10.1016/j.ajog.2020.02.017>

Qiao, J. *What are the risks of COVID-19 infection in pregnant women?* *The Lancet*, February 12, 2020

Zhu, H. et al., *Clinical analysis of 10 neonates born to mother with 2019-nCoV pneumonia*, *Translational Pediatrics*, 2020, 9 (1): 51-60

<http://dx.doi.org/10.21037/tp.2020.02.06>

Wang, X. et al., *A case of 2019 Novel Coronavirus in a pregnant woman with preterm delivery*, Department of hepatology et gastroenterology, Soochow University, February 2020.

Liu, Y. *Clinical manifestations and outcome of SARS-CoV-2 infection during pregnancy*, *Journal of infection*, February 27 2020.

Liang, H., Acharya G., *Novel coronavirus disease (COVID-19) in pregnancy: What clinical recommendations to follow?* *Acta Obstet Gynecol Scand*, 2020; 00: 1-4.

SOGC: <https://www.sogc.org/en?> January 28, 2020.



## Documents consulted

Boldog, P. et al., *Risk assessment of novel coronavirus COVID-19 outbreaks outside China*, Journal of Clinical Medicine, February 19, 2020.

Centre intégré universitaire de santé et de services sociaux de la Capitale-Nationale, *Coronavirus, mesures de prévention*, February 2020.

Comité médical provincial d'harmonisation Pour une maternité sans danger, *Avis en matière de retrait préventif de la travailleuse enceinte ou qui allaite : Virus de la grippe pandémique A(H1N1)*, November 13, 2009.

De Chang et al., *Protecting health-care workers from subclinical coronavirus infection*, The Lancet, February 13 2020.

Deng, S., Peng, HJ, *Characteristics of and public health responses to the coronavirus disease 2019 outbreak in China*, Journal of Clinical Medicine, February 20, 2020.

Gostic, K. et al., *Estimated effectiveness of symptom and risk screening to prevent the spread of COVID-19*, University of Chicago, 2020.

Heymann, D., Shindo, N., *COVID-19: what is next for public health?* The Lancet, February 12, 2020.

Institut national de santé publique du Québec, *Avis : Retrait préventif de la travailleuse enceinte en lien avec la grippe pandémique A(H1N1)*, 2009.

Institut national de santé publique du Québec, *COVID-19 (SARS-CoV-2) : Recommandations intérimaires sur les mesures de prévention et contrôle des infections à appliquer en présence d'une personne sous investigation, d'un cas probable ou confirmé ou d'un contact dans la communauté*, Comité permanent MRSI, version 1.0, February 26, 2020.

Institut national de santé publique du Québec, *COVID-19 : Avis du CINQ : gestion du risque pour la protection respiratoire en milieux de soins aigus*, version 1.0, February 25, 2020.

Institut national de santé publique du Québec, *COVID-19 : Recommandations intérimaires sur les mesures de prévention et contrôle des infections pour les milieux de soins aigus*, CINQ, version 3.0, February 25, 2020.

Institut national de santé publique du Québec, *La gestion des risques en santé publique au Québec : cadre de référence*, 2016.

Institut national de santé publique du Québec, *Prévention de la transmission des maladies respiratoires sévères d'origine infectieuse (MRSI), de l'influenza aviaire A (H5N1) et de la grippe A (H1N1) d'origine porcine dans les milieux de soins*, May 22, 2009.

Institut national de santé publique du Québec, *Prévention de la transmission des maladies respiratoires sévères d'origine infectieuse (MRSI), de l'influenza aviaire A (H5N1) et de la grippe A (H1N1) d'origine porcine dans les milieux de soins*, Mise à jour des recommandations portant sur la grippe A (H1N1), June 29, 2009.

Institut national de santé publique du Québec, *Travailleuses enceintes ou qui allaitent en milieu de soins : risque de maladie à virus Ébola et recommandations sur les mesures de prévention*, November 2014.

Jung, S. et al., *Real time estimation of the risk of death from novel coronavirus (COVID-19) Infection: inference Using Exported Cases*, Journal of Clinical Medicine, February 14, 2020.

Kam, K. et al., *A well infant with coronavirus disease 2019 (COVID-19) with high viral load*, Singapore, National Public Health Laboratory, National Centre for Infectious Disease, 2020.

Kobayashi, T. et al., *Communicating the risk of death from Novel Coronavirus Disease (COVID-19)*, Journal of Clinical Medicine, February 2, 2020.

Kooraki, S. et al., *Coronavirus outbreak : What the Department of radiology should know*, Journal of American College of Radiology, February 22, 2020.

Ministère de la Santé et des Services sociaux, *Protocole ministériel préhospitalier*, January 2020.

Ministère de la Santé et des Services sociaux, *Recommandations : Maladies respiratoires sévères infectieuses d'étiologie indéterminée*, August 2013.

MMWR, *Update: Public health response to the Coronavirus Disease 2019 Outbreak-United States*, vol 69, February 24, 2020.



Nishiura, H. et al., *Initial cluster of novel coronavirus (2019-nCoV) infections in Wuhan, China is consistent with substantial human-to-human transmission*, Journal of Clinical Medicine, 2020, 9, 488.

Ontario Ministry of Health, 2019-nCoV Guidance for Health Workers and Health Sector Employers, February 7, 2020.

Osborn, M. et al., *Briefing on COVID-19: Autopsy practice relating to possible cases of COVID-19 (2019-nCoV, novel coronavirus from China 2019-2020)*, The Royal College of Pathologists, England and Wales, February 2020.

Ralph, R. et al., *2019-nCoV (Wuhan virus), a novel Coronavirus: human-to-human transmission, travel-related cases, and vaccine readiness*, The Journal of Infection in Developing Countries 2020: 14(1):3-17.

Société française d'hygiène hospitalière, *Avis relatif au traitement du linge, au nettoyage des locaux ayant hébergé un patient confirmé à 2019-n-CoV et à la protection des personnels*, February 7, 2020.

SOGC: Coronavirus 2019, January 28, 2020.

Sun, P. et al., *Understanding of COVID-19 based on current evidence*, Chinese Academy of Medical Science, 2020.

Tang, B. et al., *An updated estimation of the risk of transmission of the novel coronavirus (2019-nCoV)*, Infectious Disease Modelling 5 (2020) 248-255.

Thompson, R. et al., *Novel coronavirus outbreak in Wuhan, China, 2020: Intense surveillance is vital for preventing sustained transmission in new locations*, Journal of Clinical Medicine, 2020, 9, 498.

Xia, J., *Non-invasive respiratory support for patients with novel coronavirus pneumonia: clinical efficacy and reduction in risk of infection transmission*, Chinese Medical Journal, 2020.

Yu P., *A familial cluster of infection associated with the 2019 novel coronavirus indicating potential person-to-person transmission during the incubation period*, Infectious Diseases Society of America, February 2020.

Zhang J. et al., *Therapeutic and triage strategies for 2019 novel coronavirus disease in fever clinics*, Lancet Respir Med, February 13, 2020.

Zunyou, Wu, McGoogan, Jennifer, *Characteristics of an important lesson from the coronavirus disease 2019 (COVID-19) outbreak in China*, JAMA, February 24, 2020.

# COVID-19 (SARS-CoV-2): Interim Recommendations on Preventive Workplace Measures for Pregnant and Nursing Workers

## **AUTHORS:**

Myreille Arteau, medical consultant  
Stéphane Caron, medical consultant  
Groupe scientifique maternité et travail, Direction des risques biologiques et de la santé au travail  
Francine Codère, Co-Chair of the Comité médical provincial d'harmonisation Pour une maternité sans danger, and medical consultant  
Centre intégré universitaire de santé et de services sociaux de l'Estrie  
Jasmin Villeneuve, medical consultant  
Comité des infections nosocomiales, Direction des risques biologiques et de la santé au travail

## **COLLABORATORS:**

Reiner Banken, Co-Chair of the Comité médical provincial d'harmonisation Pour une maternité sans danger et médecin-conseil, Centre intégré de santé et de services sociaux de Laval  
Ghislain Brodeur, Occupational Health Programs Coordinator  
Ministère de la Santé et des Services sociaux  
Geoffroy Denis, medical consultant  
Centre intégré universitaire de santé et de services sociaux Montréal Centre-Sud  
Judith Fafard, microbiologist-Infectiologist, Laboratoire de santé publique du Québec  
Marie-Pascale Sassine, Head of the Occupational Health Scientific Unit  
Direction des risques biologiques et de la santé au travail

## **REVIEWERS:**

Marc Dionne, medical consultant  
Direction des risques biologiques et de la santé au travail  
Denis Laliberté, medical consultant, Comité des infections nosocomiales et Centre intégré universitaire de santé et de services sociaux de la Capitale-Nationale

## **COORDINATED BY:**

Marie-Pascale Sassine, Head of the Occupational Health Scientific Unit  
Direction des risques biologiques et de la santé au travail

*This document is available in its entirety in electronic format (PDF) on the Institut national de santé publique du Québec's website at <http://www.inspq.qc.ca>.*

*Reproduction for the purposes of private study or research is authorized under section 29 of the Copyright Act. Any other use is subject to authorization by the Government of Québec, which holds the exclusive intellectual property rights to this document. Such authorization may be obtained by submitting a request to the central office of the Service de la gestion des droits d'auteur at Publications du Québec using the online form available at the following address: <http://www.droitauteur.gouv.qc.ca/autorisation.php>, or by writing an email to [droit.auteur@cspq.gouv.qc.ca](mailto:droit.auteur@cspq.gouv.qc.ca).*

*The data contained in the document may be cited, provided that the source is acknowledged.*

© Government of Québec (2020)

Publication No.: 2919 – English version

**Free translation:** Versacom

