SURVEILLANCE OF OPIOID MISUSE AND OVERDOSE IN MANITOBA

OCTOBER 1 – DECEMBER 31, 2017

HEALTHY MANITOBANS THROUGH AN APPROPRIATE BALANCE OF PREVENTION AND CARE.

Manitoba

TO MEET THE HEALTH NEEDS OF INDIVIDUALS, FAMILIES AND THEIR COMMUNITIES BY LEADING A SUSTAINABLE, PUBLICLY ADMINISTERED HEALTH SYSTEM THAT PROMOTES WELL-BEING AND PROVIDES THE RIGHT CARE, IN THE RIGHT PLACE, AT THE RIGHT TIME.
MANITOBA HEALTH, SENIORS AND ACTIVE LIVING

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HIGHLIGHTS:

Given the increasing concerns of harm associated with opioid misuse and overdose in Manitoba, a surveillance system was established in the beginning of 2017 by collaborating with a range of stakeholders. This report is based on available data as of the fourth quarter of 2017.

Apparent opioid-related deaths

- There have been more deaths in 2017 (N=122; rate: 9.0 per 100,000), compared to past years *(see page 16)*.
    - From the third quarter of 2016 and onwards, there has been a consistently higher proportion of deaths in males compared to females.
    - There were 47 apparent fentanyl-related deaths (this includes fentanyl-related opioids *only* and mix of fentanyl-related and non-fentanyl-related opioids); the proportion of fentanyl-related opioids only was 22% (n=27).
        - 31 of the 47 apparent fentanyl-related deaths included carfentanil (66%), in comparison to 40% (n=15) in 2016.
    - The proportion of crystal meth contributing to these deaths increased from 4% (n=3) in 2014 to 22% (n=27) in 2017.

Overdose events (using naloxone administration as a proxy for opioid overdose)

- There were 736 suspected overdose cases (9.4 per 10,000) receiving naloxone by Winnipeg Fire and Paramedic Service in 2017; the number of cases reported in the fourth quarter was the lowest *(see page 6)*.
- There were 195 suspected overdose events (rate: 3.4 per 10,000 population) reported by the Medical Transportation Coordination Centre between January 9, 2017 and January 6, 2018; the number of reported events are on the decline since the second quarter *(see page 6)*.
- In 2017, of the 955 take-home naloxone kits distributed, 112 were used in the community during overdose events *(see page 5)*.
    - In 56 of 104 overdose events (54%), 911 was not called. The top two reported reasons were:
        - "worried police would come", and
        - "thought the person would get better on their own" *(see page 11)*.

Opioid prescription dispensing

- Despite the increase in number of Manitobans being dispensed a prescription opioid from a community pharmacy from 2013 to 2017; the rate has been relatively stable. In 2017, the rate was 27.0 per 1,000, a 0.45 unit decrease from the previous year *(see page 22).*

Illegal drug activity

- During the fourth quarter, a total of 774 exhibits were submitted for analysis, which represents a 4% decrease over the last quarter. The top five controlled substances include: cocaine (n=254), methamphetamine (n=179), cannabis (n=147), fentanyl (n=22), and codeine (n=16) *(see page 26).*
- In 2017, 301 illegal opioids were identified or tracked in Manitoba; oxycodone (21%; n=63) followed by fentanyl (20%; n=60) represented the largest proportion. During the fourth quarter, 77 opioids were identified and fentanyl represented 29% *(see page 26).*

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Naloxone Distribution

Provincial Take-Home Naloxone Program

- In 2017, there were 955 take-home naloxone kits distributed; with the most number of kits distributed in the third quarter (Table 1).

Table 1: Take-home naloxone kit distribution by quarter, Manitoba Health, Seniors and Active Living (2017)

	Q1	Q2	Q3	Q4	Total
Number of distribution sites	29	55	61	62	62
Total distributed	259	227	274	195	955[a]
First kits (new service recipients)	209	160	191	150	710

a. This includes the reported number distributed from sites and is likely lower than actual distribution. Distribution numbers were not received from 17 sites.

See Appendix B – Box B.1 (page 44) for interpretation notes on the Provincial Take-Home Naloxone program data.

Manitoba's Materials Distribution Agency (MDA)

- In 2017, 1,595 naloxone kits were shipped from the MDA. There was a decrease in naloxone kits shipped during the fourth quarter of 2017 compared to the other three quarters. Zero kits were reported to be shipped in December (Figure 1):
  - Quarter 1: n=545
  - Quarter 2: n=410
  - Quarter 3: n=405
  - Quarter 4: n=235
- In 2017, the majority of naloxone kits were shipped to Winnipeg RHA (65%, n=1,040), followed by Prairie Mountain Health (14%, n=230) and Northern Health Region (12%, n=190) (*data not shown*).

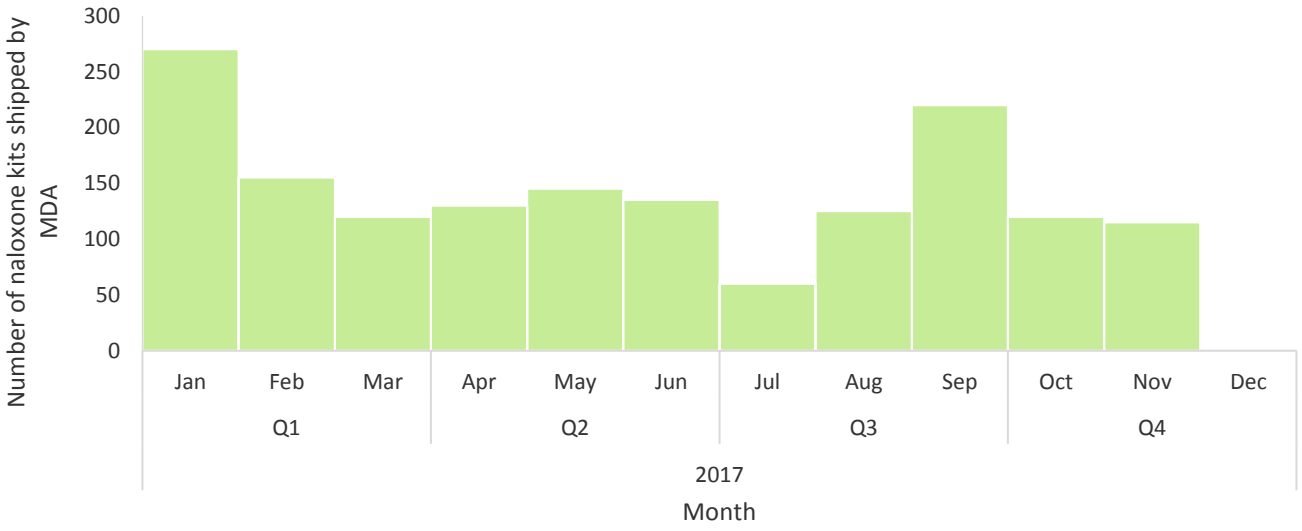


Figure 1: Number of naloxone kits shipped by Materials Distribution Agency, Panorama (2017)

Naloxone Administration

Winnipeg Fire and Paramedic Service (WFPS)

Demographics and historical trends[1]

- In 2017, there were 736 suspected overdose cases (9.4 per 10,000) receiving naloxone. The number of cases reported in the fourth quarter was less than the reports in any other quarter of 2017:
  - Quarter 1: n=210
  - Quarter 2: n=225
  - Quarter 3: n=177
  - Quarter 4: n=124
- The majority of 2017 cases were reported to be males (n=437, 59%); and in the 20-34 year age group (n=375, 51%) (Figure 2).
- The rate of suspected overdose cases receiving naloxone from WFPS increased from 4.2 per 10,000 population in 2013 to 9.4 per 10,000 population in 2017. (Figure 3).

Geographic Distribution

- In 2017, 57% of the suspected overdose cases receiving naloxone occurred in the Downtown or Point Douglas community areas. However, only 43% had residence postal codes in those communities: 23% in Downtown (n=166) and 20% in the Point Douglas (n=144).

See Appendix B – Box B.2 (page 44) for interpretation notes on WFPS data.

Medical Transportation Coordination Centre (MTCC)

- There were 195 suspected overdose events (rate[2]: 3.4 per 10,000 population) reported by MTCC between January 9, 2017 and January 6, 2018; the number of events have declined since the second quarter:
  - Quarter 1 (Jan 9, 2017 – Apr 1, 2017): n=42
  - Quarter 2 (Apr 2, 2017 – Jul 1, 2017): n=73
  - Quarter 3 (Jul 2, 2017 – Sep 30, 2017): n=42
  - Quarter 4 (Oct 1, 2017 – Jan 6, 2018): n=38
- In 2017, more than half of the events were among those in the 20 – 39 years age group (57%, n=112) (Figure 5) and females (54%, n=103) (Figure 4).
- Prairie Mountain Health had the highest rate of suspected overdose events (4.6 per 10,000 population), followed by Interlake-Eastern Health (4.4 events per 10,000 population) (Table 2).
- In 2017[3], 23 patients were reported receiving naloxone (120 suspected overdose calls occurred during this period; however, first responders can report back the administration of naloxone for events where it was initially suspected to be non-overdose; therefore an accurate denominator cannot be determined):
  - Quarter 2 (Apr 2, 2017 – Jul 1, 2017): n=9
  - Quarter 3 (Jul 2, 2017 – Sep 30, 2017): n=6
  - Quarter 4 (Oct 1, 2017 – Jan 6, 2018): n=8
- In 2017, as per EMS in Northern RHA data, there were 31 cases in which EMS reported administering naloxone and/or that they arrived on scene and naloxone was already given by another first responder; 52% were males. Half of these events (n=16) occurred in a private residence; 41% of the incidents occurred within communities that were not the individual's community of residence. Appendix B – Box B.4 (page 45) for interpretation notes on Northern RHA EMS data.

See Appendix B – Box B.3 (page 44) for interpretation notes on MTCC data.

[1] The crude rate was calculated using the 2017 population (all ages) for Winnipeg Regional Health Authority.

[2] The crude rate was calculated using the 2017 population (all ages) for all Regional Health Authorities in Manitoba, excluding the Winnipeg RHA.

[3] MTCC started to track the naloxone administration for suspected overdose events as of May 21, 2017;

Additional supporting tables and figure can be found in Appendix A of this report.

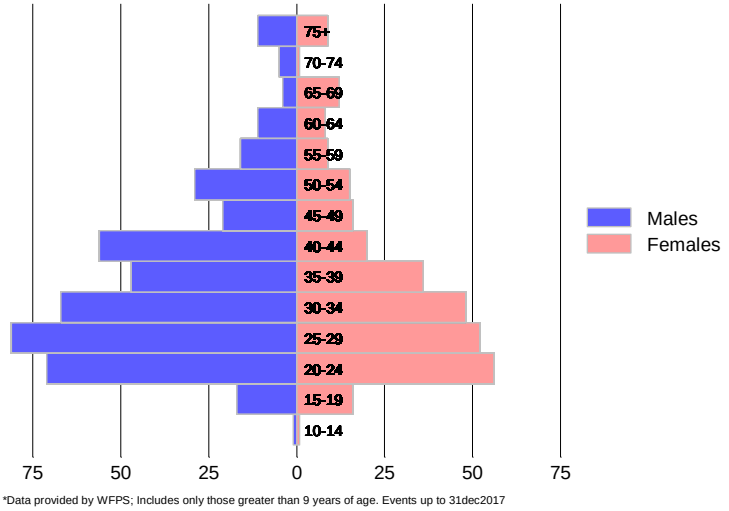


Figure 2: Age pyramid of suspected overdose cases receiving naloxone by sex, Winnipeg Fire and Paramedic Service (2017)*

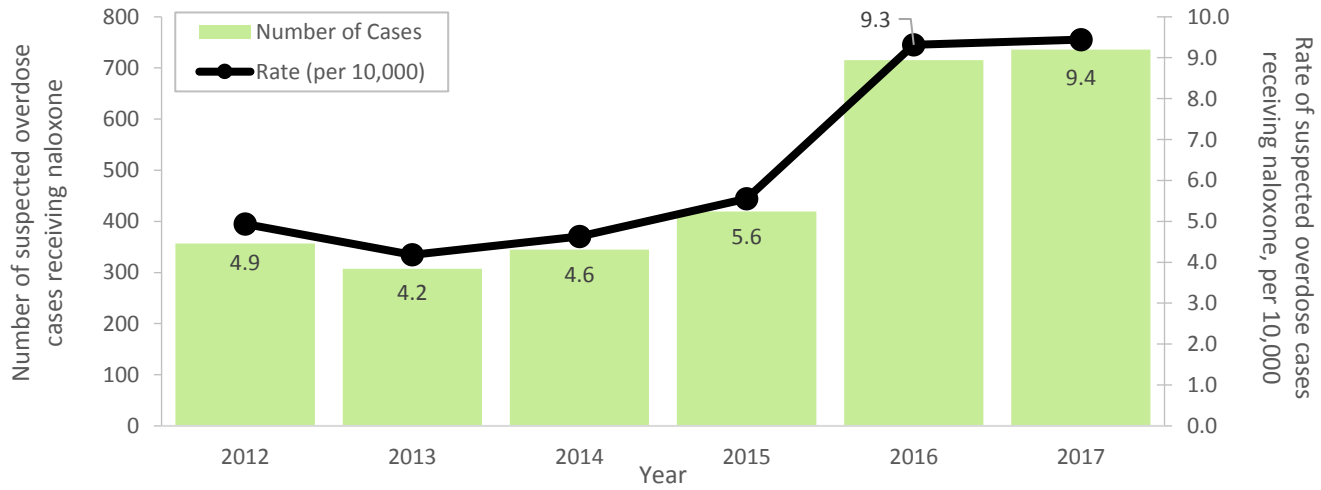


Figure 3: Number and crude rate (per 10,000) of suspected overdose cases receiving naloxone, Winnipeg Fire and Paramedic Service (2012 – 2017)

Table 2: Crude rate (per 10,000) of suspected overdose events in rural and northern Manitoba by Regional Health Authority (RHA), Medical Transportation Coordination Centre, (January 9, 2017 – January 9, 2018*)

Regional Health Authority	Number of suspected overdose events	Rate (per 10,000)
Interlake-Eastern RHA	59	4.4
Prairie Mountain Health	75	4.6
Northern RHA	20	2.6
Southern Health - Santé Sud	41	2.0

*Since the reported data period starts on January 9, 2017 and ends on January 9, 2018, the results cannot be presented for the 2017 calendar year

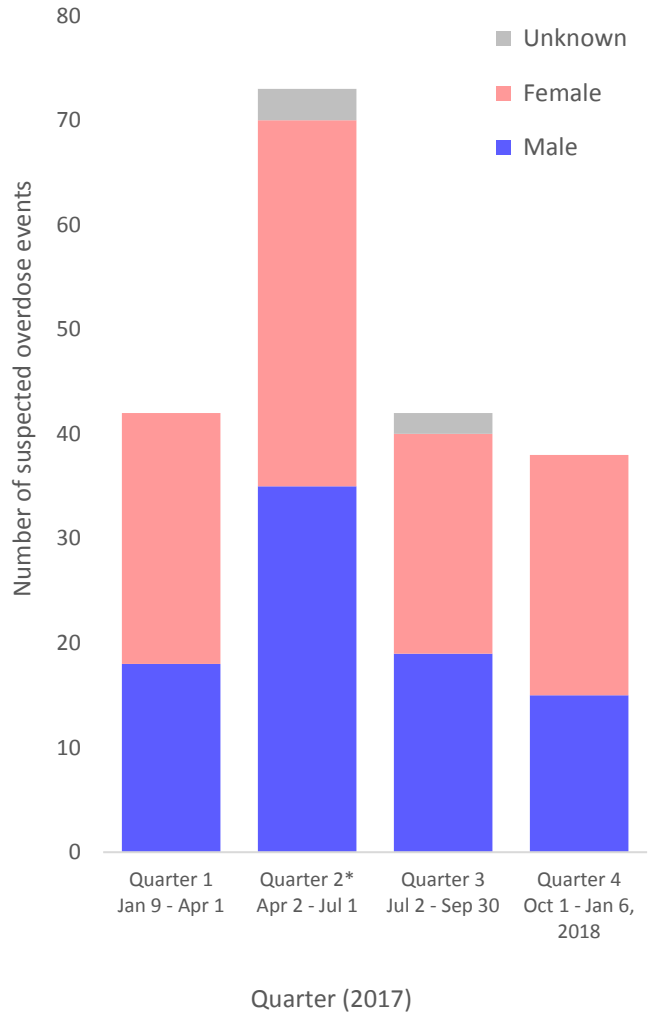


Figure 4: Quarterly number of suspected overdose events in rural and northern Manitoba by sex, Medical Transportation Coordination Centre (January 9, 2017 – January 9, 2018*)

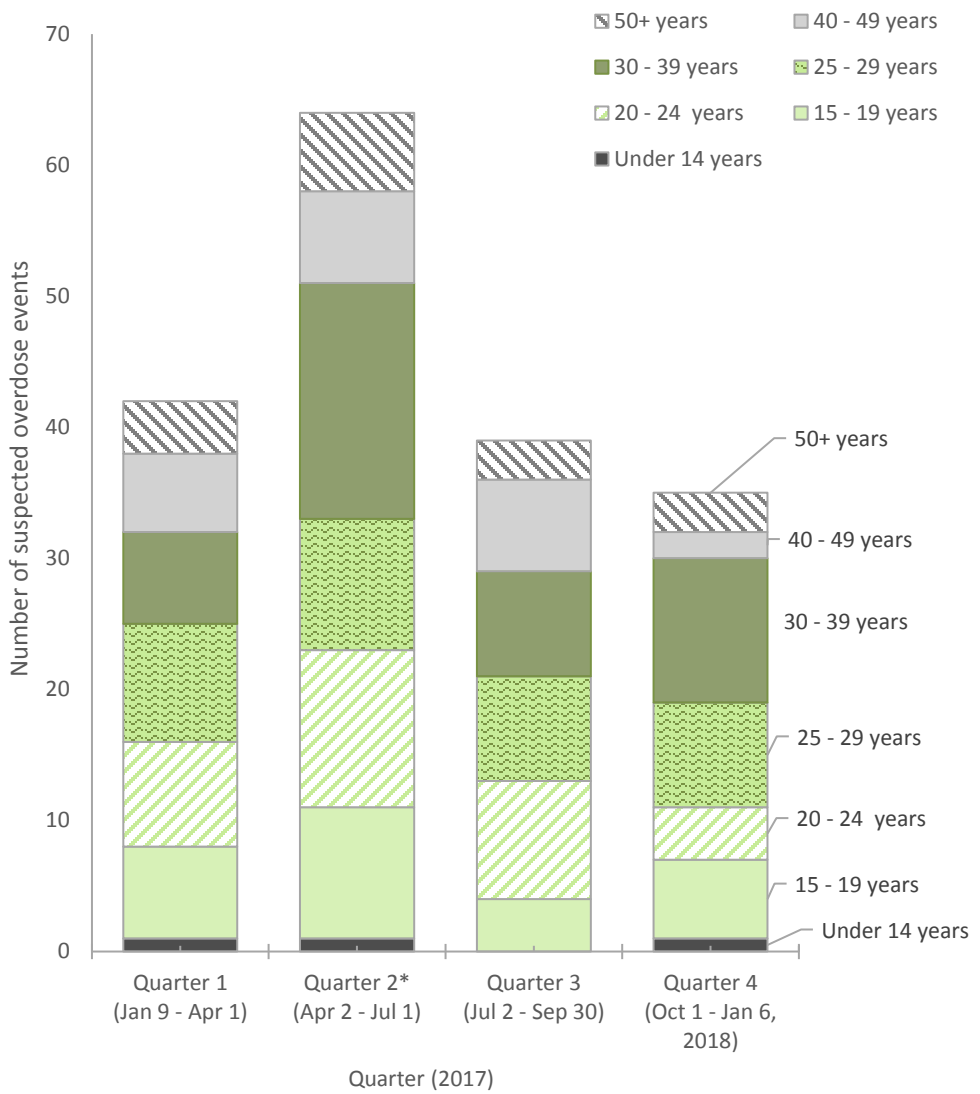


Figure 5: Quarterly number of suspected overdose events in rural and northern Manitoba by age group, Medical Transportation Coordination Centre (January 9, 2017 – January 9, 2018)

Provincial Take-Home Naloxone Program

- In 2017, of the 955 take-home naloxone kits distributed, 112 were used in the community during overdose events (approximately 1 in 9 distributed kits are reported being used in overdose events).
    - Information about the overdose events was received for 104 events (Figure 6) – kits were reported to be used the most in the second quarter[4] (n=39).
- The majority of the take-home naloxone kits were used by males (n=60, 63%) and occurred within a private residence (n=81, 70%); approximately half of the total take-home naloxone kits used were in the age group of 19 - 30 years (47%) (Table 3).
- Fentanyl was the most commonly reported drug during overdose events (Table 3).
- In 56 of 104 overdose events (54%), 911 was not called. The top two reported reasons were: "worried police would come" and "thought the person would get better on their own" (Table 4).
- There were two reported events in which the person who overdosed did not survive[5].

See Appendix B – Box B.1 (page 44) for interpretation notes on the Provincial Take-Home Naloxone Program data.

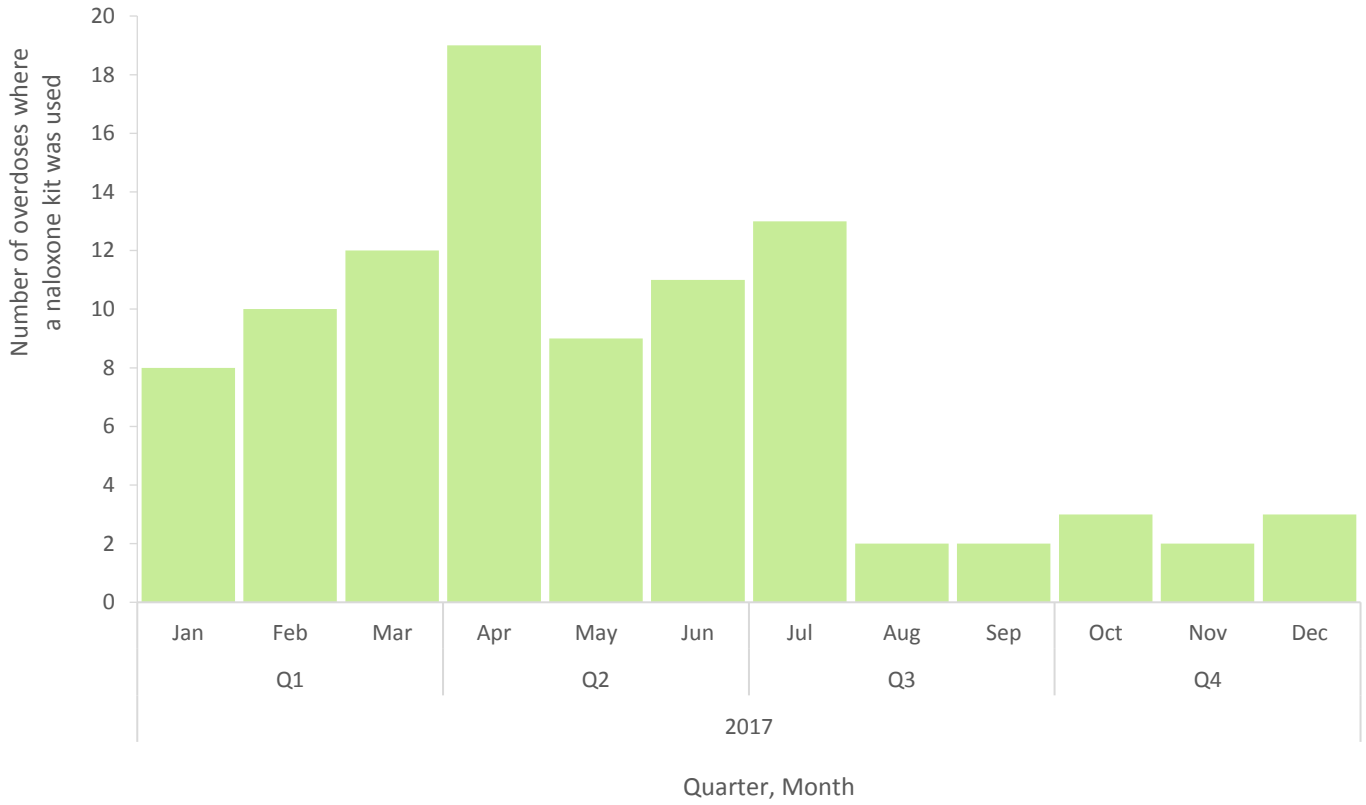


Figure 6: Number of overdose events where a take-home naloxone kit was used, Manitoba Provincial Take-Home Naloxone Program (2017)

[4] Events are often reported a month or more after they occur, so the relatively low numbers in the fourth quarter may be due to delays in reporting.

[5] When a person overdoses on an opioid drug, respirations will be depressed to the point of inadequate oxygen intake. Eventually under these conditions, the heart will stop. Naloxone administration has a small window of applicability and is indicated primarily for witnessed overdose or overdose that is discovered before the heart stops beating.

Table 3: Characteristics of overdose events where a take-home naloxone kit was used, Manitoba Provincial Take-Home Naloxone Program (2017)

Characteristics	Categories	Female (n=36)	Male (n=60)	Unknown (n=8)	Total (n=104)
Age group	12-18 years	1 (2.8%)	1 (1.7%)	0 (0.00%)	2 (1.9%)
	19-30 years	20 (55.6%)	28 (46.7%)	1 (12.5%)	49 (47.1%)
	31-40 years	11 (30.6%)	13 (21.7%)	1 (12.5%)	25 (24.0%)
	41-50 years	3 (8.3%)	6 (10.0%)	0 (0.0%)	9 (8.7%)
	51-60 years	0 (0.0%)	3 (5.0%)	0 (0.0%)	3 (2.9%)
	61 years and older	0 (0.0%)	2 (3.3%)	0 (0.0%)	2 (1.9%)
	Unknown age	1 (2.8%)	7 (11.7%)	6 (75.0%)	14 (13.5%)
Location of overdose	Private residence	30 (83.3%)	41 (68.3%)	3 (37.5%)	74 (71.2%)
	Street	4 (11.1%)	4 (6.7%)	1 (12.5%)	9 (8.7%)
	Other[a]	0 (0.0%)	5 (8.3%)	0 (0.0%)	5 (4.8%)
	Unknown and/or missing information	2 (5.5%)	10 (16.7%)	4 (50.0%)	16 (15.3%)
Region of overdose	Winnipeg RHA	29 (80.6%)	45 (75.0%)	7 (87.5%)	81 (77.9%)
	Prairie Mountain Health	5 (13.9%)	4 (6.7%)	1 (12.5)	10 (9.6%)
	Interlake-Eastern RHA	0 (0.0%)	5 (8.3%)	0 (0.0%)	5 (4.8%)
	Southern Health - Santé Sud	0 (0.0%)	2 (3.3%)	0 (0.0%)	2 (1.9%)
	Unknown region in Manitoba	2 (5.6%)	3 (5.0%)	0 (0.0%)	5 (4.8%)
	Out of province	0 (0.0%)	1 (1.7%)	0 (0.0%)	1 (1.0%)
Substance type[b] (self-reported)	Fentanyl	12 (33.3%)	25 (41.7%)	1 (12.5%)	38 (36.5%)
	Carfentanil	6 (16.7%)	15 (25.0%)	1 (12.5%)	22 (21.2%)
	Crystal meth	3 (8.3%)	12 (20.0%)	0 (0.0%)	15 (14.4%)
	Morphine	5 (13.9%)	5 (8.3%)	0 (0.0%)	10 (9.6%)
	Other substances[c]	9 (25.0%)	8 (13.3%)	2 (25.0%)	19 (18.3%)

[a] Other locations include public washroom, hotel, shelter, in-vehicle, public stairwell, apartment building lobby, and outdoor (near river).

[b] Results are not mutually exclusive.

[c] Other substances include benzodiazepine, cocaine/crack, alcohol, codeine, methadone, heroin, and dilaudid.

Table 4: Characteristics of emergency response to overdose events where a take-home naloxone kit was used, Manitoba Provincial Take-Home Naloxone Program (2017)

Variable	Description	Female (n=36)	Male (n=60)	Unknown (n=8)	Total (n=104)
Was 911 called?	Yes	9 (25.0%)	26 (43.3%)	3 (37.5%)	38 (36.5%)
	No	23 (63.9%)	30 (50.0%)	3 (37.5%)	56 (53.8%)
	Unknown	4 (11.1%)	4 (6.7%)	2 (25.0%)	10 (9.6%)
Reason(s) for not calling 911[a]	No phone	2 (5.6%)	5 (8.3%)	1 (12.5%)	8 (7.7%)
	Worried police would come	4 (11.1%)	7 (11.7%)	0 (0.0%)	11 (10.6%)
	Thought the person would get better on their own	8 (22.2%)	7 (11.7%)	0 (0.0%)	15 (14.4%)
	Unknown	7 (19.4%)	7 (11.7%)	3 (37.5%)	17 (16.3%)
	Other reasons[b]	3 (8.3%)	4 (6.7%)	0 (0.0%)	7 (6.7%)
Actions taken during overdose[a]	Stayed with the person until (s)he came around	18 (50.0%)	33 (55.0%)	3 (37.5%)	54 (51.9%)
	Checked the person's breathing	18 (50.0%)	37 (61.7%)	2 (25.0%)	57 (54.8%)
	Provided artificial respirations	12 (33.3%)	30 (50.0%)	2 (25.0%)	44 (42.3%)
	Slapped or shook the person (not recommended)	10 (27.8%)	23 (38.3%)	2 (25.0%)	35 (33.7%)
	Put the person in the recovery position	8 (22.2%)	16 (26.7%)	1 (12.5%)	25 (24.0%)
	Checked the person's pulse	10 (27.8%)	22 (36.7%)	0 (0.0%)	32 (30.8%)
	Yelled at the person	14 (38.9%)	26 (43.3%)	3 (37.5%)	43 (41.3%)
	Provided chest compressions	7 (19.4%)	14 (23.3%)	0 (0.0%)	21 (20.2%)
	Stayed with the person until first responders arrived	5 (13.9%)	21 (35.0%)	3 (37.5%)	29 (27.9%)
	Checked the person's airway for obstruction	5 (13.9%)	14 (23.3%)	1 (12.5%)	20 (19.2%)
	Gave the person a sternal rub	13 (36.1%)	16 (26.7%)	2 (25.0%)	31 (29.8%)
	Other actions taken[c]	0 (0.0%)	2 (3.3%)	0 (0.0%)	2 (1.9%)
	Unknown	8 (22.2%)	9 (15.0%)	2 (25.0%)	19 (18.3%)
Number of naloxone doses given	One	17 (47.2%)	14 (23.3%)	4 (50.0%)	35 (33.7%)
	Two	11 (30.6%)	31 (51.7%)	2 (25.0%)	44 (42.3%)
	Three	4 (11.1%)	10 (16.7%)	0 (0.0%)	14 (13.5%)
	Unknown	4 (11.1%)	5 (8.3%)	2 (25.0%)	11 (10.6%)

[a] Results are not mutually exclusive.

[b] Other reasons include the person requesting to not call 911, taking the person to the emergency room themselves, the person recovering quickly, responder is hiding from people, or brought the person to urgent care instead.

[c] Other actions taken during the overdose include putting the person in a cold shower, or stimulation with ice.

Severity

Hospital Admissions

- In 2017, a total of 139 opioid poisoning hospitalizations were reported (a rate of 10.2 per 100,000 population, an increase from 2015 (9.2 per 100,000) and 2016 (9.3 per 100,000) (Figure 7). In 2017, the lowest number of hospitalizations were in the fourth quarter:
    - Quarter 1: n=38
    - Quarter 2: n=38
    - Quarter 3: n=34
    - Quarter 4: n=29
- The female population continues to have a higher rate of opioid poisoning hospitalizations in 2017 as compared to males (10.8 per 100,000 female population; 9.6 per 100,000 male population). This is a continuing trend since 2008 (Figure 7).
- Those aged 25 – 64 make up 66% of opioid poisoning hospitalizations in Manitoba. The rate of opioid poisoning hospitalizations have increased in those aged 44 years and younger; and decreased in those 45 years and older since 2016 (Figure 8).
- The number of synthetic opioid poisoning hospitalization (including fentanyl) has increased from 4 hospitalizations (rate: 0.3 per 100,000) in 2014 to 23 in 2017 (rate: 1.7 per 100,000) (Figure 9).
- Based upon the region of residence,
    - Prairie Mountain continues to have the highest rate of opioid poisoning hospitalizations during 2008 – 2017 (Figure 10).
    - The Winnipeg region is showing an upward trend in opioid poisoning hospitalizations.
    - In all other regions a downward trend is seen in opioid poisoning hospitalizations in 2017.
    - The Northern Health Region, including First Nations communities, had five opioid poisoning hospitalizations in 2017[6] and 10 suspected opioid overdoses reported between April 5 and November 26, 2017 (*data not shown*). Nine out of ten cases (90%) were sent out by medical evacuation due to severe condition. See Appendix B – Box B.6 (page 46) for interpretation notes on FNIHB data.

Emergency Department Admissions

- In 2017, there were 1,413 (1.8 per 1,000 population[7]) suspected overdose cases arriving at the WRHA emergency departments and urgent care facilities; there was a decrease in the number of suspected overdose events that occurred in the fourth quarter (n=319), as compared to the third (n=332), second (n=411) and the first quarters (n=351) of 2017; females contributed to the largest proportion of these events (n=937, 66%).
- Approximately 44% of the female cases were within the age group of 15 - 24 years; the corresponding proportion of this age group among males was lower (32%) (Figure 11).
- Suspected overdose cases were the highest among those living in Downtown (n=226; 16%), Point Douglas (n=191; 14%), and River East (n=135; 10%) community areas (Figure 12).

Additional supporting tables and figures can be found in Appendix A of this report.
See Appendix B – Box B.5 (page 45) for interpretation notes on Emergency Department Admissions data.

[6] Data is current as of December 5, 2017. Numbers are subject to change as additional information may be received.
[7] The 2017 population of Winnipeg RHA was used to calculate the rate, despite knowing that patients from outside the RHA may arrive at the emergency departments and urgent care facilities.

Figure 7: Number and crude rate of opioid poisoning hospitalizations in Manitoba by sex, Manitoba Health, Seniors and Active Living (2008 –2017)

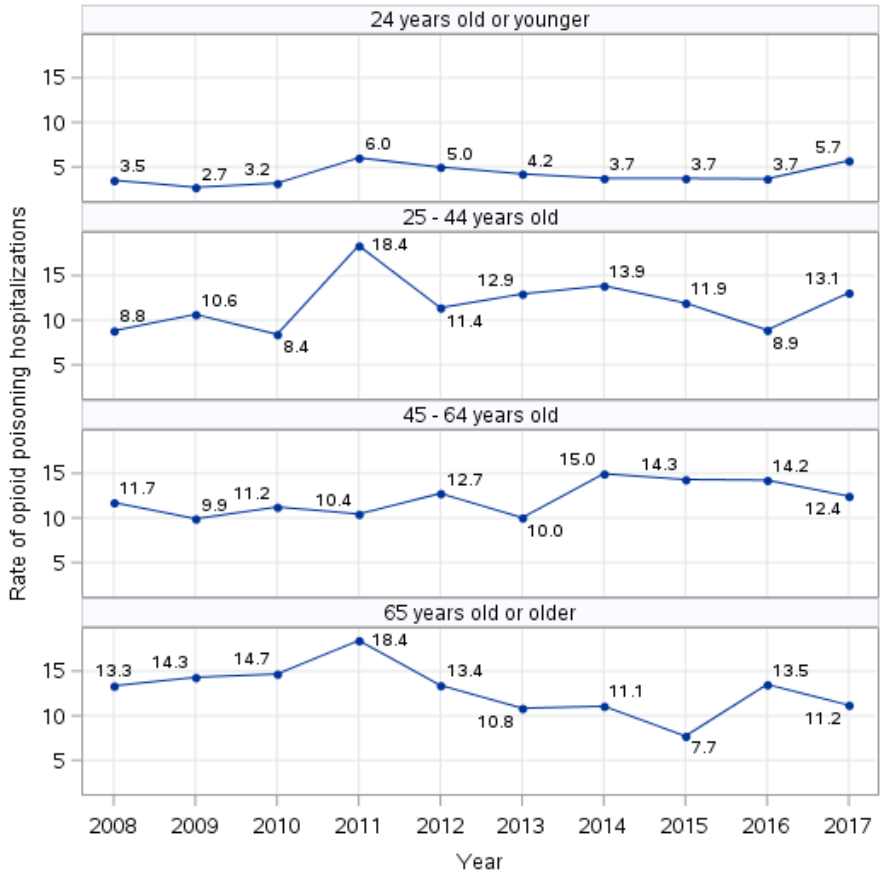
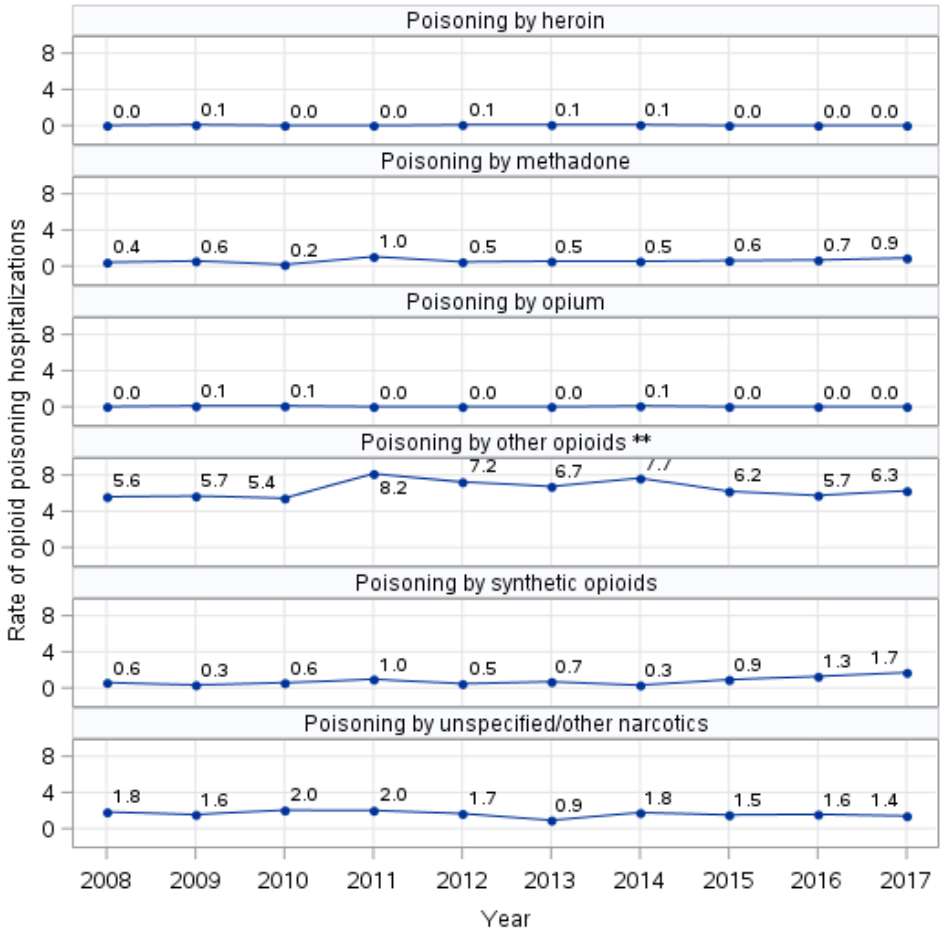


Figure 8: Crude rate (per 100,000) of opioid poisoning hospitalizations in Manitoba by age group, Manitoba Health, Seniors and Active Living (2008 – 2017)



** Other opioids include oxycodone, morphine, hydromorphone, and unspecified opioids.

Figure 9: Crude rate (per 100,000) of opioid poisoning hospitalizations in Manitoba by opioid type, Manitoba Health, Seniors and Active Living (2008 –2017)

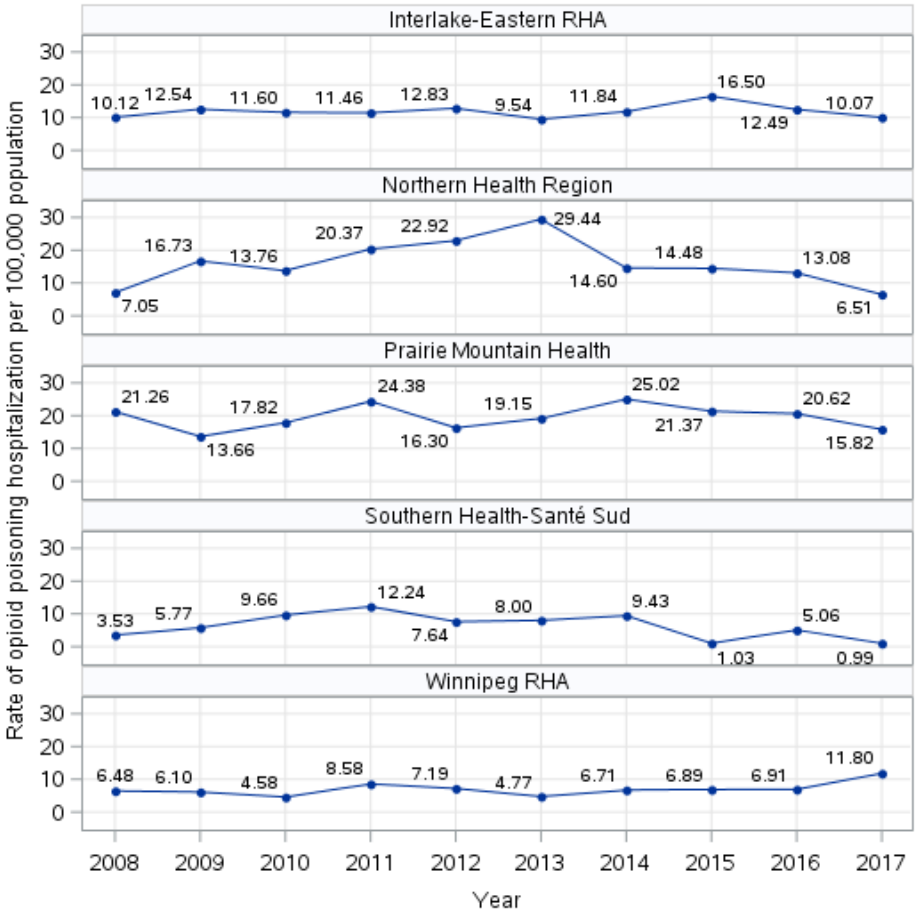


Figure 10: Crude Rate (per 100,000) of opioid poisoning hospitalizations in Manitoba by regional health authority, Manitoba Health, Seniors and Active Living (2008 –2017)

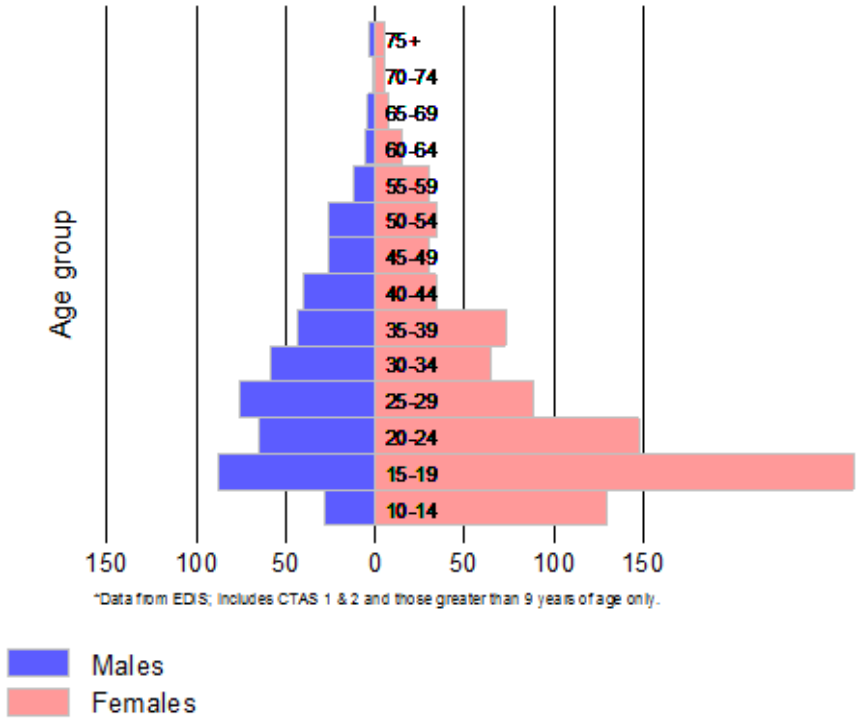


Figure 11: Age pyramid of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities by sex, Emergency Department Information System (2017)*

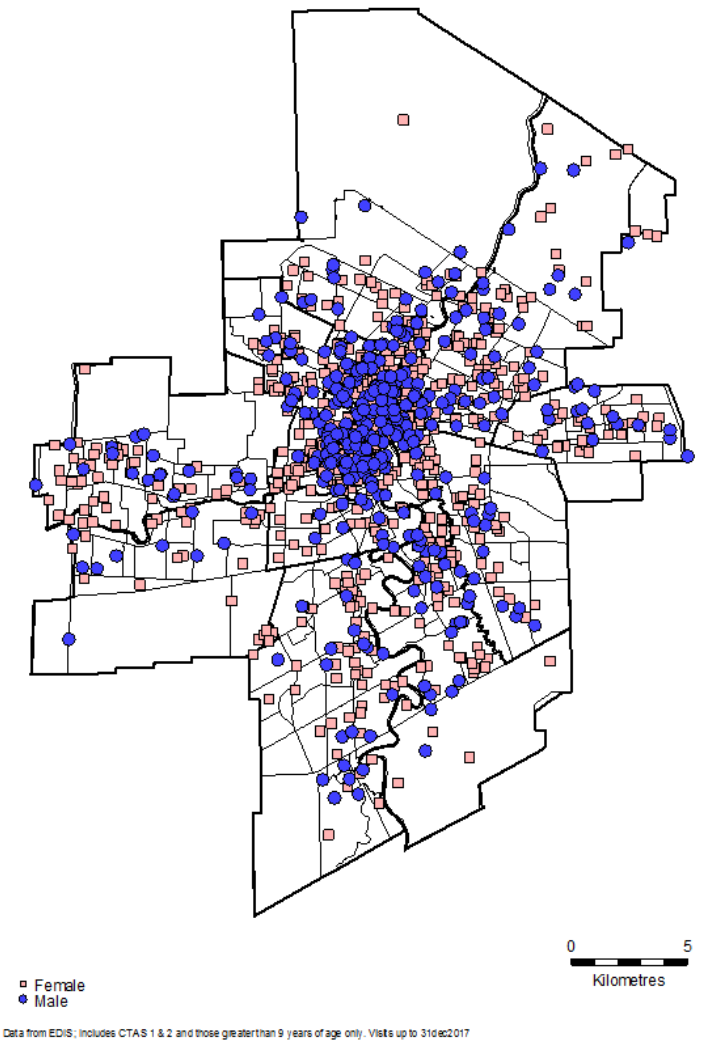


Figure 12: Dot map of residential location of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities, Emergency Department Information System (2017)*

Mortality

Office of the Chief Medical Examiner

Demographics

- There has been more apparent opioid-related deaths in 2017 (n=122; rate: 9.0 per 100,000), compared to past years (Figure 13). In 2017[8], the most number of deaths was in the first quarter:
    - Quarter 1: n=37
    - Quarter 2: n=36
    - Quarter 3: n=23
    - Quarter 4: n=26.
- In 2017, the most common place of death (69%) and place of overdose (80%) was in the home setting; the manner of death for over one third of cases (64%) continues to be unintentional (accidental) (Table 5).
- From the third quarter of 2016 and onwards, there has been a consistently higher proportion of deaths in males compared to females (Figure 14). The death rate in the male population has been on the rise from 4.7 per 100,000 population in 2015 to 11.6 per 100,000 population in 2017 (Figure 15).
- The majority of the apparent opioid-related deaths are among those aged 25 - 44 years (Figure 16).

Geographic trends

- In the fourth quarter of 2017, 62% of the deaths were in the WRHA (n=16, rate: 10.8 per 100,000) (Figure 17). The death rate has increased in all of the Regional Health Authorities except in the Interlake-Eastern Health Region between 2016 and 2017. In Southern Health, Prairie Mountain Health, and Winnipeg RHA, the increase has been occurring since 2015.
- Southern Health has had the largest increase in death rates since 2015, from 2.6 to 8.5 per 100,000.

Drug trends

- In 2017, there were 47 apparent fentanyl-related deaths (fentanyl-related opioids only and mix of fentanyl-related and non-fentanyl-related opioids):
    - The proportion of fentanyl-related opioids only in all 2017 apparent opioid-related deaths was 22% (n=27), with a decrease in proportion in the fourth quarter; the highest proportion was seen in the fourth quarter of 2016 (58%) (Figure 18).
    - 31 of the 47 apparent fentanyl-related deaths included carfentanil (66%), in comparison to 40% (n=15) in 2016 (Figure 19).
- Overall, the top two other substances contributing to deaths between 2014 and 2017 were benzodiazepines and antidepressants (figure 20).
    - The proportion of crystal meth contributing to these deaths increased from 4% (n=3) in 2014 to 22% (n=27) in 2017.
- Between 2014 and 2017, opioids were the most frequently prescribed drugs within six months before an apparent opioid-related death occurred (with the exception of 2015), followed by antidepressants and benzodiazepines (Figure 20). The proportion of opioid prescription dispensation increased from 56% in 2014 to 67% in 2017 (Figure 21).
    - The most commonly prescribed opioids within six months before an apparent opioid-related death occurred were codeine (50%), methadone (21%), and hydromorphone (22%) (*data not shown*).

Additional supporting tables and figures can be found in Appendix A of this report.

See Appendix B – Box B.7 (page 46) for interpretation notes on Office of the Chief Medical Examiner's data.

[8] Note, the number of deaths for this period is subject to change as the toxicology results become available.

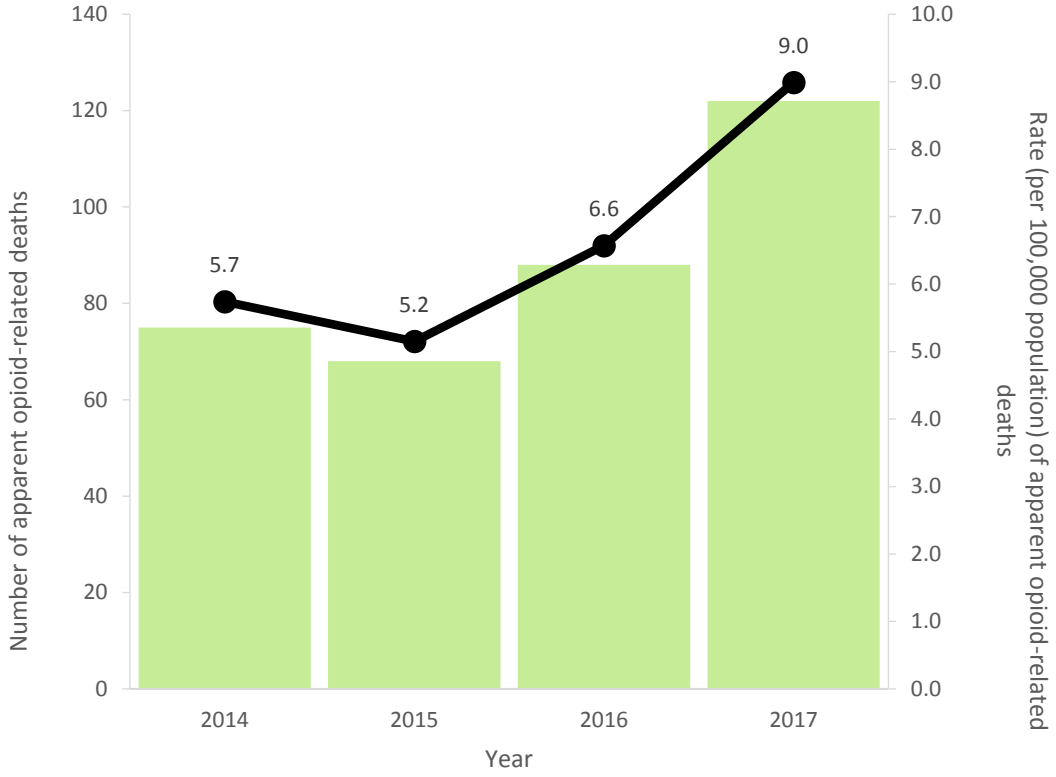


Figure 13: Number and rate (per 100,000) of apparent opioid-related deaths in Manitoba, Office of the Chief Medical Examiner (2014 – 2017)

Table 5: Characteristics of apparent opioid-related deaths, Office of the Chief Medical Examiner, 2017

	Male		Female		Total	
	n	%	n	%	N	%
Total	*78*	*100*	*44*	*100*	*122*	*100*
Place of death						
Home	53	68%	31	70%	84	69%
Health care facility	12	15%	9	20%	21	17%
Public setting	3	4%	2	5%	5	4%
Other	10	13%	2	5%	12	10%
Place of overdose						
Home	61	78%	36	82%	97	80%
Public Setting	7	9%	3	7%	10	8%
Other	10	13%	5	11%	15	12%
Manner of death						
Unintentional (accident)	58	74%	20	45%	78	64%
Intentional (suicide)	5	6%	7	16%	12	10%
Undetermined	11	14%	13	30%	24	20%
Unknown (open file)	4	5%	4	9%	8	7%

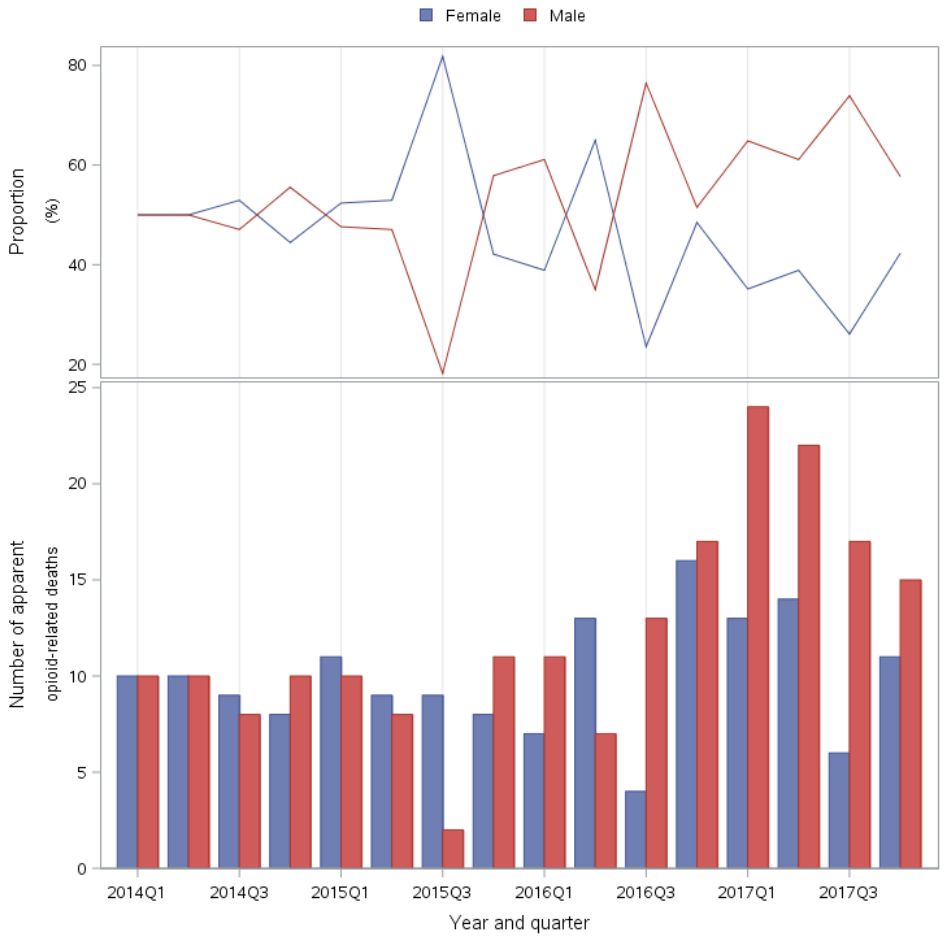


Figure 14: Number and proportion of apparent opioid-related deaths in Manitoba by sex, Office of the Chief Medical Examiner (2014 – 2017)

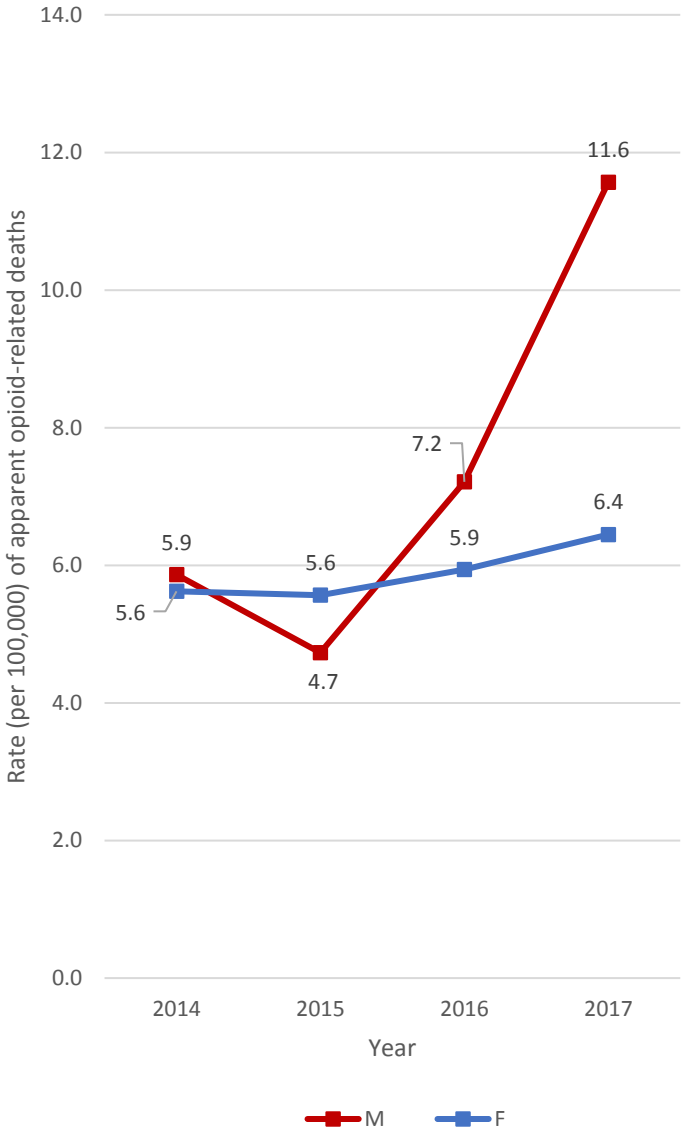


Figure 15: Crude rate of apparent opioid-related deaths in Manitoba by sex, Office of the Chief Medical Examiner (2014 – 2017)

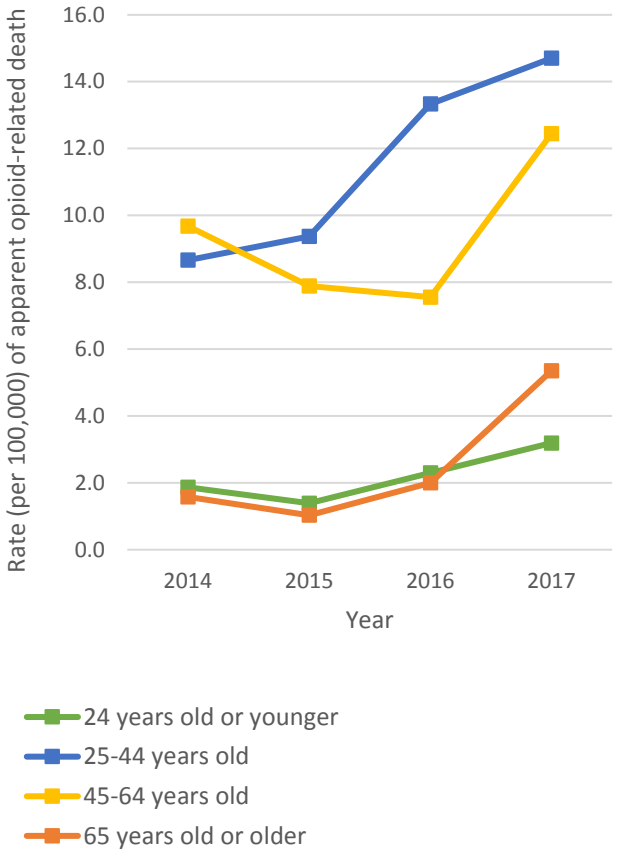


Figure 16: Crude rate of apparent opioid-related deaths in Manitoba by age group, Office of the Chief Medical Examiner (2014 – 2017)

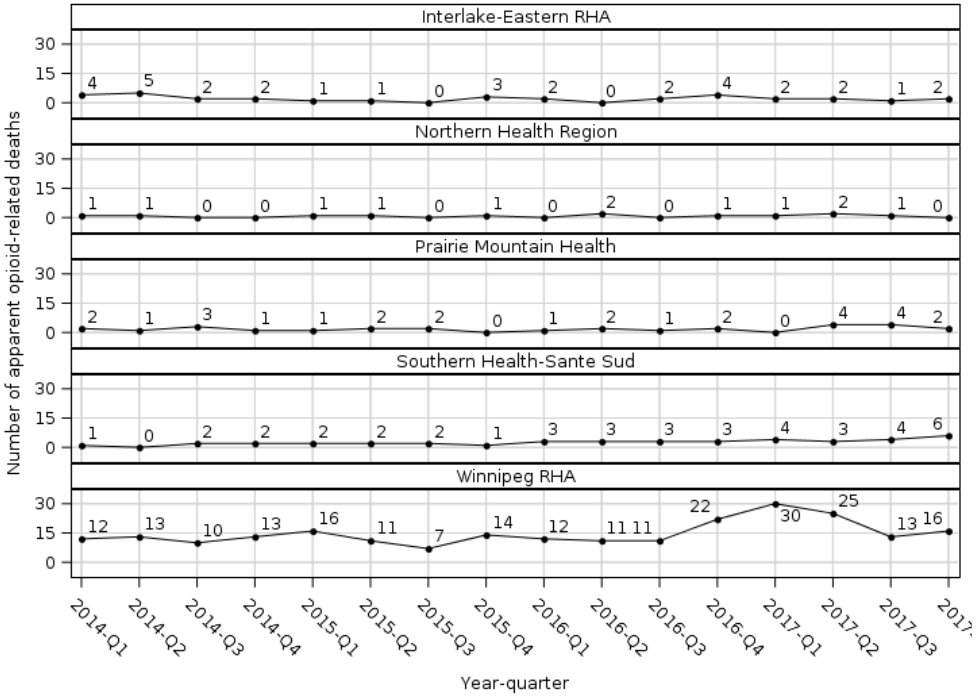


Figure 17: Number of apparent opioid-related deaths in Manitoba by Regional Health Authority, Office of the Chief Medical Examiner (2014 – 2017)

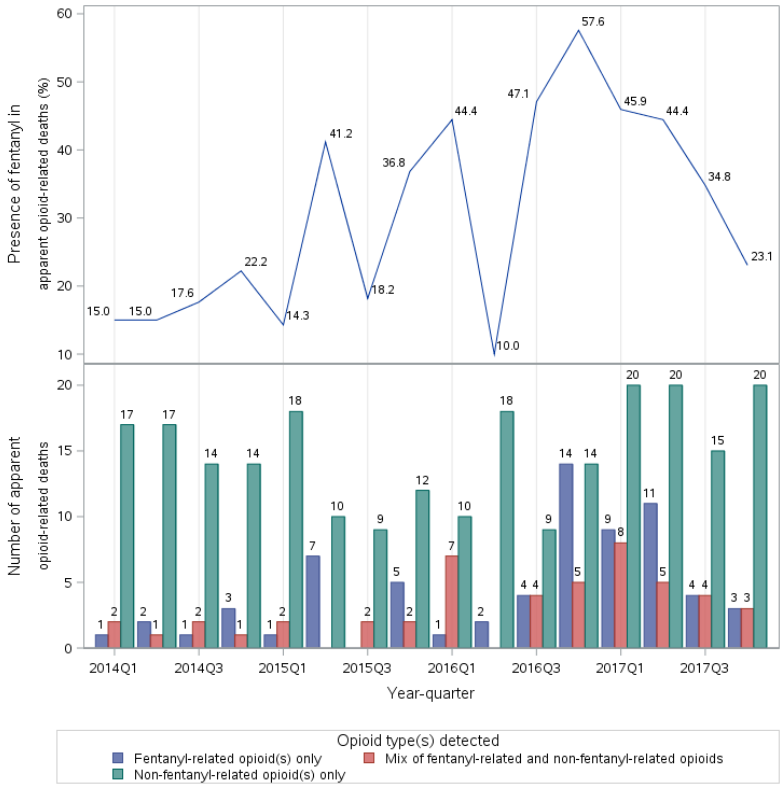


Figure 18: Presence of fentanyl analogs in apparent opioid-related deaths and number of apparent opioid-related deaths in Manitoba by suspected opioid type, Office of the Chief Medical Examiner (2014 – 2017)

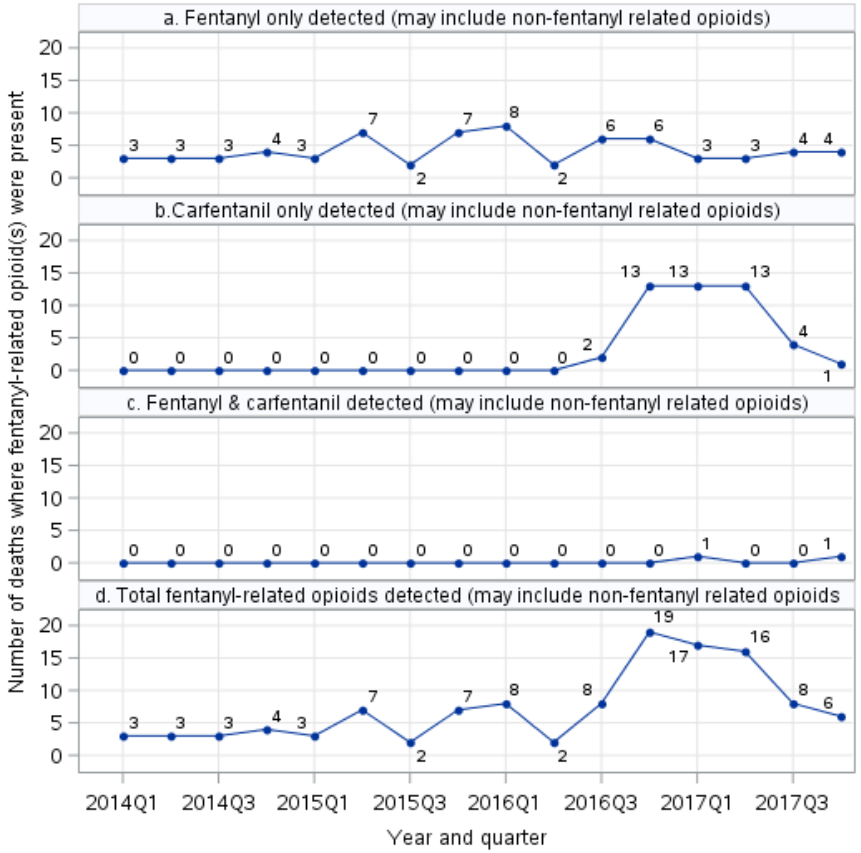


Figure 19: Number of apparent opioid-related deaths where fentanyl-related opioids were present, Office of the Chief Medical Examiner (2014 – 2017)

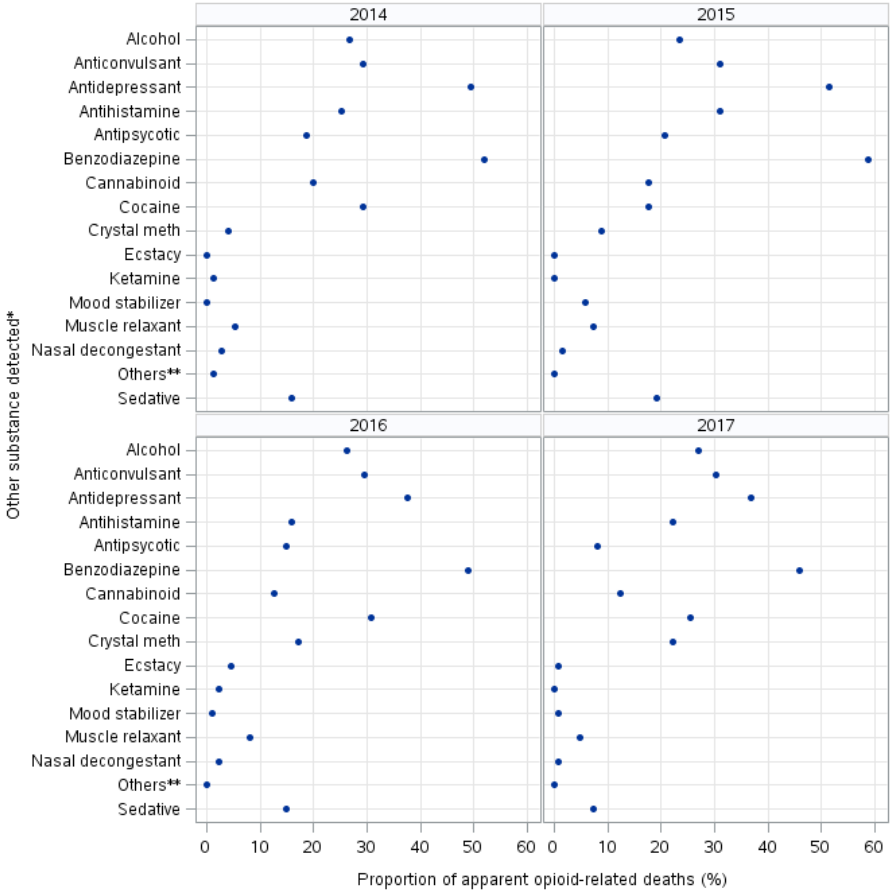


Figure 20: Proportion of other substances detected in case of apparent opioid-related deaths, Office of the Chief Medical Examiner (2014 – 2017)

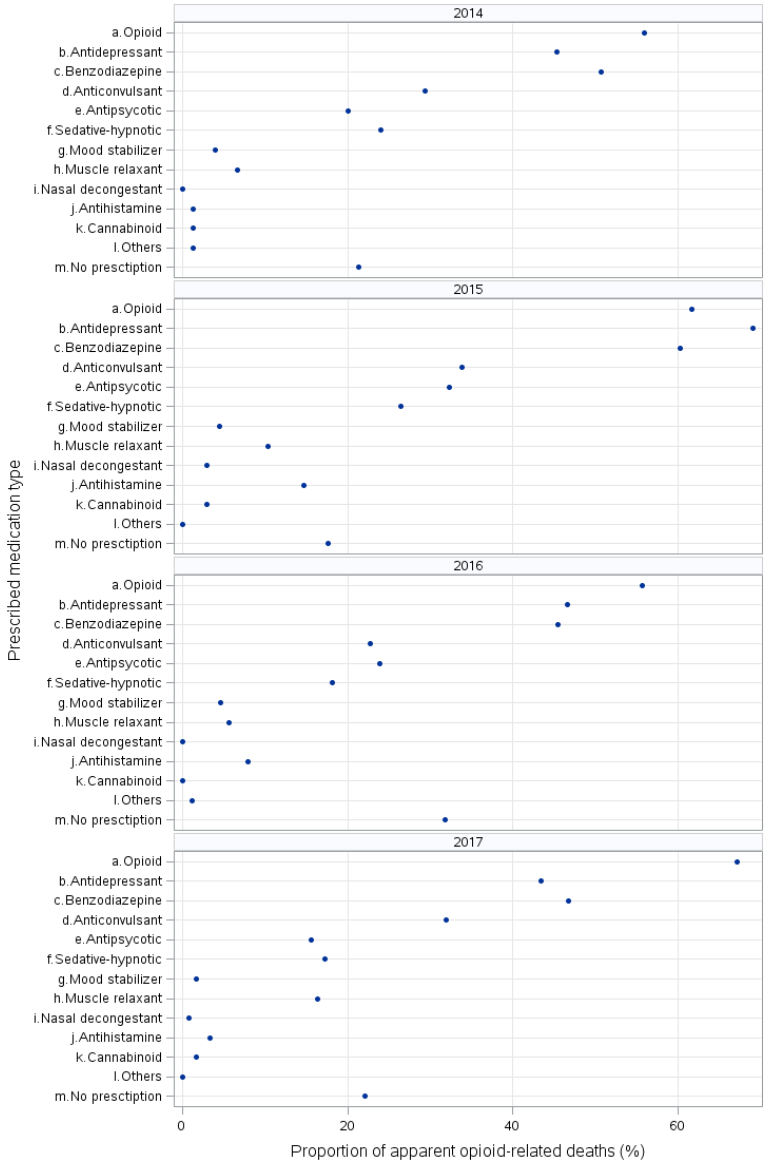


Figure 21: Count of prescription medication use within six months before an apparent opioid-related death occurred, Office of the Chief Medical Examiner (2014 – 2017)

Toxicology

- There were a total of 42 positive screens for fentanyl analogs* between January 1st and January 10, 2018. Approximately 86% of all these positive screens detected the presence of the carfentanil analog* (Figure 22).
- A steady decline in positive screen is seen from the first to the fourth quarter; this is mainly due to incomplete toxicology results. As results become available, the data will be updated.

*Fentanyl analogs do not include fentanyl.
**The reported data ends on Jan 10, 2018; therefore, the results cannot be presented as January 1 – December 31, 2017.

See Appendix B – Box B.8 (page 46) for interpretation notes on Toxicology data.

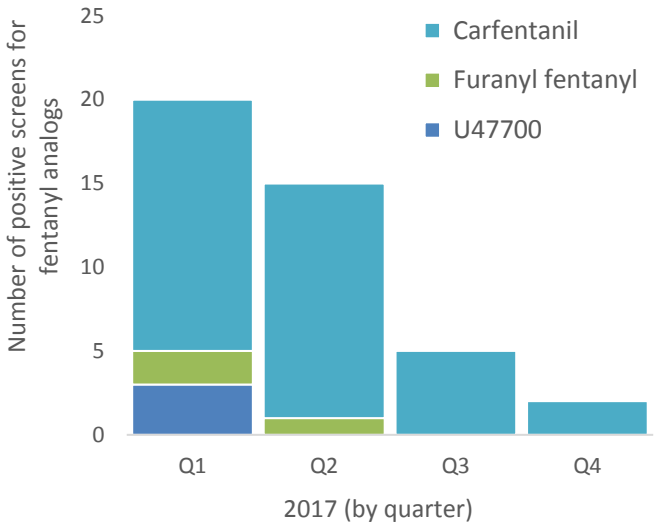


Figure 22: Number of positive toxicology screens by fentanyl analog*, Diagnostic Services Manitoba (January 1, 2017 – January 10**, 2018)

Prescription Opioid Dispensation

Drug Program Information Network (DPIN)

- In 2017, 36,592 Manitobans were dispensed a prescription opioid from a community pharmacy; in the fourth quarter, 324 more prescriptions we dispensed compared to the third quarter:
  - Quarter 1: n = 9,184
  - Quarter 2: n = 9,152
  - Quarter 3: n = 8,966
  - Quarter 4: n = 9,290
- Despite the increase in number of Manitobans being dispensed a prescription opioid from a community pharmacy from 2013 to 2017, the rate has been relatively stable ranging between 26.5 per 1,000 (2013) and 27.4 per 1,000 (2016). In 2017, the rate was 27.0 per 1,000 (see Figure 24), a 0.45 unit decrease from the previous year.
  - Since 2012, the proportion of females dispensed a prescription opioid has been consistently greater than males.
  - In 2017, similar to previous years, the rate of Manitobans per 10,000 population prescribed opioids increased by age (see Table 6).
- The rate of Manitobans dispensed a dosage prescription opioid (≤50 MME/day and 51-90 MME/day) has gradually increased from 2013 to 2017. On the other hand, during the same period, the number of Manitobans dispensed a high dosage prescription opioid (91-200 MME/day and >200 MME/day) has been on the decline (Figure 23).
  - Age differences can also be seen in the prescribing procedures. In general, higher dosage of opioids is uncommon among Manitobans under the age of 15.
  - About 78% (n=2,087) of new/naïve[9] opioid patients in the fourth quarter were dispensed hydromorphone, followed by morphine (n=508; 19%) (Figure 25).

[9] Naïve with respect to DPIN data. Patients/client may have been discharged from hospital. Data excludes long term care and palliative care claims.

Additional supporting figure can be found in Appendix A of this report.

See Appendix B – Box B.9 (page 47) for interpretation notes on Drug Program Information Network data.

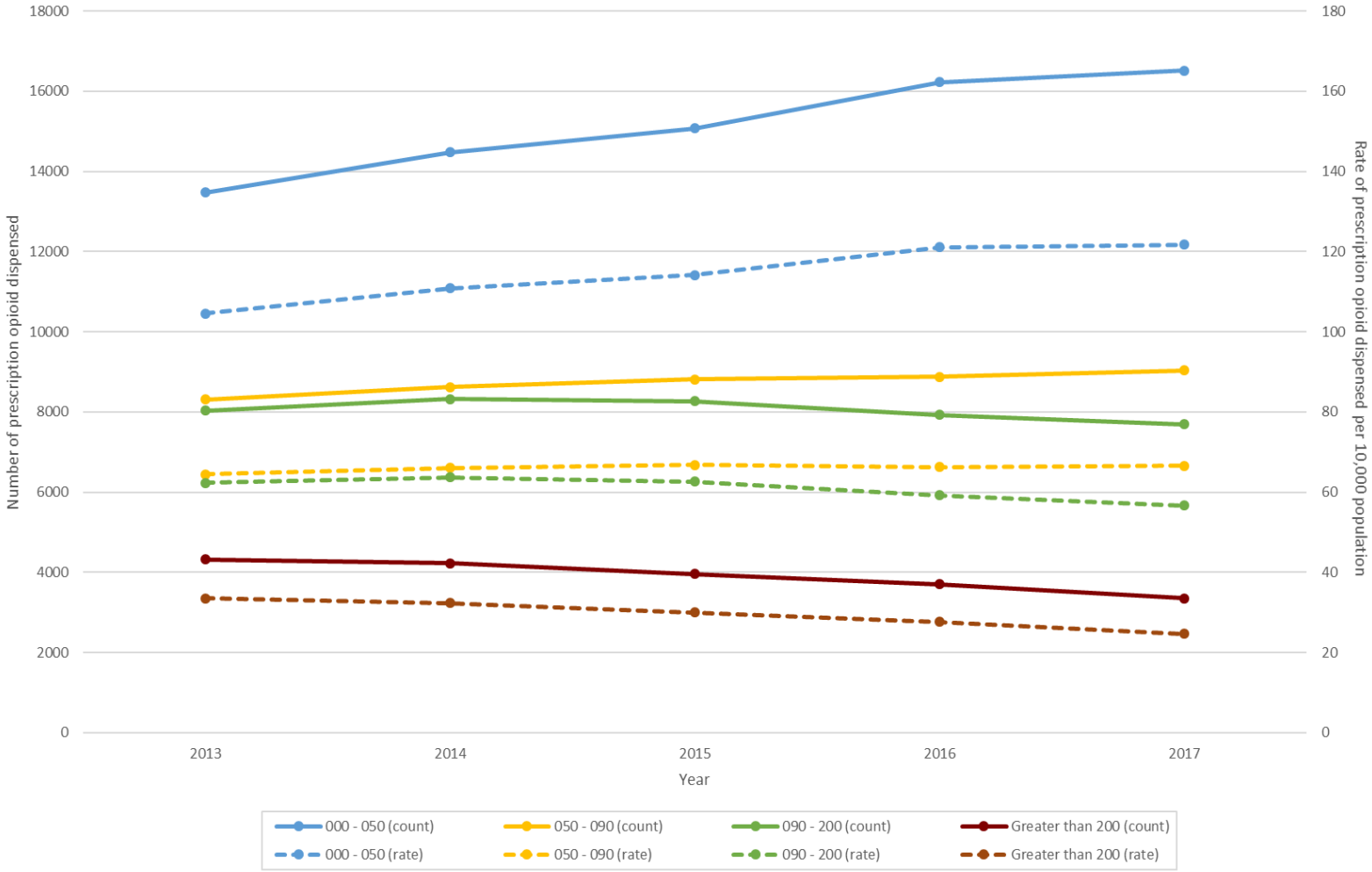


Figure 23: Count and crude rate of Manitobans per 10,000 population dispensed a prescription opioid from a community pharmacy by morphine milligram equivalent (MME) per day, Drug Program Information Network (Jan 1, 2013 – December 31, 2017)

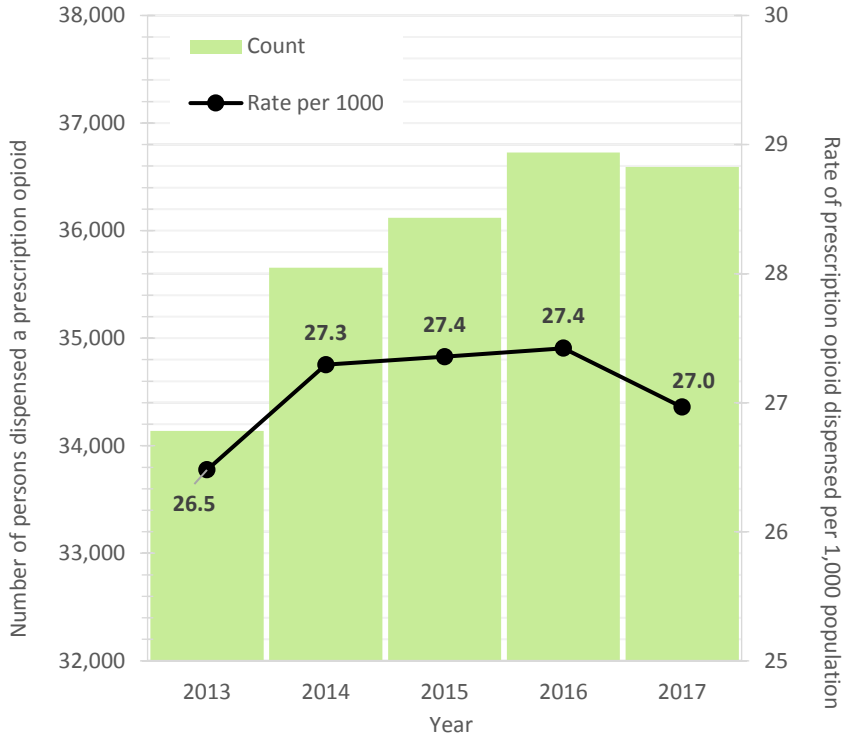


Figure 24: Number and crude rate (per 1,000) of Manitobans dispensed a prescription opioid from a community pharmacy, Drug Program Information Network (2013 – 2017)

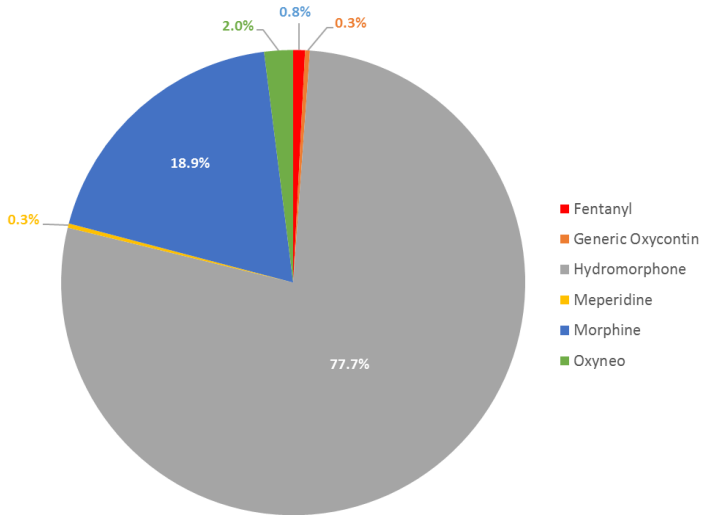


Figure 25: Proportion of new/naïve persons dispensed a prescription opioid from a community pharmacy by opioid product type, Drug Program Information Network (Oct 1 – Dec 31, 2017)

Table 6: Number and crude rate (per 10,000) of Manitobans dispensed a prescription opioid from a community pharmacy by age group, Drug Program Information Network (2013 – 2017)

Year	Under 15 years		15 to 24.9 years*		25 to 44.9 years**		45 to 64.9 years		65+ years	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
2013	31	1.3	484	26.5	5,768	169.7	16,444	485.1	11,412	618.7
2014	35	1.4	557	30.3	5,920	170.9	16,779	492.1	12,364	651.9
2015	52	2.1	546	29.8	5,911	167.9	16,935	494.7	12,676	652.1
2016	40	1.6	525	28.7	5,750	159.7	17,025	494.7	13,386	669.8
2017	60	2.3	488	26.7	5,548	151.0	16,905	489.3	13,591	661.4

* For rate calculation, the age range of the population used was 15 to 24 years

** For rate calculation, the age range of the population used was 25 to 44 years

Call Centres

Health Links – Info Santé

- In 2017, there were five opioid misuse and overdose related calls and five fentanyl-related calls to Health Links – Info Santé in 2017 (Table 7).

Additional supporting tables and figures can be found in Appendix A of this report.

See Appendix B – Box B.10 (page 47) for interpretation notes on Health Links – Info Santé data

Table 7: Number calls to Health Links – Info Santé by opioids topic discussed per 2017 quarter, Health Links – Info Santé (January 1, 2017 – December 31, 2017)

Call topics	2017 Q1 (Jan - Mar)	2017 Q2 (Apr - Jun)	2017 Q3 (Jul - Sep)	2017 Q4 (Oct - Dec)
Fentanyl*	1	2	1	1
Naloxone Programs and Kits*	4	0	0	0
Opioid misuse and/or opioid overdose-related*	5	0	0	0
Naloxone-related (e.g. Narcan)*	0	0	0	0

* Based upon increasing caller and RN demand, new/updated health education document title is added. Data is only available from 2017 onwards.

Manitoba Poison Centre (MPC)

- Overall, the number of opioid-related calls received by MPC was relatively stable between 2013 (n= 268) and 2015 (n=264), but dropped in 2016 (n= 229), and remained stable into 2017. The majority of callers are 20 years or older.
- In 2017, there were 225 opioid-related calls received by MPC; the number of calls decreased from the first quarter to the third quarter, but increased in the fourth quarter (Table 8).

Additional supporting tables and figures can be found in Appendix A of this report.

See Appendix B – Box B.11 (page 47) for interpretation notes on Manitoba Poison Centre data.

Table 8: Number of opioid poisoning-related calls by opioid-type, Manitoba Poison Centre (2017)

Opioid Type	2017 Q1 (Jan - Mar)	2017 Q2 (Apr-Jun)	2017 Q3 (Jul-Sep)	2017 Q4 (Oct-Dec)
Opioids in combination with non-opioid analgesics	50	29	33	51
Hydromorphone	8	4	1	4
Tramadol	2	1	0	4
Morphine	1	5	2	3
Oxycodone	3	3	1	3
Fentanyl	2	0	1	2
Methadone/Buprenorphine	1	3	1	1
Codeine	0	2	2	0
Other/unknown opioids	1	1	0	0
Total	**68**	**48**	**41**	**68**

Illegal Opioids Identified or Tracked

Drug Analysis Service, Health Canada

- During the fourth quarter, a total of 774 exhibits were submitted for analysis, which represents a 4% decrease over the last quarter. The top five controlled substances include: cocaine (n=254), methamphetamine (n=179), cannabis (n=147), fentanyl (n=22), and codeine (n=16) (*data not shown*).
- In 2017, 301 illegal opioids were identified or tracked in Manitoba; oxycodone (n=63) followed by fentanyl (n=60) represented the largest proportion. During the fourth quarter, 77 opioids were identified and fentanyl represented 29% (Figure 26).
- From all heroin samples analyzed, 62% also contained fentanyl or analogue(s) *(data not shown).*
    - 124 illegal fentanyl and analogues were identified or tracked (Figure 27) – 39 were in the fourth quarter.

See Appendix B – Box B. 12 (page 48) for interpretation notes on Drug Analysis Service data.

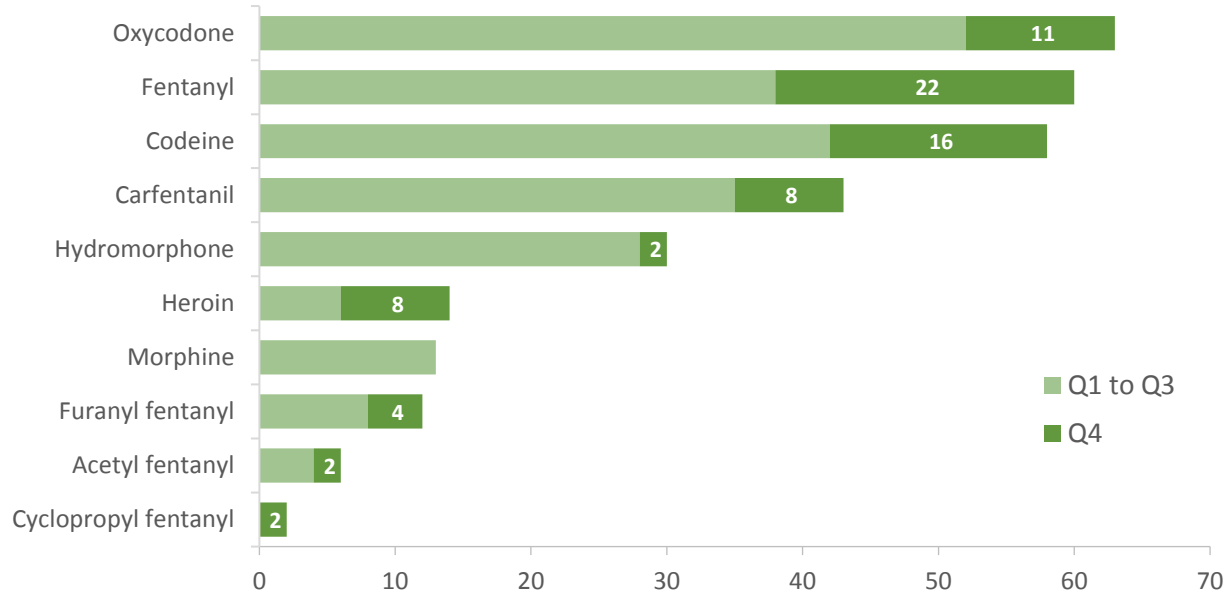


Figure 26: Top ten illegal opioids identified or tracked in 2017 in Manitoba, Drug Analysis Service, Health Canada

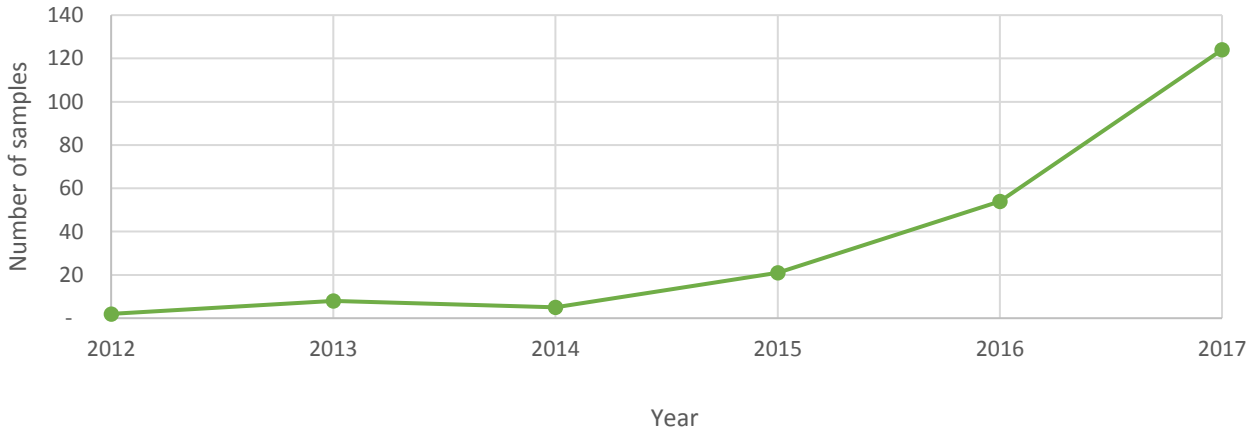


Figure 27: Number of illegal fentanyl-related opioids identified or tracked in Manitoba, Drug Analysis of Health Canada (2011 - 2017)

Conclusion

Given the increasing concerns of harm associated with opioid misuse and overdose in Manitoba, a surveillance system was established in the beginning of 2017 by collaborating with a range of stakeholders. To date, five reports (baseline, quarter one, quarter two, quarter three and quarter four) have been publicly[10] released.

Based on available data, as of the fourth quarter of 2017, in Manitoba, there has been more apparent-opioid related deaths in 2017 (N=122; rate: 9.0 per 100,000), compared to past years. The overall number of apparent overall deaths increased in the fourth quarter of 2017. Despite decreasing numbers in the fourth quarter, carfentanil (making up 66% of apparent fentanyl-related deaths) and crystal meth (making up 22% of apparent opioid-related deaths) continue to contribute significantly to apparent opioid-related deaths in 2017 compared to previous year. The proportion of opioid prescription dispensation within six months before an apparent opioid-related death occurred increased from 56% in 2014 to 67% in 2017. However, the rate of opioid prescription dispensing from a community pharmacy has remained relatively stable since 2013 (ranging between 26.5 per 1,000 and 27.4 per 1,000).

Naloxone administration can be used as a proxy measure of suspected opioid overdose in the community. There were 736 suspected overdose cases (9.4 per 10,000) receiving naloxone by Winnipeg Fire and Paramedic Service in 2017; the number of cases reported in the fourth quarter was the lowest. In rural and northern Manitoba, 23 patients were reported receiving naloxone by the MTCC. In 2017, of the 955 take-home naloxone kits distributed, 112 were used in the community during overdose events.

Manitoba continues to work closely with regional, provincial, and national stakeholders to improve prescription opioid monitoring, public awareness and education, prevention and harm reduction, and mental health and addiction treatment services.

[10] Reports available at: http://www.gov.mb.ca/health/publichealth/surveillance/other.html

Appendix A: Additional Figures and Tables

Naloxone Administration: Winnipeg Fire and Paramedic Service

Table A.1: Characteristics of suspected overdose cases receiving naloxone, Winnipeg Fire and Paramedic Service (2017)*

	Female		Male		Total	
	No.	%	No.	%	No.	%
Age group						
10-14	1	0.3	1	0.2	2	0.3
15-19	16	5.4	17	3.9	33	4.5
20-24	56	18.7	71	16.2	127	17.3
25-29	52	17.4	81	18.5	133	18.1
30-34	48	16.1	67	15.3	115	15.6
35-39	36	12.0	47	10.8	83	11.3
40-44	20	6.7	56	12.8	76	10.3
45-49	16	5.4	21	4.8	37	5.0
50+	54	18.1	76	17.4	130	17.7
Total	*299*	*100.0*	*437*	*100.0*	*736*	*100.0*
Community Area of Event Location						
St. James	12	4.0	19	4.3	31	4.2
Assiniboine South	1	0.3	7	1.6	8	1.1
Fort Garry	5	1.7	11	2.5	16	2.2
St. Vital	22	7.4	21	4.8	43	5.8
St. Boniface	8	2.7	18	4.1	26	3.5
Transcona	8	2.7	17	3.9	25	3.4
River East	27	9.0	33	7.6	60	8.2
Seven Oaks	16	5.4	28	6.4	44	6.0
Inkster	14	4.7	14	3.2	28	3.8
Point Douglas	60	20.1	111	25.4	171	23.2
Downtown	115	38.5	137	31.4	252	34.2
River Heights	11	3.7	21	4.8	32	4.3
Total	*299*	*100.0*	*437*	*100.0*	*736*	*100.0*
Community Area of Residency						
St. James	9	3.1	16	3.8	25	3.5
Assiniboine South	2	0.7	8	1.9	10	1.4
Fort Garry	8	2.7	14	3.3	22	3.1
St. Vital	18	6.1	16	3.8	34	4.7
St. Boniface	11	3.8	14	3.3	25	3.5
Transcona	6	2.0	13	3.1	19	2.6
River East	25	8.5	42	9.9	67	9.3
Seven Oaks	17	5.8	25	5.9	42	5.9
Inkster	15	5.1	15	3.5	30	4.2
Point Douglas	59	20.1	85	20.0	144	20.1
Downtown	75	25.6	91	21.5	166	23.2
River Heights	13	4.4	17	4.0	30	4.2
Missing - no postal code	15	5.1	31	7.3	46	6.4
Non-Winnipeg postal code, Manitoba resident	15	5.1	34	8.0	49	6.8
Non-Winnipeg postal code, Non-Manitoba resident	5	1.7	3	0.7	8	1.1
Total	*293*	*100.0*	*424*	*100.0*	*717*	*100.0*

* Includes only those greater than 9 years of age.

Table A.2: Number of suspected overdose cases receiving naloxone by sex and year, Winnipeg Fire and Paramedic Service (2017)*

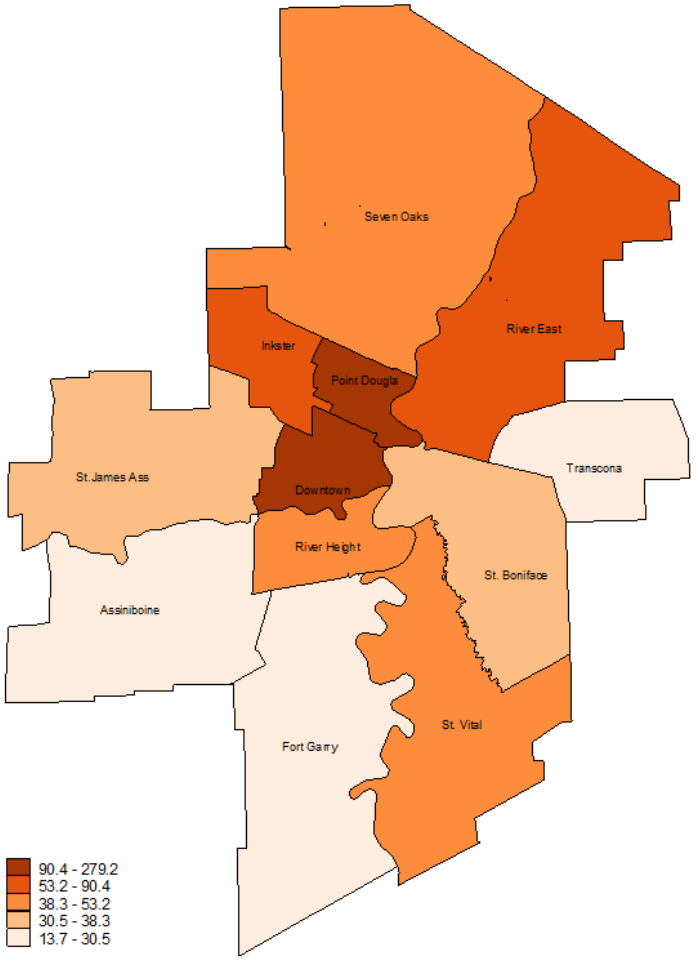
Year	Female		Male		Total	
	No.	%	No.	%	No.	%
2012	171	47.9	186	52.1	357	100.0
2013	144	46.9	163	53.1	307	100.0
2014	153	44.3	192	55.7	345	100.0
2015	198	47.3	221	52.7	419	100.0
2016	313	43.8	402	56.2	715	100.0
2017	299	40.6	437	59.4	736	100.0
Total	*1,278*	*44.4*	*1,601*	*55.6*	*2,879*	*100.0*

* Includes only those greater than 9 years of age.

Table A.3: Rates (per 100,000) of suspected overdose cases receiving naloxone by community area of residence and sex, Winnipeg Fire and Paramedic Service (2017)*

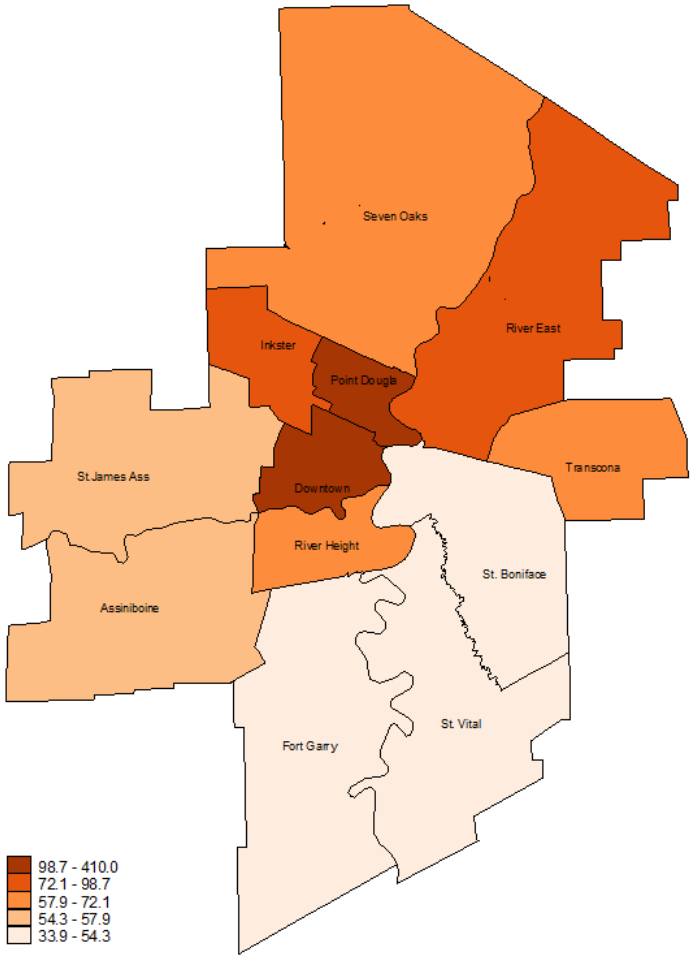
			Age-Standardized	
Community Area of Residence	Number	Crude Rate	Rate	95% Confidence Interval
Female				
St. James	9	31.7	33.6	15.3 - 64.6
Assiniboine South	2	12.0	13.7	1.6 - 50.2
Fort Garry	8	20.3	20.0	8.6 - 39.7
St. Vital	18	55.3	53.2	31.4 - 85.0
St. Boniface	11	40.8	38.3	19.1 - 69.3
Transcona	6	34.6	30.5	11.2 - 67.9
River East	25	55.7	54.5	35.0 - 81.0
Seven Oaks	17	49.7	48.6	28.2 - 78.3
Inkster	15	99.9	90.4	50.3 - 150.1
Point Douglas	59	297.3	279.2	211.8 - 361.1
Downtown	75	214.2	193.0	150.9 - 243.2
River Heights	13	47.7	45.9	24.0 - 80.5
Total	*258*	*76.4*	*74.0*	*65.2 - 83.8*
Male				
St. James	16	61.6	57.9	33.0 - 95.0
Assiniboine South	8	52.3	57.0	24.0 - 113.6
Fort Garry	14	36.6	33.9	18.3 - 57.5
St. Vital	16	53.1	54.3	30.9 - 88.5
St. Boniface	14	54.9	52.0	28.4 - 87.8
Transcona	13	77.5	71.3	37.9 - 122.7
River East	42	99.8	98.1	70.5 - 133.1
Seven Oaks	25	76.7	72.1	46.6 - 106.8
Inkster	15	100.5	98.7	54.6 - 163.5
Point Douglas	85	421.6	410.0	326.6 - 507.8
Downtown	91	247.9	232.9	186.6 - 287.1
River Heights	17	68.9	64.9	37.4 - 105.3
Total	*356*	*110.2*	*106.0*	*95.1 - 117.7*

* Includes only those greater than 9 years of age.



Female Events up to 31dec2017. Total annual population (> 9years) used in rate calculations.

Figure A.1: Age-standardized rate (per 100,000) map of suspected overdose females receiving naloxone by community area of residence, Winnipeg Fire and Paramedic Service (2017)



Male Events up to 31dec2017. Total annual population (> 9years) used in rate calculations.

Figure A.2 : Age-standardized rate (per 100,000) map of suspected overdose males by community area of residence, Winnipeg Fire and Paramedic Service (2017)

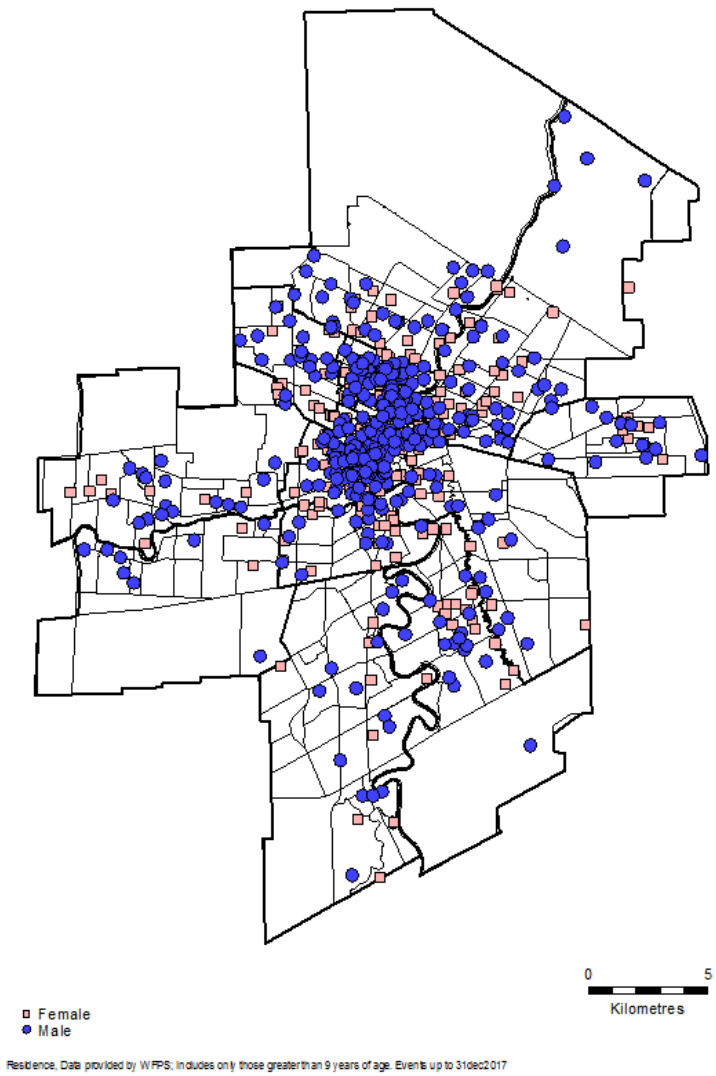


Figure A.3: Dot map of residential location[11] of suspected overdose cases receiving naloxone, Winnipeg Fire and Paramedic Service (2017)

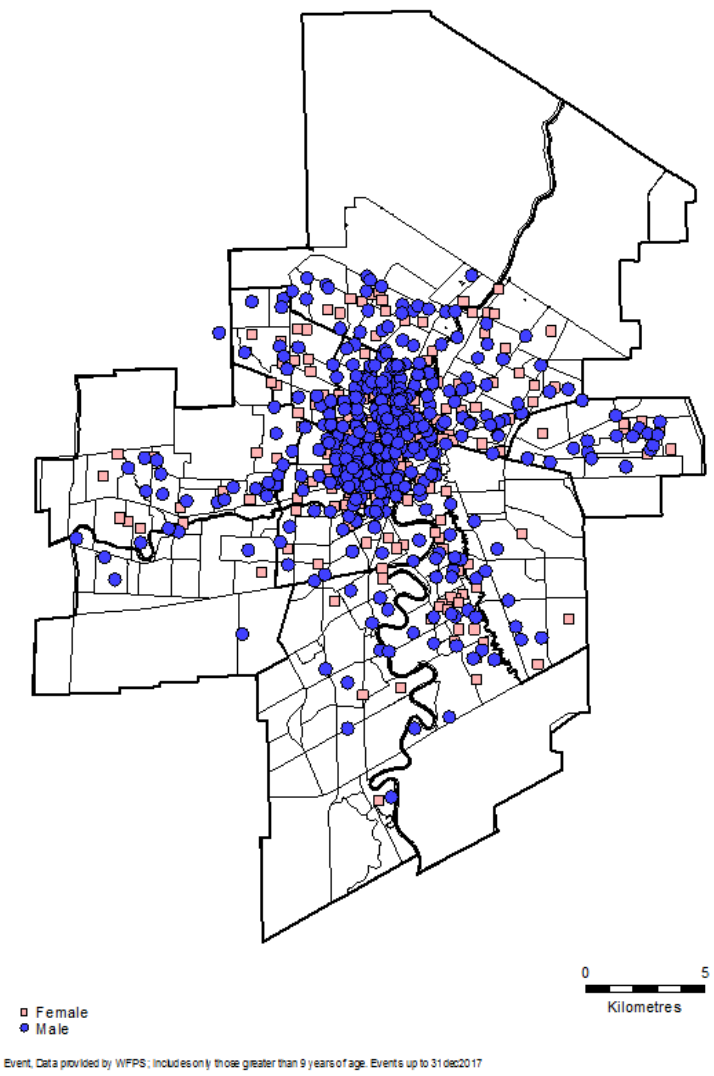


Figure A.4: Dot map of event locations[12] of suspected overdose cases receiving naloxone, Winnipeg Fire and Paramedic Service (2017)

[11] Residential locations are not exact (randomized within neighborhoods).

[12] The event locations (where the WFPS call for service occurred) illustrated on the map are not exact (randomized within neighborhoods).

Table A.4: Characteristics of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities, Emergency Department Information System (2017)*

	Female		Male		Total	
	No.	%	No.	%	No.	%
Age group						
10-14	130	13.9	28	5.9	158	11.2
15-19	268	28.6	88	18.5	356	25.2
20-24	148	15.8	65	13.7	213	15.1
25-29	89	9.5	76	16.0	165	11.7
30-34	65	6.9	59	12.4	124	8.8
35-39	73	7.8	43	9.0	116	8.2
40-44	34	3.6	40	8.4	74	5.2
45-49	31	3.3	26	5.5	57	4.0
50+	99	10.6	51	10.7	150	10.6
Community Area of Residence						
St. James	46	4.9	19	4.0	65	4.6
Assiniboine South	24	2.6	10	2.1	34	2.4
Fort Garry	54	5.8	19	4.0	73	5.2
St. Vital	53	5.7	26	5.5	79	5.6
St. Boniface	46	4.9	20	4.2	66	4.7
Transcona	28	3.0	16	3.4	44	3.1
River East	93	9.9	42	8.8	135	9.6
Seven Oaks	51	5.4	23	4.8	74	5.2
Inkster	40	4.3	14	2.9	54	3.8
Point Douglas	121	12.9	70	14.7	191	13.5
Downtown	150	16.0	76	16.0	226	16.0
River Heights	28	3.0	20	4.2	48	3.4
Missing - no postal code	24	2.6	16	3.4	40	2.8
Non-Winnipeg postal code, Manitoba resident	151	16.1	87	18.3	238	16.8
Non-Winnipeg postal code, Non-Manitoba resident	28	3.0	18	3.8	46	3.3
Total	*937*	*100.0*	*476*	*100.0*	*1,413*	*100.0*

*Includes CTAS 1– Resuscitation & 2 - Emergent and those greater than 9 years of age only.

Table A.5: Number of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities by year and sex (2012 - 2017)*

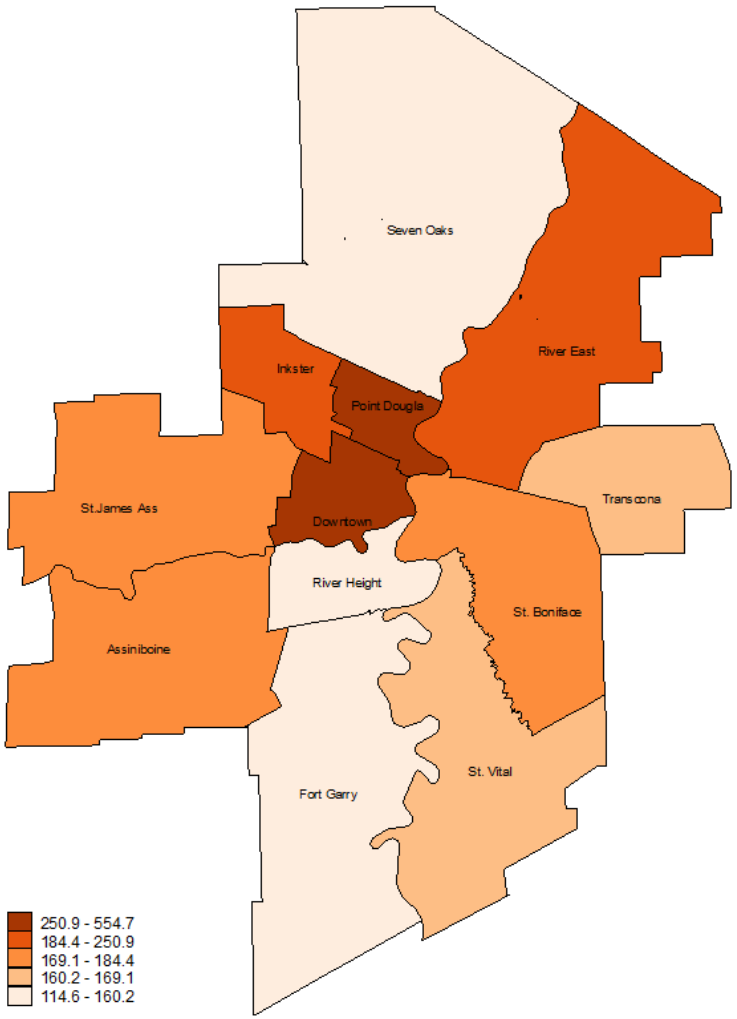
Year	Female		Male		Total	
	No.	%	No.	%	No.	%
2012	791	63.7	450	36.3	1,241	100.0
2013	745	65.0	401	35.0	1,146	100.0
2014	841	69.4	370	30.6	1,211	100.0
2015	858	70.5	359	29.5	1,217	100.0
2016	905	65.4	479	34.6	1,384	100.0
2017	937	66.3	476	33.7	1,413	100.0
Total	*5,077*	*66.7*	*2,535*	*33.3*	*7,612*	*100.0*

* Includes CTAS 1– Resuscitation & 2 - Emergent and those greater than 9 years of age only.

Table A.6: Rates (per 100,000) of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities by community area of residence and sex (2017)*

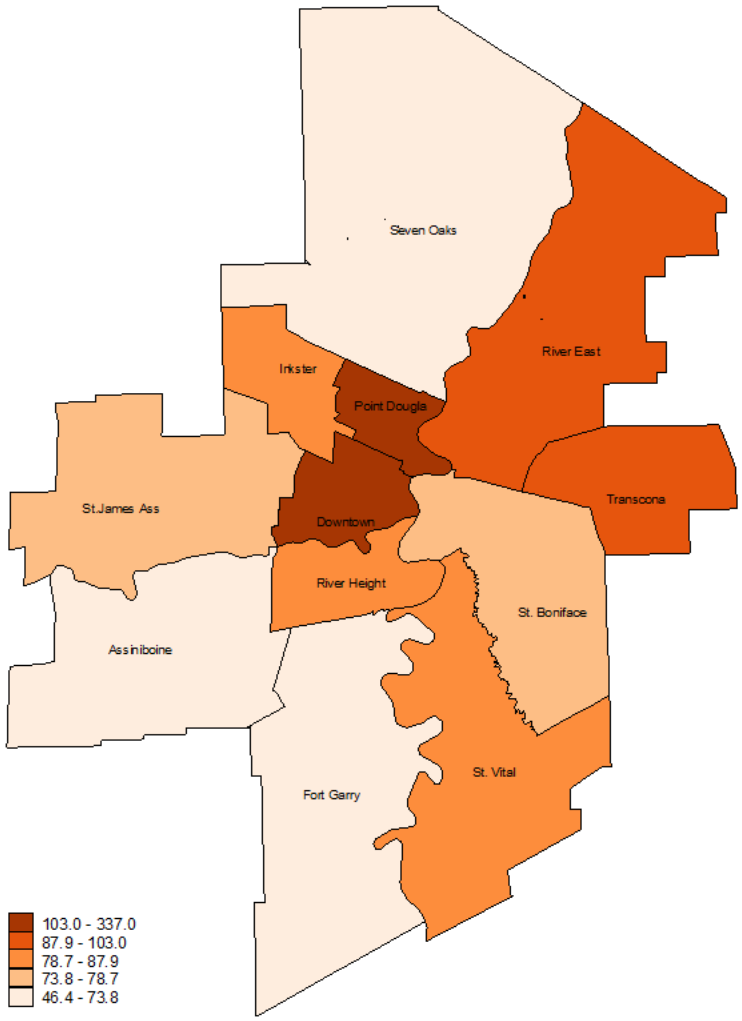
			Age-Standardized	
	Number	Crude Rate	Rate	95% Confidence Interval
Females				
St. James	46	162.1	184.4	134.2 - 247.1
Assiniboine South	24	143.9	169.2	108.0 - 252.5
Fort Garry	54	136.8	138.3	103.6 - 180.8
St. Vital	53	162.8	169.1	126.2 - 221.9
St. Boniface	46	170.8	172.6	126.0 - 230.8
Transcona	28	161.6	163.7	108.7 - 236.7
River East	93	207.1	231.8	186.6 - 284.5
Seven Oaks	51	149.1	160.2	119.1 - 210.7
Inkster	40	266.5	250.9	179.1 - 342.1
Point Douglas	121	609.8	554.7	459.5 - 663.9
Downtown	150	428.4	412.2	347.8 - 485.0
River Heights	28	102.8	114.6	74.2 - 168.7
Total	*734*	*217.5*	*226.6*	*210.4 - 243.8*
Males				
St. James	19	73.2	78.7	47.2 - 123.1
Assiniboine South	10	65.4	73.8	34.9 - 136.1
Fort Garry	19	49.7	46.4	27.7 - 72.9
St. Vital	26	86.2	87.9	57.3 - 129.1
St. Boniface	20	78.5	77.8	47.4 - 120.5
Transcona	16	95.3	90.6	51.6 - 147.7
River East	42	99.8	103.0	74.0 - 139.5
Seven Oaks	23	70.6	67.7	42.8 - 101.8
Inkster	14	93.8	82.2	44.6 - 139.3
Point Douglas	70	347.2	337.0	262.0 - 426.5
Downtown	76	207.0	195.9	153.7 - 246.2
River Heights	20	81.1	83.8	50.6 - 130.7
Total	*355*	*109.9*	*107.2*	*96.2 - 119.0*

* Includes CTAS 1– Resuscitation & 2 - Emergent and those greater than 9 years of age only.



Female Visits up to 31dec2017. Total annual population (> 9years) used in rate calculations.

Figure A.5: Age-standardized rate (per 100,000) map of suspected overdose females arriving at Winnipeg RHA emergency departments and urgent care facilities by community area of residence (2017)



Male Visits up to 31dec2017. Total annual population (> 9years) used in rate calculations.

Figure A.6: Age-standardized rate (per 100,000) map of suspected overdose males arriving at Winnipeg RHA emergency departments and urgent care facilities by community area of residence (2017)

Naloxone Administration: Medical Transportation Coordination Centre (MTCC)

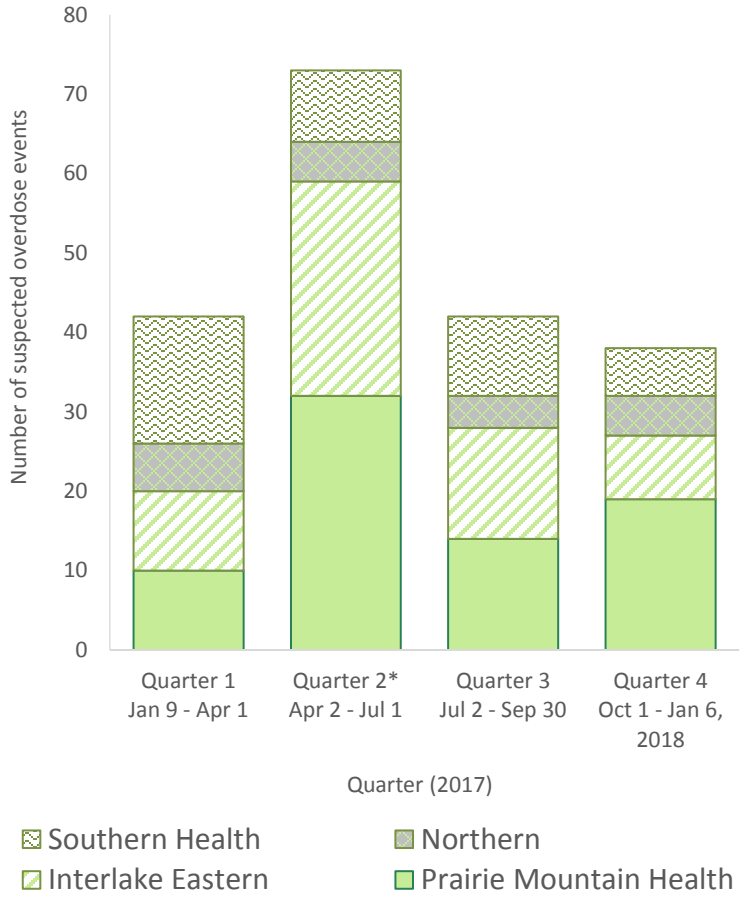


Figure A.7: Quarterly number of suspected opioid overdose events in rural and northern Manitoba by Regional Health Authority (RHA), Medical Transportation Coordination Centre (January 9, 2017 – January 9, 2018)

Severity: Hospital Admissions

Table A.7: Number of opioid poisoning hospitalizations in Manitoba by age group, Manitoba Health, Seniors and Active Living (2008 – 2017)

Year	24 years old or younger	25 - 44 years old	45 - 64 years old	65 years old or older	Total
2008	14	28	37	22	101
2009	11	34	32	24	101
2010	13	27	37	25	102
2011	25	60	35	32	152
2012	21	38	43	24	126
2013	18	44	34	20	116
2014	16	48	51	21	136
2015	16	42	49	15	122
2016	16	32	49	27	124
2017	25	48	43	23	139
Total	*175*	*401*	*410*	*233*	*1219*

Table A.8: Number of opioid poisoning hospitalizations in Manitoba by opioid type, Manitoba Health, Seniors and Active Living (2008 – 2017)

Year	Poisoning by heroin	Poisoning by methadone	Poisoning by opium	Poisoning by other opioids **	Poisoning by synthetic opioids	Poisoning by unspecified/other narcotics	Total
2008	0	5	0	67	7	22	**101**
2009	1	7	1	69	4	19	**101**
2010	0	2	1	67	7	25	**102**
2011	0	13	0	102	12	25	**152**
2012	1	6	0	92	6	21	**126**
2013	1	7	0	87	9	12	**116**
2014	1	7	1	100	4	23	**136**
2015	0	8	0	82	12	20	**122**
2016	0	9	0	77	17	21	**124**
2017	0	12	0	85	23	19	**139**
Total	*4*	*76*	*3*	*828*	*101*	*207*	***1219***

Table A.9: Number of opioid poisoning hospitalizations in Manitoba by Regional Health Authority, Manitoba Health, Seniors and Active Living (2008 – 2017)

Year	Interlake-Eastern RHA	Northern Health Region	Prairie Mountain Health	Southern Health-Santé Sud	Winnipeg RHA	Total
2008	12	5	34	6	44	**101**
2009	15	12	22	10	42	**101**
2010	14	10	29	17	32	**102**
2011	14	15	40	22	61	**152**
2012	16	17	27	14	52	**126**
2013	12	22	32	15	35	**116**
2014	15	11	42	18	50	**136**
2015	21	11	36	2	52	**122**
2016	16	10	35	10	53	**124**
2017	13	5	27	2	92	**139**
Total	*148*	*118*	*324*	*116*	*513*	***1219***

Mortality: Office of the Chief Medical Examiner

Table A.10: Number and rate (per 100,000) of death by RHA and year

Year	Number of deaths	Rate
Interlake-Eastern Health Region		
2014	13	10.3
2015	5	3.9
2016	8	6.2
2017	7	5.4
Northern Health Region		
2014	2	2.7
2015	3	4.0
2016	3	3.9
2017	4	5.2
Prairie Mountain Health		
2014	7	4.2
2015	5	3.0
2016	6	3.5
2017	10	5.9
Southern Health		
2014	5	2.6
2015	7	3.6
2016	12	6.1
2017	17	8.5
Winnipeg Regional Health		
2014	48	6.4
2015	48	6.4
2016	56	7.3
2017	84	10.8
Out of Province		
2016	3	n/a

Table A.11: Number and rate (per 100,000) of death by age group

Year	Number of deaths	Rate
24 years old or younger		
2014	8	1.9
2015	6	1.4
2016	10	2.3
2017	14	3.2
25-44 years old		
2014	30	8.7
2015	33	9.4
2016	48	13.3
2017	54	14.7
45-64 years old		
2014	33	9.7
2015	27	7.9
2016	26	7.6
2017	43	12.4
65 years old or older		
2014	3	1.6
2015	2	1.0
2016	4	2.0
2017	11	5.4

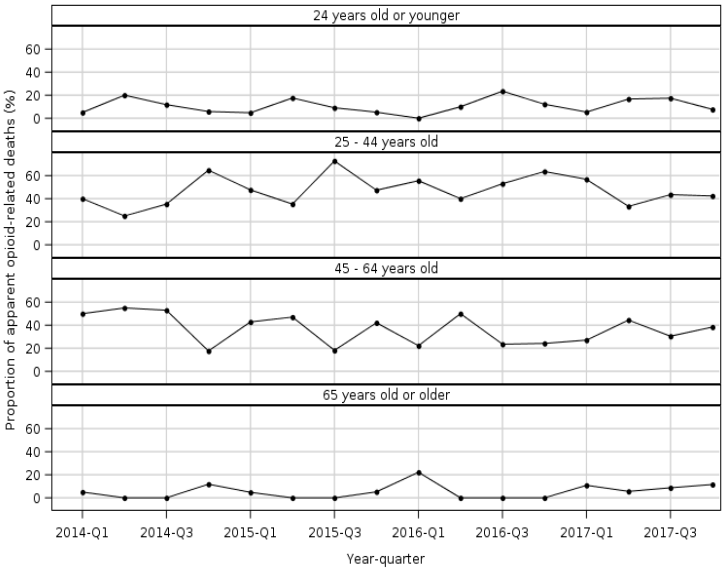
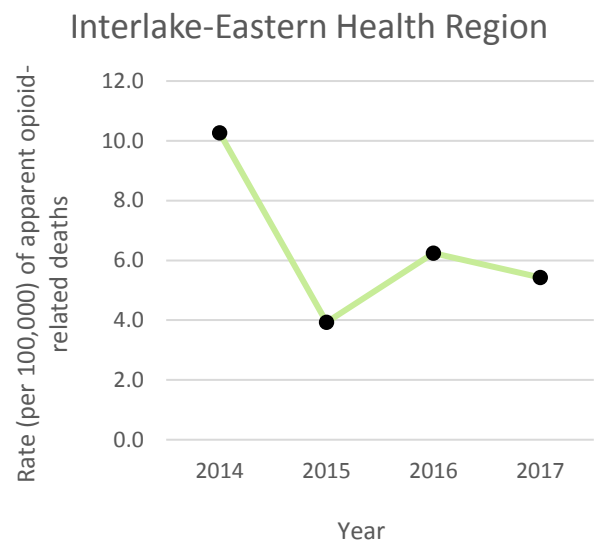
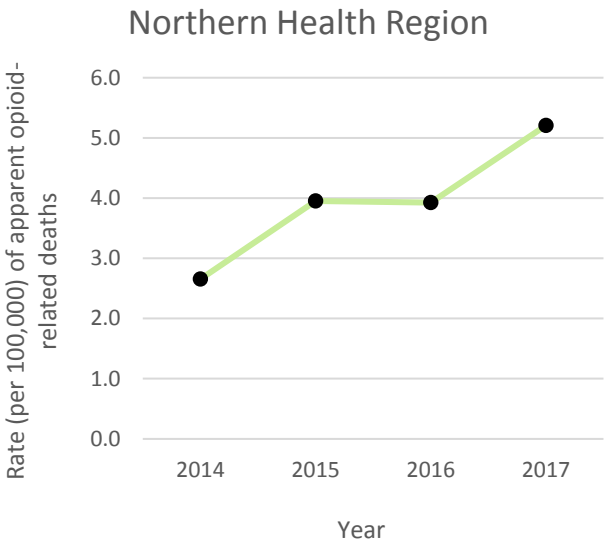
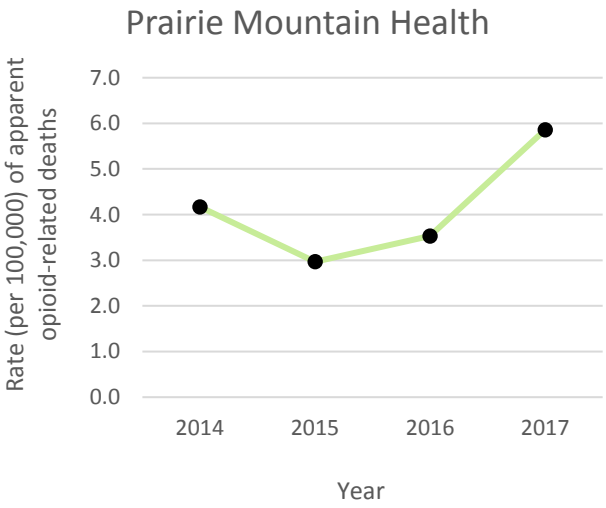
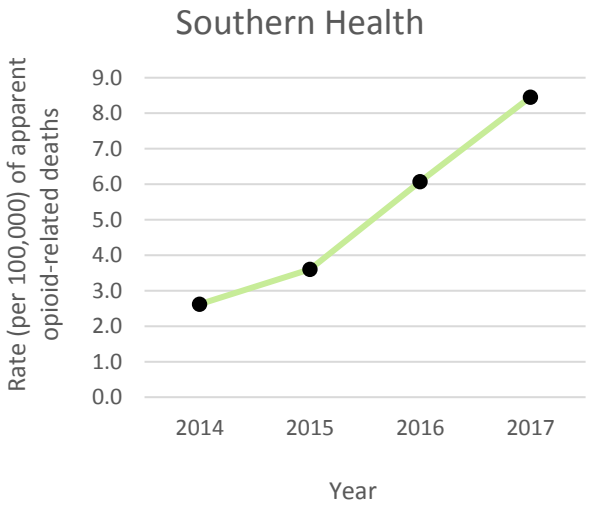


Figure A.8: Proportion of Apparent Opioid-Related Deaths in Manitoba by Age Group, Office of the Chief Medical Examiner (2014 – 2017)









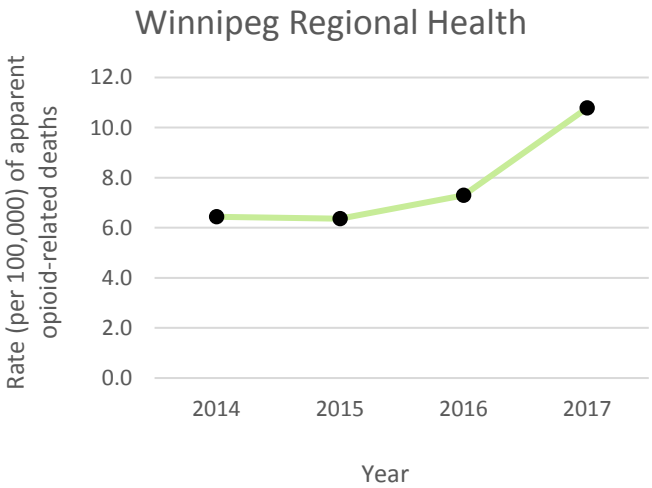


Figure A.9: Crude rate (per 100,000) of apparent opioid-related deaths by Regional Health Authority (2014 – 2017)

Prescription Opioid Dispensation: Drug Program Information Network (DPIN)

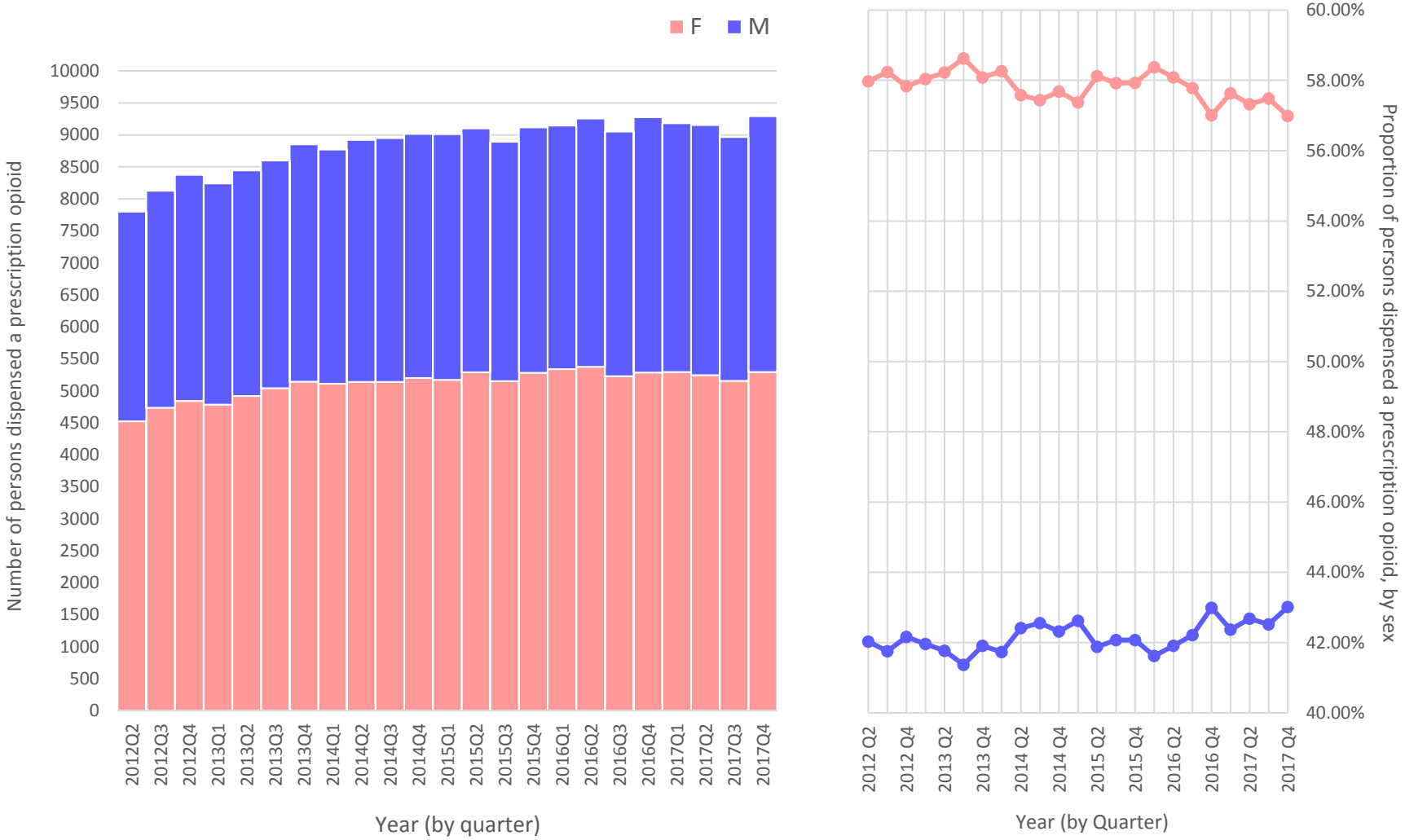


Figure A.10: Number of Manitobans dispensed a prescription opioid from a community pharmacy by sex, Drug Program Information Network (2012 – 2017)

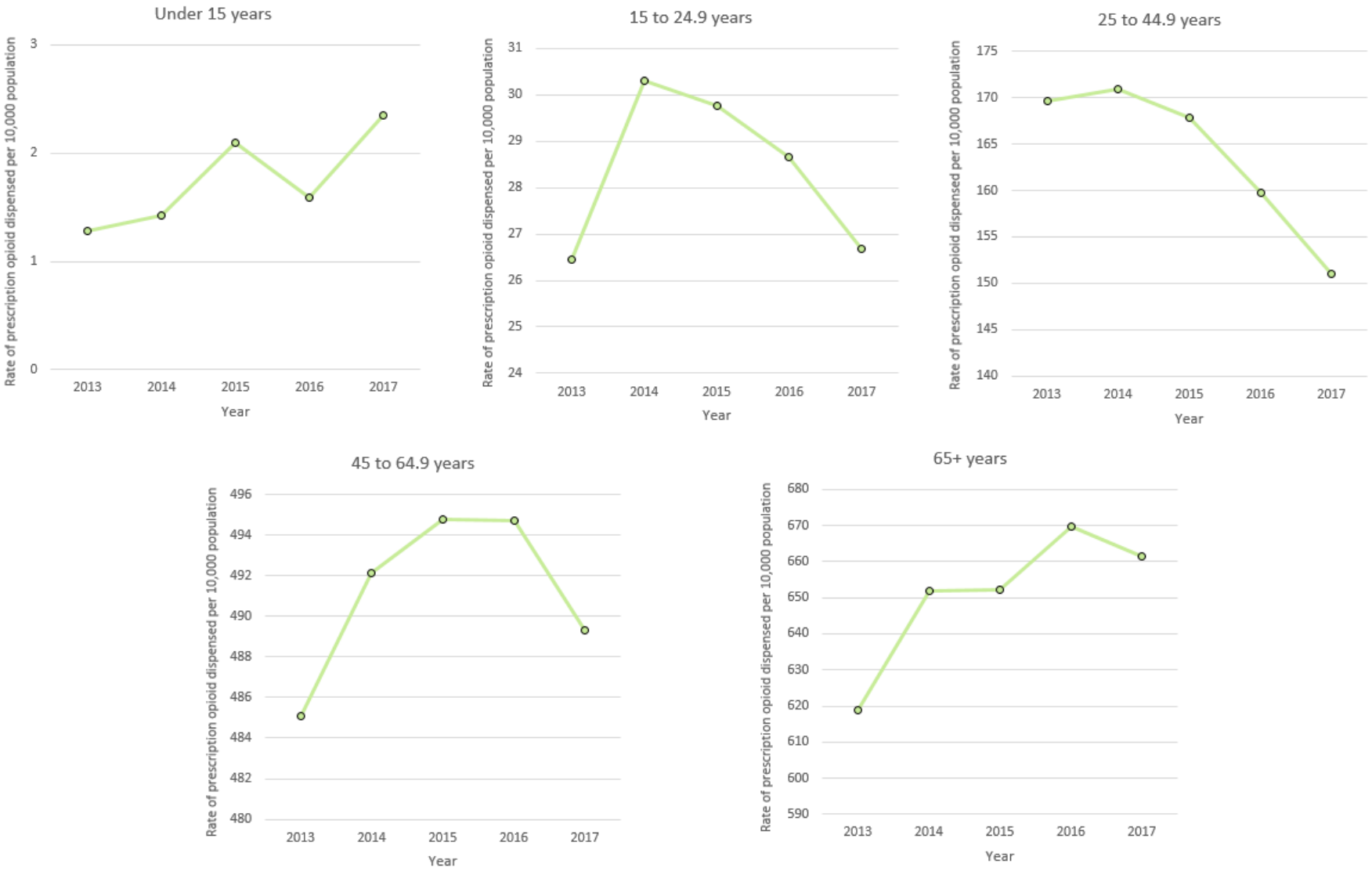


Figure A.11: Rate of Manitobans (per 10,000) dispensed a prescription opioid from a community pharmacy by age group, Drug Program Information Network (2013 –2017)

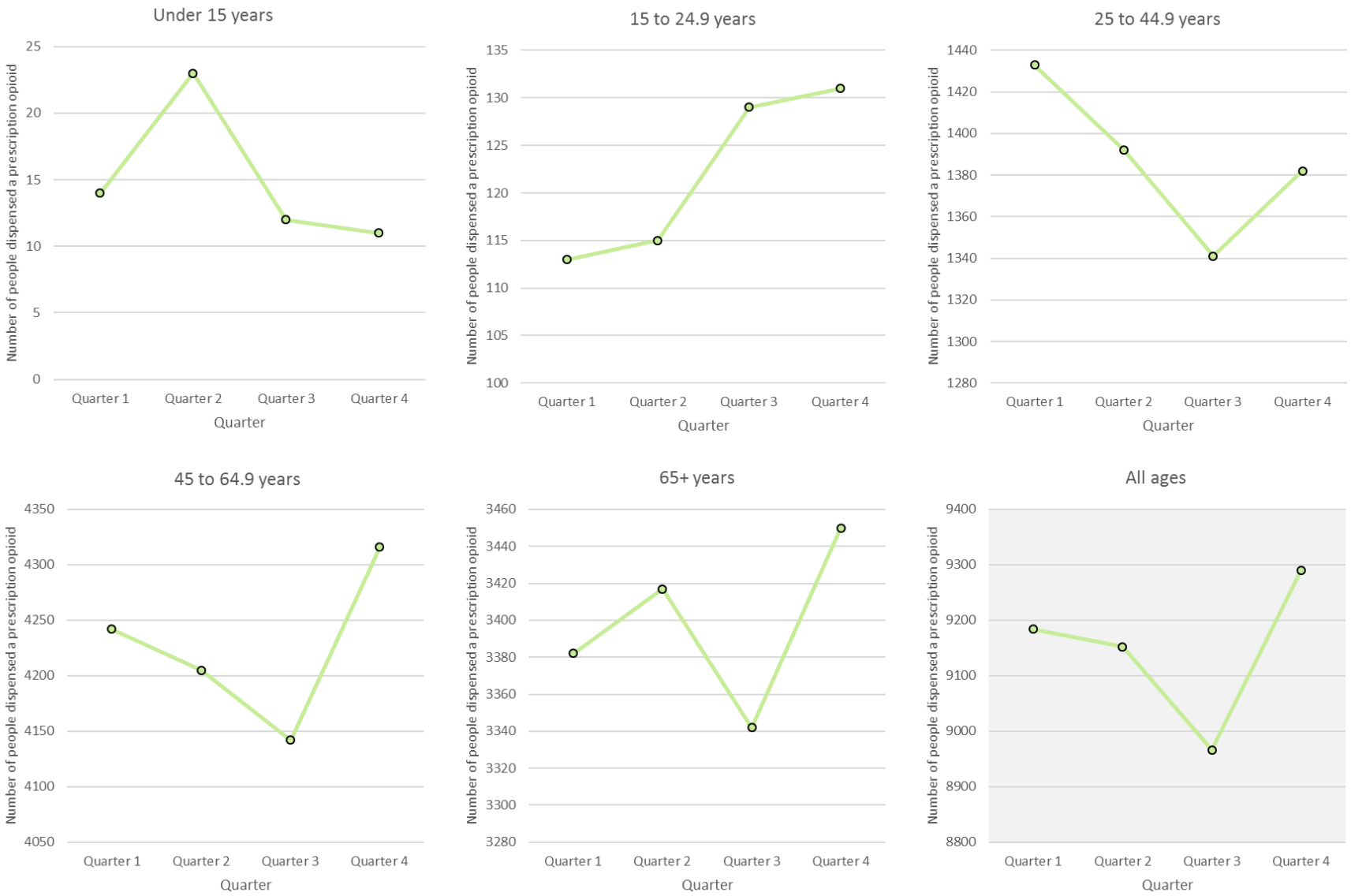


Figure A.12: Number of Manitobans dispensed a prescription opioid from a community pharmacy by age group per 2017 quarter, Drug Program Information Network

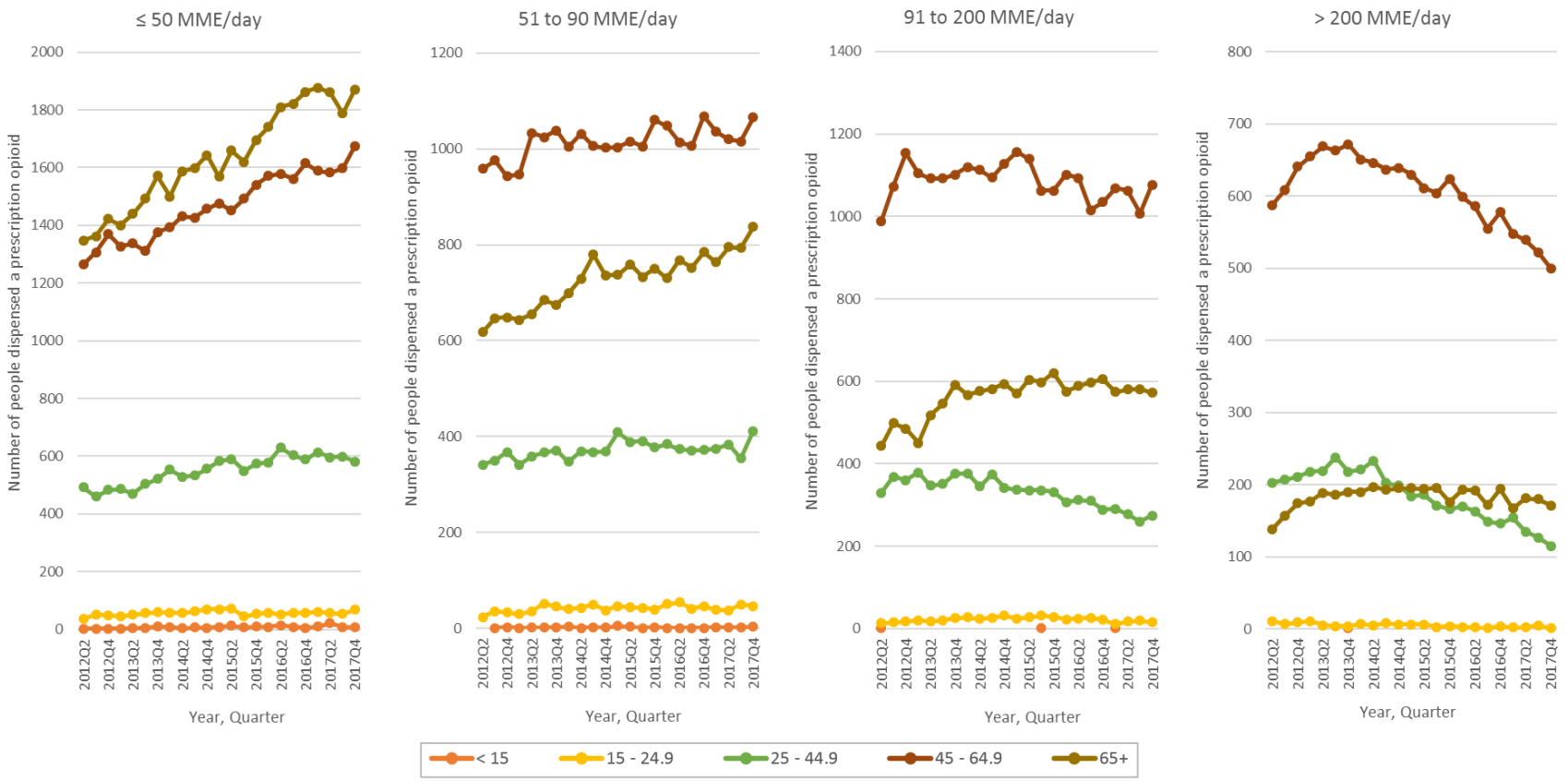


Figure A.13: Number of Manitobans dispensed a prescription opioid from a community pharmacy by morphine milligram equivalent (MME) per day, by age group, Drug Program Information Network (April 1, 2012 – December 31, 2017)

Health Links – Info Santé

Table A.12: Number of calls to Health Links – Info Santé by topic discussed, Health Links – Info Santé (2013 –2017)

Call topics	2013	2014	2015	2016	2017
Withdrawal Symptoms: Drug and Alcohol Abuse*	n/a	n/a	n/a	n/a	63
Detoxification	34	33	52	61	14
Drug, Alcohol and Tobacco Use During Pregnancy	52	24	0	17	14
Drugs - What You Should Know and Drug Testing	26	30	17	12	13
Hallucinations	5	10	17	14	10
Substance Abuse	14	13	16	11	7
Prescription Drug Abuse	8	6	9	9	5
Fentanyl*	n/a	n/a	n/a	n/a	5
Opioid misuse and/or opioid overdose-related*	n/a	n/a	n/a	n/a	5
Naloxone Programs and Kits*	n/a	n/a	n/a	n/a	4
Recognizing Drug Abuse in Kids	2	1	2	1	1
Street Connections Launches a Take-Home Naloxone Program	0	0	0	0	1
Street drugs and their slang names	0	0	0	3	0
Treating Teens for Substance Abuse	0	1	0	3	0
Talking with your Child about Drinking and Drugs	1	0	1	1	0
Talking with Your Child about Drinking and Drugs*	n/a	n/a	n/a	n/a	0
Naloxone-related (e.g. Narcan)*	n/a	n/a	n/a	n/a	0
Total Calls	*142*	*118*	*114*	*132*	*142*

* Based upon increasing caller and RN demand, new/updated health education document title is added. Data is only available from 2017 onwards.

Manitoba Poison Centre

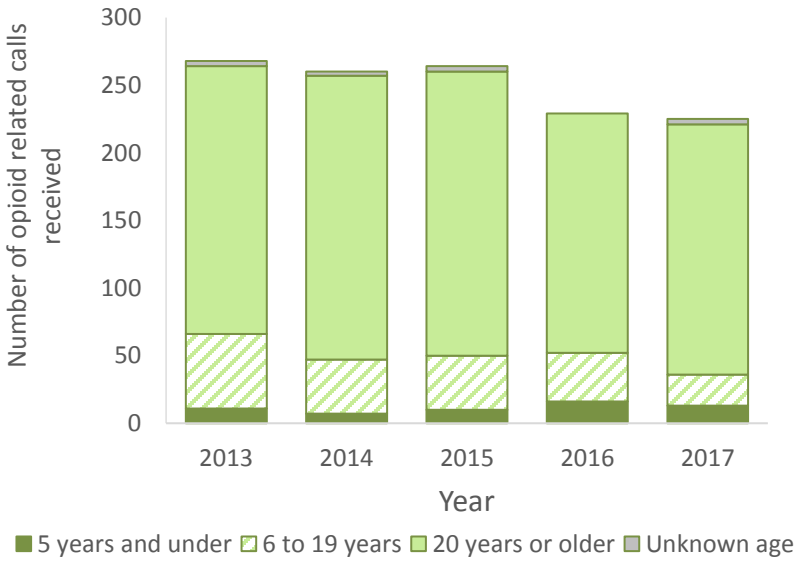


Figure A.14: Number of opioid poisoning-related calls by age group, Manitoba Poison Centre (2013 – 2017)

Appendix B: Data Source Background and Interpretation Notes

Naloxone Distribution and Administration

Provincial Take-Home Naloxone Program data

The Healthy Sexuality and Harm Reduction program in Winnipeg RHA launched a Take-Home Naloxone program in January 2016 in order to increase access to opioid overdose prevention and response resources among people with a high risk of opioid overdose. It was later extended to the entire province in January 2017. A summary of take-home naloxone kit components, distribution site criteria, and training manual are available online at www.gov.mb.ca/fentanyl. An up-to-date list of take-home naloxone distribution sites in Manitoba is available at www.streetconnections.ca. More information regarding the program can also be found at: http://www.gov.mb.ca/fentanyl/opioid-overdose

Box B.1 - Interpretation notes regarding the *Provincial Take-Home Naloxone Program data*

When a take-home naloxone kit dispensed from a distribution site is used by a lay responder in an overdose event, an overdose response form is completed by the staff replacing the kit (available online). It is possible that more kits were used in overdose events than were reported. Clients often return to a distribution site and report the event months after it occurred, thus retrospective reporting tends to cause temporal gaps in data. The data presented in this report are drawn from these overdose events for which data was collected.

Manitoba's Materials Distribution Agency (MDA) - Panorama Inventory Management System data

Beginning in December 29, 2016, all eligible take-home naloxone kit distribution sites ordered naloxone kits directly from Manitoba's Materials Distribution Agency (MDA). The Inventory Management Module within Panorama (an electronic public health management system) was used by distribution sites to order naloxone kits.

Winnipeg Fire & Paramedic Service data (available for Winnipeg RHA only)

Winnipeg Fire and Paramedic Services (WFPS) will administer naloxone when it is suspected (by objective clinical assessment of patient vital signs and presentation) that an opioid overdose has occurred. The analysis of the WFPS is completed by the Winnipeg RHA for the quarterly report. Winnipeg RHA works closely with WFPS to continually explore mechanisms that provide data to inform public health programming in the region.

Box B.2 - Interpretation notes regarding Winnipeg Fire and Paramedic Service data

No drug or laboratory testing is undertaken by WFPS to confirm whether ingestion of an opioid has actually occurred. As a result, it is likely that a number of reported naloxone related calls for service are not opioid-related.

Medical Transportation Coordination Centre data (available for rural and northern Manitoba)

The Medical Transportation Coordination Centre (MTCC) is a command and control centre for the dispatch of emergency medical services in rural and northern Manitoba. MTCC began collecting data relating to suspected opioid events in December 2016 to assist with the provincial opioid misuse and overdose surveillance system.

Box B.3 - Interpretation notes regarding the Medical Transportation Coordination Centre data

MTCC Data is collected at the moment of the 911 call, where information is solicited from the caller (1st or 2nd party). It is important to note that callers may not be forthright or knowledgeable with the information provided, and therefore the data may be subject to error and inaccuracy.

A suspected overdose call is defined by the International Academy of Emergency Dispatch (medical priority dispatch overdose problem type/determinate).

MTCC naloxone administration data is gathered from field paramedics that respond to the dispatched 911 call. If naloxone is administered, paramedics/first responders report back to MTCC to be recorded. Situations where

paramedics are dispatched to an opioid-related call will be recorded as an opioid-related call, regardless of actual outcome upon arrival.

In the case where a paramedic is responding to a non-opioid related call and naloxone is administered, this would not be recorded in the opioid-related call count. However, it will be recorded that naloxone was administered. Therefore, the number of naloxone administered is not contained within the count of opioid-related calls.

Northern RHA
Emergency Medical Services within the Northern Health Region consists of both regionally and privately run EMS. It should be noted that many remote communities do not have access to land EMS.

Surveillance Definition:
All cases within the Northern Health Region from January 1, 2017 onward where Emergency Medical Services (EMS) administer naloxone and/or cases where EMS arrive on scene and are informed that another first responder administered naloxone.

Box B.4 - Interpretation notes regarding the EMS data in the Northern RHA
Emergency Medical Services within the Northern Health Region consists of both regionally and privately run EMS. It should be noted that many remote communities do not have access to land EMS.

EMS data in Northern RHA include reporting from 12 of the 15 EMS services in this region. Between January 1 and July 1, 2017: Only cases from NHR run EMS and Thompson Fire services are included. From July onward non-NRHA run EMS services have been included but reporting has not been complete. EMS does not have electronic patient care reporting capabilities and so identification of those cases in which Naloxone was administered is initially done through manual review of forms.

Severity

Hospital separation abstracts
Manitoba Health, Seniors and Active Living's (MHSAL) population-based hospital separation abstract database is used to measure opioid poisoning hospitalizations. The following ICD-10-CA (International Classification of Diseases) codes were used to identify opioid poisoning hospitalizations [6]: T40.0 - Poisoning by opium, T40.1- Poisoning by heroin, T40.2 -Poisoning by other opioids (includes morphine, oxycodone, hydrocodone, and codeine), T40.3 - Poisoning by methadone, T40.4 - Poisoning by synthetic opioids (includes fentanyl, propoxyphene, and meperidine), and T40.6 - Poisoning by unspecified/other narcotics. Codes with a prefix of Q, indicating a suspected diagnosis were excluded from the analysis.

Emergency department information system data (available for Winnipeg Regional Health Authority [RHA] only)
The Emergency Department Information System (EDIS) contains information on a patient's experience as he or she progresses through an emergency department from the first point of entry at the triage desk through to discharge. Emergency department admissions due to overdose at CTAS 1 – Resuscitation and 2 - Emergent in Winnipeg RHA are described using EDIS data.

Box B.5 – Interpretation notes regarding Emergency Department Admissions data
EDIS data used in this report are not specific to opioid overdose, but are a reflection of overdose events of all types. At this point in time, EDIS does not collect information on the suspected substance involved in an overdose admission, nor is confirmatory drug testing routinely undertaken. The chief complaint/visit reason of overdose used to extract the data for this report is based upon the triage nurse's initial impression when the patient first arrives

and overdoses may not always be initially recognized. The result is that the number of overdose admissions is likely to be undercounted in this report.

First Nations and Inuit Health Branch

On April 5, 2017 Nursing Stations were asked to start completing an enhanced suspected opioid overdose form for all suspected opioid overdoses. There are 22 Nursing Stations from which Enhanced Opioid Overdose Surveillance Forms are expected if a suspected opioid overdose occurs.

Box B.6 – Interpretation notes regarding First Nations and Inuit Health Branch data

Suspected Opioid Overdose is defined as: A life-threatening event requiring emergency medical assistance that is suspected or confirmed to be caused by opioid overdose, which is typically characterized by respiratory depression, coma or decreased level of consciousness, and sometimes accompanied by pupillary constriction. Cases include presentations where it is suspected or confirmed that opioids were mixed with other chemical agents.

Mortality

Office of the Chief Medical Examiner's data

Office of the Chief Medical Examiner's (OCME) mortality data is used to describe the apparent opioid-related deaths in Manitoba. Data is gathered through chart reviews of the opioid-related deaths examined at OCME. This report applies the definitions by the Public Health Agency of Canada to ensure consistency with other jurisdictions across Canada.

Box B.7 – Interpretation notes regarding data

An apparent opioid-related death is defined as an acute intoxication/toxicity death resulting from the direct effects of the administration of exogenous substance(s) where one or more of the substances is an opioid. The definition includes open (preliminary) and closed (certified) cases, both intentional and unintentional cases, and those with or without personal prescriptions.

Examples of fentanyl-related opioid(s) include the subtypes fentanyl, carfentanil, and furanyl-fentanyl. Examples of non-fentanyl-related opioid(s) include codeine, heroin, and morphine. Other substances include but are not limited to alcohol, benzodiazepines, and cocaine.

Diagnostic Services Manitoba data

The Office of the Chief Medical Examiner (OCME) can request Diagnostic Services Manitoba (DSM) to provide further evidence to support an investigation. As part of that process, DSM will screen samples for fentanyl analogs including carfentanil and furanyl fentanyl. The source of the screening results is blood and tissue samples received from physicians (clinicians and pathologists).

Box B.8 – Interpretation notes regarding Toxicology data

It cannot be presumed that the presence of a fentanyl analog is related to the cause of death. This requires the review by the Office of the Chief Medical Examiner, as toxicological findings must be consolidated with all cases and autopsy information in order to ascertain cause of death. Thus, there can be no implied correlation between the number of positive test results and the number of overdose-related deaths.

Prescription Opioid Dispensation

Drug Program Information Network data

Drug Program Information Network (DPIN) database was used to measure the prescription opioid dispensation from community pharmacies in Manitoba. DPIN is an electronic, on-line, point-of-sale prescription drug database that has

connected Manitoba Health, Seniors and Active Living to all pharmacies in Manitoba since 1995. The DPIN system generates complete drug profiles for all out-of-hospital transactions at the point of distribution.

Box B.9 – Interpretation notes regarding Drug Program Information Network data
Prescription opioids included in the analysis are fentanyl, oxyneo, generic oxycontin, hydromorphone, meperidine, and morphine. Opioids dispensed as part of long term care and palliative care programs are excluded from the analysis.

Morphine milligram equivalent (MME) per day are used to measure the quantity of prescription opioids dispensed. The MME is the strength of an opioid in comparison to the strength of morphine. The MME per day is calculated by taking total MME divided by day supply of opioid. Average MME per day is grouped as <=50 MME/day, 51-90 MME/day, 91-200 MME/day, and >200 MME/day.

DPIN information excludes clients registered in palliative care program, home cancer drug program, and nursing homes. Analysis does not include drugs dispensed in acute care hospitals. Data reports drugs dispensed, not used.

To ensure that claims were new, we look back to month 0 or Jan 1, 2017. Using the Minimum Dispensed Date in Quarter 4, we would capture the earleast Rx for that patient

Call centres

Calls to Health Links - Info Santé
Health Links – Info Santé is a provincial telenursing service that offers the following confidential services free-of-charge: (1) health assessment, care advice, and triage to the most appropriate level of care (e.g. "the Right Care at the Right Time"), (2) general health information and education, and (3) assistance in finding and accessing health resources in local communities to all residents in Manitoba.

Box B.10 – Interpretation notes regarding Health Links – Info Sante data
Calls that utilize health education documents are only topics discussed during calls – it is not known if callers are directly involved in the topic matter (opioid/drug use). Therefore, interpretation of the data presented in this section should be continued with caution.

Health Links – Info Santé registered nurses use evidence-based guidelines and/or health education documents (e.g. "Health Information Advisor" (HIA) documents) to assist clients. Although guidelines and health education documents are a core asset in providing health information, professional nursing judgment is also used in providing information and triaging symptoms for clients.

Calls to Manitoba Poison Centre
The Manitoba Poison Centre (MPC) is a telephone toxicology consultation service that provides expert poison advice 24 hours a day to the public and healthcare professionals throughout Manitoba. MPC data is used in this report to describe the opioid-related calls received.

Box B.11 – Interpretation notes for Manitoba Poison Centre data
It is important to note that since overdose poisoning are not reportable diseases in Manitoba, there is no obligation for a patient or health care provider to call MPC to help manage an exposure. In fact, emergency room doctors are generally more comfortable with management and the use of naloxone. Therefore, MPC numbers may be an undercount and should not be relied on to provide a complete picture of the extent of the problem.

The substance about which the caller inquired may not have been verified. Certainly, what was purchased on the streets may not be what is advertised. It is entirely possible that number of calls recorded by MPC can be double counted from the same patient, as each call represents a single opioid type taken. Opioid-related calls recorded by MPC are not all necessarily due to the misuse of opioids; it is possible that intentional suicide may be the reason for the opioid exposure and call to MPC.

Illegal opioids identified or tracked

Drug Analysis Service data, Health Canada

The Drug Analysis Service of Health Canada operates laboratories across Canada that are employed to analyze suspected illegal drugs seized by Canadian police forces and the Canada Border Services Agency. The laboratories receive over 110,000 samples per year, confirming the identity and in some cases the purity of the controlled substances seized by police.

Box B.12 – Interpretation notes regarding Drug Analysis Service data

The Drug Analysis Service of Health Canada aggregated data was used to summarize the illegal opioids identified or tracked in Manitoba. It should be noted that a single sample may contain more than one substance. For the purpose of this report, U-47700 and W-18 were counted as opioids.

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- Diagnostic Services Manitoba
- Emergency Medical Services in the Northern Health Region
- First Nations and Inuit Health Branch
- Health Canada
- Health Links/Info Santé
- Manitoba Justice
- Manitoba Poison Centre
- Northern Regional Health Authority
- Medical Transportation Coordination Centre
- Winnipeg Regional Health Authority
- Winnipeg Fire and Paramedic Service