Congenital Zika syndrome (CZS) in infants in Canada

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REPORTING INFORMATION
(To be completed by CPSP staff)

Report number:	
Month of reporting:	
Province:	
Today's date:	

Please complete the following sections for the case identified above.
Confidentiality of information will be assured.

CASE DEFINITION FOR CONGENITAL ZIKA SYNDROME

Report any infant less than 12 months of age who presents with:

- Microcephaly defined as head circumference less than 2 standard deviations for gestational age and sex according to the standardized reference percentile*

OR

- Other congenital anomalies and malformations consistent with congenital Zika syndrome including malformations of the central nervous system, such as intracranial calcifications, structural brain or eye abnormalities, or other congenital central nervous system-related abnormalities (not explained by another etiology†)

AND

- A maternal history that includes an epidemiologic linkage‡ to Zika virus OR a positive or inconclusive Zika virus laboratory test

OR

- An infant with a positive or inconclusive Zika virus laboratory test

* *If there is a case of severe microcephaly suspected to be associated with Zika virus then a questionnaire for the severe microcephaly study and the congenital Zika syndrome study should be completed (i.e., if the case meets both case definitions).*

† *Other etiologies that should be considered include other congenital infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus, varicella zoster, parvovirus B19, and herpes simplex virus. An assessment of potential genetic and other teratogenic causes of the congenital anomalies should also be considered.*

‡ *Epidemiological linkage means: travelled to, or resided in, an area with active Zika virus transmission during her pregnancy; OR had unprotected sex during pregnancy with a partner who resided in, or traveled to, an area with active Zika virus transmission.*

CASE INCLUSION CRITERIA

There must be at least one check in Column 1 AND one check in Column 2 to meet the case definition.

Zika virus criteria	**Column 1 Yes**	**Clinical criteria** ***(infant up to 12 months of age)***	**Column 2 Yes**
Born to mother with positive Zika virus test	☐	Has microcephaly (according to definition above)	☐
Born to mother with inconclusive Zika virus test (ZIKA plaque reduction neutralization test with inconclusive result)	☐		
Born to mother with epidemiological link with no Zika virus test or unknown test result	☐	Has any congenital anomaly or malformation of concern	☐
Infant has positive Zika virus test	☐		

SECTION 1 – DEMOGRAPHIC AND BACKGROUND CLINICAL INFORMATION

1.1 Date of first visit to reporting physician**:** ____ /_____ /_____
DD MM YYYY

1.2 Date of birth: ____ /_____ /_____
DD MM YYYY

1.3 Sex: Male____ Female____ Ambiguous genitalia____

1.4 Province/territory of residence: _____

1.5 Ethnicity (check all that apply): First Nations____ Inuit____ Métis____ White____ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)____ Chinese____ Black____ Filipino____ Latin American____ Arab____ Southeast Asian (e.g., Vietnamese, Cambodian, Laotian, Thai, etc.)____ West Asian (e.g., Iranian, Afghan, etc.)____ Korean____ Japanese____ Caribbean ____ Other, specify: _____ Unknown____

1.6 Mode of delivery:

Spontaneous vaginal delivery____ Assisted vaginal delivery____ Assisted breech/breech extraction____

Caesarian section____ *If* Caesarian section, explain indication: _____

1.7 APGAR scores: 1 minute_____ 5 minutes_____ 10 minutes_____

1.8 Gestational age at delivery: ____ weeks

1.9 Birth type: Singleton____ Twin____ Higher order multiple____ Order of birth ____ Unknown ___

1.10

Length (cm):	**Weight (g):**	**Head circumference (cm):**
At birth: _____	At birth: _____	At birth: _____
At visit: _____	At visit: _____	At visit: _____

SECTION 2 – PREGNANCY AND EXPOSURES INFORMATION

2.1

Maternal disorder/disease/finding	**Present**			**Age *or* Date of diagnosis (MM/DD/YYYY)**
Hypertension	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Gestational diabetes mellitus	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Pre-gestational diabetes	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Sickle cell disease	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Elevated maternal PKU	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Severe malnutrition	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Placental insufficiency	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Rhesus disease	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Abnormal ultrasound findings	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Other pregnancy complications	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____
Chronic conditions of the mother:	Yes___	No___	Unknown___	Age:_____ *or* ____ /_____ /_____

If yes, please specify condition(s): _____

2.2 **Exposure history during pregnancy:**

Smoking	Yes___	No___	Unknown___	If yes, consumption: ____ packs per week
Alcohol use	Yes___	No___	Unknown___	If yes, consumption: ____ drinks per week
Illicit drug use	Yes___	No___	Unknown___	Drug: _____ Consumption: _____
Known teratogen exposure	Yes___	No___	Unknown___	Specify: _____

SECTION 3 – TRAVEL HISTORY

3.1 Did the mother travel to other countries **during pregnancy** or **three months prior** to conception?

Yes___ No___ Unknown___

If yes, please specify:

Country	**Approximate date arrived DD/MM/YYYY**	**Approximate date departed DD/MM/YYYY**
_____	____ /_____ /_____	____ /_____ /_____
_____	____ /_____ /_____	____ /_____ /_____
_____	____ /_____ /_____	____ /_____ /_____

3.2 Illness present during or immediately (within 12 days) after travel? Yes___ No___ Unknown___

If yes, specify diagnosis: _____ Diagnosis made by: _____

3.3 Symptoms: Fever____ Rash____ Arthralgia/arthritis____ Conjunctivitis____ Myalgia____ Headache____

Retro-orbital pain____ Pruritus____ Other, specify: _____

3.4 Did the mother have a sexual partner who traveled to other countries during pregnancy or three months prior to conception? Yes___ No___ Unknown___

If yes, please specify:

Country	**Approximate date arrived** **DD/MM/YYYY**	**Approximate date departed** **DD/MM/YYYY**
_____	____ /_____ /_____	____ /_____ /_____
_____	____ /_____ /_____	____ /_____ /_____
_____	____ /_____ /_____	____ /_____ /_____

3.5 Sexual partner illness present during or immediately (within 12 days) after travel? Yes___ No___ Unknown___

If yes, specify diagnosis: _____ Diagnosis made by: _____

3.6 Symptoms: Fever____ Rash____ Arthralgia/arthritis____ Conjunctivitis____ Myalgia____ Headache____

Retro-orbital pain____ Pruritus____ Other, specify: _____

SECTION 4 –MICROBIOLOGIC TESTS

4.1 **Maternal pre-natal tests (If no tests done, check NO as appropriate.)**

Tests	**Performed**	**Date of test (DD/MM/YYYY)**	**Result**
RT-PCR Zika:			
• Blood	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown ___
• Urine	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown ___
• Placenta	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown ___
Zika serology	Yes___ No___ Unknown___	____ /_____ /_____	IgM: Positive___ Negative___ Unknown___
	Yes___ No___ Unknown___	____ /_____ /_____	IgG: Positive___ Negative___ Unknown___
Zika PRNT (*plaque reduction neutralization test)*	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown___ Inconclusive*___ ** unable to differentiate between Zika, dengue or other flaviviruses*
Dengue serology	Yes___ No___ Unknown___	____ /_____ /_____	IgM: Positive___ Negative___ Unknown___
	Yes___ No___ Unknown___	____ /_____ /_____	IgG: Positive___ Negative___ Unknown___
Congenital infection screen	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown___ *If positive,* specify: Toxo___ Rubella___ CMV___ Herpes___ VZV___ Syphilis___ Other, please specify: _____

4.2 **Maternal post-natal tests (If tests not done, check here ____ and go to 4.3 Child Zika tests section below.)**

Were any of the above tests done and/or repeated after delivery? Yes___ No___

If yes, list tests:	**Date of test (DD/MM/YYYY)**	**Result**
_____	____ /_____ /_____	Positive___ Negative___ Unknown ___
_____	____ /_____ /_____	Positive___ Negative___ Unknown ___
_____	____ /_____ /_____	Positive___ Negative___ Unknown ___

4.3 **Child Zika virus tests**

Tests	Performed	Date of test (DD/MM/YYYY)	Result
RT-PCR ZIKA:			
• Blood	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown___
• Urine	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown ___
• CSF	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown ___
Zika serology	Yes___ No___ Unknown___	____ /_____ /_____	IgM: Positive___ Negative___ Unknown___
	Yes___ No___ Unknown___	____ /_____ /_____	IgG: Positive___ Negative___ Unknown___
Zika PRNT	Yes___ No___ Unknown___	____ /_____ /_____	Positive___ Negative___ Unknown___ Inconclusive*___ ** unable to differentiate between Zika, dengue or other flaviviruses*

4.4 **Child congenital infection tests**

4.4.1 Check if the child tested positive for infection with any of the following:

Toxoplasmosis___ Rubella___ CMV___ Herpes simplex___ Syphilis___ VZV___ HIV___

Other, please specify: _____

4.4.2 List laboratory investigations done to make diagnosis of above congenital infection(s). If the child tests positive for more than one of the above infections, please note which test(s) below refer to which infection.

	Performed	Normal	Abnormal (give result)	Date of test: (DD/MM/YYYY)
PCR	Yes___ No___ Unknown___	_____	_____	____ /_____ /_____
IgM	Yes___ No___ Unknown___	_____	_____	____ /_____ /_____
IgG	Yes___ No___ Unknown___	_____	_____	____ /_____ /_____
Other:_____	Yes___ No___ Unknown___	_____	_____	____ /_____ /_____
Other basis for diagnosis	_____			

SECTION 5 – CLINICAL INFORMATION

5.1 **Cranial morphology**	Present	At birth *or* date first identified (DD/MM/YYYY)
Microcephaly *(> 2 SD and < 3 SD for gestational age and sex according to the standardized reference percentile)*	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Severe microcephaly (< 3 SD *for gestational age and sex according to the standardized reference percentile)*	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Overlapping cranial sutures	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Prominent occipital bone	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Excess nuchal skin	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Craniofacial disproportion	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Biparietal depression	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____

5.2 **Ocular anomalies**	Present	At birth *or* date first identified (DD/MM/YYYY)
Microphthalmia	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Coloboma	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Cataract	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Intraocular calcifications	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____
Chorioretinal atrophy	Yes___ No___ Unknown___	At birth___ *or* ____ /_____ /_____

Focal pigmentary mottling of the retina	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Optic nerve atrophy/anomalies	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Retinal lesions, including well-defined chorioretinal atrophy and gross pigmentation	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____

5.3 **Congenital contractures**	**Present**			**At birth *or* date first identified (DD/MM/YYYY)**
Arthrogryposis	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Clubfoot ___unilateral ___bilateral	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Bilateral congenital hip dislocation	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Dislocation or partial dislocation of one or both knees	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____

5.4 **Neurological sequelae**	**Present**			**At birth *or* date first identified (DD/MM/YYYY)**
Motor disabilities ___fine ___gross	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Hypertonia and spasticity	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Hypotonia	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Tremors	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Abnormal posturing (e.g., opisthotonus)	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Cognitive disabilities, specify: _____ _____	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Irritability/excessive crying	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Seizures ___general ___focal	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Swallowing difficulties	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Failure to thrive	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Vision impairment, specify: _____ _____	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Hearing impairment/loss, specify: _____ _____	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____

5.5 **Brain imaging/neurophysiology**	**Present**			**At birth *or* date first identified (DD/MM/YYYY)**
Intracranial calcifications	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Neural tube defect	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Congenital hydrocephalus	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Increased fluid spaces (ventricular and extra-axial)	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Cortical thinning with abnormal gyral patterns (most consistent with polymicrogyria)	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Hypoplasia or absence of the corpus callosum	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Decreased myelination	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Cerebellar or cerebella vermis hypoplasia	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Thinning of the cord and reduction in the ventral roots (via MRI)	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Wallerian degeneration of the long descending tracts	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____
Abnormal EEG	Yes___	No___	Unknown___	At birth___ *or* ____ /_____ /_____

5.6 Has the patient achieved developmental milestones, in the following domains, appropriate for age/corrected gestational age? ***(Please complete only if child is > 3 months old.)***

Gross motor	Yes___	No___	Unknown___	N/A, specify _____
Fine motor	Yes___	No___	Unknown___	N/A, specify _____
Social	Yes___	No___	Unknown___	N/A, specify _____
Language	Yes___	No___	Unknown___	N/A, specify _____

5.7 Other health systems affected:

Cardiovascular system	Normal___	Abnormal___	Unknown___	*If* abnormal, specify:_____
Respiratory system	Normal___	Abnormal___	Unknown___	*If* abnormal, specify:_____
Gastrointestinal system	Normal___	Abnormal___	Unknown___	*If* abnormal, specify:_____

Abdominal tenderness___ Jaundice___ Hepatomegaly___ Hernia___
Splenomegaly___ Omphaloceles___ Gastroschesis___ Other, specify: _____

5.8 Other abnormalities: Yes___ No___ Unknown___

If yes, specify other abnormal clinical features noted: _____

_____

SECTION 6 – FAMILY HISTORY

6.1 Consanguinity of parents: Degree of relationship: None___ 1st___ 2nd___ 3rd___ >3rd___

6.2 Family history (up to 2nd degree relatives, e.g., grandparent, sibling, etc.):

Microcephaly	Yes___	No___	Unknown___	*If* yes, specify relative: _____
Other congenital anomalies, specify_____	Yes___	No___	Unknown___	*If* yes, specify relative: _____
History of developmental delays, specify_____	Yes___	No___	Unknown___	*If* yes, specify relative:_____
Previous pregnancy with congenital anomaly(ies)	Yes___	No___	Unknown___	*If* yes, specify relative:_____
History of miscarriage	Yes___	No___	Unknown___	*If* yes, specify relative:_____
History of stillbirth	Yes___	No___	Unknown___	*If* yes, specify relative:_____

___ I agree to be contacted by the CPSP for further information on this questionnaire.

___ I do not wish to be contacted by the CPSP for further information on this questionnaire.

POSSIBLE COHORT STUDY OPPORTUNITY

A separate study may be conducted in the future to provide the opportunity to enroll patients in a cohort study, with the informed consent of the family. This process is separate from the CPSP. Are you interested in obtaining further information on this opportunity? By checking “yes” you are giving permission for the CPSP to release your contact information (including email address) to the research team responsible for this separate study.

Yes___ No___

SECTION 7 – REPORTING PHYSICIAN

First name_____ Surname_____

Address_____

City_____ Province_____ Postal code_____

Telephone number_____ Fax number_____

E-mail_____ Date completed_____

Thank you for completing this form.

(CZS 2017/03)