

# **Surveillance of Apparent Opioid Overdoses in New Brunswick**

**2018 - Quarters 3 & 4**

April, 2019

## Surveillance of Apparent Opioid Overdoses in New Brunswick Quarters 3 & 4: July to December, 2018 Report

### Highlights

#### **Suspect opioid overdoses: Ambulance New Brunswick, 2018**

- The estimated annual crude rate of suspect opioid overdose patients that responded to naloxone in New Brunswick in 2018 was 14.5 per 100,000 population.
- Overall in 2018, naloxone was administered to 238 suspect opioid overdose patients of which 110 (46.2%) responded to naloxone.
- Of those who responded to naloxone:
  - An equal proportion of males and females responded and 20.9% were between 40 and 49 years old.
  - The age distribution during 2018 did not reflect the shift to younger age groups that was seen during 2017.
- There was a decrease in the number of individuals who were administered naloxone and who responded to naloxone in 2018 compared to 2017.
- In Q3 & Q4 of 2018, naloxone was administered to 120 suspect opioid overdose patients of which 53 (44.2%) responded to naloxone.

#### **Emergency Department (ED) non-suicidal opioid overdoses: Horizon and Vitalité Health Networks**

- After careful consideration and review, the Department of Health will no longer be collecting or reporting emergency department (ED) non-suicidal opioid overdoses.

#### **Apparent opioid overdose deaths: Chief Coroner's Office, 2018 Q1-Q3 (Jul to Sep)**

- The estimated annual crude mortality rate for apparent opioid overdoses with accidental or pending intent in New Brunswick was 2.5 deaths per 100,000 population.
- There were 19 apparent opioid related deaths in Q1-Q3 of 2018 of which 14 were deemed accidental or with pending intent.
  - 5 (35.7%) were males, and 9 (64.3%) were females.
  - 4 (28.6%) were aged 30 to 39 years and 4 (28.6%) were aged 50 to 59 years old, with an average age of 46.5 years.
  - Data from the first three quarters of 2018 do not indicate the shift towards younger age groups that was seen in 2017.
- None of the apparent opioid related deaths with accidental or pending intent in Q1-Q3 were related to fentanyl or fentanyl analogs.
  - There were 7 apparent opioid deaths in Q3 of 2018 of which 3 were accidental or with pending intent.
- Data for 2018 are incomplete and numbers are expected to increase as coroner investigations continue.

## Introduction

This quarterly surveillance report focuses on apparent opioid overdose and death data collected by Ambulance New Brunswick (ANB) and the Chief Coroner's Office, and reported to the Office of the Chief Medical Officer of Health (OCMOH). Additional sources of data will be included in future reports as they become validated. Data sources are updated at different time periods and may change in subsequent reports.

## Changes from last report

- Updates have been made to previously reported counts and rates based on revised data.
- Emergency department non-suicidal opioid overdoses data are no longer being collected.

## Data Sources

### Ambulance New Brunswick

Data include the number of patients ANB treated for suspect opioid overdoses regardless of intent. A patient is counted as a suspect overdose when a first responder (paramedic) who attended the event suspects the patient might be experiencing symptoms compatible with an opioid overdose, resulting in the decision to administer naloxone. The number of patients receiving naloxone might be an overestimation of the actual number of opioid overdoses as naloxone will not have an effect if opioids were not taken. Therefore, the number of patients responding to naloxone is also collected and reported as this information is more specific to an opioid overdose. Data in this report reflects data received from ANB as of January 16, 2019.

**Limitations:** The number of suspect opioid overdoses is an estimate based on the decision to administer naloxone. As such, the data do not include overdoses where patients were already dead on arrival and those who were missed and not given naloxone. Data include suspect opioid overdoses regardless of intent (i.e., accidental, intentional or unknown), and therefore may differ in terms of demographics from other data sources (e.g., apparent opioid overdose deaths). The Health Region specific rates are estimated based on hospital of referral as location of dispatch pick-up is not available.

### Emergency Departments

After careful consideration and review, the Department of Health has stopped collecting or reporting emergency department (ED) non-suicidal opioid overdoses. The collection of these data was a labour intensive manual process for hospitals and may have resulted in reporting differences between EDs. We thank the EDs for collecting this data over the past two years. Collection of ED data may resume in the future as new data collection methods become available.

### Chief Coroner Office

Data include all apparent opioid overdose deaths (including fentanyl and fentanyl analogs) that are classified as either accidental (unintentional) or with pending intent at the time of reporting. Deaths with intentional and undetermined intent related to any type of drugs

(opioids and non-opioids) are also included. Data in this report reflect data received from the Chief Coroner's Office as of January 28, 2019.

**Limitations:** Due to the inherent delay in investigating deaths, the reported number of apparent opioid overdose deaths is preliminary and may change over time as the cause of death certification may lead to a change in classification.

## Methodology

Descriptive analysis was conducted for suspect opioid overdoses and apparent opioid overdose deaths. Throughout this report, estimated annual rates are calculated using person-time contributed to the specified time period. This method is used to provide a better estimate of rates that are calculated for partial years. Caution should be used when interpreting region-specific rates because of the small numbers involved that can lead to wide variation in rates. Also, the reported data are preliminary and numbers are subject to change in the coming reports.

Comparisons should not be made between different data sources as each represents a different population. For example, ANB data look at the number of patients they treated for suspect opioid overdoses regardless of intent, while Coroner data look at the number of deaths from opioids or non-opioid overdoses. Together these data sources add to our understanding of the complex opioid overdose situation in New Brunswick.

## Definitions used in this report

- **ANB patients treated for a suspect opioid overdose:** First responder (paramedic) who attended the event suspects the patient might be experiencing symptoms compatible with an opioid overdose, resulting in the decision to administer naloxone.
- **Apparent opioid overdose death:** A death caused by intoxication/toxicity (poisoning) as a result of drug use, where one or more of the drugs is an opioid.
  - The data include both open (preliminary) and closed (certified) cases.
  - The data do not include deaths due to chronic substance use, medical assistance in dying, or trauma where an exogenous substance contributed to the circumstances of the injury, or deaths classified as homicides.
- **Accidental death:** A death considered to be unintentional in nature.
- **Undetermined death:** A closed death investigation where the intent of death was deemed unknown by the coroner.
- **Intentional death:** A death classified as a suicide based on the coroner investigation.
- **Death with pending intent:** An open investigation where the intent of death is yet to be determined.
- **Non-fentanyl opioids:** Includes but not limited to buprenorphine metabolites, codeine, dihydrocodeine, heroin, hydrocodone, hydromorphone (total, unconjugated), loperamide, meperidine, methadone, monoacetylmorphine, morphine (unconjugated, unconjugated-RIA), normeperidine, oxycodone, tapentadol, tramadol, U-47700.
- **Fentanyl and fentanyl analogs:** Includes but not limited to fentanyl, norfentanyl, acetylfentanyl, 3-methylfentanyl, carfentanil, butyrylfentanyl, furanyl-fentanyl, despropionyl-fentanyl.
- **Any opioid:** Either non-fentanyl opioids or fentanyl and fentanyl analogs.

- **Prescription opioid/fentanyl:** A medically prescribed opioid/fentanyl to the same patient/deceased person.
- **Illicit opioid/fentanyl:** Street opioid/fentanyl or opioid/fentanyl medically prescribed to a person other than the patient/deceased person.

## Suspect opioid overdoses: Ambulance New Brunswick, Q3 & Q4, 2018

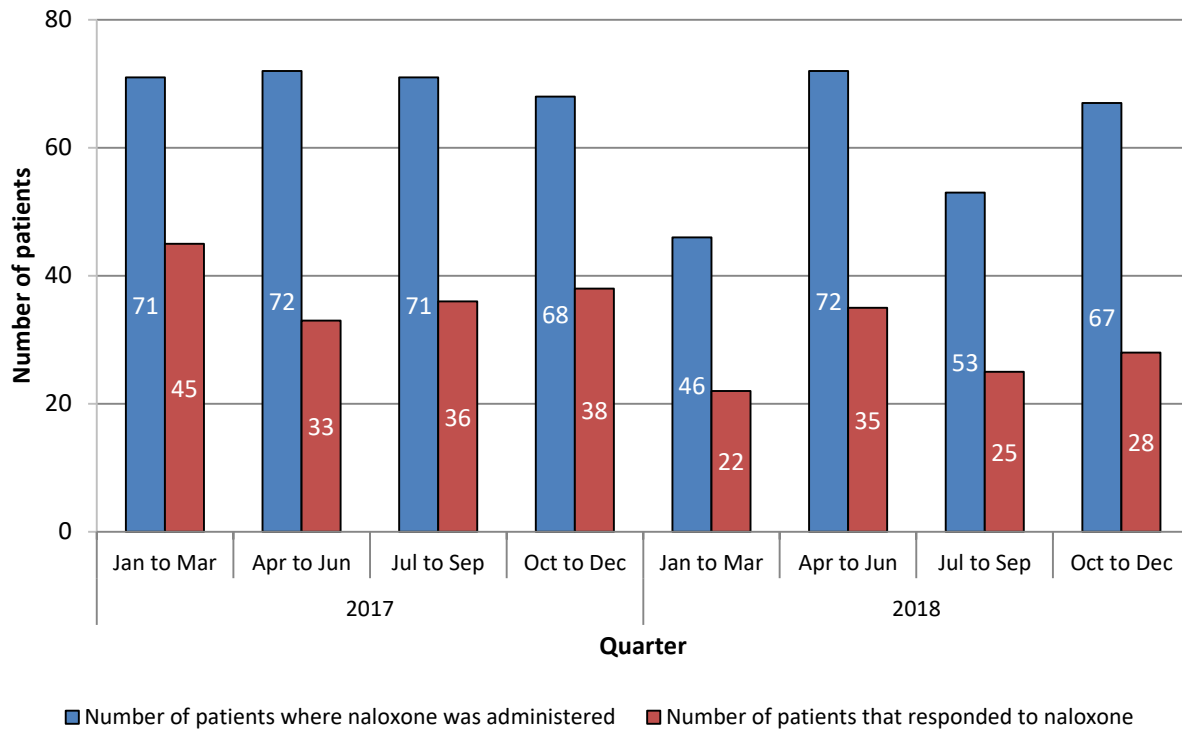
### 2018 Q3 & Q4 (July 1 to December 31)

- During the last two quarters of 2018, naloxone was administered to 120 suspect opioid overdoses (Graph 1), with an average of 20 per month (range: 11 to 30).
- Of the 120 suspect opioid overdoses, 53 (44.2%) responded to naloxone which corresponds to an average of 8.8 per month (range: 4 to 14).
- Of the 53 patients who responded to administered naloxone :
  - 26 (49.1%) were males, consistent with Q1 & Q2 of 2018 (49.1% males).
  - 12 (22.6%) were between 30 and 39 years old (Graph 2).
  - Compared to the same time period in 2017, there was a decrease in the number of suspect opioid overdoses that responded to naloxone in all age categories, except for the 60 to 69 year old age group which increased by one.
  - The age distribution during 2018 was consistent to that in 2016, and did not reflect the shift to younger age groups that was seen during 2017.

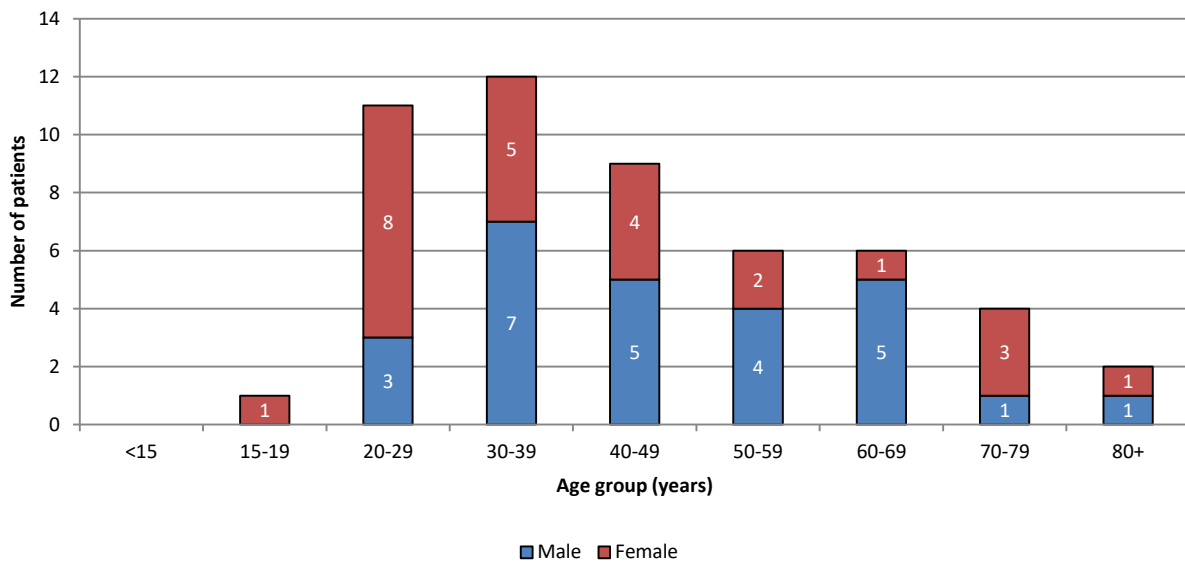
### 2018 Annual Data and Trends

- From 2012 to 2017, both the number of suspect opioid overdose patients who were administered naloxone and those who responded to naloxone increased almost every year; the number of cases in 2018 decreased compared to 2017 (Graph 3).
- The reduction in the number of individuals who were administered naloxone and those who responded to naloxone in 2018 compared to 2017 should be interpreted with caution as rates may have been impacted by the increasing availability of take home naloxone (THN) kits in the province.
  - Surveillance of THN kit distribution and use has been initiated and will be reported in the future.
- In 2018, naloxone was administered to 238 suspect opioid overdose patients, with an average of 20 per month (range: 11 to 30) (Graph 1).
- Of the 238 suspect opioid overdoses, 110 (46.2%) responded to naloxone, and of those who responded:
  - 54 (49.1%) were males and 23 (20.9%) were aged 40-49 (Graph 4).
  - Overall, all age groups in 2018 had fewer or an equal number of cases that responded to Naloxone compared to 2017, except for those aged 80 years or more; however, all age groups in 2018 had more or an equal number of cases that responded to naloxone compared to the 5-year average from 2012-2016.
- The estimated annual crude rate of suspect opioid overdose cases that responded to naloxone in New Brunswick overall was 14.5 per 100,000 population and ranged from 2.1 to 23.5 per 100,000 population among Health Regions (Table 1). The highest crude rate was reported in the Saint John Health Region with 23.5 suspect opioid overdoses per 100,000 population. However, regional rates need to be interpreted with caution because of the small numbers involved which can lead to unstable rates.

**Graph 1.** Number of suspect opioid overdoses where naloxone was administered and number of patients that responded to naloxone, by quarter in New Brunswick, January 2017 to December 2018 (Data source: ANB, January 16, 2019).

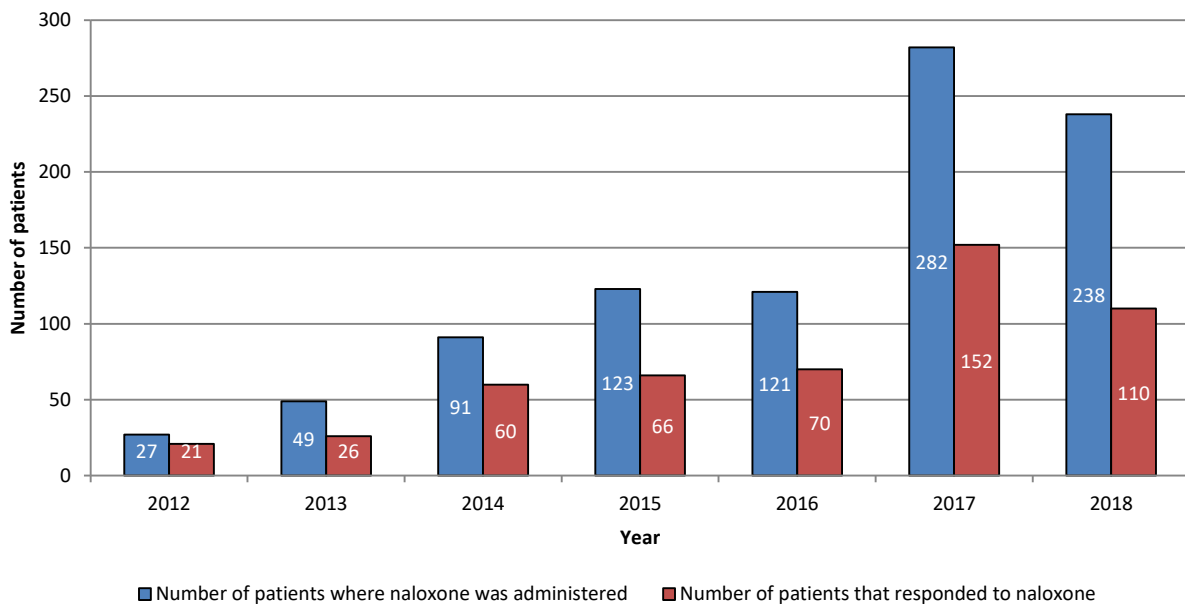


**Graph 2.** Number of suspect opioid overdose patients that responded to naloxone, by age group and sex\*, New Brunswick, Q3 & Q4, 2018 (Data source: ANB, January 16, 2019).



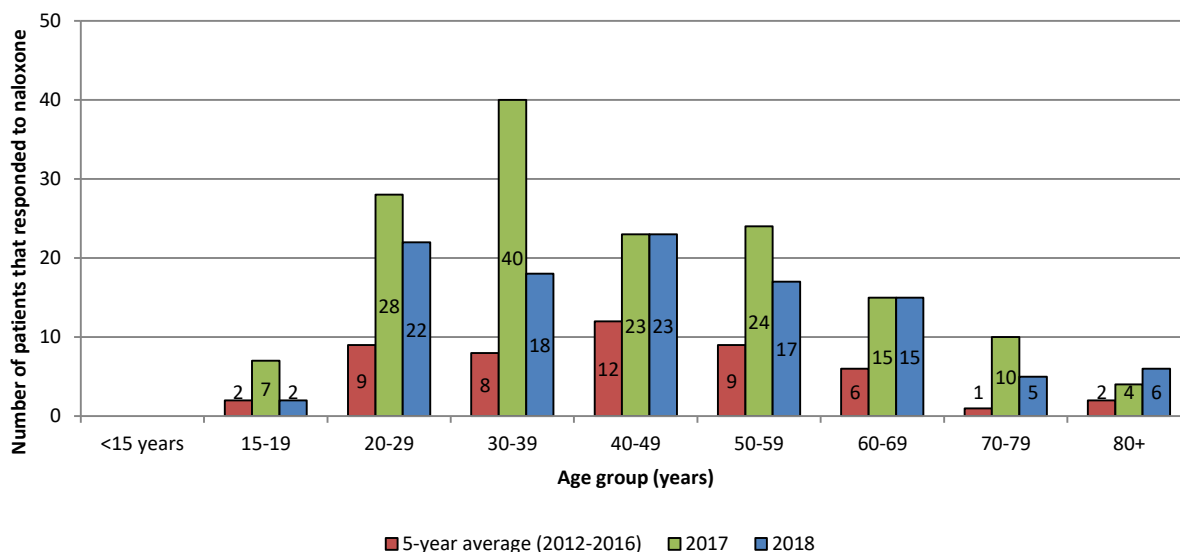
\*Sex and age were not reported for 2 individuals in Q3 & Q4 of 2018.

**Graph 3.** Number of suspect opioid overdoses where naloxone was administered and number of patients that responded to naloxone, New Brunswick, 2012-2018 (Data Source: ANB, January 16, 2019).





**Graph 4.** Number of ambulance dispatches for suspect opioid overdoses that responded to naloxone, by age group, New Brunswick, 2017, 2018 and 2012-2016 5-year average.



**Table 1.** Number (%) of hospital referrals and estimated annual crude rates of suspect opioid overdose patients that responded to naloxone, New Brunswick, 2017 and 2018 (Data source: ANB, January 16, 2019).

Health Region	2017		2018	
	Number (%) of hospital referrals	Rate of patients that responded to naloxone per 100,000 population*	Number (%) of hospital referrals	Rate of patients that responded to naloxone per 100,000 population*
Bathurst	18 (15.4)	24.2	13 (12.1)	17.5
Campbellton	5 (4.3)	19.6	5 (4.7)	19.6
Edmundston	6 (5.1)	12.8	1 (0.9)	2.1
Fredericton	14 (12.0)	7.9	14 (13.1)	7.9
Moncton	33 (28.2)	15.3	25 (23.4)	11.6
Miramichi	9 (7.7)	20.0	8 (7.5)	17.8
Saint John	32 (27.4)	18.3	41 (38.3)	23.5
<b>New Brunswick<sup>‡</sup></b>	<b>119 (100.0)</b>	<b>15.7</b>	<b>57 (100.0)</b>	<b>14.5</b>

Source for rate calculations: OCMOH, Disease Prevention and Control. The denominators used were 2017 population estimates received from Statistics Canada, Demography Division; March 2018.

\* Caution should be used while interpreting region-specific rates because of the small numbers involved that can lead to unstable rates. Health Region specific rates are estimated based on the hospital of referral as location of dispatch pick-up is not available.

<sup>‡</sup> The total number of hospital referrals for New Brunswick also includes suspect opioid overdoses where the hospital of referral is listed as "Other" (2017=2 and 2018=2). A hospital may be listed as "Other" if the patient was not transported to a hospital ER (e.g., cardiac arrest, terminated on-scene or patient refused to be transported).

## Apparent Opioid Overdose Deaths: Chief Coroner's Office

### 2016

- Since the last report, there have been no changes to the total number of deaths reported for 2016, nor have any changes been made to existing cases.

### 2017

- 59 deaths (including intentional, accidental, pending intent and undetermined) due to any type of drug (opioids and non-opioids) occurred in 2017 (Graph 5), of which 37 (62.7%) were related to opioids.
- While the number of deaths from all drug sources decreased by 4.8% in 2017 compared to 2016, the number of drug-related deaths that involved opioids has increased by 12.1%. This means that, while less people are dying from drug overdoses overall, more people are dying from opioid related overdoses.
- Of the 59 deaths due to any type of drug, 46 (78.0%) were classified as accidental or with pending intent, 13 (22.0%) were intentional, and none were undetermined intent.
- 31 (83.8%) of the 37 apparent opioid overdose deaths were classified as accidental or with pending intent at the time of reporting (Graph 6). Seven (7) were associated with fentanyl or fentanyl analogs.
- Of the 31 apparent opioid overdose deaths classified as accidental or with pending intent:
  - 19 (61.3%) were males and 12 (38.7%) were females.
  - 9 (29.0%) were aged 30 to 39 years old, with an average age of 39.8 years (Graph 7). There was a shift to younger ages compared to 2016 where the average was 44.9 years.
  - Of the 7 (22.6%) associated with fentanyl or fentanyl analogs, other opioids were found in the toxicology reports of four decedents, whereas the remaining three found only fentanyl or fentanyl analogs. Fentanyl was reported in four deaths, fentanyl-fentanyl in two, and carfentanyl in one.
  - 15 (48.4%) deaths were from illicit sources of opioids, 3 (9.7%) were from undetermined sources of opioids, and 13 (41.9%) were from prescribed opioids (Graph 7). Males accounted for 73.3% of illicit drug use and the 20 to 29 and 30 to 39 years age groups each accounted for 33.3% of illicit drug use. The highest percentage of illicit opioid use (26.7%) occurred among males in the 30 to 39 years age group.
  - The estimated annual crude death rate for New Brunswick overall was 4.1 per 100,000 population and ranged from 0 to 6.3 deaths per 100,000 population among Judicial Districts (Table 2). Judicial District rates need to be interpreted with caution because of the small numbers involved which can lead to unstable rates.

### **2018 Q1 & Q2 (January 1 to June 30)**

- 25 deaths (including intentional, accidental, pending intent and undetermined) due to any type of drug (opioids and non-opioids) occurred in Q1 and Q2 of 2018, of which 12 (48.0%) were related to opioids (Graph 5).
- 11 (91.7%) of the 12 apparent opioid overdose deaths were classified as accidental or with pending intent at the time of reporting (Graph 6). None of the deaths were associated with fentanyl or fentanyl analogs.
- Data are expected to change as active cases continue to be investigated.

### **2018 Q3 (July 1 to September 30)**

- 12 deaths (including intentional, accidental, pending intent and undetermined) due to any type of drug (opioids and non-opioids) occurred in the Q3 of 2018, of which 7 (58.3%) were related to opioids (Graph 5).
- 3 (42.9%) of the 7 apparent opioid overdose deaths were classified as accidental or with pending intent at the time of reporting (Graph 6). None of the deaths were associated with fentanyl or fentanyl analogs.
- Data are expected to change as active cases continue to be investigated.

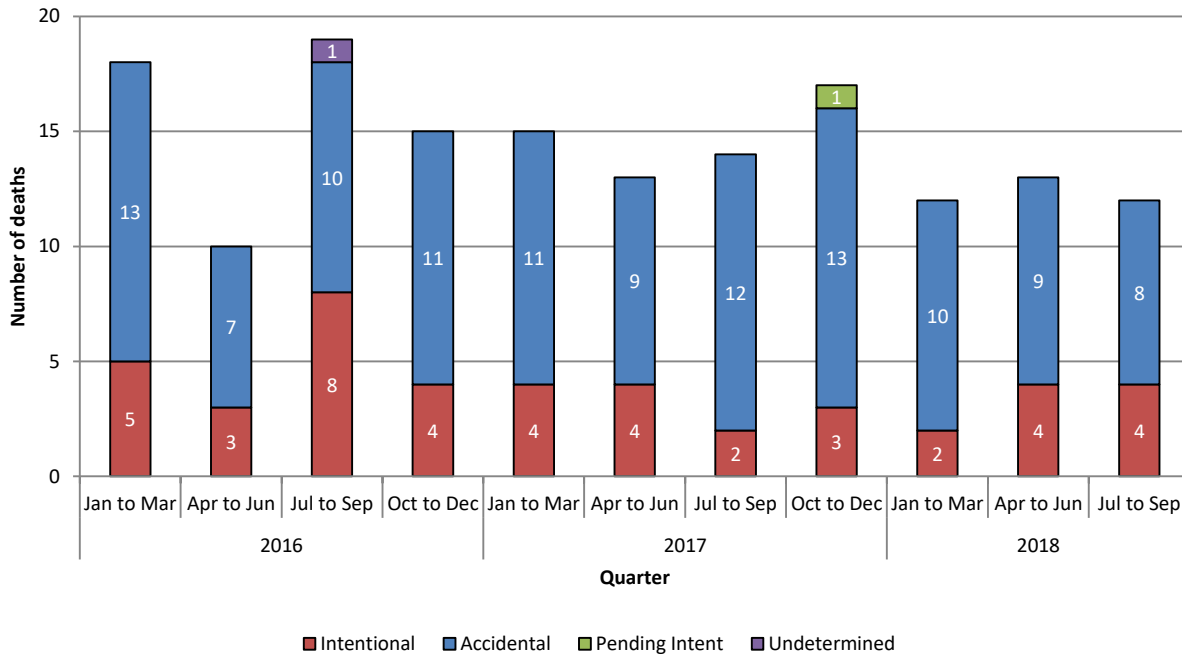
### **2018 Q1-Q3 (January 1 to September 30)**

- 37 deaths (including intentional, accidental, pending intent and undetermined) due to any type of drug (opioids and non-opioids) occurred in the first 3 quarters of 2018, of which 19 (51.4%) were related to opioids (Graph 5).
- 14 (73.7%) of the 19 apparent opioid related overdose deaths were classified as accidental or with pending intent at the time of reporting (Graph 6). None of the deaths were associated with fentanyl or fentanyl analogs.
- Of the 14 apparent opioid overdose deaths classified as accidental or with pending with intent:
  - 5 (35.7%) were males, and 9 (64.3%) were females.
  - 4 (28.6%) were aged 30 to 39 years and four (28.6%) were aged 50 to 59 years old, with an average age of 46.5 years (Graph 7). The age distribution during 2018 Q1-Q3 did not reflect the shift to younger age groups that was seen during 2017, as the average age was similar to that of 2016.
  - 6 (42.9%) deaths were from prescribed opioids, 5 (35.7%) were from illicit sources of opioids, and 3 (21.4%) were from undetermined sources of opioids (Graph 7).
  - The estimated annual crude death rate for New Brunswick overall was 2.5 per 100,000 person-years and ranged from 0 to 5.2 deaths per 100,000 person-years among the Judicial Districts (Table 2). Judicial District rates need to be interpreted with caution because of the small numbers involved which can lead to unstable rates.

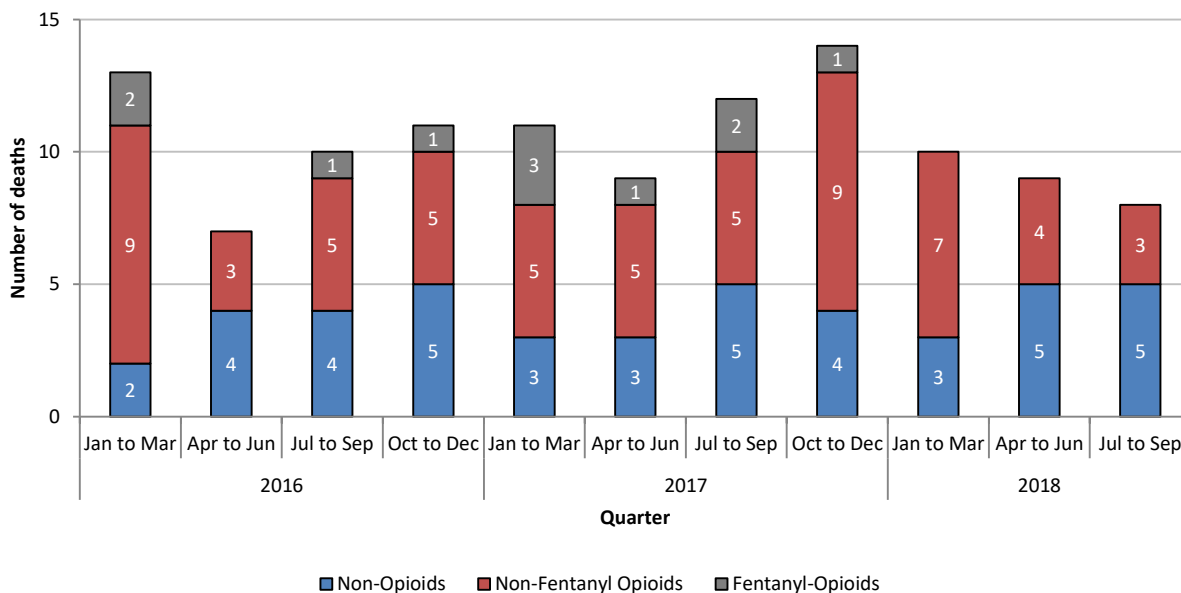
**2018 Q4 (October 1 to December 31)**

- Data for Q4 are incomplete and numbers are expected to change significantly as coroner investigations continue.

**Graph 5.** Number of apparent drug overdose (opioid and non-opioid) deaths, by intent (intentional, accidental, pending intent or undetermined), by quarter in New Brunswick, January 2016 to September 2018 (Data source: Chief Coroner’s Office, January 28, 2019).

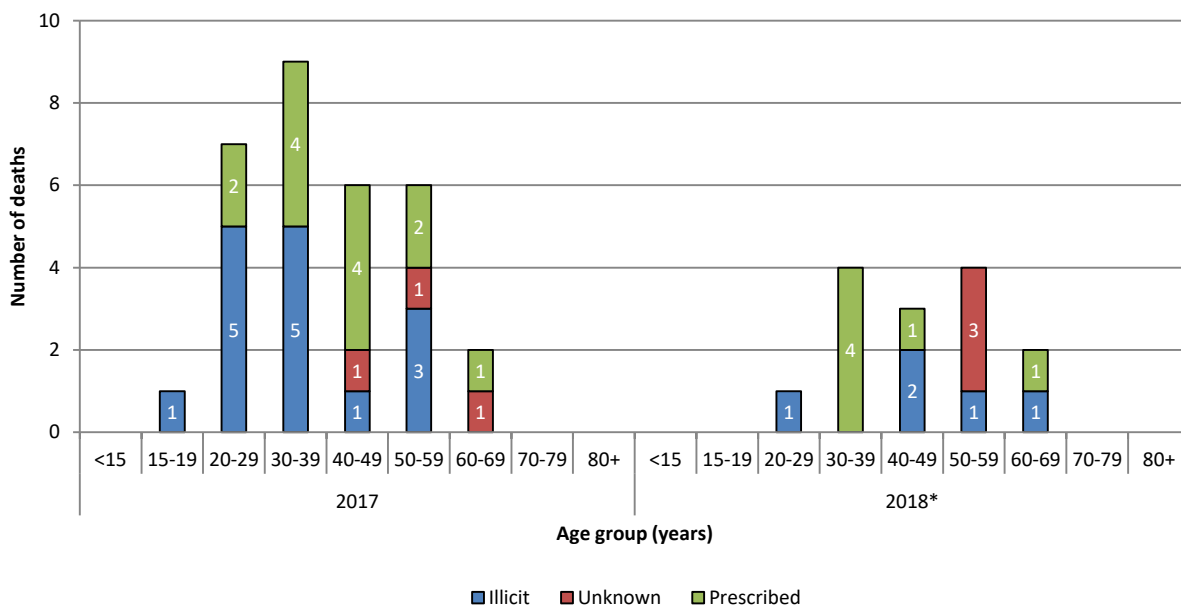


**Graph 6.** Number of apparent drug-overdose deaths that are accidental or with pending intent\*, by drug type, by quarter in New Brunswick, January 2016 to September 2018 (Data source: Chief Coroner's Office, January 28, 2019).



\*At the time of reporting, the only death with pending intent between January 1, 2016 and September 30, 2018 occurred in 2017. These numbers may change as more information becomes available and coroner investigations continue.

**Graph 7.** Age distribution of apparent opioid overdose deaths classified as accidental or with pending intent, by drug source, New Brunswick, January 2017 to September 2018 (Data source: Chief Coroner's Office, January 28, 2019).



\*Data for 2018 only includes the first three quarters. Numbers are expected to change as coroner investigations continue.

**Table 2.** Apparent opioid overdose estimated annual crude mortality rates\* for deaths that are accidental or with pending intent, by Judicial District, New Brunswick, 2017 and 2018 (Data source: Chief Coroner’s Office, January 28, 2019).

Judicial District†	2017		2018**	
	Number (%) of deaths reported	Death Rate per 100,000 person-years*	Number (%) of deaths reported	Death Rate per 100,000 person-years*
Bathurst	1 (3.2)	1.3	2 (14.3)	3.6
Campbellton	1 (3.2)	3.9	1 (7.1)	5.2
Edmundston	0 (0.0)	0.0	0 (0.0)	0.0
Fredericton‡	6 (19.4)	3.4	1 (7.1)	0.8
Moncton	10 (32.3)	4.6	4 (28.6)	2.5
Miramichi	2 (6.5)	4.4	0 (0.0)	0.0
Saint John	11 (35.5)	6.3	6 (42.9)	4.6
<b>New Brunswick</b>	<b>31 (100.0)</b>	<b>4.1</b>	<b>14 (100.0)</b>	<b>2.5</b>

Source for rate calculations: OCMOH, Disease Prevention and Control. The denominators used were 2017 population estimates received from Statistics Canada, Demography Division; March 2018.

\* Caution should be used while interpreting Judicial District rates because of the small numbers involved which can lead to unstable rates.

\*\*Rates are calculated for 2018 Quarter 1 to Quarter 3.

† Where death occurred or where the deceased was found.

‡Fredericton corresponds to both Fredericton and Woodstock judicial districts.