SURVEILLANCE OF OPIOID MISUSE AND OVERDOSE IN MANITOBA

JULY 1 – SEPTEMBER 30, 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

Epidemiology & Surveillance
Active Living, Population and Public Health Branch
Active Living, Indigenous Relations, Population and Public Health Division
Manitoba Health, Seniors and Active Living

Publication date: February 2018

Suggested citation: Government of Manitoba, Manitoba Health, Seniors and Active Living, Epidemiology and Surveillance. (2018). Surveillance of Opioid Misuse and Overdose in Manitoba: July 1 – September 30, 2017.

Manitoba

ABBREVIATIONS

CTAS	Canadian Triage and Acuity Scale
DPIN	Drug Program Information Network
EDIS	Emergency Department Information System
FY	Fiscal Year
ICD	International Classification of Diseases
MDA	Materials Distribution Agency
MHSAL	Manitoba Health, Seniors and Active Living
MME	Morphine Milligram Equivalent
MPC	Manitoba Poison Centre
MTCC	Medical Transportation Coordination Centre
PHAC	Public Health Agency of Canada
RHA	Regional Health Authority
RN	Registered Nurse
WFPS	Winnipeg Fire and Paramedic Service

ACKNOWLEDGEMENTS

The *Surveillance of Opioid Misuse and Overdose in Manitoba* report is the result of the ongoing efforts of a dedicated team of individuals throughout the province of Manitoba. Their combined efforts and expertise in the management of opioid misuse and overdose was necessary to produce this valuable report.

We kindly acknowledge the collaboration of the following organizations for providing the data for the opioid surveillance system:

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

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HIGHLIGHTS

- Between January 1st and September 30th, 2017, there were 66 apparent opioid-related deaths in Manitoba, which is 50% (n= 44) more deaths compared to the same period in 2016 *(see page 32)*.
- The proportion of crystal meth contributing to apparent-opioid related deaths increased from 4% (n=3) in 2014 to 29% (n=19) in 2017 (January to September) *(see page 37)*.
- Between January 1st and September 30th, 2017 in Manitoba, approximately 85% of all positive toxicology screens detected the presence of the carfentanil analog *(see page 40)*.
  Note: Carfentanil is a derivative of the synthetic opioid fentanyl but is approximately 10,000 times more toxic than morphine and 100 times more toxic than fentanyl.
- In Manitoba, the number of illegal fentanyl-related opioids identified or tracked by Drug Analysis Service of Health Canada increased from 2 in 2012 to 85 by the third quarter of 2017 *(see page 51)*.
- During the third quarter of 2017 in Manitoba, more take-home naloxone kits were distributed to people at risk of opioid overdose, as compared to the first and second quarters of 2017 *(see page 10)*.
- During the third quarter of 2017 in Manitoba, there was a decrease in the following areas, as compared to the first and second quarters of 2017:
    a. Number of suspected overdose cases receiving naloxone from Winnipeg Fire and Paramedic Service *(see page 12)*
    b. Number of suspected overdose events recorded by emergency medical services in rural and northern Manitoba (see page 17)
    c. Number of suspected overdose events where a take-home naloxone kit was used *(see page 19)*
    d. Number of opioid poisoning hospitalizations *(see page 22)*
    e. Number of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities *(see page 27)*
    f. Number of Manitobans dispensed a prescription opioid from a community pharmacy *(see page 42)*.

BACKGROUND

Public health surveillance is the continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice [1]. It is needed to provide an accurate assessment in the scope of a problem, provide information to define priorities, inform planning of public health programs, and evaluate those programs so that they can be improved [2]. In 2016, the Minister of Health, Seniors and Active Living requested the development of an opioid misuse and overdose surveillance system in the province. Under the Public Health Act in Manitoba, a surveillance system was created in order to anticipate, assess, monitor, and plan for addressing health needs and threats to public health [3].

Opioids are medications that are primarily prescribed to treat individuals with varying degrees of acute and chronic pain; they can also produce a sense of euphoria as a side effect. The two main adverse outcomes directly resulting from opioid misuse are fatal opioid related overdoses and non-fatal opioid related overdoses. Non-fatal overdoses, which often go unreported, can result in respiratory conditions, muscular conditions, renal failure, brain injury, ambulance and emergency response, and social damages to family and friends who witness these events. Commonly used examples of opioids are fentanyl, hydrocodone, hydromorphone, morphine, and oxycodone.

Of recent concern has been the impact of the opioid fentanyl, a prescribed drug to treat chronic pain, and carfentanil, an analog of the synthetic opioid analgesic fentanyl. Fentanyl is up to 100 times more toxic than morphine, and carfentanil is up to100 times more toxic than fentanyl. Fentanyl typically comes in a patch form, where some users cut up, suck on, or scrape off and smoke its contents. An illicit imported powdered variety of fentanyl and carfentanil from other countries has been found to be laced into other drugs, such as heroin, oxycodone, crystal methamphetamine, and cocaine (often unknown to the user increasing risk of an overdose). In Canada, fentanyl was a contributor in at least 655 deaths from 2009 – 2014 [4], and fentanyl-related deaths have been on the rise every year since 2009 [5]. National data shows that fentanyl misuse is emerging across socio-economic status and population groups.

The largest burden of fentanyl misuse and overdose has been seen in Canada's four largest provinces, British Columbia, Alberta, Ontario, and Quebec [5]. The impact of this issue on British Columbia was severe, such that a Public Health Emergency in 2016 was declared due to the dramatic year over year rise in fentanyl-related deaths.

Given the increasing concerns of harm associated with opioid misuse, opioid overdose surveillance in Manitoba is essential to monitor these events in an attempt to accurately quantify the significance of the issue and to develop a provincial response plan. In addition, standardized opioid overdose surveillance data would allow for more accurate national estimates of opioid-related deaths, and nation-wide jurisdictional comparability.

OBJECTIVE

The primary objective of the surveillance system is to manage, analyze, and interpret opioid data from a range of stakeholders to inform prevention programming and management of opioid misuse and overdose in Manitoba. This collaboration with regional and provincial stakeholders in the province will assist in managing harm due to opioid misuse and overdose and to provide epidemiological evidence to inform policy and programs.

THIS REPORT AND ITS ONE-PAGE SUMMARY WILL BE PRODUCED QUARTERLY.

DATA SOURCES

Manitoba Health, Seniors and Active Living collaborates with a range of stakeholders to collect opioid misuse and overdose data. The compilation of the data creates a surveillance system where the sum of the individual parts provides a useful picture of the provincial context.

The following data sources were used to generate this report:

- Office of the Chief Medical Examiner's data
- Emergency department information system data (available for Winnipeg Regional Health Authority [RHA] only)
- Hospital separation abstracts
- Calls to Health Links - Info Santé
- Provincial Take-Home Naloxone program data
- Winnipeg Fire & Paramedic Service data (available for Winnipeg RHA only)
- Drug Analysis Service data, Health Canada
- Calls to Manitoba Poison Centre
- Medical Transportation Coordination Centre data (available for rural and northern Manitoba)
- Panorama Inventory Management System data
- Diagnostic Services Manitoba data
- Drug Program Information Network data
- Emergency Medical Services data in the Northern Health Region

Produced quarterly, this report will provide an overview on each of the data sources to determine changes in trends and to inform public health action. Collectively, the information provides a description of the situation relating to opioid misuse and overdose in the province.

NALOXONE DISTRIBUTION

PROVINCIAL TAKE-HOME NALOXONE PROGRAM

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.

As of November 2017, there were 61 registered naloxone distribution sites in Manitoba, with representation in every health region and 24 First Nations communities. Many of these sites registered near the end of reporting period, thus were not actively distributing in this period. All active sites are listed at: http://www.streetconnections.ca.

The program provides training on how to recognize and respond to substance overdose and how to safely administer naloxone (a safe and highly effective opioid agonist) in an opioid overdose event. In addition to training, take-home naloxone kits are provided free of charge to people who are at risk of opioid overdose, with a priority focus on people who inject opioids.

The Manitoba take-home naloxone kits contains:

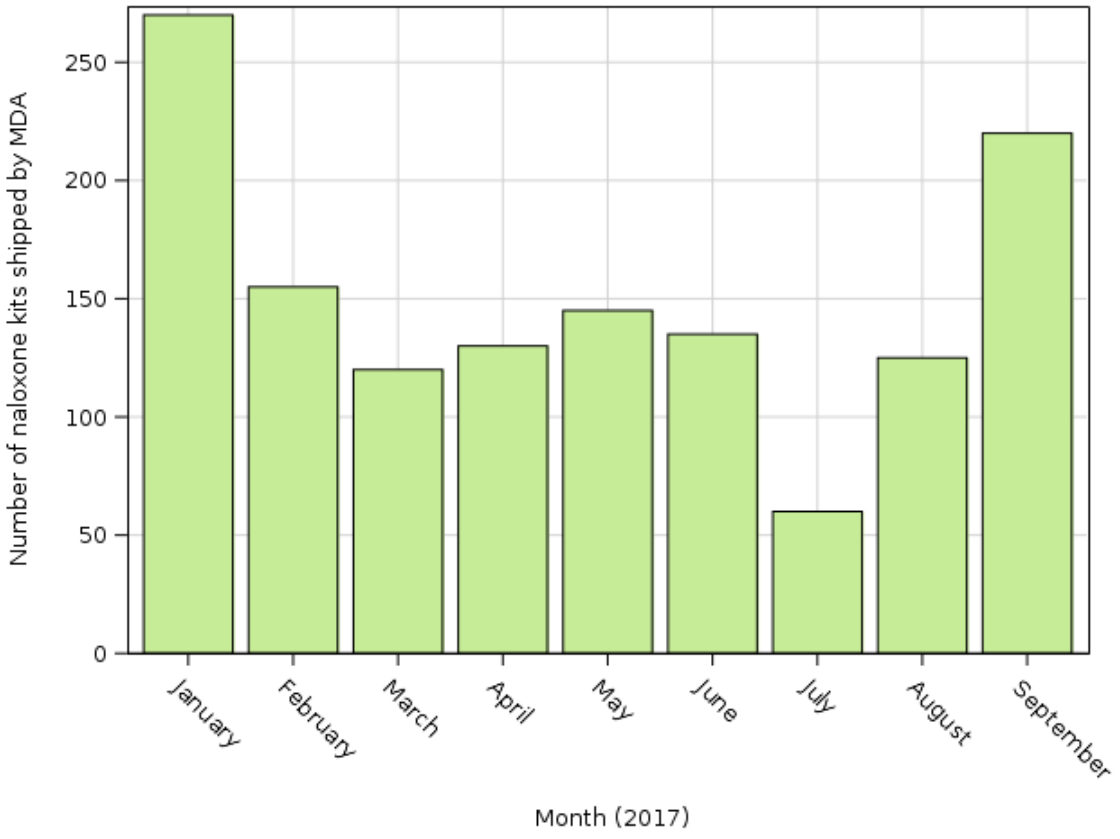
- Instruction sheet (French and English)
- Alcohol swabs
- Gloves and a breathing mask to protect the responder
- 3 Vanish Point® syringes
- Pill bottle containing 3 ampoules of naloxone
- 3 ampoule breakers

Between January 1st and September 30th, 2017, a total of 765 take-home naloxone kits were distributed to people at risk of opioid overdose across the province. There was an increase in naloxone kits distributed during the third quarter of 2017 (n=275), as compared to the first (n=260) and the second (n=230) quarters of 2017.

MANITOBA'S MATERIALS DISTRIBUTION AGENCY

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. Data from Panorama was analyzed in order to describe the number of naloxone kits shipped from the provincial warehouse.

FIGURE 1: NUMBER OF NALOXONE KITS SHIPPED BY MATERIALS DISTRIBUTION AGENCY, PANORAMA (JANUARY 1, 2017 - SEPTEMBER 30, 2017)



MDA, Manitoba's Materials Distribution Agency

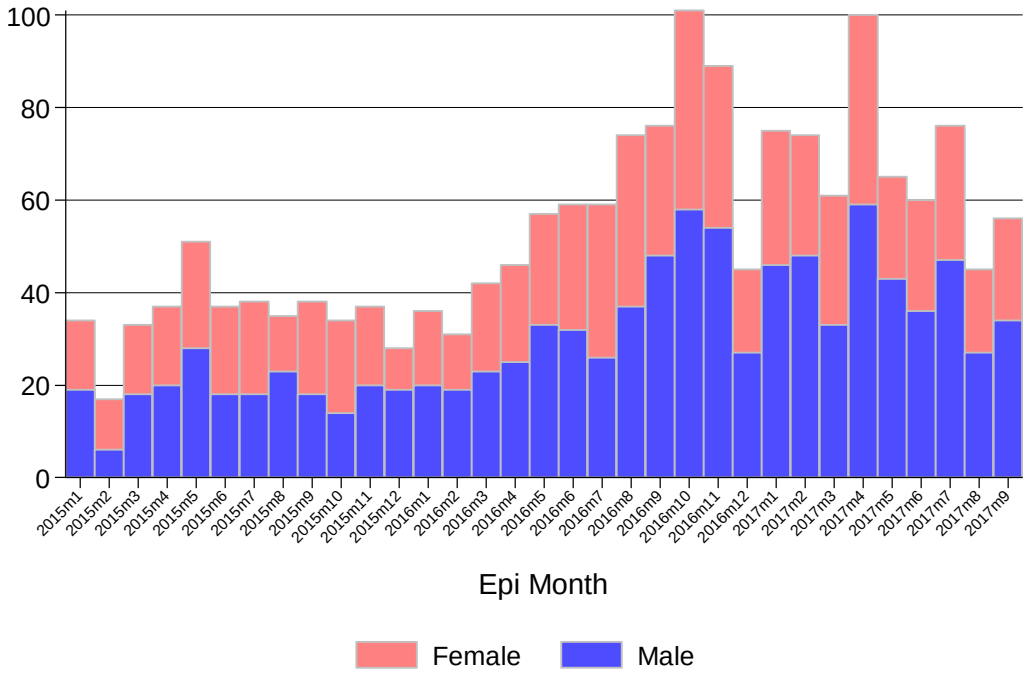
- There was a decrease in naloxone kits shipped during the third quarter of 2017 (n=405), as compared to the first (n=545) and the second (n=410) quarters of 2017. However, third quarter data is trending upwards.
- Between January 1st and September 30th, 2017, the majority of naloxone kits were shipped to Winnipeg RHA (n=885), followed by Prairie Mountain Health (n=200) and Northern Health Region (n=175) *(data not shown)*.

NALOXONE ADMINISTRATION

WINNIPEG FIRE AND PARAMEDIC SERVICE

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 data in this report represents the number of suspected overdose cases receiving naloxone from WFPS between January 1st, 2015 and September 30th, 2017.

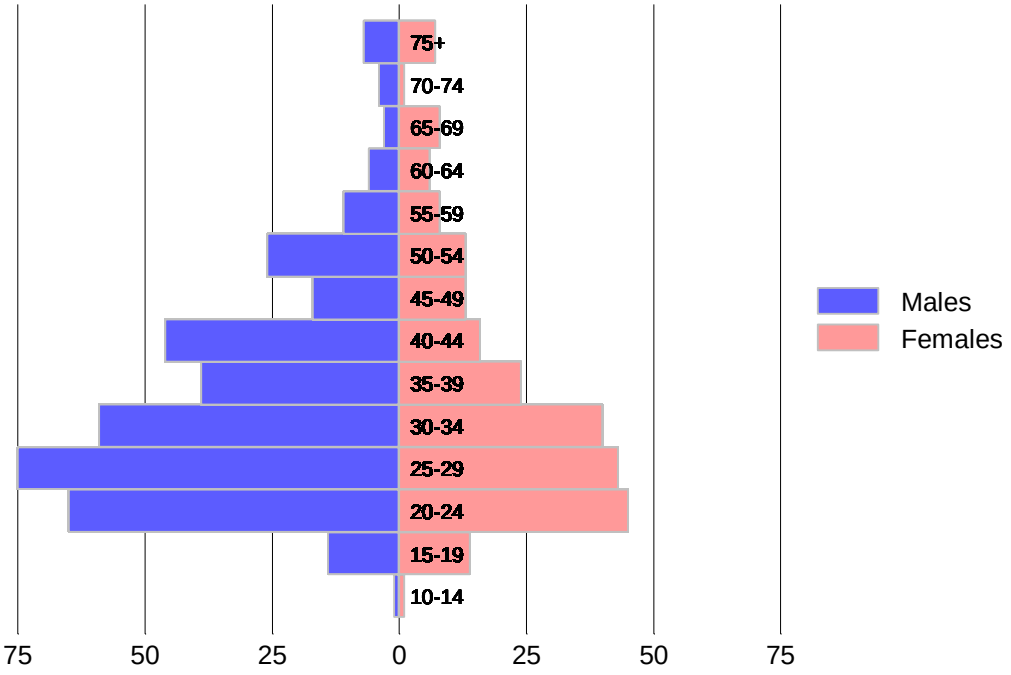
FIGURE 2: NUMBER OF SUSPECTED OVERDOSE CASES RECEIVING NALOXONE, WINNIPEG FIRE AND PARAMEDIC SERVICE (JANUARY 1, 2015 – SEPTEMBER 30, 2017)



*Data provided by WFPS; Includes only those greater than 9 years of age. Events up to 30sep2017

- Between January 1st and September 30th, 2017, there were 612 suspected overdose cases receiving naloxone, with the majority of these cases concerning males (n=373, 61%); in the third quarter of 2017 alone, there were 177 cases, which is less than the cases reported in the first (n=210) and the second (n=225) quarters of 2017.
- In 2015, there were a total of 419 suspected overdose cases receiving naloxone from WFPS; in 2016, the corresponding numbers were 715. The increase of 296 administrations may indicate a true increase in burden or a difference in awareness by WFPS.

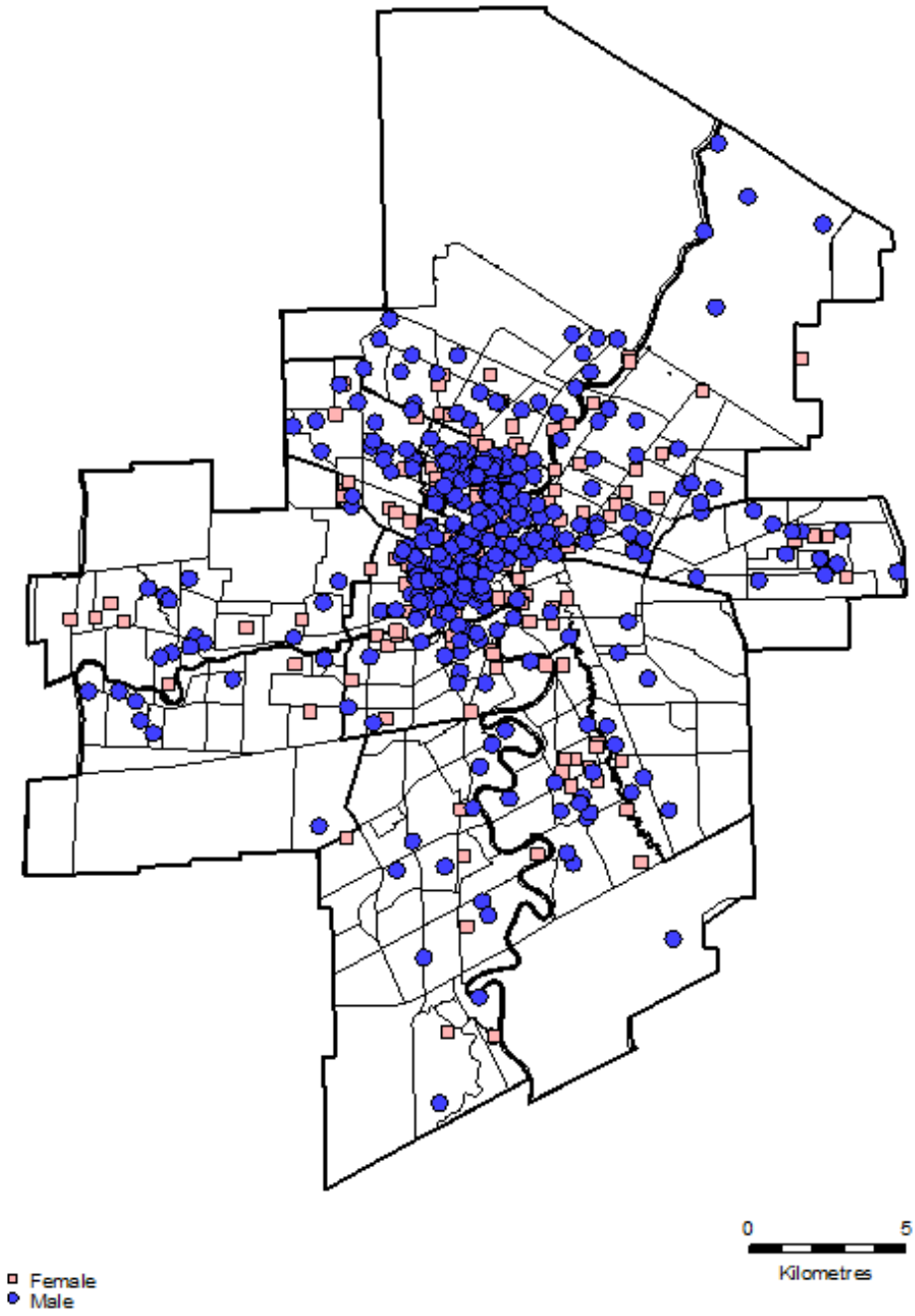
FIGURE 3: AGE PYRAMID OF SUSPECTED OVERDOSE CASES RECEIVING NALOXONE BY SEX, WINNIPEG FIRE AND PARAMEDIC SERVICE (JANUARY 1 – SEPTEMBER 30, 2017)



*Data provided by WFPS; Includes only those greater than 9 years of age. Events up to 30sep2017

- Between January 1st and September 30th, 2017, 54% (n=327) of the suspected overdose cases receiving naloxone from WFPS were in the 20-34 year age group.

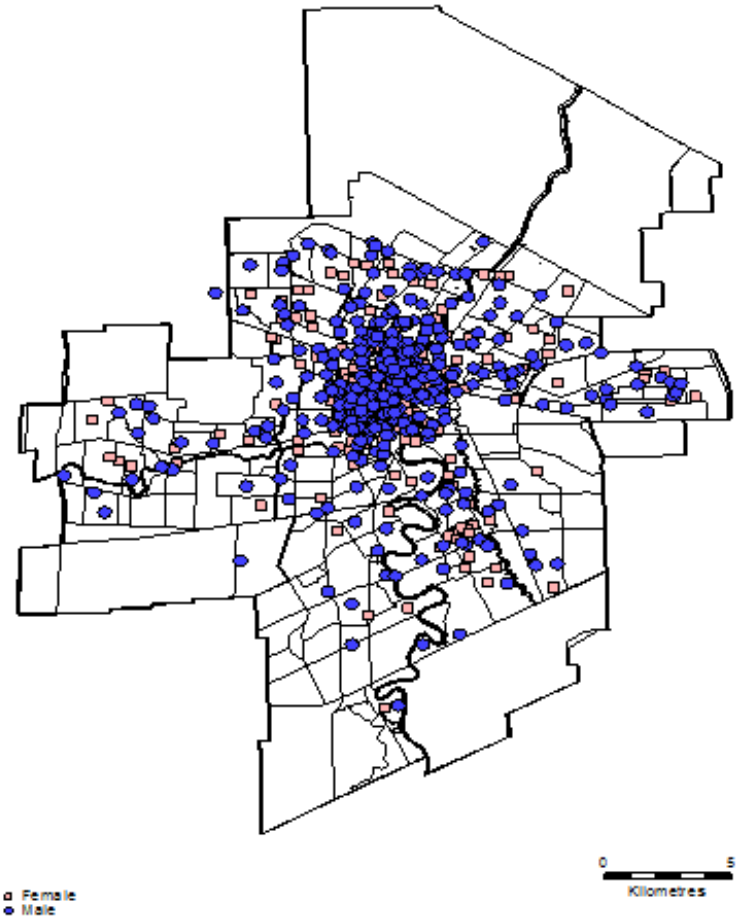
FIGURE 4: DOT MAP OF RESIDENTIAL LOCATION OF SUSPECTED OVERDOSE CASES RECEIVING NALOXONE, WINNIPEG FIRE AND PARAMEDIC SERVICE (JANUARY 1 – SEPTEMBER 30, 2017)



* Residential locations are not exact (randomized within neighborhoods).
**Winnipeg Fire and Paramedic Service does not service East St. Paul and South St. Path neighborhoods.

- Between January 1st and September 30th, 2017, suspected overdose cases receiving naloxone from WFPS were the highest among those living in Downtown (n=141; 23%) and the Point Douglas (n=122; 20%) community areas.

FIGURE 5: DOT MAP OF EVENT LOCATIONS OF SUSPECTED OVERDOSE CASES RECEIVING NALOXONE, WINNIPEG FIRE AND PARAMEDIC SERVICE (JANUARY 1 – SEPTEMBER 30, 2017)



Event Data provided by WFPS. Includes only those greater than 9 years of age. Events up to 30sep2017

* Residential locations are not exact (randomized within neighborhoods).
**Winnipeg Fire and Paramedic Service does not service East St. Paul and South St. Path neighborhoods.

- Between January 1st and September 30th, 2017, 58% of the suspected overdose cases receiving naloxone from WFPS occurred in the Downtown or Point Douglas community areas, while only 43% had residence postal codes in those communities. The discrepancies may be contributed by the 17% of cases where a postal code was either not in Winnipeg or not provided. Alternatively, it is possible that some individuals might be travelling from their home community areas into Downtown / Point Douglas to use drugs which might add to the overall burden of overdose events in these areas.

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

NOTE(S):

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.

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.

The increase in reported naloxone administration in 2016 is in part due to a real increase in opioid overdose events in Winnipeg. However, a proportion of the increase is also likely due to a number of changes over the past year which could have inflated the count of naloxone-related calls and the intensity of naloxone administration. These changes are:

- Naloxone started being administered routinely by all levels of WFPS paramedics in May 2016.
- Protocols for naloxone administration by WFPS changed in May 2016. Previous naloxone administration was based upon an initial administration of 0.4 mg of naloxone, and repeated until there were signs of improved patient condition. Now administration is more variable, with 0.4–2.0 mg doses repeated as required.

MEDICAL TRANSPORTATION COORDINATION CENTRE

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.

TABLE 1: CERTAIN CHARACTERISTICS OF SUSPECTED OVERDOSE EVENTS IN RURAL AND NORTHERN MANITOBA, MEDICAL TRANSPORTATION COORDINATION CENTRE (DECEMBER 9, 2016* – SEPTEMBER 30, 2017)

	N	%
Total	191	100.0
Age groups (years)		
<=19	30	15.7
20-29	69	36.1
30-39	40	20.9
40-49	22	11.5
50+	15	7.9
Unknown	15	7.9
Sex		
Female	96	50.3
Male	87	45.5
Unknown	8	4.2
Transportation**		
Not transported	37	19.4
Transported: Non-emergent	116	60.7
Transported: Emergent	38	19.9

*The reported data period starts on December 9, 2016; therefore, the results cannot be presented as January 1st to September 30th, 2017 as similar to other results in this report.

**Transportation is defined upon the initial assessment of the patient. Patients who are in a critical state upon assessment are transported in an emergent state such that sirens and flashing lights are used. Patients who do not display life-threatening or critical symptoms are transported in a non-emergent state.

- There were 191 suspected overdose events reported by MTCC between December 9th, 2016 and September 30th, 2017; the number of suspected overdose events gradually decreased from 76 events in the first quarter of 2017 to 42 events in the third quarter of 2017 *(data not shown)*.
- 57% of suspected overdose events were among those aged 20 – 39 years.
- Of the 191 total suspected overdose calls, 61% of patients were transported in "non-emergent" mode, where the assessed patient was not in critical state during transport. However, 20% of patients were transported in "emergent" mode in potentially life threatening circumstances, and needed to arrive at an emergency department as soon as possible.

TABLE 2: CRUDE RATE (PER 100,000) OF SUSPECTED OVERDOSE EVENTS IN RURAL AND NORTHERN MANITOBA BY REGIONAL HEALTH AUTHORITY (RHA), MEDICAL TRANSPORTATION COORDINATION CENTRE (DECEMBER 9, 2016* – SEPTEMBER 30, 2017)

RHA	N	Crude rate
Interlake-Eastern	60	46.8
Prairie Mountain	65	38.3
Northern	20	26.2
Southern Health - Santé Sud	46	23.3

*The reported data period starts on December 9, 2016; therefore, the results cannot be presented as January 1 – September 30, 2017 as similar other results in this report.

- Interlake-Eastern Health had the highest crude rate at 46.8 suspected overdose events per 100,000 population between December 9th, 2016 and September 30th, 2017, followed by Prairie Mountain Health (38.3 events per 100,000 population).

Naloxone administration

- MTCC started to track the naloxone administration for suspected overdose events as of May 21, 2017. Of the 82 total suspected overdose calls which occurred between May 21st and September 30th, 2017, 18% of patients received naloxone (n=15).
- Between January 1st, 2017 and September 30th, 2017, as per EMS in Northern RHA data, there were 14 cases in which EMS reported administering naloxone and/or that they arrived on scene and naloxone was already given by another first responder. Half of these events (n=7) occurred in a private residence and the majority of cases were males (n=9, 64%)

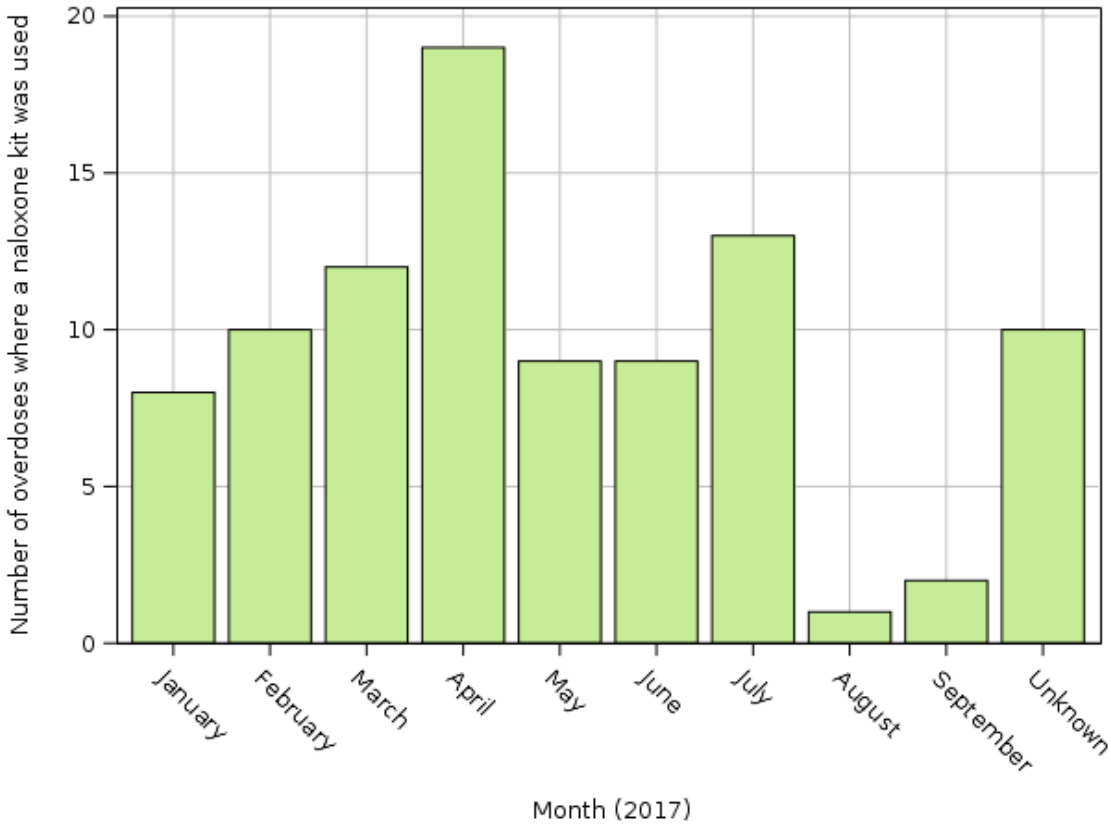
NOTE(S):

- 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.
- EMS data in Northern RHA include reporting from 10 of the 15 EMS services in this region. Many remote communities in the north do not have land EMS. Between January 1st and July 1st 2017 only cases from NRHA run EMS services are included.

PROVINCIAL TAKE-HOME NALOXONE PROGRAM

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[1] is completed by the staff replacing the kit. 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 below are drawn from these overdose events for which data was collected.

FIGURE 6: NUMBER OF OVERDOSE EVENTS WHERE A TAKE-HOME NALOXONE KIT WAS USED, MANITOBA PROVINCIAL TAKE-HOME NALOXONE PROGRAM (JANUARY 1 - SEPTEMBER 30, 2017)



- Between January 1st and September 30th, 2017, 93 naloxone kits were reported to public health staff as having been used during overdose events in Manitoba.
- There were 21 naloxone used during the third quarter of 2017, which was less than the first and the second quarters of 2017 (n=30 and n=42, respectively).

[1] The overdose response form is accessible at:
http://www.gov.mb.ca/health/publichealth/surveillance/docs/mhsu_6836_20171115.pdf

TABLE 3: CHARACTERISTICS OF OVERDOSE EVENTS WHERE A TAKE-HOME NALOXONE KIT WAS USED, MANITOBA PROVINCIAL TAKE-HOME NALOXONE PROGRAM (JANUARY 1 – SEPTEMBER 30, 2017)

Characteristics	Categories	Female (n=30)	Male (n=56)	Unknown (n=7)	Total (n=93)
Age group	12-19	1 (3.3%)	1 (1.8%)	0 (0.0%)	2 (2.2%)
	19-30	16 (53.3%)	26 (46.4%)	1 (14.3%)	43 (46.2%)
	31-40	9 (30.0%)	13 (23.2%)	1 (14.3%)	23 (24.7%)
	41-50	3 (10.0%)	5 (8.9%)	0 (0.0%)	8 (8.6%)
	51-60	0 (0.0%)	2 (3.6%)	0 (0.0%)	2 (2.2%)
	61 or over	0 (0.0%)	2 (3.6%)	0 (0.0%)	2 (2.2%)
	Unknown	1 (3.3%)	7 (12.5%)	5 (71.4%)	13 (14.0%)
Location of overdose	Private residence	25 (83.3%)	39 (69.6%)	3 (42.9%)	67 (72.0%)
	Street	4 (13.3%)	3 (5.4%)	0 (0.0%)	7 (7.5%)
	Other*	0 (0.0%)	5 (8.9%)	0 (0.0%)	5 (5.4%)
	Unknown	1 (3.3%)	9 (16.1%)	4 (57.1%)	14 (15.1%)
RHA of overdose	Winnipeg-	25 (83.3%)	42 (75.0%)	7 (100.0%)	74 (79.6%)
	Interlake-Eastern	0 (0.0%)	5 (8.9%)	0 (0.0%)	5 (5.4%)
	Prairie Mountain	3 (10.0%)	3 (5.3%)	0 (0.0%)	6 (6.4%)
	Southern Health - Santé Sud	0 (0.0%)	2 (3.6%)	0 (0.0%)	2 (2.1%)
	Out of province	0 (0.0%)	1 (1.8%)	0 (0.0%)	1 (1.1%)
	Unknown	2 (6.7%)	3 (5.3%)	0 (0.0%)	5 (5.4%)
Substance type**	Fentanyl	9 (30.0%)	24 (42.9%)	1 (14.3%)	34 (36.6%)
	Carfentanil	6 (20.0%)	15 (26.8%)	1 (14.3%)	22 (23.7%)
	Crystal Meth	2 (6.7%)	11 (19.6%)	0 (0.0%)	13 (14.0%)
	Morphine	4 (13.3%)	5 (8.9%)	0 (0.0%)	9 (9.7%)
	Other substances***	8 (26.7%)	6 (10.7%)	1 (14.3%)	15 (16.1%)

* Other locations include public washroom, hotel, shelter, and in-vehicle.
** Results are not mutually exclusive.
*** Other substances include benzodiazepine, cocaine/crack, alcohol, codeine, methadone, heroin, and dilaudid.

- In Manitoba, the majority of the take-home naloxone kits were used by males (n=56, 60%) between January 1st and September 30th, 2017.
- Approximately half of the total take-home naloxone kits used were in the age group of 19 - 30 years.
- The majority of the overdose events occurred in a private residence (n=67, 72%) and in Winnipeg RHA (n=74, 77%).
- Fentanyl and carfentanil were the most common substances reported to be used for the overdose events (n=56, 60%). The reported use of crystal meth decreased from 7 cases during the second quarter of 2017 to 3 cases during the third quarter of 2017.

TABLE 4: CHARACTERISTICS OF EMERGENCY RESPONSE TO OVERDOSE EVENTS WHERE A TAKE-HOME NALOXONE KIT WAS USED, MANITOBA PROVINCIAL TAKE-HOME NALOXONE PROGRAM (JANUARY 1 – SEPTEMBER 30, 2017)

Characteristics	Categories	Female (n=30)	Male (n=56)	Unknown (n=7)	Total (n=93)
Was 911 called?	Yes	7 (23.3%)	24 (42.9%)	3 (42.8%)	34 (36.6%)
	No	19 (63.4%)	28 (50.0%)	2 (28.6%)	49 (52.6%)
	Unknown	4 (13.3%)	4 (7.1%)	2 (28.6%)	10 (10.8%)
Reason(s) for NOT calling 911*	No phone	2 (10.5%)	5 (17.9%)	0 (0.0%)	7 (14.3%)
	Worried police would come	4 (21.1%)	6 (21.4%)	0 (0.0%)	10 (20.4%)
	Thought the person would get better on their own	4 (21.1%)	7 (25.0%)	0 (0.0%)	11 (22.5%)
	Other reasons**	2 (10.5%)	4 (14.3%)	0 (0.0%)	6 (12.2%)
	Unknown	7 (36.8%)	6 (21.4%)	2 (100.0%)	15 (30.6%)
Actions taken during overdose*	Stayed with the person until (s)he came around	18 (60.0%)	33 (58.9%)	3 (42.9%)	54 (58.1%)
	Checked the person's breathing	18 (60.0%)	36 (64.3%)	2 (28.6%)	56 (60.2%)
	Provided artificial respirations	9 (30.0%)	29 (51.8%)	1 (14.3%)	39 (41.9%)
	Slapped or shook the person (*not recommended*)	10 (33.3%)	22 (39.3%)	2 (28.6%)	34 (36.6%)
	Put the person in the recovery position	8 (26.7%)	16 (28.6%)	1 (14.3%)	25 (26.9%)
	Checked the person's pulse	10 (33.3%)	22 (39.3%)	0 (0.0%)	32 (34.4%)
	Yelled at the person	12 (40.0%)	24 (42.9%)	3 (42.9%)	39 (41.9%)
	Provided chest compressions	6 (20.0%)	14 (25.0%)	0 (0.0%)	20 (21.5%)
	Stayed with the person until first responders arrived	5 (16.7%)	20 (35.7%)	3 (42.9%)	28 (30.1%)
	Checked the person's airway for obstruction	5 (16.7%)	14 (25.0%)	1 (14.3%)	20 (21.5%)
	Gave the person a sternal rub	12 (40.0%)	16 (28.6%)	2 (28.6%)	30 (32.3%)
	Other actions taken***	0 (0.0%)	2 (3.6%)	0 (0.0%)	2 (2.2%)
	Unknown	6 (20.0%)	9 (16.1%)	2 (28.6%)	17 (18.3%)
Number of naloxone doses given	One	15 (50.0%)	12 (21.4%)	3 (42.9%)	30 (32.3%)
	Two	8 (26.7%)	30 (53.6%)	2 (28.6%)	40 (43.0%)
	Three	3 (10.0%)	9 (16.1%)	0 (0.0%)	12 (12.9%)
	Unknown	4 (13.3%)	5 (8.9%)	2 (28.6%)	11 (11.8%)

*Results are not mutually exclusive.
**Other reasons include the person requesting to not call 911, taking the person to the emergency room themselves, or the person recovering quickly,
***Other actions taken during the overdose include putting the person in a cold shower, or stimulation with ice.

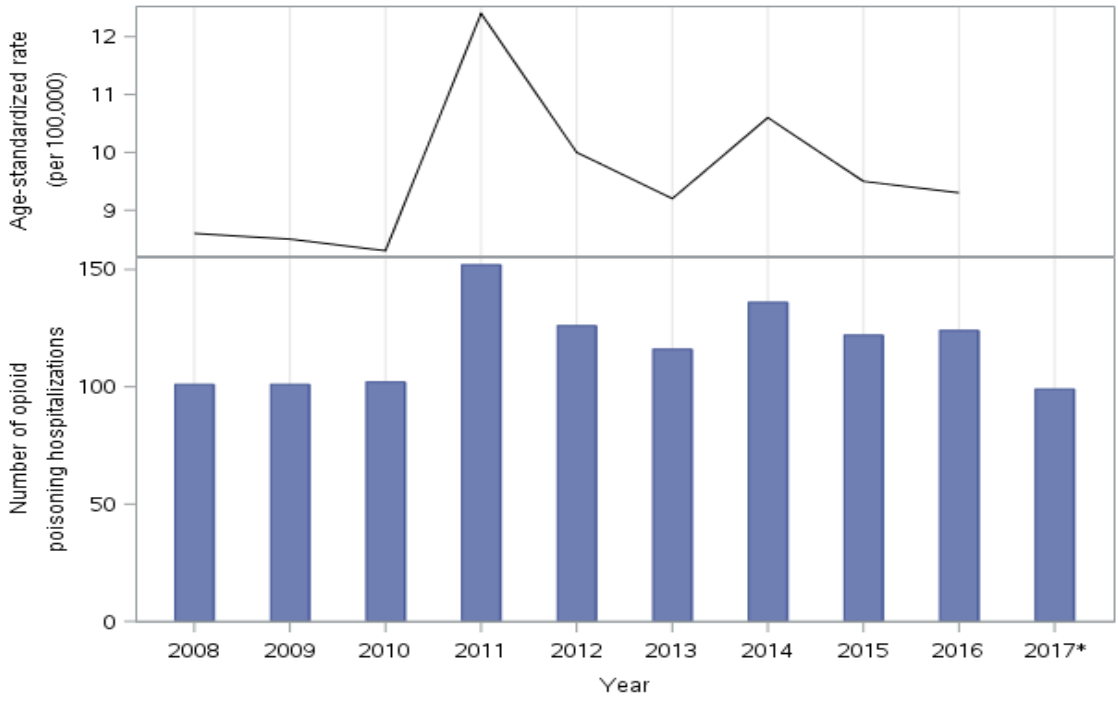
- Notably, 911 was not called in more than half of the overdose events (n=49, 53%).
- Half of the females who overdosed received one naloxone dose, while 54% of the males who overdosed received two naloxone doses.

SEVERITY

HOSPITAL ADMISSIONS

Manitoba Health, Seniors and Active Living's (MHSAL) population-based hospital separation abstract database was used to measure the opioid poisoning hospitalizations in Manitoba from January 1st, 2008 to September 30th, 2017. We used the following ICD-10-CA (International Classification of Diseases) codes to identify the opioid poisoning hospitalization [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.

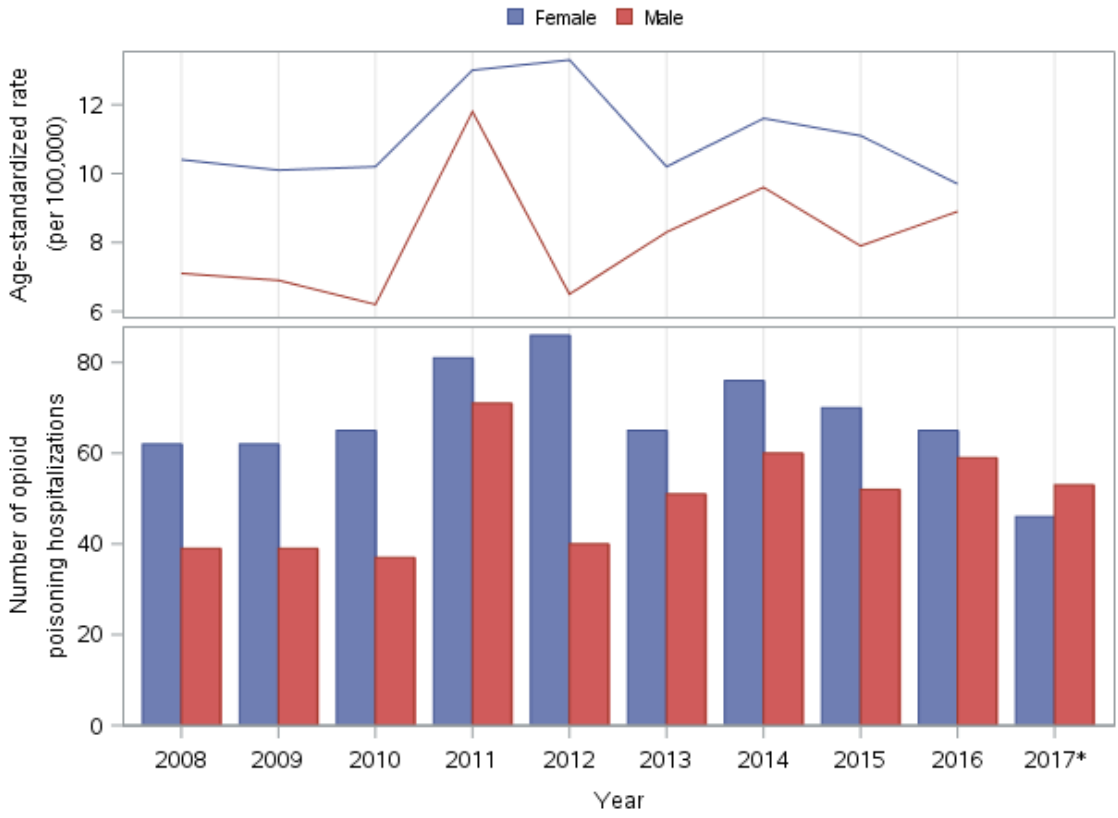
FIGURE 7: NUMBER AND RATE OF OPIOID POISONING HOSPITALIZATIONS IN MANITOBA, MANITOBA HEALTH, SENIORS AND ACTIVE LIVING (JANUARY 1, 2008 – SEPTEMBER 30, 2017)



*2017 period includes data from January 1st to September 30th, 2017

- The age-standardised rate of opioid poisoning hospitalizations was the highest in 2011 (11.4 per 100,000 population).
- Between January 1st and September 30th, 2017, there were 99 opioid poisoning hospitalizations (38 in the first quarter, 39 in the second quarter, and 22 in the third quarter).

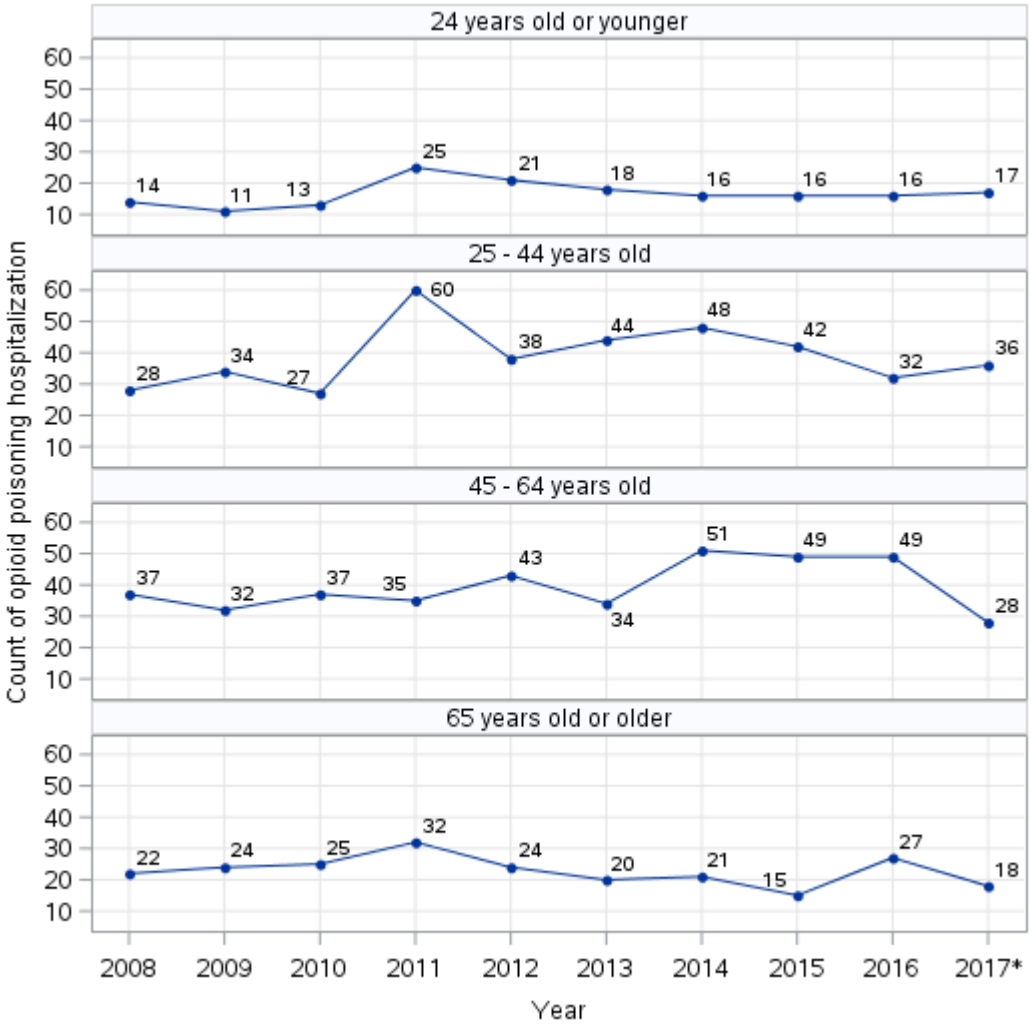
FIGURE 8: NUMBER AND RATE OF OPIOID POISONING HOSPITALIZATIONS IN MANITOBA BY SEX, MANITOBA HEALTH, SENIORS AND ACTIVE LIVING (JANUARY 1, 2008 – SEPTEMBER 30, 2017)



*2017 period includes data from January 1st to September 30th, 2017.

- From 2008 to 2016, the female population had a higher number of opioid poisoning hospitalizations as compared to males. However, between January 1st and September 30th, 2017, the male population had a slightly higher number of opioid poisoning hospitalizations (53 hospitalizations in males and 46 hospitalizations in females).

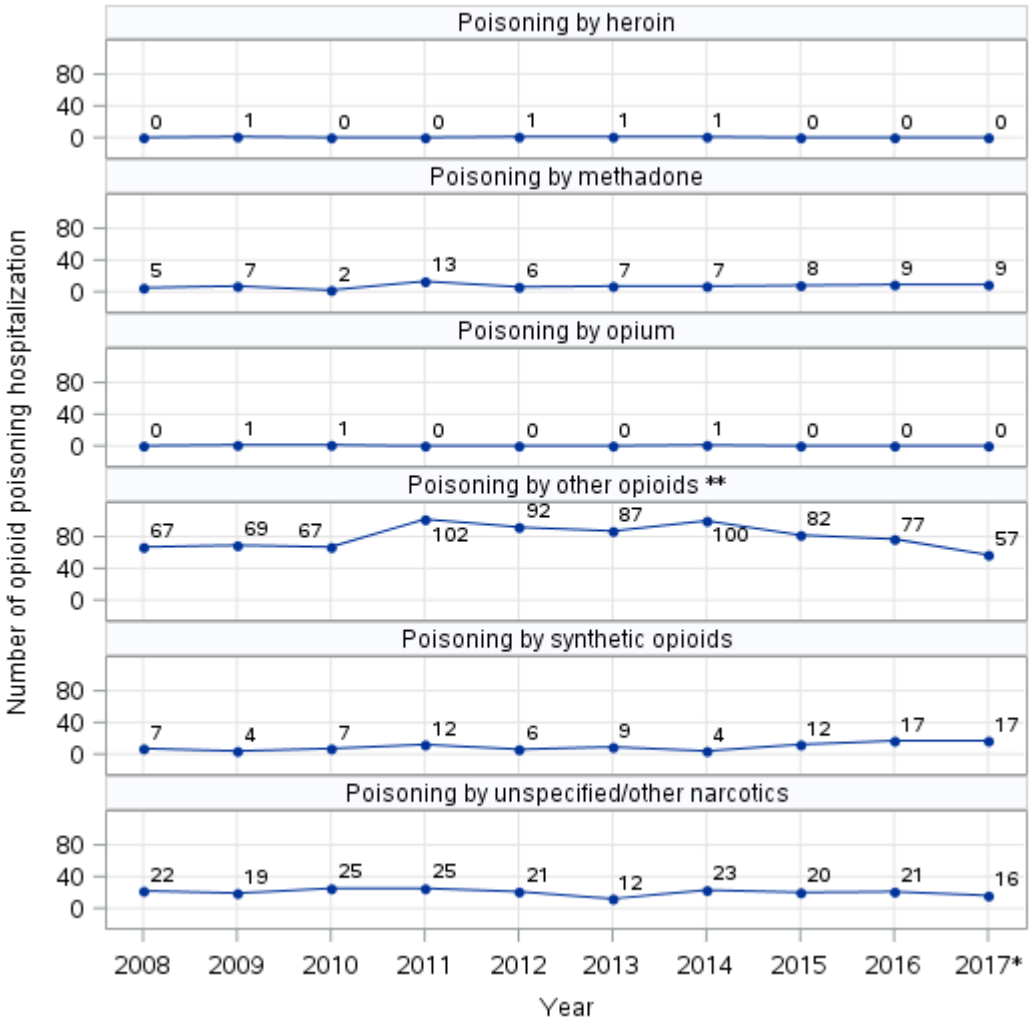
FIGURE 9: NUMBER OF OPIOID POISONING HOSPITALIZATIONS IN MANITOBA BY AGE GROUP, MANITOBA HEALTH, SENIORS AND ACTIVE LIVING (JANUARY 1, 2008 – SEPTEMBER 30, 2017)



*2017 period includes data from January 1st to September 30th, 2017.

- Overall, between January 1st, 2008 and September 30th, 2017, those aged 25 – 64 had the highest number of opioid poisoning hospitalizations in Manitoba.

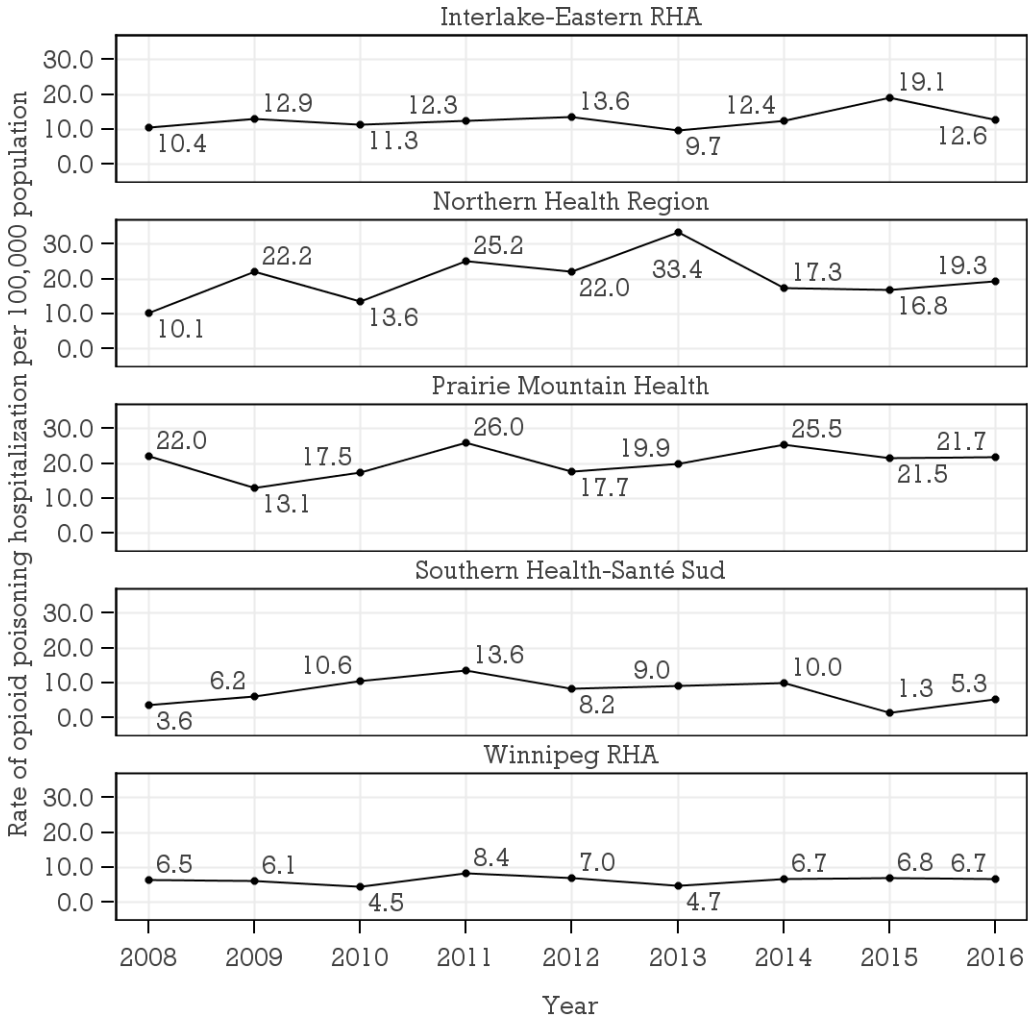
FIGURE 10: NUMBER OF OPIOID POISONING HOSPITALIZATIONS IN MANITOBA BY OPIOID TYPE, MANITOBA HEALTH, SENIORS AND ACTIVE LIVING (JANUARY 1, 2008 – JUNE 30, 2017)



*2017 period includes data from January 1st to September 30th, 2017.
** Other opioids include oxycodone, morphine, hydromorphone, and unspecified opioids.

- Number of synthetic opioid (including fentanyl) poisoning hospitalization had been on rise from 4 hospitalizations in 2014 to 17 hospitalizations in 2017 (January to September).

FIGURE 11: AGE-STANDARDIZED RATE (PER 100,000 PERSONS) OF OPIOID POISONING HOSPITALIZATION IN MANITOBA BY REGIONAL HEALTH AUTHORITY, MANITOBA HEALTH, SENIORS AND ACTIVE LIVING (2008 – 2016)

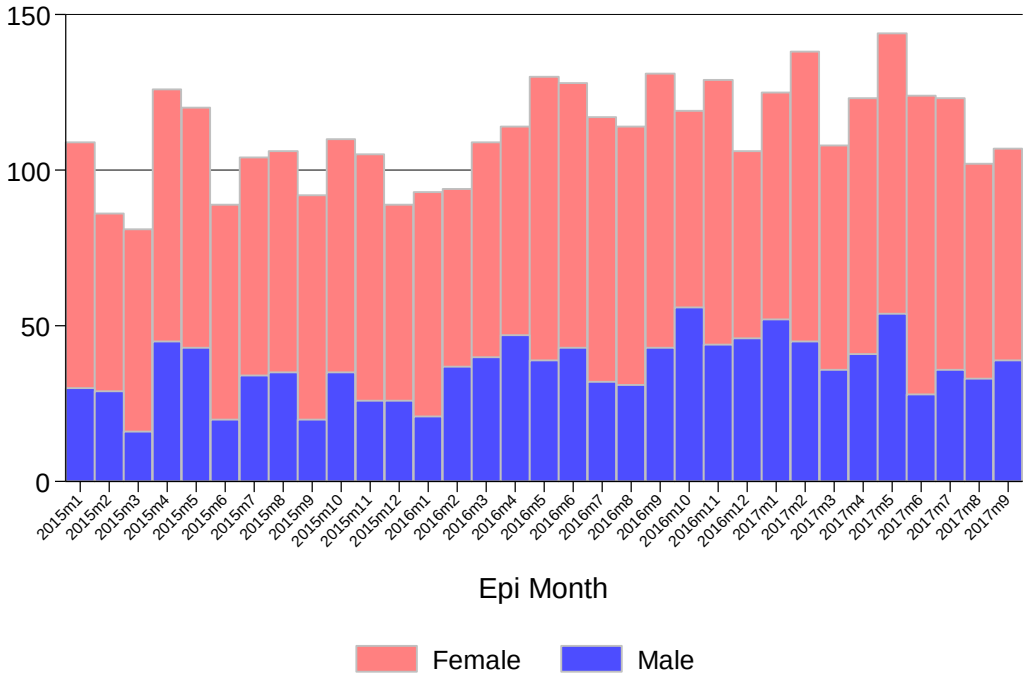


- Based upon the region of residence, Prairie Mountain Health and Northern Health Regions had the highest age-standardized rate of opioid poisoning hospitalizations during 2008 - 2016.
- Between January 1st and September 30th, 2017, the number of opioid poisoning hospitalizations was 60 in Winnipeg RHA, 21 in Prairie Mountain Health, 12 in Interlake-Eastern RHA, 4 in Northern Health Region and 2 in Southern Health-Santé Sud.

EMERGENCY DEPARTMENT ADMISSIONS

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 from January – September 2017. *Note that the EDIS data used in this report are not specific to opioid overdose, but are a reflection of overdose events of all types.*

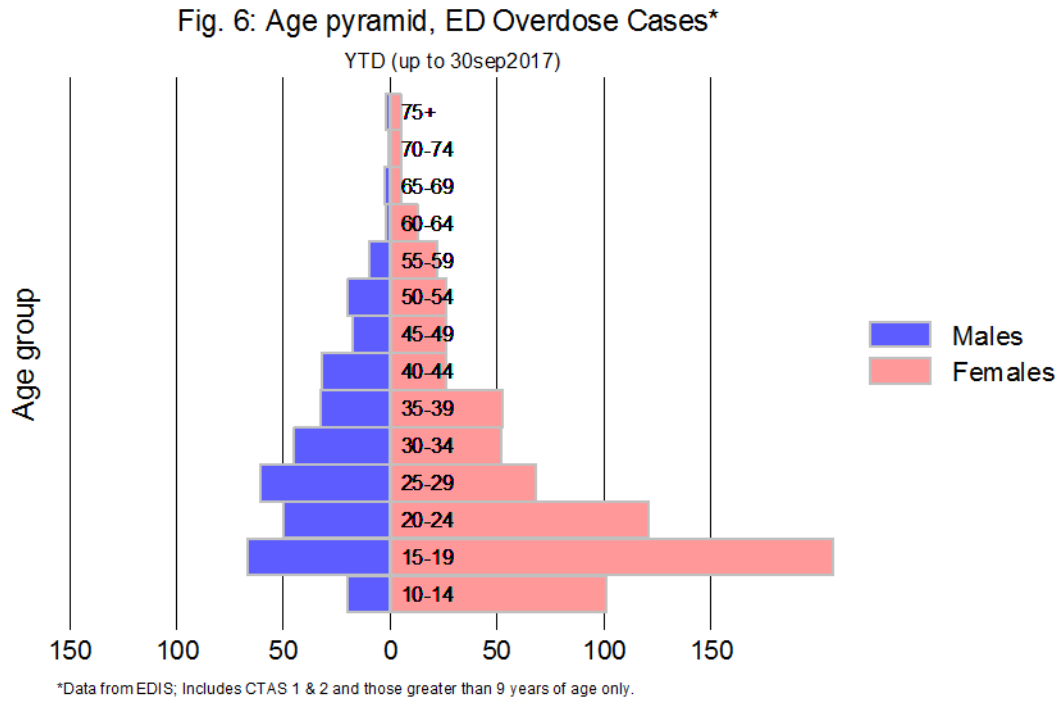
FIGURE 12: NUMBER OF SUSPECTED OVERDOSE CASES ARRIVING AT WINNIPEG RHA EMERGENCY DEPARTMENTS AND URGENT CARE FACILITIES, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1, 2015 – SEPTEMBER 30, 2017)



*Data from EDIS; Includes CTAS 1 & 2 and those greater than 9 years of age only. Visits up to 30sep2017

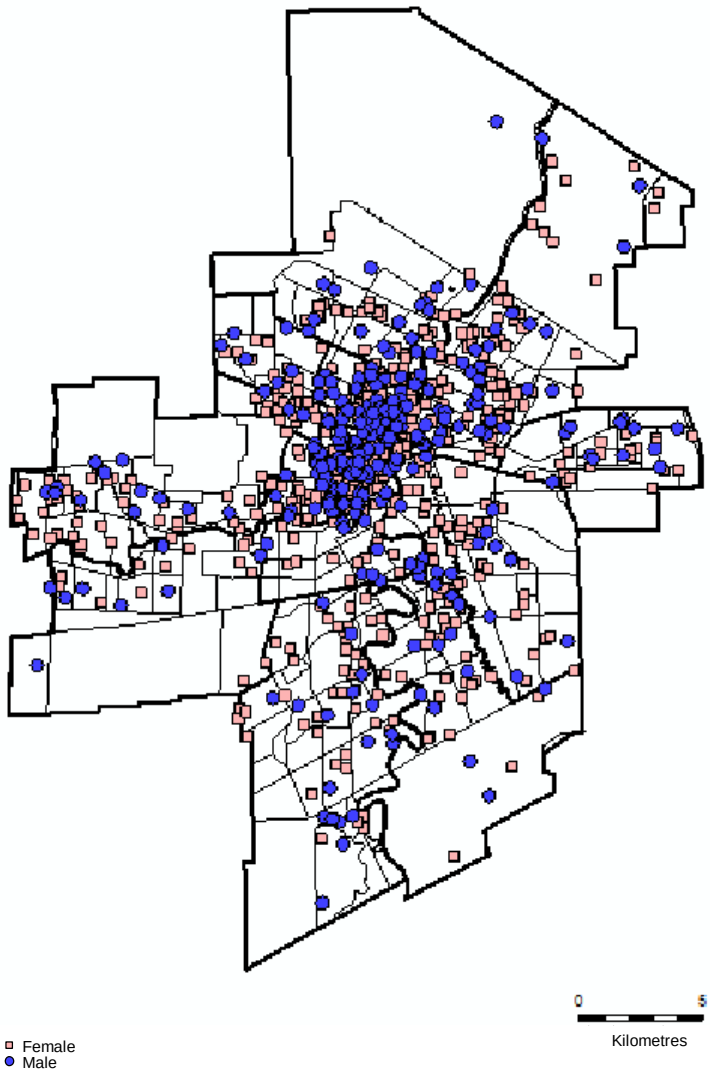
- Overall, the number of suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities has been on rise since the beginning of 2016.
- In 2017, there was a decrease in the number of suspected overdose events that occurred in the third quarter (n=332) as compared to the second quarter (n=411) and the first quarter (n=351); females contributed to the largest proportion of these events (n=730, 67%).

FIGURE 13: AGE PYRAMID OF SUSPECTED OVERDOSE CASES ARRIVING AT WINNIPEG RHA EMERGENCY DEPARTMENTS AND URGENT CARE FACILITIES BY SEX, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1 – SEPTEMBER 30, 2017)



- Approximately 45% of the female suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities were within the age group of 15 - 24 years; the corresponding proportion of this age group among the males was lower (32%).

FIGURE 14: DOT MAP OF SUSPECTED OVERDOSE CASES ARRIVING AT WINNIPEG RHA EMERGENCY DEPARTMENTS AND URGENT CARE FACILITIES BY COMMUNITY AREA OF RESIDENCE, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1 – SEPTEMBER 30, 2017)



Data from EDIS; Includes CTAS 1 & 2 and those greater than 9 years of age only. Visits up to 30sep2017

- Between January 1st and September 30th, 2017, suspected overdose cases arriving at Winnipeg RHA emergency departments and urgent care facilities were the highest among those living in Downtown (n=174; 16%), Point Douglas (n=153; 14%), and River East (n=113; 10%) community areas.

Additional supporting tables and figures from the Emergency Department Information System (EDIS) can be found in the Appendix B of this report.

NOTE(S):

- 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.

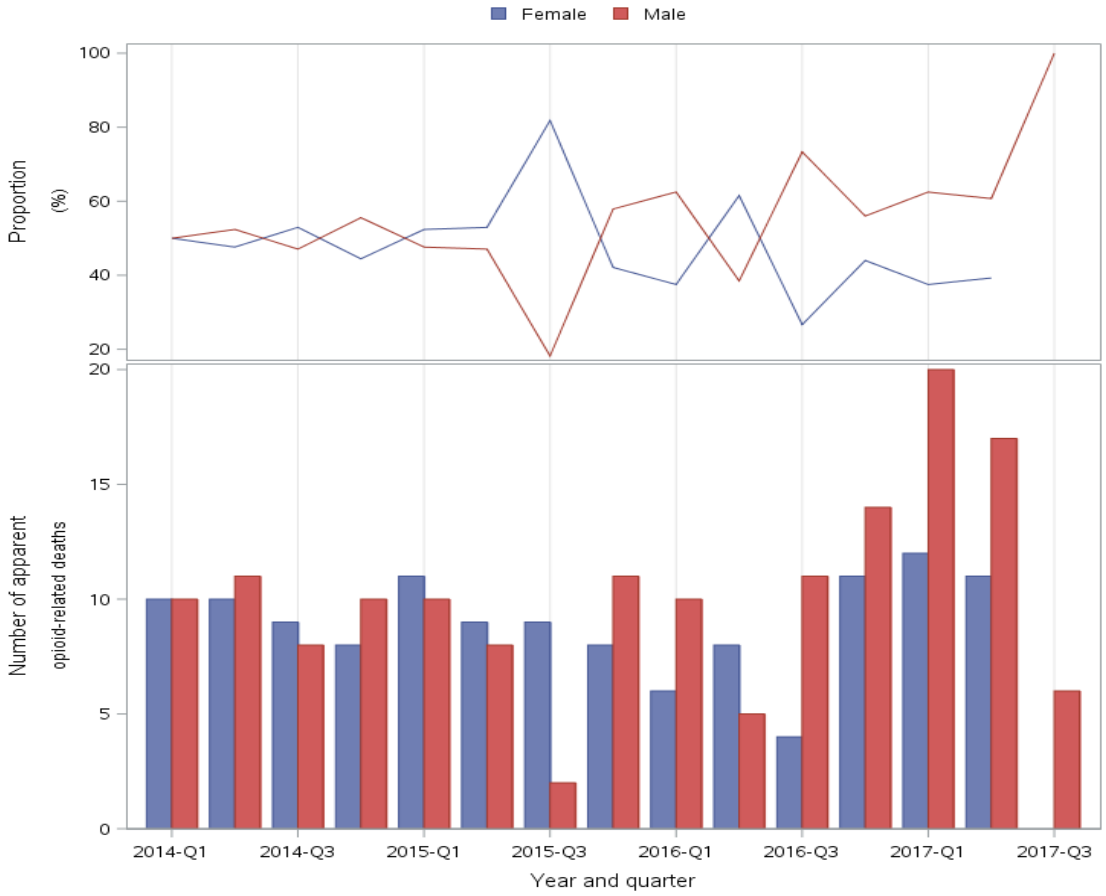
MORTALITY

OFFICE OF THE CHIEF MEDICAL EXAMINER

Office of the Chief Medical Examiner's (OCME) mortality data from January 1st, 2014 to September 30th, 2017 was 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 be ensure consistency with other jurisdictions across Canada.

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.

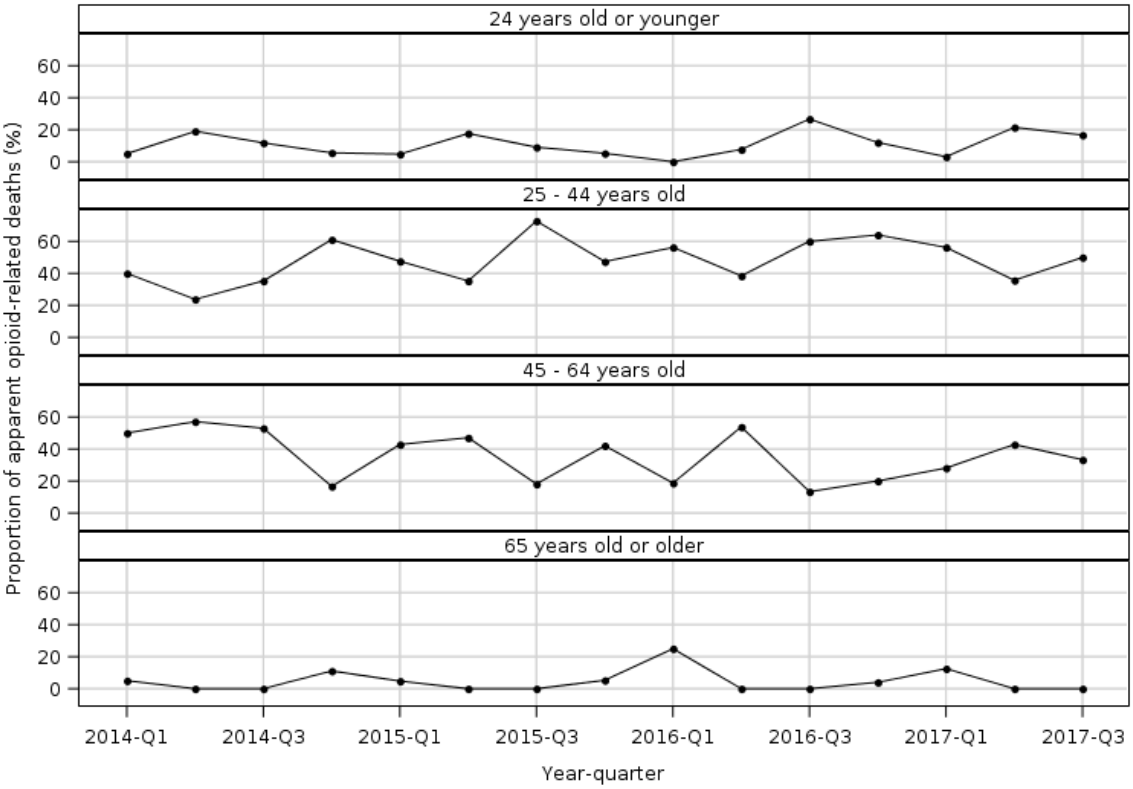
Examples of *fentanyl-related opioid(s)* include the subtypes fentanyl, carfentanil, and furanyl-fentanyl. Examples of *non-fentanyl-related opioid(s)* include codeine, heroin, and morphine. *Other substances* include but are not limited to alcohol, benzodiazepines, and cocaine.



FIURE 15: NUMBER AND PROPORTION OF APPARENT OPIOID-RELATED DEATHS IN MANITOBA BY SEX, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)

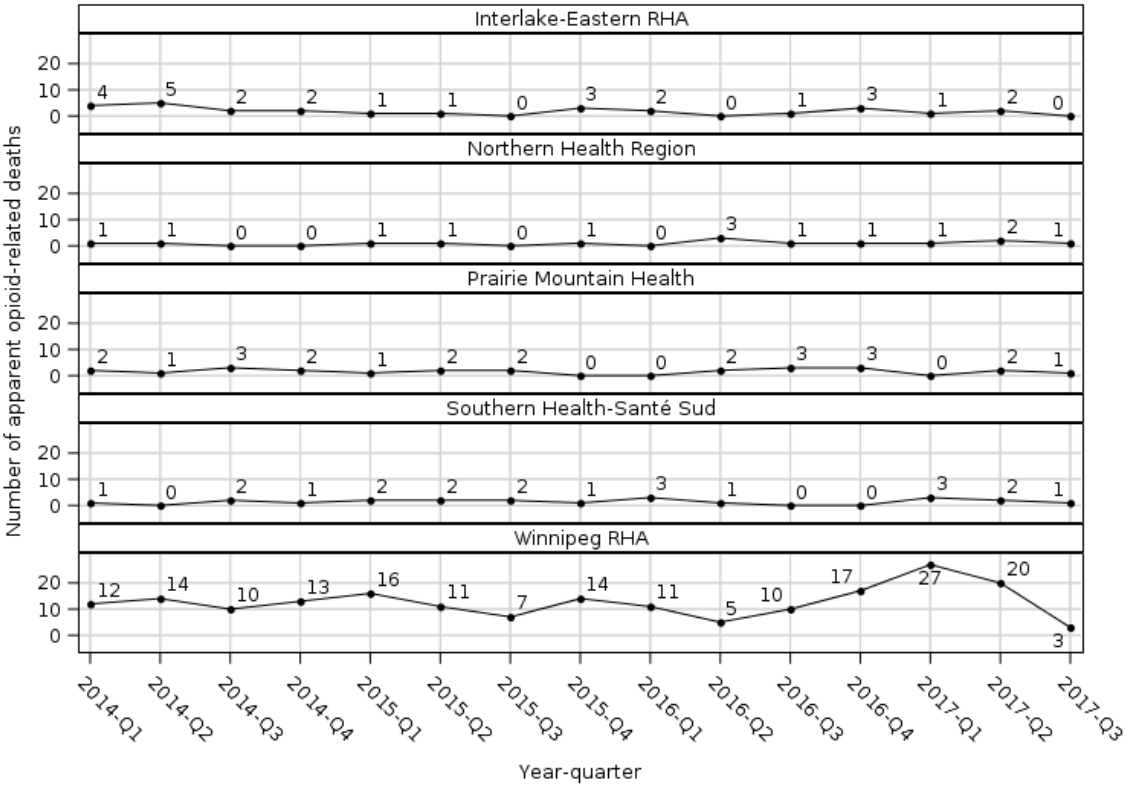
- Overall, the number of apparent opioid-related deaths decreased from 20 deaths in the first quarter of 2014 to 15 deaths in the third quarter of 2016. However, apparent opioid-related deaths have generally been on rise since the fourth quarter of 2016.
- There were 66 apparent opioid-related deaths in Manitoba between January 1st and September 30th, 2017, which is 50% more deaths compared to the same period in 2016 (n= 44).
- In 2017, the number of apparent opioid-related deaths by quarter was 32 in the first quarter, 28 in the second quarter, and 6 in the third quarter. Note -Number of deaths for this period is subject to change as the toxicology results become available.
- From the fourth quarter of 2015 and onwards, there was a consistently higher proportion of deaths in males compared to females (except for the second quarter of 2016). In the third quarter of 2017, there were no female cases.

FIGURE 16: PROPORTION OF APPARENT OPIOID-RELATED DEATHS IN MANITOBA BY AGE GROUP, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)



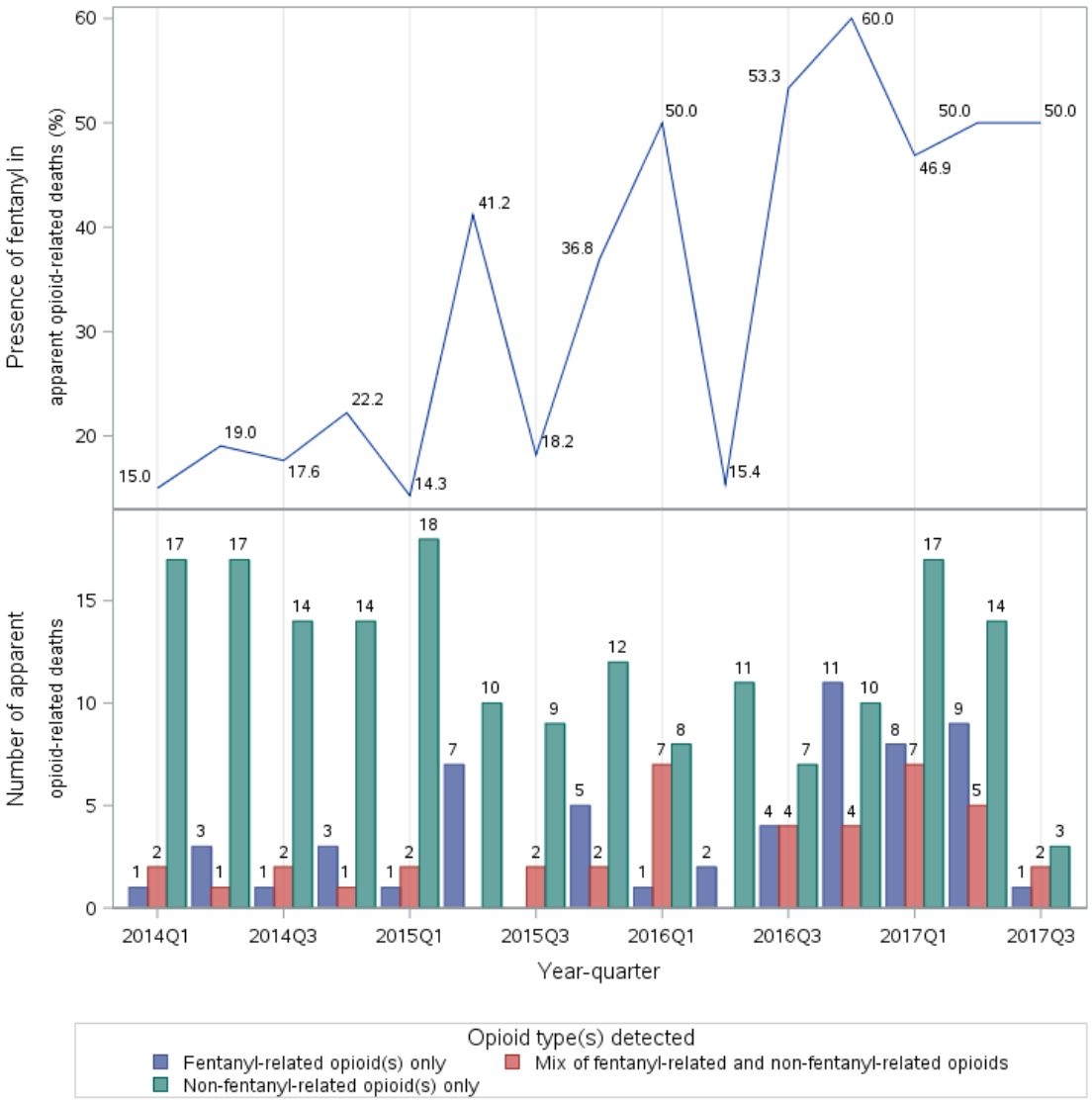
- Starting the fourth quarter of 2014, the majority of the apparent opioid-related deaths were among those aged 25 - 44 years, with the exception of the second quarters of 2016 and 2017.

FIGURE 17: NUMBER OF APPARENT OPIOID-RELATED DEATHS IN MANITOBA BY REGIONAL HEALTH AUTHORITY, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)



- In Winnipeg RHA, the number of apparent opioid-related deaths decreased from 12 deaths in the first quarter of 2014 to 5 deaths in the second quarter of 2016. However, apparent opioid-related deaths increased from the third quarter of 2016 (n=10) to the first quarter of 2017 (27); a decline was noted in the second quarter of 2017 (n=20).
- The corresponding data in the other health regions of Manitoba had been stable during the same time period.

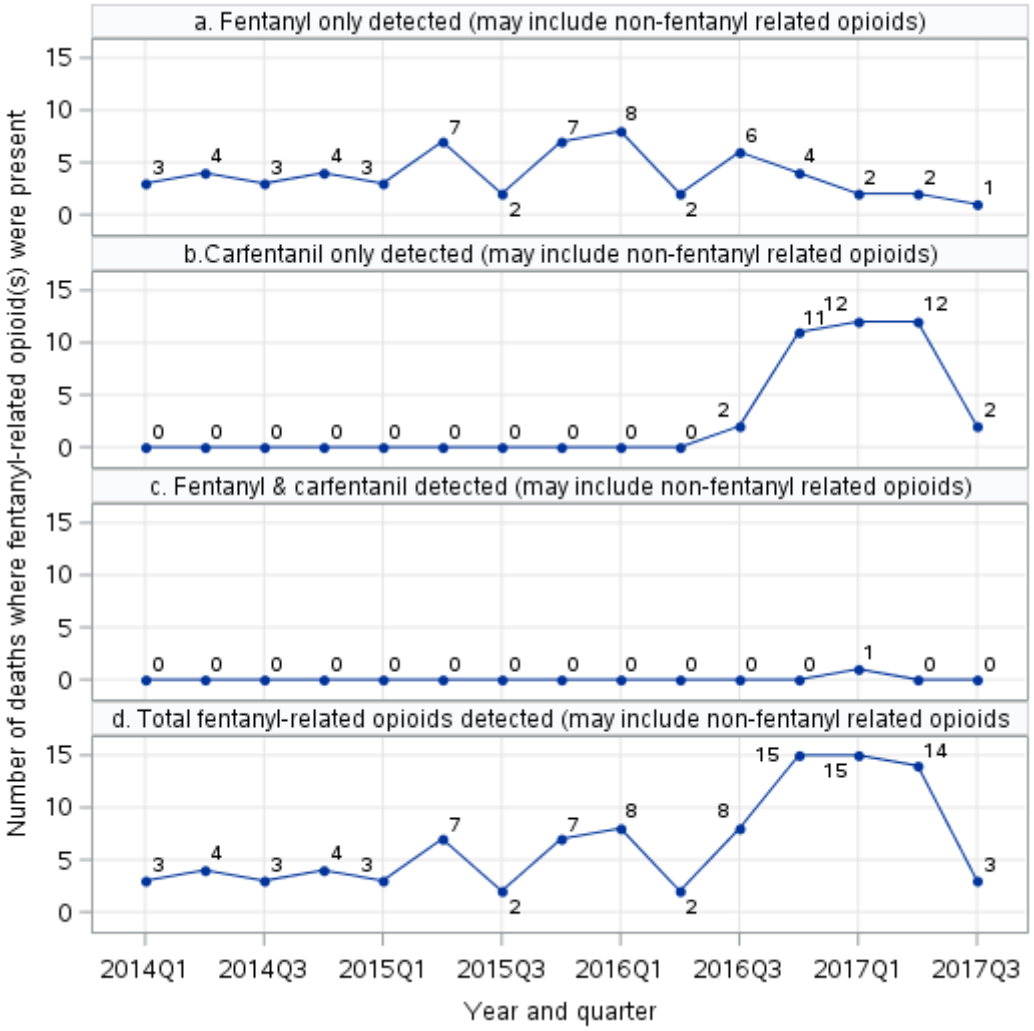
FIGURE 18: PRESENCE OF FENTANYL ANALOGS IN APPARENT OPIOID-RELATED DEATHS AND NUMBER OF APPARENT OPIOID-RELATED DEATHS IN MANITOBA BY SUSPECTED OPIOID TYPE, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)



* Fentanyl-related opioid(s) include fentanyl, carfentanil, furanyl-fentanyl, and etc.
**Non-fentanyl related opioid(s) include codeine, heroin, morphine, and etc.

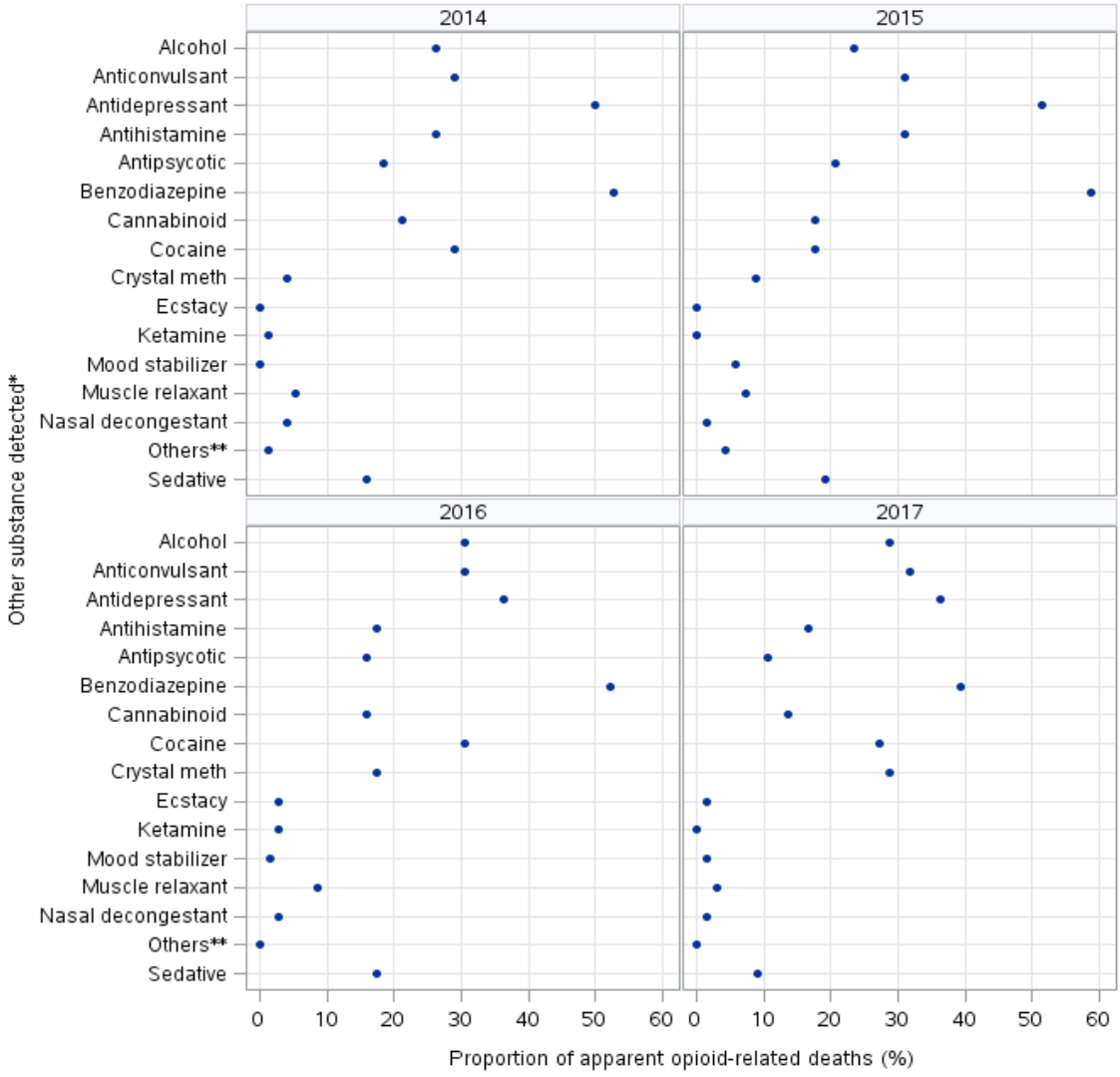
- The proportion of fentanyl presence in apparent opioid-related deaths increased from 15% during the first quarter of 2014 to 50% during the third quarter of 2017.

FIGURE 19: NUMBER OF APPARENT OPIOID-RELATED DEATHS WHERE FENTANYL-RELATED OPIOIDS WERE PRESENT, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)



- There were 14 apparent fentanyl-related deaths in the second quarter of 2017; 12 of the 14 included carfentanil (86%).
- Carfentanil presence in apparent opioid-related deaths first appeared in the third quarter of 2016 where there were 2 deaths. Then, the numbers increased substantially with 11 in the fourth quarter of 2016 and 12 in the first and second quarters of 2017.

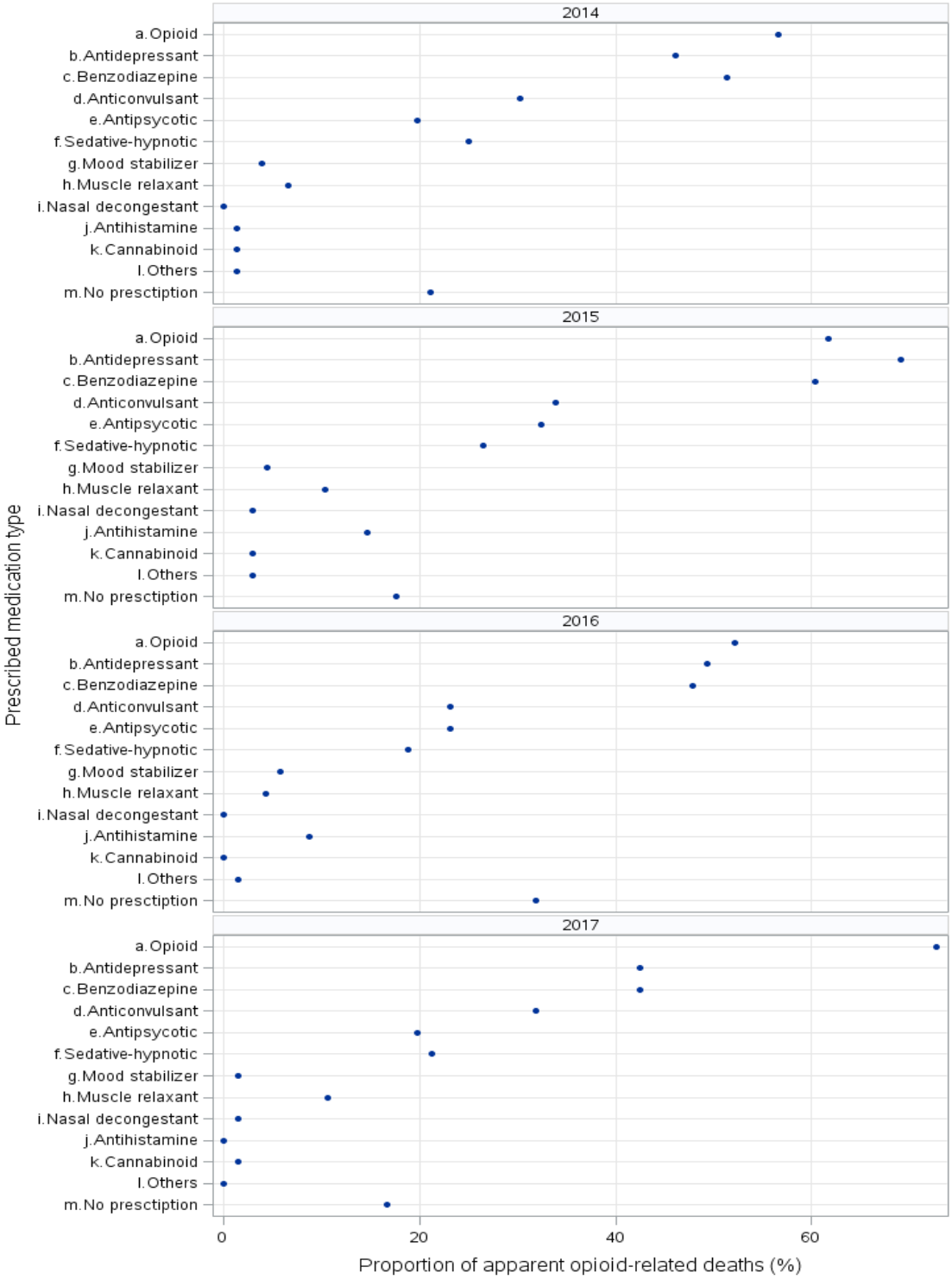
FIGURE 20: PROPORTION OF OTHER SUBSTANCES DETECTED IN CASE OF APPARENT OPIOID-RELATED DEATHS, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)



*Results are NOT mutually exclusive.
*Others include loperamide, metoclopramide, or methylphenidate.

- Overall, the top two other substances contributing to apparent-opioid related deaths from 2014 to 2017 (January to September) were benzodiazepines and antidepressants.
- The proportion of crystal meth contributing to apparent-opioid related deaths increased from 4% (n=3) in 2014 to 29% (n=19) in 2017 (January to September).
- Among the apparent carfentanil-related deaths, the most commonly seen other substances contributing to death were cocaine and crystal meth (*data not shown*).

FIGURE 21: COUNT OF PRESCRIPTION MEDICATION USE WITHIN SIX MONTHS BEFORE AN APPARENT OPIOID-RELATED DEATH OCCURED, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1, 2014 – SEPTEMBER 30, 2017)



*Others include ketamine, Methylphenidate, or metoclopramide.

- Between January 1st, 2014 and September 30th, 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 21).
- The proportion of opioid prescription dispensation increased from 57% in 2014 to 72% in 2017 (January to September) (Figure 21).
- Between January 1st and September 30th, 2017, the most commonly prescribed opioids within six months before an apparent opioid-related death occurred were codeine (35%), methadone (18%), and hydromorphone (17%) *(data not shown)*.

TABLE 5: CERTAIN CHARACTERISTICS OF APPARENT OPIOID-RELATED DEATHS, OFFICE OF THE CHIEF MEDICAL EXAMINER (JANUARY 1 – SEPTEMBER 30, 2017)

	Male		Female		Total	
	n	%	n	%	N	%
Total	*43*	*100.0*	*23*	*100.0*	*66*	*100.0*
Place of death						
Home	24	55.8	17	73.9	41	62.1
Health care facility	8	18.6	5	21.7	13	19.7
Public setting	1	2.3	0	0.0	1	1.5
Other	10	23.3	1	4.4	11	16.7
Place of overdose						
Home	30	69.8	19	82.6	49	74.2
Public Setting	3	7.0	1	4.4	4	6.1
Other	10	23.2	3	13.0	13	19.7
Manner of death						
Unintentional (accident)	16	37.2	9	39.1	25	37.9
Intentional (suicide)	3	7.0	2	8.7	5	7.6
Undetermined	2	4.6	4	17.4	6	9.1
Unknown (open file)	22	51.2	8	34.8	30	45.4

- Between January 1st and September 30th, 2017, the most common place of death and place of overdose was in the home setting.
- The manner of death for over one third of cases was unintentional (accident). Note that at the time of the analysis, there were more than 45% files still open, and therefore, the manner of death was unknown. Over time, this data will be finalized and reported.

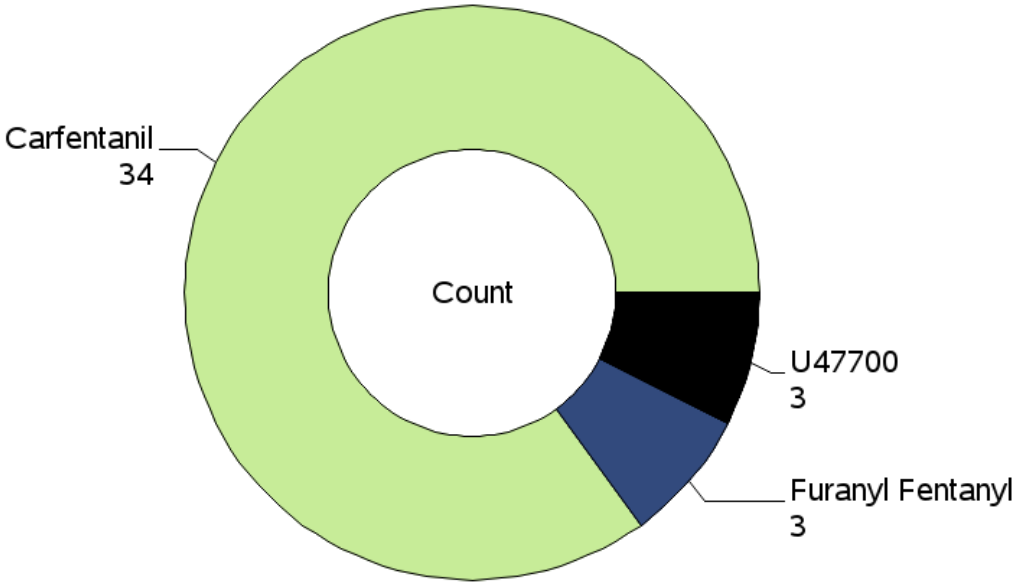
NOTE(S):

- Overall, apparent opioid-related deaths for 2016 and 2017 in Manitoba are expected to remain stable or somewhat increase as compared to previous years. However, the contribution of opioids, including fentanyl, to these overall overdose deaths appears to be increasing in 2016 and in 2017.
- There are several prevention initiatives underway which may impact these numbers. For example, the Take-Home Naloxone program for individuals at risk of opioid overdose, and the provision of naloxone at the scene of suspected opioid overdose by first responders may affect the number of overdose deaths. The impact of these programs may become clearer over time.

TOXICOLOGY

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).

FIGURE 22: NUMBER OF POSITIVE TOXICOLOGY SCREENS BY FENTANYL ANALOG*, DIAGNOSTIC SERVICES MANITOBA (JANUARY 1 – SEPTEMBER 22, 2017)**



*Fentanyl analogs do not include fentanyl.
**The reported data ends on September 22, 2017; therefore, the results cannot be presented as January 1- September 30, 2017.

- There were a total of 40 positive screens for fentanyl analogs between January 1st and September 22nd, 2017 (n=20 during January 1st to April 4th, 2017; n=15 during April 5th to September 30th, 2017; n=5 during July 1st to September 22nd, 2017).
- Approximately 85% of all positive screens detected the presence of the carfentanil analog.

NOTE:

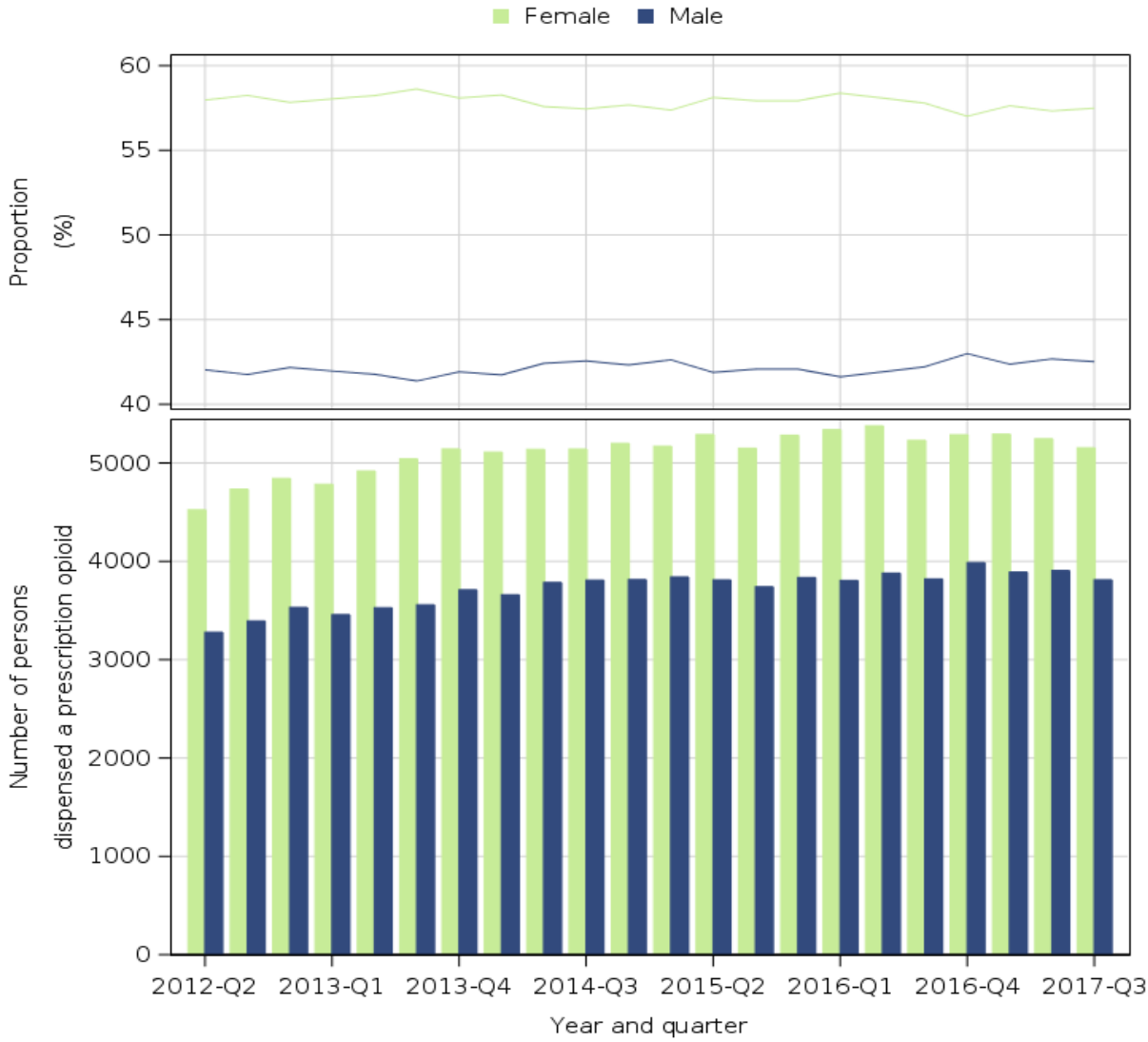
It cannot be presumed that the presence of a fentanyl analog is related to the cause of death. This requires the review by the Office of the Chief Medical Examiner, as toxicological findings must be consolidated with all cases and autopsy information in order to ascertain cause of death. Thus, there 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 (DPIN) database was used to measure the prescription opioid dispensation from community pharmacies in Manitoba from April 1st, 2012 to September 30th, 2017. 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.

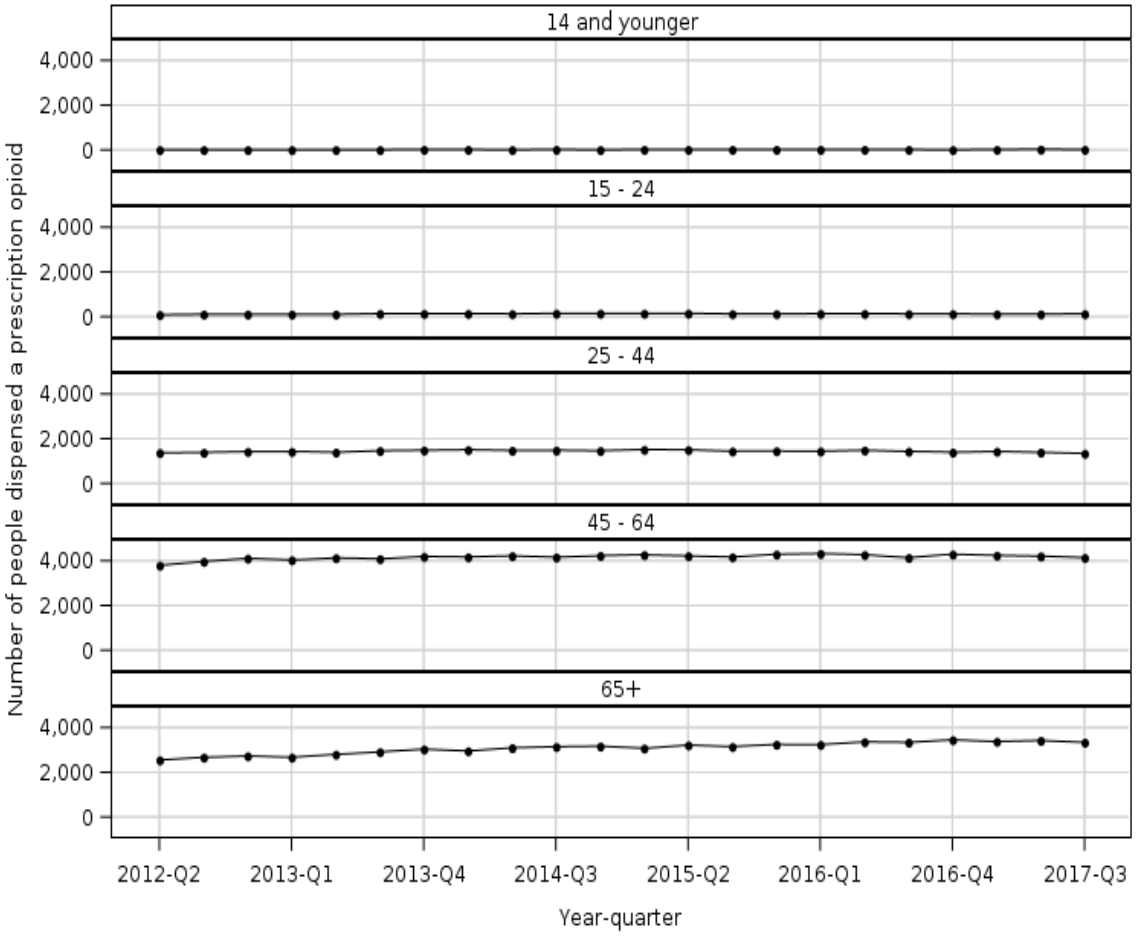
Prescription opioids included in the analysis are fentanyl, oxyneo, generic oxycontin, hydromorphone, meperidine, and morphine. Opioids dispensed as part of long term care and palliative care programs are excluded from the analysis. Morphine milligram equivalent (MME) per day are used to measure the 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.

FIGURE 23: NUMBER AND PROPORTION OF MANITOBANS DISPENSED A PRESCRIPTION OPIOID FROM A COMMUNITY PHARMACY BY SEX, DRUG PROGRAM INFORMATION NETWORK (APRIL 1, 2012 – SEPTEMBER 30, 2017)



- There was a decrease in the number of Manitobans dispensed a prescription opioid from a community pharmacy during the third quarter of 2017 (n=8,966) compared to the first (n=9,184) and second (9,152) quarters of 2017.
- Overtime, the number of Manitobans dispensed a prescription opioid from a community pharmacy increased from 7,802 in second quarter of 2012 to 9,152 in the second quarter of 2017.
- Overall, the proportion of females dispensed a prescription opioids was greater than males.

FIGURE 24: NUMBER OF MANITOBANS DISPENSED A PRESCRIPTION OPIOID FROM A COMMUNITY PHARMACY BY AGE GROUP, DRUG PROGRAM INFORMATION NETWORK (APRIL 1, 2012 – SEPTEMBER 30, 2017)

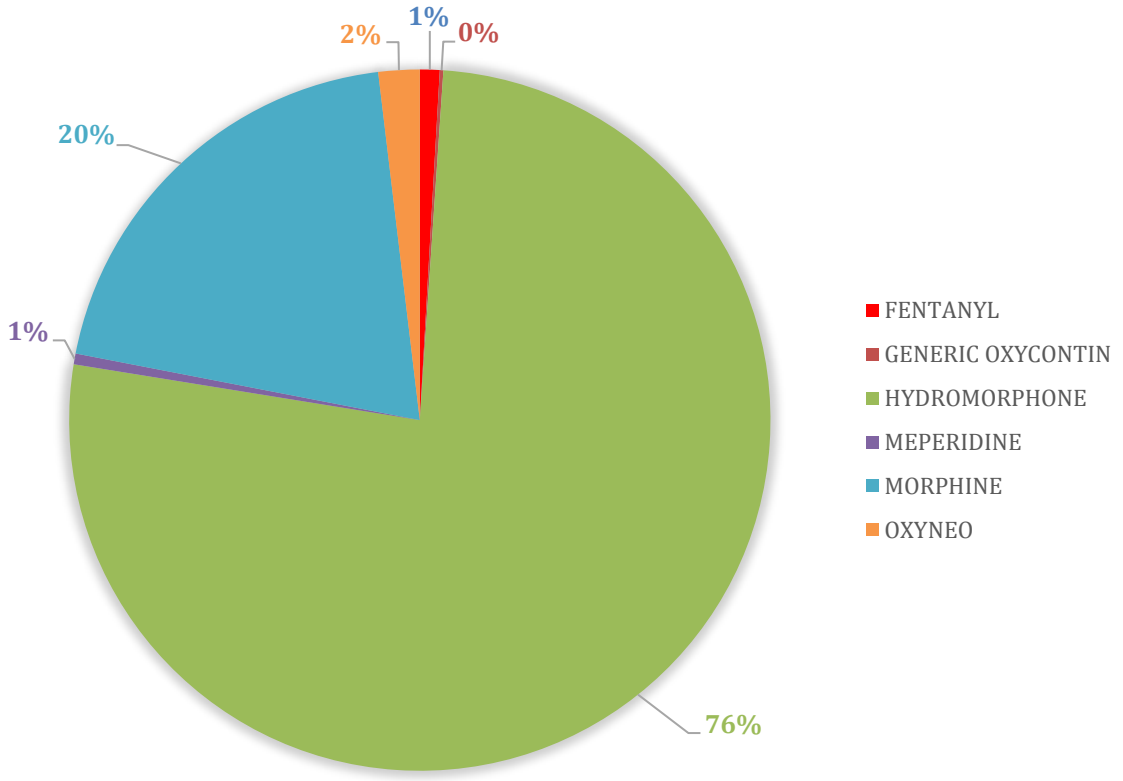


- Overall, adults aged 45-64 years dispensed a prescription opioids more than the other age groups, followed by older adults aged 65+ years. Note that prescription opioids dispensed at personal care homes are excluded from the analysis, and therefore, it is expected that the number of older adults dispensed an opioid prescription is under counted.

FIGURE 25: NUMBER OF MANITOBANS DISPENSED A PRESCRIPTION OPIOID FROM A COMMUNITY PHARMACY BY MORPHINE MILLIGRAM EQUIVALENT (MME) PER DAY, DRUG PROGRAM INFORMATION NETWORK (APRIL 1, 2012 – SEPTEMBER 30, 2017)

- The number of Manitobans dispensed a prescription opioid for ≤50 MME/day gradually increased from 3,173 in the second quarter of 2012 to 4,077 in the third quarter of 2017 (an increase of 29%). A similar trend is noted for the dispensation of 51-90 MME/day dosage. On the other hand, during the same period, the number of Manitobans dispensed a prescription opioid for >200 MME/day decreased by 11% while 91-200 MME/day stayed stable.
- Overall, the majority of individuals dispensed a prescription opioid for >200 MME/day and 91-200 MME/day were in the age group of 45 - 64 years. Majority of children aged 14 years or younger dispensed a low dosage prescription opioid (≤50 MME/day) *(data not shown)*.

FIGURE 26: PROPORTION OF NEW/NAÏVE* PERSONS DISPENSED A PRESCRIPTION OPIOID FROM A COMMUNITY PHARMACY BY OPIOID PRODUCT TYPE, DRUG PROGRAM INFORMATION NETWORK (JUNE 01 - SEPTEMBER 30, 2017)



* Naïve with respect to DPIN data. Patients/Client may have been dispensed a prescription opioid from a hospital. To ensure that claims are new, DPIN data was analyzed up to 9 months before June 1st. 2017. There were 2,417 new/naïve persons dispensed a prescription opioid from a community pharmacy between June 1st and September 30th, 2017.

- About 77% (n=1,853) of new/naïve opioid patients were dispensed hydromorphone, followed by morphine (n=486; 20%).
- The average starting opioid dosage was 78.8 MME/day for generic oxycontin, 65.4 MME/day for hydromorphone, 61.6 MME/day for oxyneo, 40.6 MME/day for morphine, 16.1 MME/day for meperidine, and 14.4 MME/day for fentanyl *(data not shown).*

NOTE(S):

- 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.

CALL CENTERS

A number of call centers exist in Manitoba to provide the general public information in specific areas such as poisoning or general areas such as healthcare. Two call centers (Health Links – Info Santé and the Poison Control Centre) capture data on calls that are linked to opioids.

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.

TABLE 6: NUMBER OF CALLS TO HEALTH LINKS – INFO SANTÉ, HEALTH LINKS – INFO SANTÉ (JANUARY 1, 2013 - SEPTEMBER 30, 2017)

Health Education Document Title	2013	2014	2015	2016	2017*
Substance Abuse	14	13	16	11	7
Recognizing Drug Abuse in Kids	2	1	2	1	1
Prescription Drug Abuse	8	6	9	9	5
Drugs - What You Should Know and Drug Testing	26	30	17	12	10
Street Drugs and their Slang Names	0	0	0	3	0
Street Connections Launches a Take-Home Naloxone Program	0	0	0	0	1
Detoxification	34	33	52	61	14
Treating Teens for Substance Abuse	0	1	0	3	0
Hallucinations	5	10	17	14	10
Talking with your Child about Drinking and Drugs	1	0	1	1	0
Drug, Alcohol and Tobacco Use During Pregnancy	52	24	0	17	14
Naloxone Programs and Kits**	-	-	-	-	4
Street Connections Launches a Take-Home Naloxone Program**	-	-	-	-	0
Fentanyl**	-	-	-	-	4
Withdrawal Symptoms: Drug and Alcohol Abuse**	-	-	-	-	42
Talking with Your Child about Drinking and Drugs**	-	-	-	-	0
Opioid misuse/overdose-related	-	-	-	-	5
Naloxone-related	-	-	-	-	0

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

- There were five opioid misuse- and overdose-related calls and four fentanyl-related calls to Health Links – Info Santé between January 1st and September 30th, 2017.

NOTE(S):

- Calls that utilize health education documents in the above tables 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.

MANITOBA POISON CENTRE

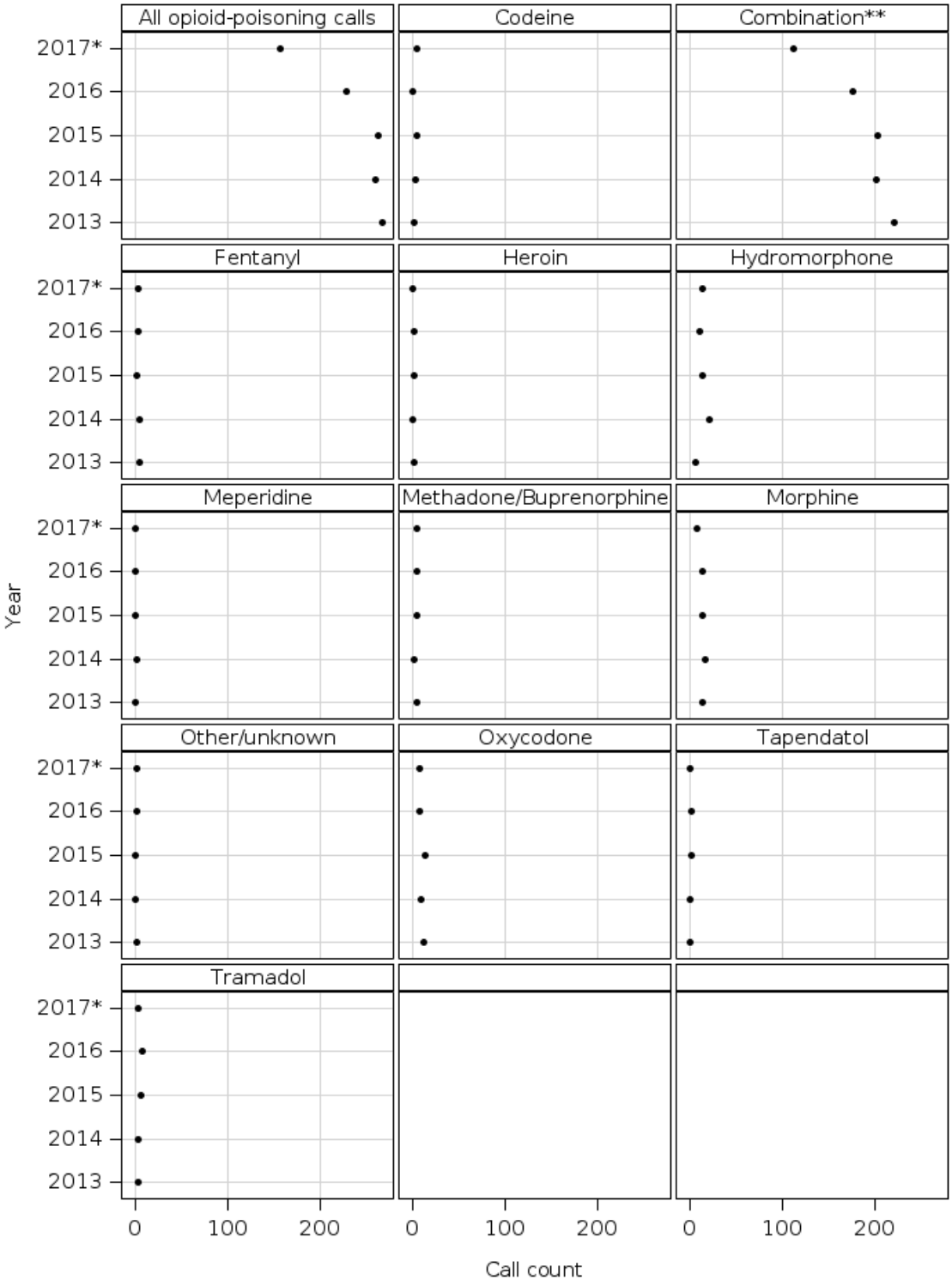
The Manitoba Poison Centre (MPC) is a telephone toxicology consultation service that provides expert poison advice 24 hours a day to the public and healthcare professionals throughout Manitoba [7]. MPC data is used in this report to describe the opioid-related calls received between January 1st, 2013 and September 30th, 2017 (Figure 27):

- Overall, 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).
- Between January 1st and September 30th, 2017, there were 157 opioid-related calls received by MPC; the number of calls has decreased over time during 2017 from 68 calls in the first quarter to 41 calls in the third quarter.
- Between January 1st and September 30th, 2017, 71% of all calls were specific to opioids in combination with non-opioid analgesics.
- There was a steady increase in number of calls related to Tramadol, from 3 calls in 2013 to 7 calls in 2016; between January 1st and September 30th, 2017, there were 3 tramadol-related calls.
- Between July 1 and September 30, 2017, there were 12 calls where the opioid-related call was thought to be intentional suicide (as compared to opioid misuse) (*data not shown*).

NOTE(S):

- 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.

FIGURE 27: NUMBER OF OPIOID POISONING-RELATED CALLS BY OPIOID TYPE, MANITOBA POISON CENTRE (JANUARY 1, 2013 – SEPTEMBER 30, 2017)

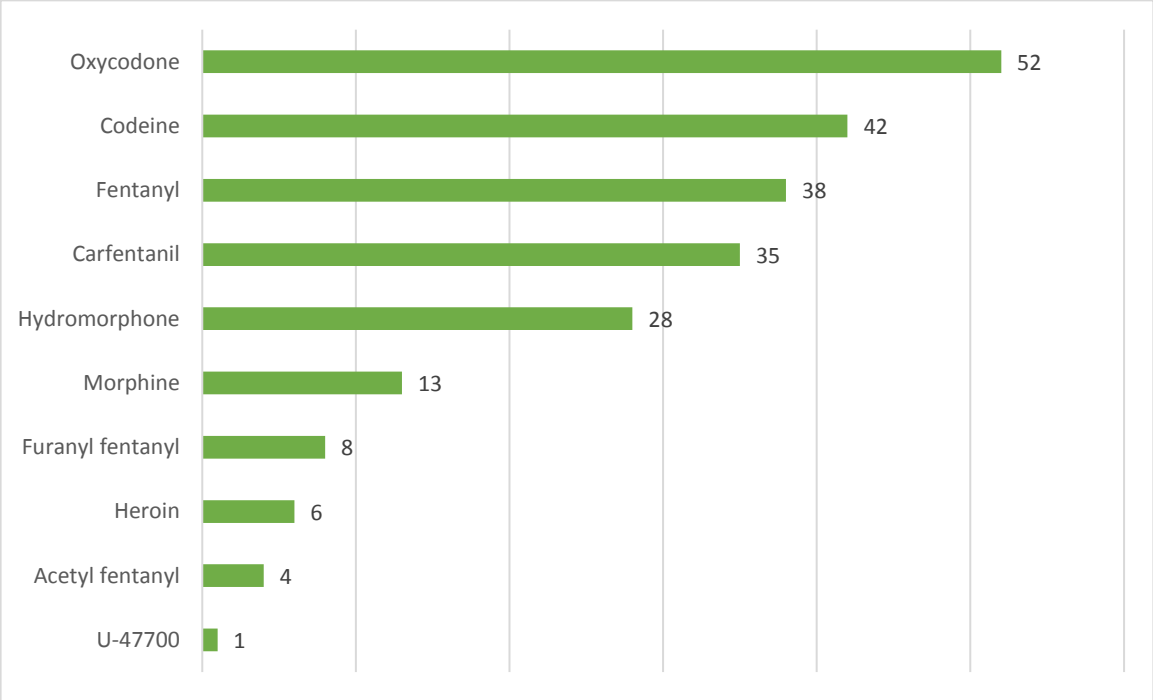


* 2017 includes up to September 30 only.
** In combination with non-opioid analgesics.

ILLEGAL OPIOIDS IDENTIFIED OR TRACKED

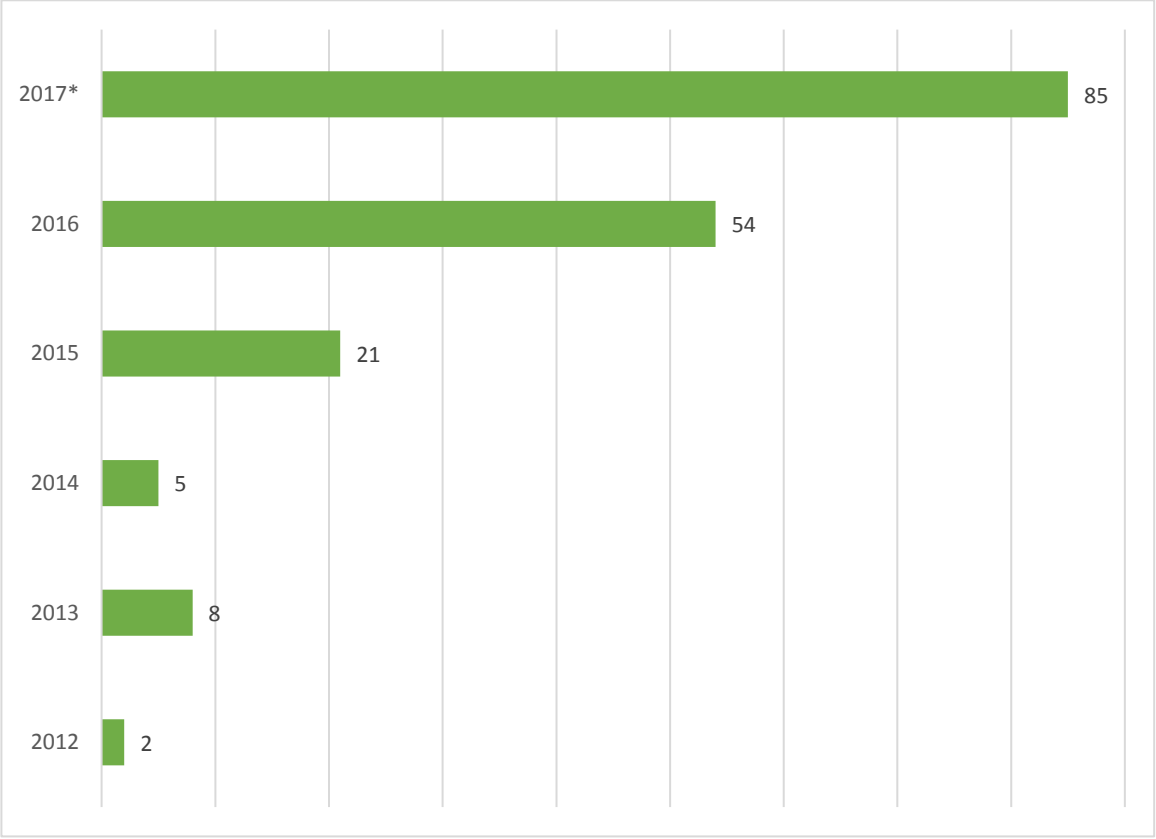
The Drug Analysis Service of Health Canada operates laboratories across Canada that are employed to analyze suspected illegal drugs seized by Canadian police forces and the Canada Border Services Agency. The laboratories receive over 110,000 samples per year, confirming the identity and in some cases the purity of the controlled substances seized by police [8]. We used the Drug Analysis Service of Health Canada aggregated data 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.

FIGURE 28: NUMBER OF TOP TEN ILLEGAL OPIOIDS IDENTIFIED OR TRACKED IN MANITOBA, DRUG ANALYSIS SERVICE OF HEALTH CANADA (JANUARY 1 – SEPTEMBER 30, 2017)



- In Manitoba, there were a total of 227 illegal opioids identified or tracked by Drug Analysis Service of Health Canada between January 1st and September 30th, 2017; 88 (39%) of these were identified in the third quarter of 2017 alone.
- Overall, illegal fentanyl-related opioids represented the largest proportion of these samples at 37% (n=85,), followed by oxycodone (n=52, 23%). Carfentanil accounted for 41% of the fentanyl-related opioids (n=35).

FIGURE 29: NUMBER OF ILLEGAL FENTANYL-RELATED OPIOIDS IDENTIFIED OR TRACKED IN MANITOBA, DRUG ANALYSIS SERVICE OF HEALTH CANADA (JANUARY 1, 2012 – SEPTEMBER 30, 2017)



*2017 period includes data from January 01st to September 30th, 2017.

- In Manitoba, the number of illegal fentanyl-related opioids identified or tracked increased from 2 in 2012 to 85 by the third quarter of 2017.
- In the third quarter of 2017 alone, there were 39 illegal fentanyl-related opioids identified or tracked in Manitoba by Drug Analysis Service of Health Canada.

APPENDICES

APPENDIX A: WINNIPEG FIRE AND PARAMEDIC SERVICE

TABLE A.1: CHARACTERISTICS OF SUSPECTED OVERDOSE CASES RECEIVING NALOXONE, WINNIPEG FIRE AND PARAMEDIC SERVICE (JANUARY 1, 2017 – SEPTEMBER 30, 2017)

	Female		Male		Total	
	No.	%	No.	%	No.	%
Total	*239*	*100.0*	*373*	*100.0*	*612*	*100.0*
Age group						
10-14	1	0.4	1	0.3	2	0.3
15-19	14	5.9	14	3.8	28	4.6
20-24	45	18.8	65	17.4	110	18.0
25-29	43	18.0	75	20.1	118	19.3
30-34	40	16.7	59	15.8	99	16.2
35-39	24	10.0	39	10.5	63	10.3
40-44	16	6.7	46	12.3	62	10.1
45-49	13	5.4	17	4.6	30	4.9
50+	43	18.0	57	15.3	100	16.3
Community area of event location						
St. James	10	4.2	15	4.0	25	4.1
Assiniboine South	1	0.4	7	1.9	8	1.3
Fort Garry	5	2.1	10	2.7	15	2.5
St. Vital	19	7.9	16	4.3	35	5.7
St. Boniface	6	2.5	13	3.5	19	3.1
Transcona	6	2.5	15	4.0	21	3.4
River East	20	8.4	30	8.0	50	8.2
Seven Oaks	12	5.0	26	7.0	38	6.2
Inkster	12	5.0	13	3.5	25	4.1
Point Douglas	48	20.1	97	26.0	145	23.7
Downtown	94	39.3	114	30.6	208	34.0
River Heights	6	2.5	17	4.6	23	3.8
Community area of residency						
St. James	8	3.3	12	3.2	20	3.3
Assiniboine South	2	0.8	8	2.1	10	1.6
Fort Garry	6	2.5	12	3.2	18	2.9
St. Vital	14	5.9	13	3.5	27	4.4
St. Boniface	9	3.8	10	2.7	19	3.1
Transcona	4	1.7	12	3.2	16	2.6
River East	19	7.9	37	9.9	56	9.2
Seven Oaks	13	5.4	23	6.2	36	5.9
Inkster	10	4.2	14	3.8	24	3.9
Point Douglas	50	20.9	72	19.3	122	19.9
Downtown	62	25.9	79	21.2	141	23.0
River Heights	7	2.9	13	3.5	20	3.3
Missing - no postal code	15	6.3	31	8.3	46	7.5
Non-Winnipeg postal code, Manitoba resident	15	6.3	34	9.1	49	8.0
Non-Winnipeg postal code, Non-Manitoba resident	5	2.1	3	0.8	8	1.3

*Data 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 (JANUARY 1, 2012 – SEPTEMBER 30, 2017)

	Female		Male		Total	
	No.	%	No.	%	No.	%
Year						
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	239	39.1	373	60.9	612	100.0
Total	*1,218*	*44.2*	*1,537*	*55.8*	*2,755*	*100.0*

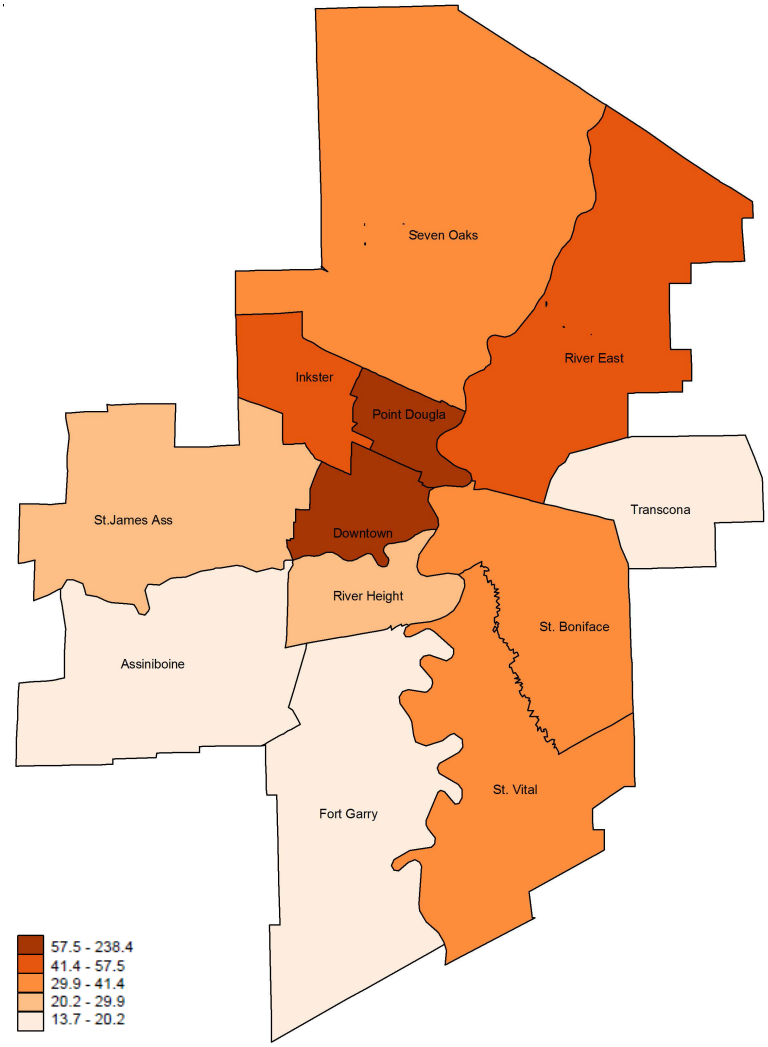
*Data includes only those greater than 9 years of age.

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 (JANUARY 1, 2017 – SEPTEMBER 30, 2017)

Sex	Community Area of Residency	Number	Crude rate	Age-standardized rate	95% confidence interval
Female	St. James	8	28.2	29.9	12.8 - 59.8
	Assiniboine South	2	12.0	13.7	1.6 - 50.2
	Fort Garry	6	15.2	15.2	5.5 - 33.3
	St. Vital	14	43.0	42.5	23.1 - 72.0
	St. Boniface	9	33.4	31.3	14.3 - 60.2
	Transcona	4	23.1	20.2	5.5 - 53.5
	River East	19	42.3	41.4	24.7 - 65.4
	Seven Oaks	13	38.0	36.6	19.4 - 63.0
	Inkster	10	66.6	57.5	27.5 - 106.9
	Point Douglas	50	252.0	238.4	176.3 - 315.2
	Downtown	62	177.1	159.1	121.2 - 205.1
	River Heights	7	25.7	23.1	9.0 - 50.1
	Total	*204*	*60.4*	*58.5*	*50.7 - 67.2*
Male	St. James	12	46.2	44.0	22.7 - 77.7
	Assiniboine South	8	52.3	57.0	24.0 - 113.6
	Fort Garry	12	31.4	29.0	14.8 - 51.3
	St. Vital	13	43.1	44.5	23.5 - 76.3
	St. Boniface	10	39.2	37.2	17.8 - 69.0
	Transcona	12	71.5	65.1	33.5 - 114.6
	River East	37	87.9	85.4	59.9 - 118.1
	Seven Oaks	23	70.6	66.5	42.1 - 100.1
	Inkster	14	93.8	93.5	50.5 - 157.3
	Point Douglas	72	357.2	343.5	268.0 - 433.3
	Downtown	79	215.2	199.2	156.9 - 249.5
	River Heights	13	52.7	48.2	25.3 - 84.1
	Total	*305*	*94.4*	*90.2*	*80.2 - 101.0*

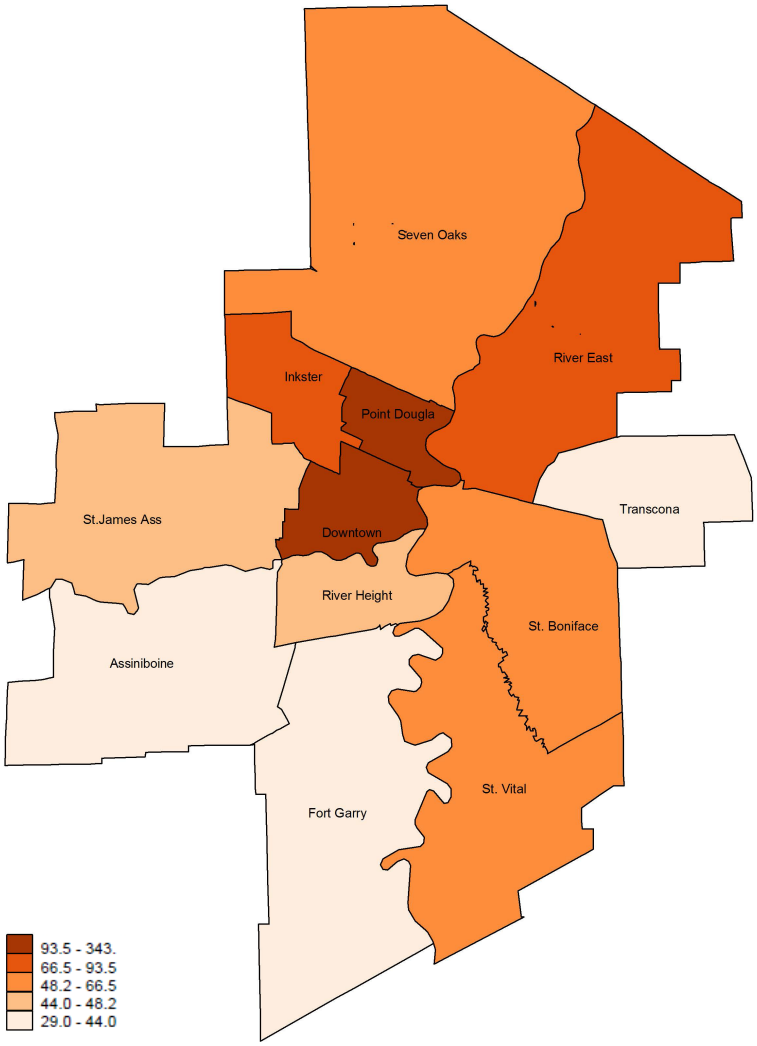
*Data includes only those greater than 9 years of age.

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 (JANUARY 1, 2017 – SEPTEMBER 30, 2017)



Female Events up to 30sep2017. Total annual population (> 9years) used in rate calculations.

FIGURE A.2: AGE STANDARDIZED RATE (PER 100,000) MAP OF SUSPECTED OVERDOSE MALES RECEIVING NALOXONE BY COMMUNITY AREA OF RESIDENCE, WINNIPEG FIRE AND PARAMEDIC SERVICE (JANUARY 1, 2017 – SEPTEMBER 30, 2017)



Male Events up to 30sep2017. Total annual population (> 9years) used in rate calculations.

APPENDIX B: EMERGENCY DEPARTMENT INFORMATION SYSTEM

TABLE B.1: CHARACTERISTICS OF SUSPECTED OVERDOSE CASES ARRIVING AT WINNIPEG RHA EMERGENCY DEPARTMENTS AND URGENT CARE FACILITIES, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1, 2017 – SEPTEMBER 30, 2017)

	Female		Male		Total	
	No.	%	No.	%	No.	%
Age group						
10-14	101	13.8	20	5.5	121	11.1
15-19	207	28.4	67	18.4	274	25.0
20-24	121	16.6	50	13.7	171	15.6
25-29	68	9.3	61	16.8	129	11.8
30-34	52	7.1	45	12.4	97	8.9
35-39	53	7.3	33	9.1	86	7.9
40-44	26	3.6	32	8.8	58	5.3
45-49	26	3.6	18	4.9	44	4.0
50+	76	10.4	38	10.4	114	10.4
Community Area						
St. James	37	5.1	13	3.6	50	4.6
Assiniboine South	18	2.5	9	2.5	27	2.5
Fort Garry	45	6.2	17	4.7	62	5.7
St. Vital	38	5.2	18	4.9	56	5.1
St. Boniface	37	5.1	12	3.3	49	4.5
Transcona	19	2.6	12	3.3	31	2.8
River East	78	10.7	35	9.6	113	10.3
Seven Oaks	38	5.2	19	5.2	57	5.2
Inkster	31	4.2	10	2.7	41	3.7
Point Douglas	98	13.4	55	15.1	153	14.0
Downtown	119	16.3	55	15.1	174	15.9
River Heights	15	2.1	12	3.3	27	2.5
Missing - no postal code	18	2.5	14	3.8	32	2.9
Non-Winnipeg postal code, Manitoba resident	120	16.4	71	19.5	191	17.5
Non-Winnipeg postal code, Non-Manitoba resident	19	2.6	12	3.3	31	2.8
Total	*730*	*100.0*	*364*	*100.0*	*1,094*	*100.0*

*Data includes only those greater than 9 years of age.

TABLE B.2: NUMBER OF SUSPECTED OVERDOSE CASES ARRIVING AT WINNIPEG RHA EMERGENCY DEPARTMENTS AND URGENT CARE FACILITIES BY SEX AND YEAR, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1, 2012 – SEPTEMBER 30, 2017)

	Female		Male		Total	
	No.	%	No.	%	No.	%
Year						
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	730	66.7	364	33.3	1,094	100.0
Total	*4,870*	*66.8*	*2,423*	*33.2*	*7,293*	*100.0*

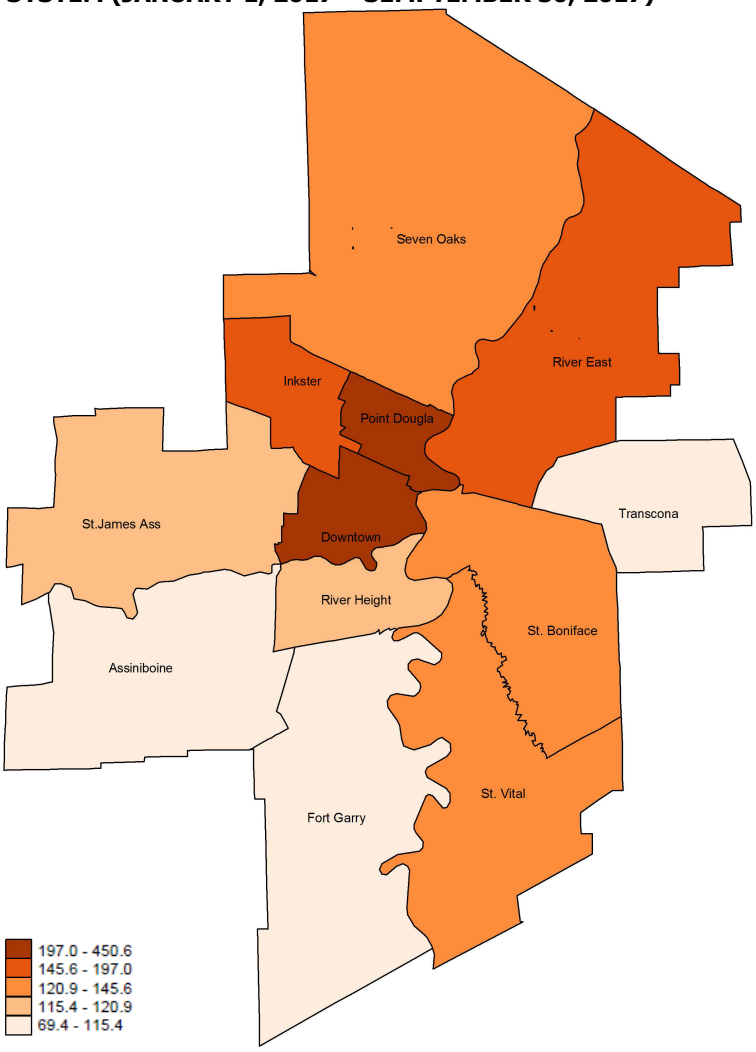
*Data includes only those greater than 9 years of age.

TABLE B.3: RATES (PER 100,000) OF SUSPECTED OVERDOSE CASES ARRIVING AT WINNIPEG RHA EMERGENCY DEPARTMENTS AND URGENT CARE FACILITIES BY COMMUNITY AREA AND SEX, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1,2017 – SEPTEMBER 30, 2017)

Sex	Community Area	Number	Crude Rate	Age-Standardized Rate	95%CI
Female	St. James	37	130.4	145.6	101.7 - 201.8
	Assiniboine South	18	107.9	126.3	74.4 - 200.4
	Fort Garry	45	114.0	115.4	83.9 - 154.7
	St. Vital	38	116.8	120.9	85.2 - 166.6
	St. Boniface	37	137.4	137.6	96.7 - 190.3
	Transcona	19	109.7	110.6	66.5 - 172.8
	River East	78	173.7	197.0	155.3 - 246.2
	Seven Oaks	38	111.1	118.1	83.5 - 162.2
	Inkster	31	206.5	195.3	132.6 - 277.6
	Point Douglas	98	493.9	450.6	365.1 - 550.2
	Downtown	119	339.8	324.7	268.0 - 389.9
	River Heights	15	55.1	69.4	37.6 - 116.1
	Total	*573*	*169.8*	*176.9*	*162.6 - 192.2*
Male	St. James	13	50.1	53.8	28.5 - 92.3
	Assiniboine South	9	58.9	68.5	31.0 - 129.9
	Fort Garry	17	44.5	41.8	24.2 - 67.3
	St. Vital	18	59.7	62.6	37.0 - 99.0
	St. Boniface	12	47.1	46.1	23.8 - 81.0
	Transcona	12	71.5	69.2	35.6 - 121.2
	River East	35	83.1	85.9	59.6 - 119.6
	Seven Oaks	19	58.3	55.7	33.4 - 87.2
	Inkster	10	67.0	60.3	28.6 - 112.1
	Point Douglas	55	272.8	262.3	197.0 - 342.1
	Downtown	55	149.8	142.2	106.6 - 185.9
	River Heights	12	48.7	48.7	24.6 - 86.5
	Total	*267*	*82.7*	*80.6*	*71.2 - 91.0*

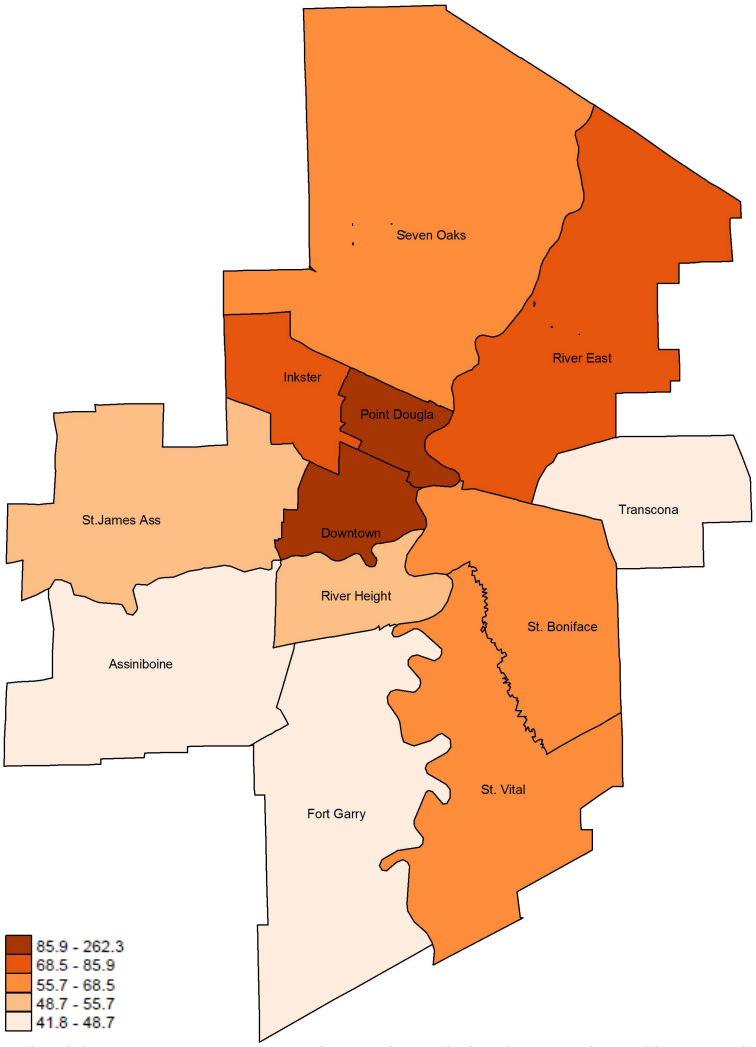
*Data includes only those greater than 9 years of age.

FIGURE B.1: 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, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1, 2017 – SEMPTEMBER 30, 2017)



Female Visits up to 30sep2017. Total annual population (> 9years) used in rate calculations.

FIGURE B.2: 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, EMERGENCY DEPARTMENT INFORMATION SYSTEM (JANUARY 1, 2017 – SEPTEMBER 30, 2017)



Male Visits up to 30sep2017. Total annual population (> 9years) used in rate calculations.

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