

## CANADIAN PAEDIATRIC SURVEILLANCE PROGRAM

# Study investigates unexpected newborn collapse and sudden death

When a healthy baby is born but suffers acute and unexpected cardio-respiratory arrest in the first few days of life, the cause or contributing factors are often unclear.

“There has been a lot of focus on sudden infant death, which has its peak between two and four months,” said Dr. Kayla Feldman, paediatrician at the North York General Hospital in Toronto. “This is a form of sudden infant death that’s occurring at a much earlier time period. We generally expect that newborn babies are healthy and that nothing is going to happen, and then we’ve got cases of devastating things happening.”

Dr. Feldman is working with Dr. Robin Whyte of the IWK Health Centre in Halifax to investigate this phenomenon through a new study under the Canadian Paediatric Surveillance Program (CPSP). Cases of unexpected sudden infant death (SID) or severe apparent life-threatening events (S-ALTE) in the early postnatal period must meet the following criteria:

- $\geq 35$  weeks’ gestation;
- Apgar score  $\geq 8$  at five minutes (if known);
- Acute and unexpected cardiorespiratory arrest within the first seven days of life (where day 1 is the day of birth);
- Died or received hospitalized mechanical respiratory support for  $\geq 12$  hours

The current frequency of SID and S-ALTE in Canada is unknown but data from similar surveillance studies conducted in Germany and Britain suggest a minimum of nine or ten cases per year.

Dr. Feldman said while the underlying cause is typically unknown, contributing

factors seem to suggest prone positioning of an infant on the mother’s chest, airway obstruction during breastfeeding, primiparity, maternal fatigue, or the effects of analgesia on the mother.

The investigators hope the study provides more accurate data on the incidence of early postnatal SID and S-ALTE in Canada, and sheds light on potential risk factors, underlying conditions and causes, with an eye toward minimizing risks.

“Once we have some grasp on how big the problem is, we’ll be able to design the methodology for really understanding the problem, which is exactly what happened with sudden infant death,” said Dr. Whyte, adding that more needs to be known about frequency and affected age groups.

Dr. Whyte says the results of the study may also influence public health messaging and procedures used in maternity wards.

“There’s another aspect to this, it could be related to some of the things that we’re very anxious to encourage, like breastfeeding, and it could be related to some of the things that we’ve taken rather for granted, such as maternal anesthetic and maternal fatigue,” said Dr. Whyte.

The results may also indicate whether babies require more supervision while in hospital.

“Babies are never risk-free,” said Dr. Whyte. “Babies in the first few days of life are actually at much higher risk than they’re going to be in the following

weeks. They’ve only completed the transition and sometimes we overlook their somewhat tenuous grasp on life.”

*The study runs between January 2013 and December 2015, and is funded by the Division of Neonatal-Perinatal Medicine of the IWK Health Centre. To view the protocol for this and other CPSP studies, visit [www.cpsp.cps.ca](http://www.cpsp.cps.ca) → Current Studies.* 🌱

## eCPSP: Improving paediatric surveillance

Subscribers to the Canadian Paediatric Surveillance Program’s electronic system enjoy a simplified and efficient reporting process that provides a unique, secure e-mail link to the monthly reporting form. No user names or passwords are required, and participants can respond from any location with Internet access.

- Online subscribers have access to case definitions, full protocols and up-to-date study statistics. They also receive detailed questionnaires more quickly, when required.
- Since the launch of e-reporting in 2012, 54 per cent of participants (almost 1,400) are now online reporters; the CPSP has a reporting rate of almost 80 per cent, and 50 per cent of these reporters reply within 24 hours.
- With less likelihood of losing a piece of paper by continued offline reporting, e-reporting is the ideal alternative to ensure your report is captured quickly.

Visit [www.cpsp.cps.ca/participants/sign-up-for-electronic-reporting](http://www.cpsp.cps.ca/participants/sign-up-for-electronic-reporting) to sign up, or e-mail [cpssp@cpsp.ca](mailto:cpssp@cpsp.ca), for more information.