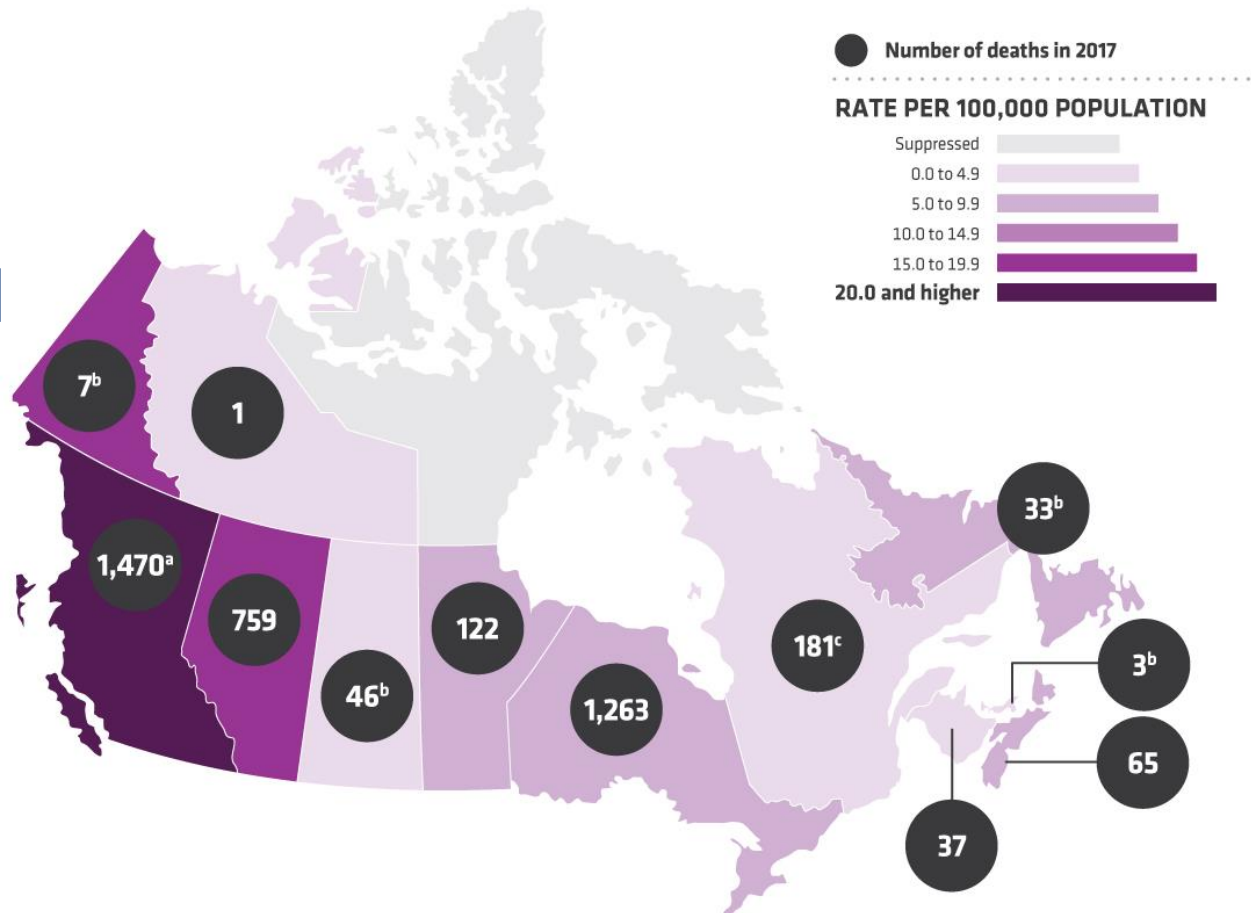


Trends in calls to paramedics for suspected opioid overdoses in Toronto

**Jennifer Liang, Kandace Ryckman, Chris
Olynyk, Adam Thurston, Russell MacDonald**
November 26, 2018

2017

- Canada: 3,987 apparent opioid related deaths
- Toronto: 308 deaths from opioid-related causes



a Includes deaths related to all illicit drugs including, but not limited to, opioids.

b Includes deaths with completed investigations only.

c Includes deaths related to all illicit drugs including, but not limited to, opioids, from July to December only. This number is expected to rise.

- **Depressants:** slow down the CNS
- **Overdose:** drug overwhelms the body
 - Not breathing
 - Blue tinged skin
 - Grey white lips
 - Deep snoring/gurgling
 - Pinpoint pupils
 - Unconscious
- **Naloxone:** attaches to opioid receptors with greater affinity than opioids

Step 1

Paramedic assesses and treats the patient



Step 2

Paramedic completes the ePCR

- Time
- Location
- Patient demographic
- Clinical intervention
- Narrative description
- Outcome



Step 3

TPaS extracts ePCRs where naloxone is administered or paramedic suspects opioid overdose

Strengths

- Captures non-fatal suspected opioid overdose cases that refuse transport to ED
- Real-time identification and data sharing of suspected opioid overdoses → good for early warning

Limitations

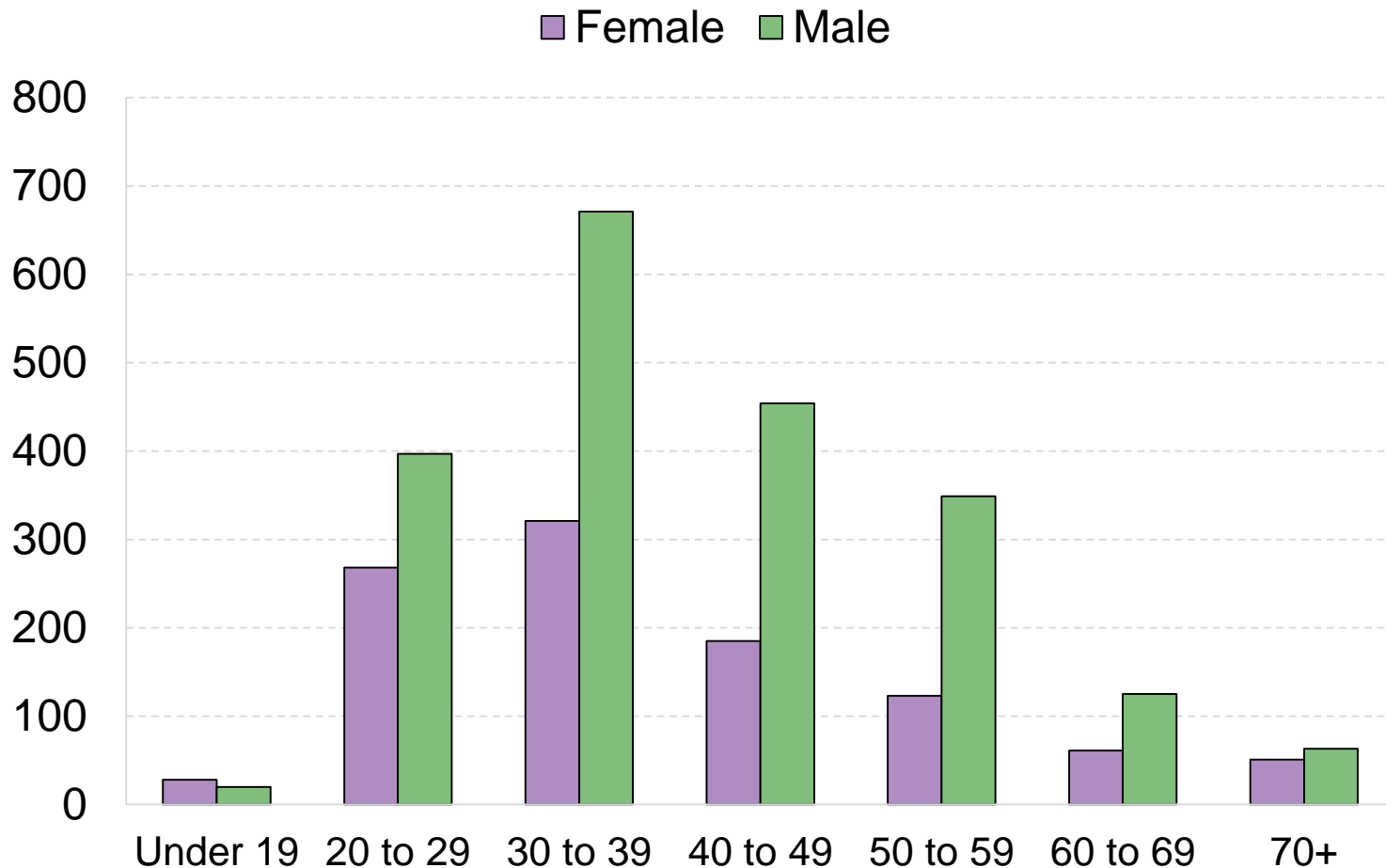
- Suspected opioid overdose may not correspond to diagnosis in hospital or cause of death by coroner
- Only captures state of case while interacting with paramedics

August 3, 2017-August 2, 2018:

- 3,203 suspected opioid overdose cases
- 161 fatal cases
- 65% male, 32% female
- Average age of patient: 40 years old

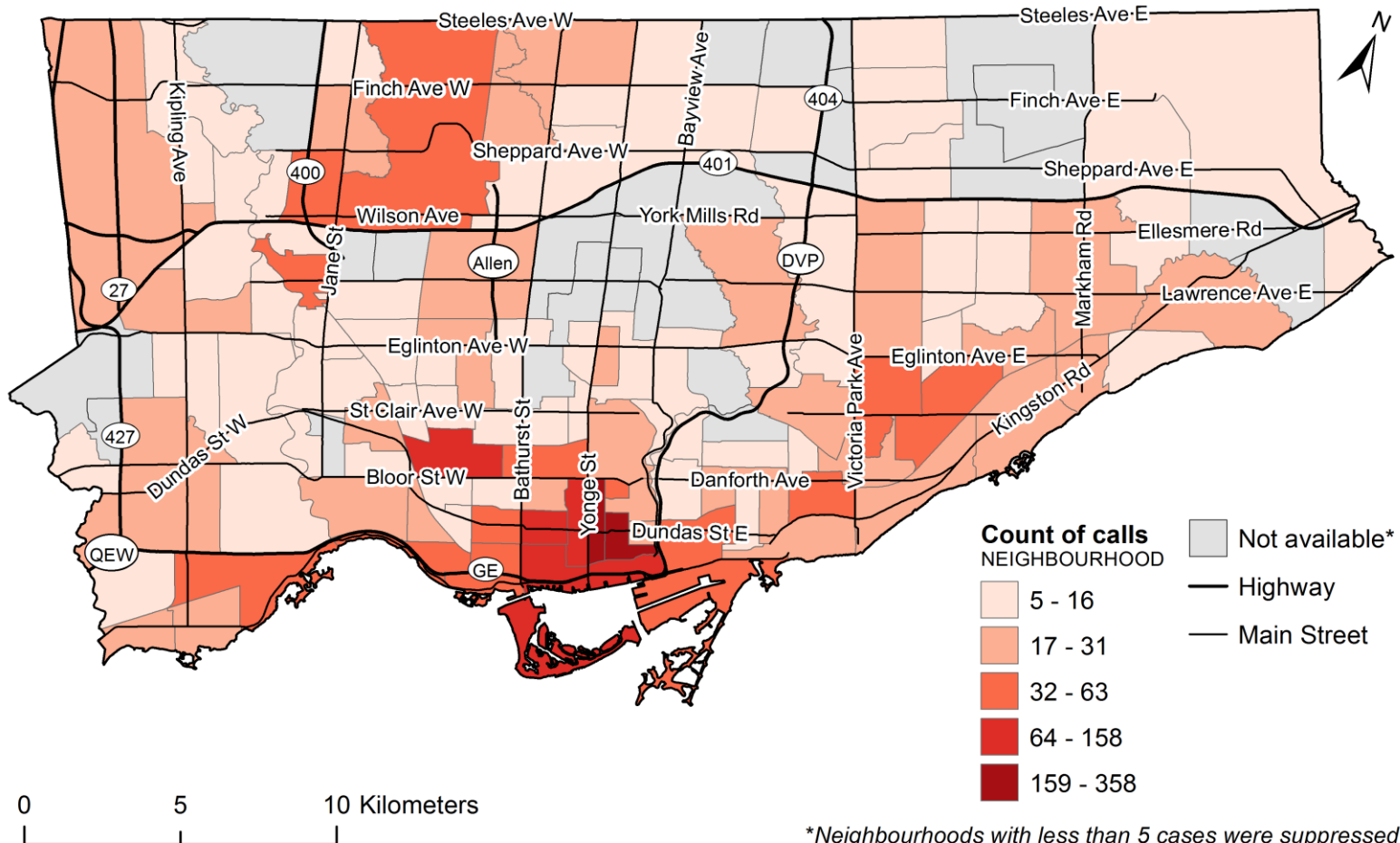
Results: Age and sex of opioid overdose cases

Figure 1. Number of suspected opioid overdose cases by age and sex



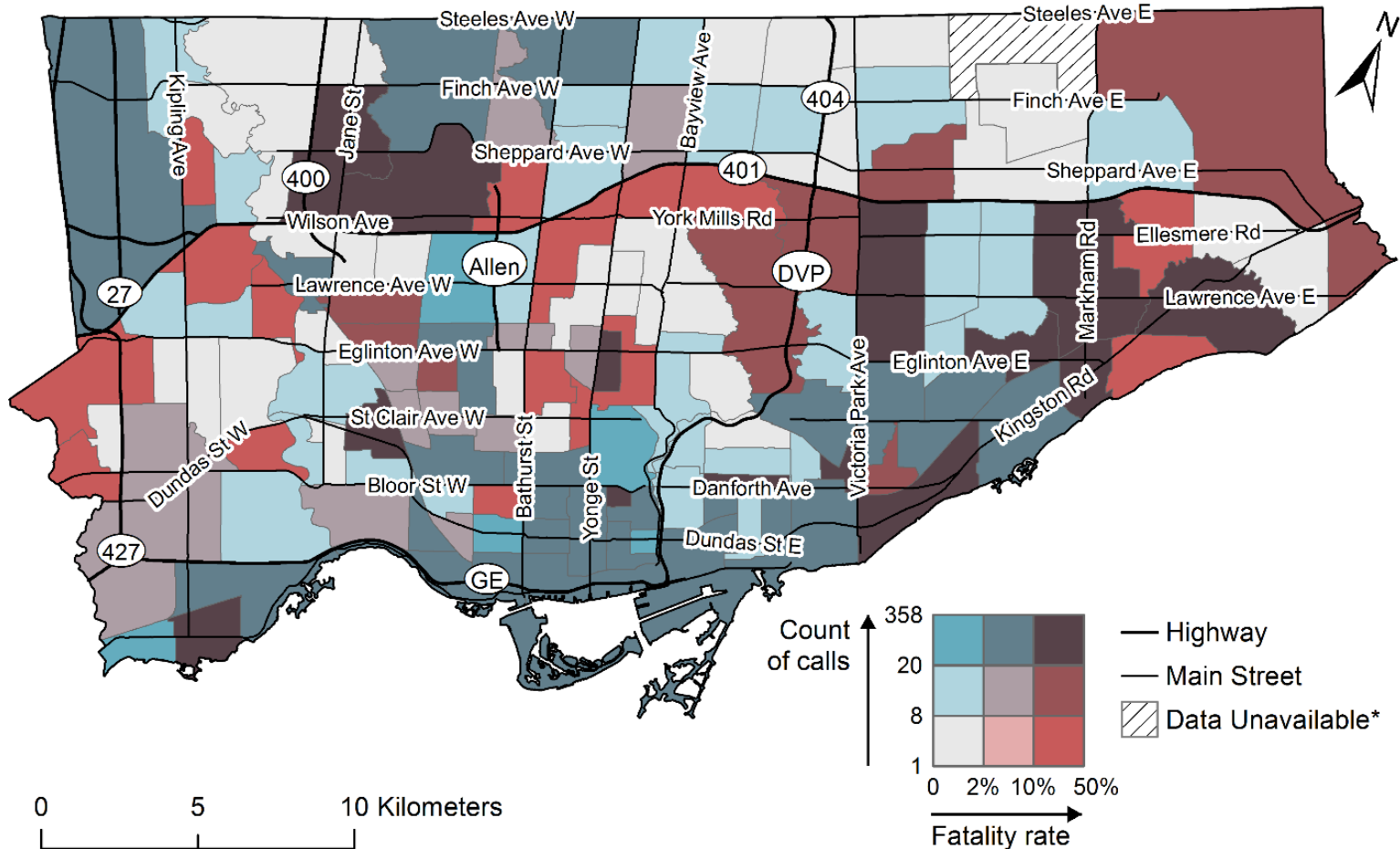
Results: Location of opioid overdose cases

Figure 2. Suspected opioid overdose cases attended by Toronto Paramedic Services by neighbourhood



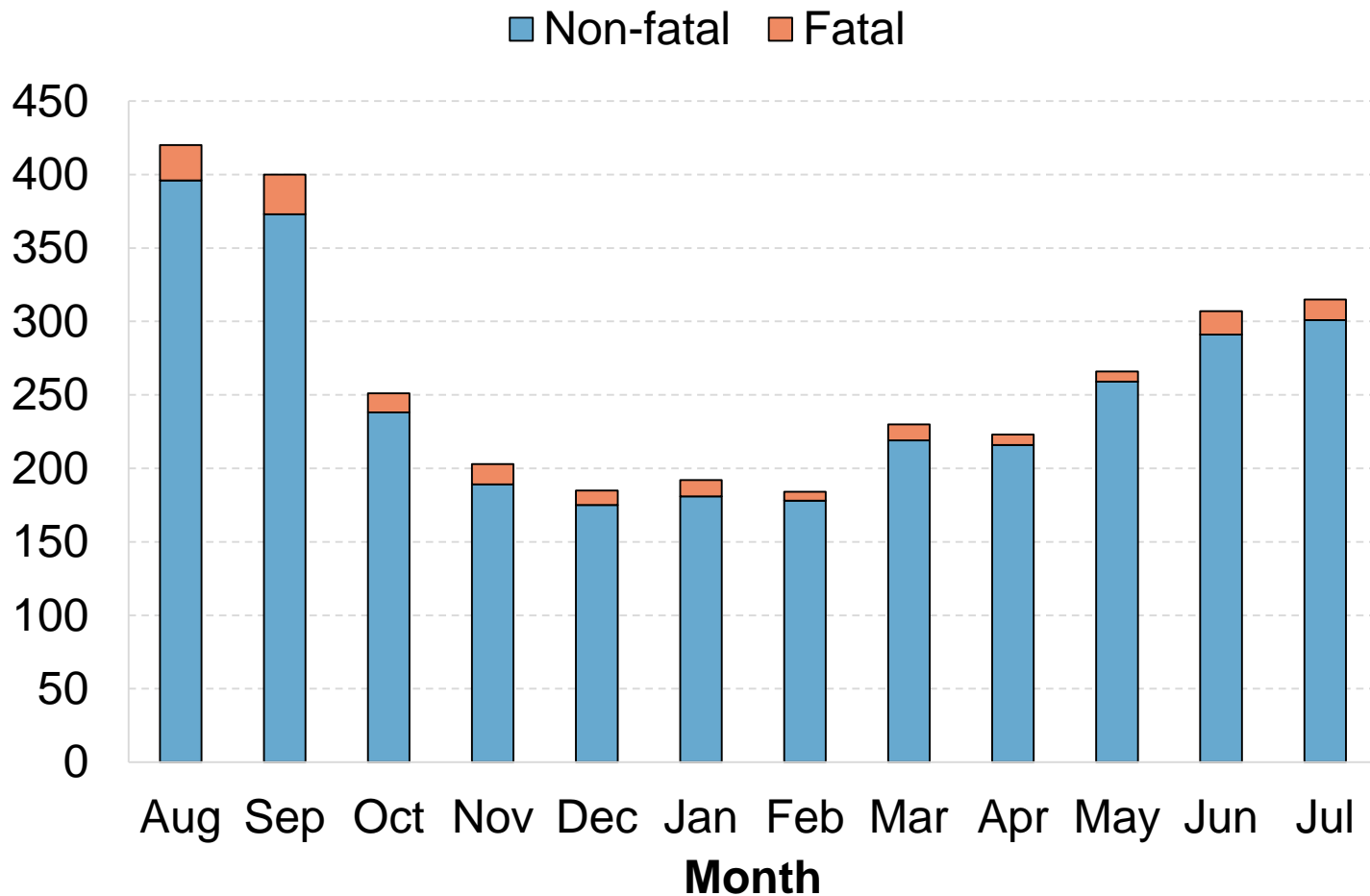
Results: Location of fatal opioid overdose cases

Figure 3. Suspected opioid overdose cases attended by Toronto Paramedic Services and fatality rate by neighbourhood



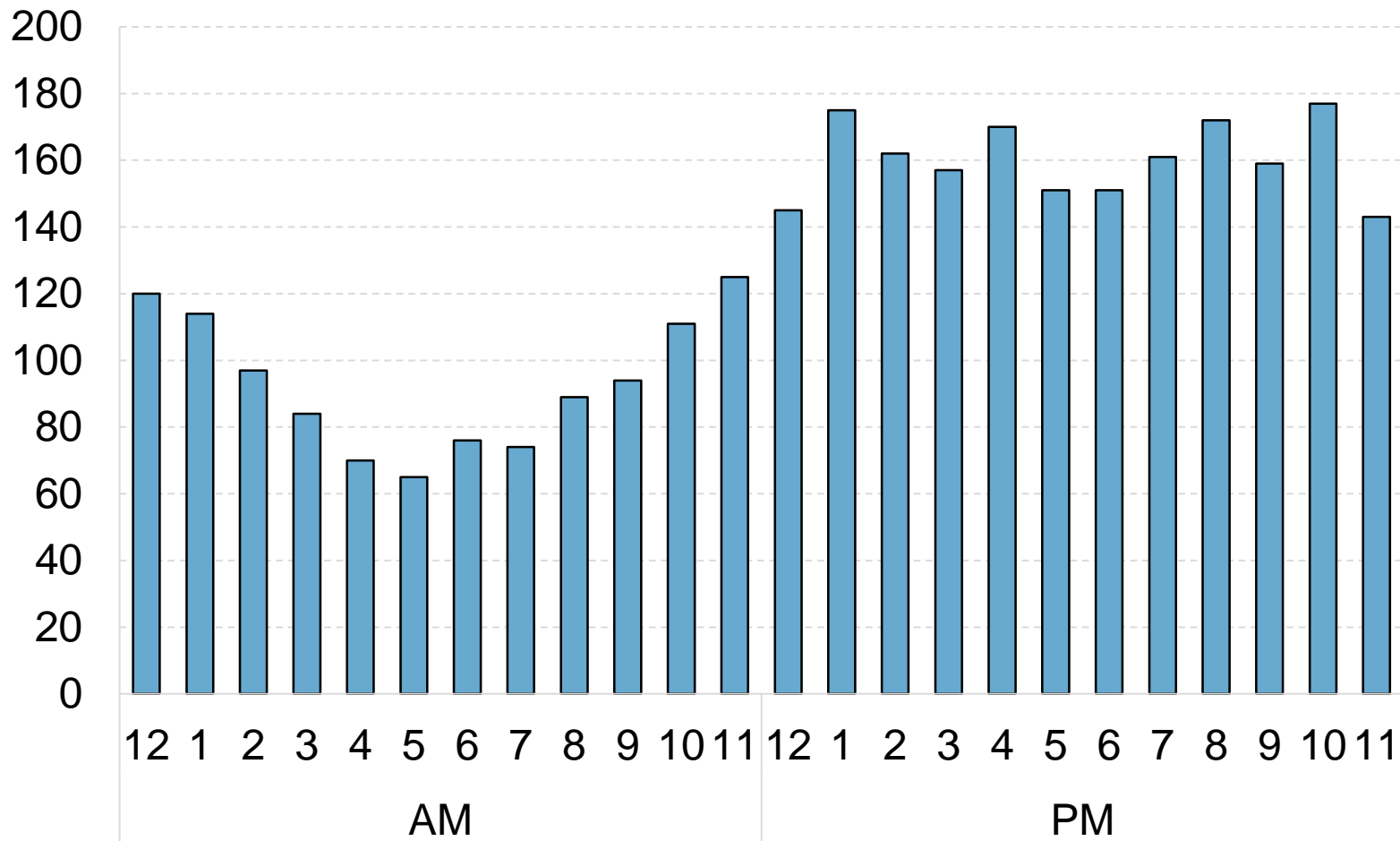
Results: Opioid overdose cases by month

Figure 4. Number of fatal and non-fatal suspected opioid overdose cases by month



Results: Opioid overdose cases by the hour

Figure 5. Number of non-fatal suspected opioid overdose calls by hour of the day



Results: “Cheque Effect”

- Increases in opioid overdose cases after monthly social-assistance payment

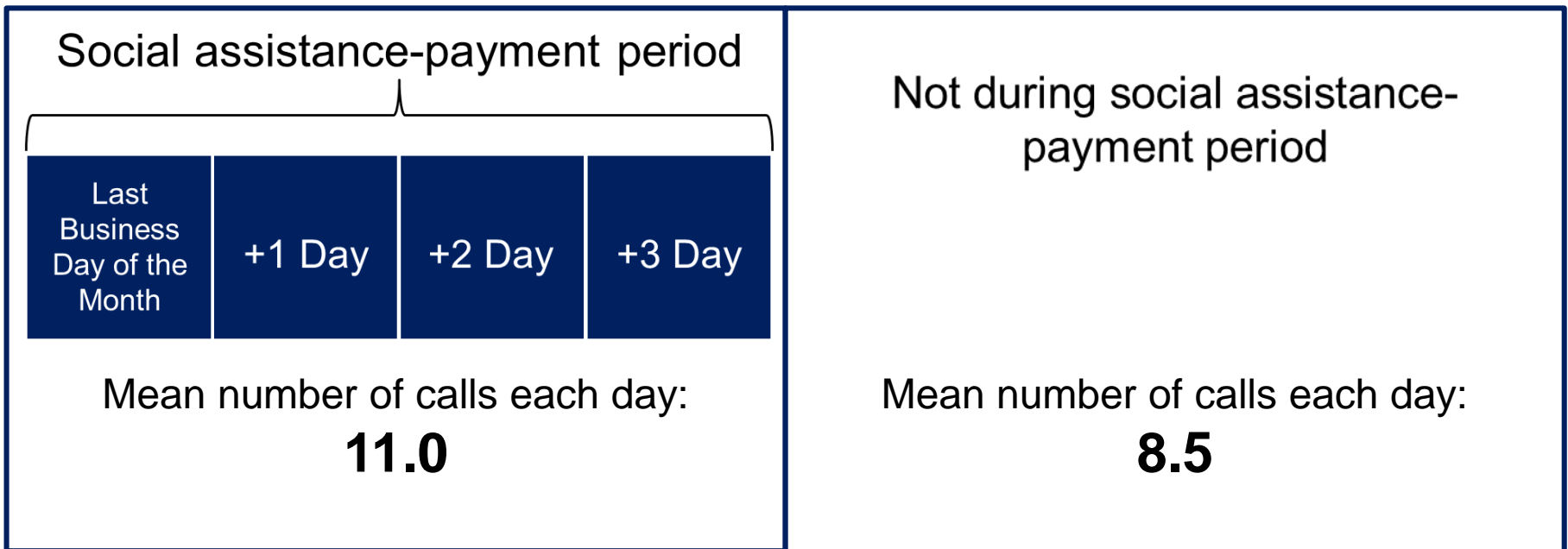
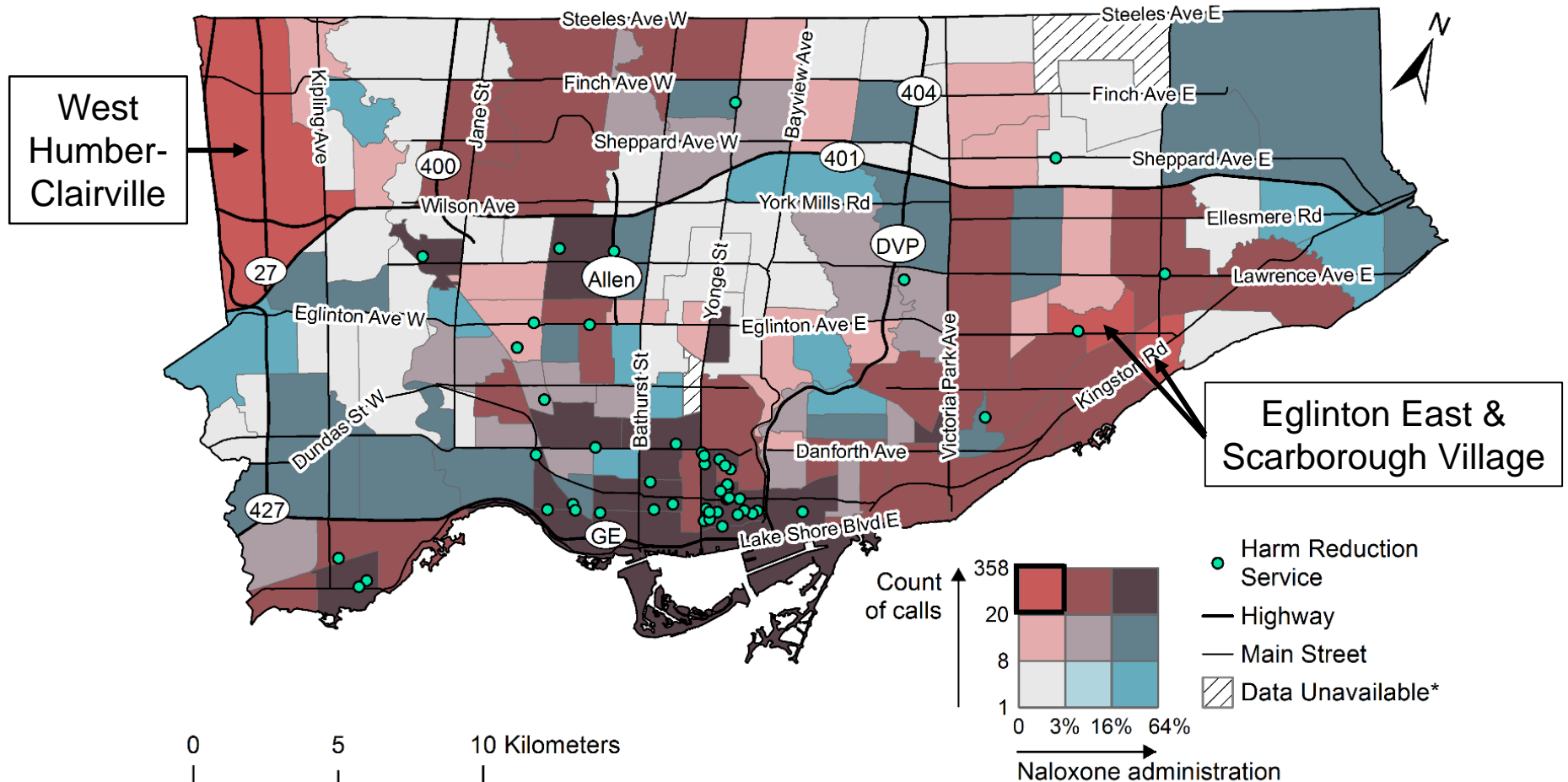


Figure 6. Suspected opioid overdose cases attended by Toronto Paramedic Services and naloxone administration rate by neighbourhood



- Continue partnership and data sharing between Toronto Paramedic Services and Toronto Public Health
- Validate “suspected opioid overdose” case definition
 - Determine specificity and sensitivity
 - Ongoing research project

- Increase situational awareness for TPH
- Use data to inform harm reduction services and planning
- Inform resource allocation in identified high-risk time periods and neighbourhoods of interest

Supervisors: Kandace Ryckman and Liz Corson

**Surveillance and
Epidemiology Unit:**

Shusmita Rahman,
Joseph Ariwi

**Toronto Paramedic
Services:**

Chris Olynyk, Adam
Thurston, Dr. Russell
MacDonald

Report: Trends in Paramedic-Attended Opioid Overdoses:
A Review of Suspected Opioid Overdoses in
Toronto Paramedic Services Data, 2017/18

<https://www.toronto.ca/wp-content/uploads/2018/11/8f75-TrendsSuspectedOpioidOverdosesWeb.pdf>

Contact: seu@toronto.ca