

Opioid Drug Misuse Analytics in Nova Scotia

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Background

- In 2016, the Nova Scotia Department of Health and Wellness developed a response plan for opioid misuse and overdose
- One component of this response plan was a surveillance plan that included using analytics to examine opioid use and misuse.

Purpose

- Develop a profile of clients that receive opioid prescriptions and identify risk factors for opioid-related harms to inform public health prevention activities.

Methods

- Cohort includes clients that first filled an opioid prescription in 2010
- Included all opioid prescriptions for 2010-2016
- Data linkage with hospitalization, physician billings, vital statistics and hepatitis C datasets

Results

Table 1: Descriptive characteristics

Characteristic	N	%
Total cohort	31952	100
Sex		
Female	17101	53.5
Male	14851	46.5
Age (median, [IQR])	44 [24, 60]	--
# of Prescriptions		
1	16251	50.9
2	6629	20.8
3-10	6843	21.4
11-50	1531	4.8
51+	452	1.4
Methadone Patients	354	1.1
Hepatitis C	139	0.44
Total deaths	3374	10.6
Opioid related death	13	0.04
Cancer diagnosis	2704	8.5
High opioid dose (MEQ ≥ 90mg)	2594	8.1
Chronic Therapy(1 or more opioid Rx at least 91 days following the 1 st Rx)	3720	11.6
# patients with an ED visit	26183	81.9
% with at least 1 ED visits by # of Prescriptions		
1		75.8
2		85.8
3-10		89.8
11-50		90.5
51+		93.3

Results

Figure 1: Percentage of Non-Methadone vs. Methadone Patients by Age Group, 2010-2016

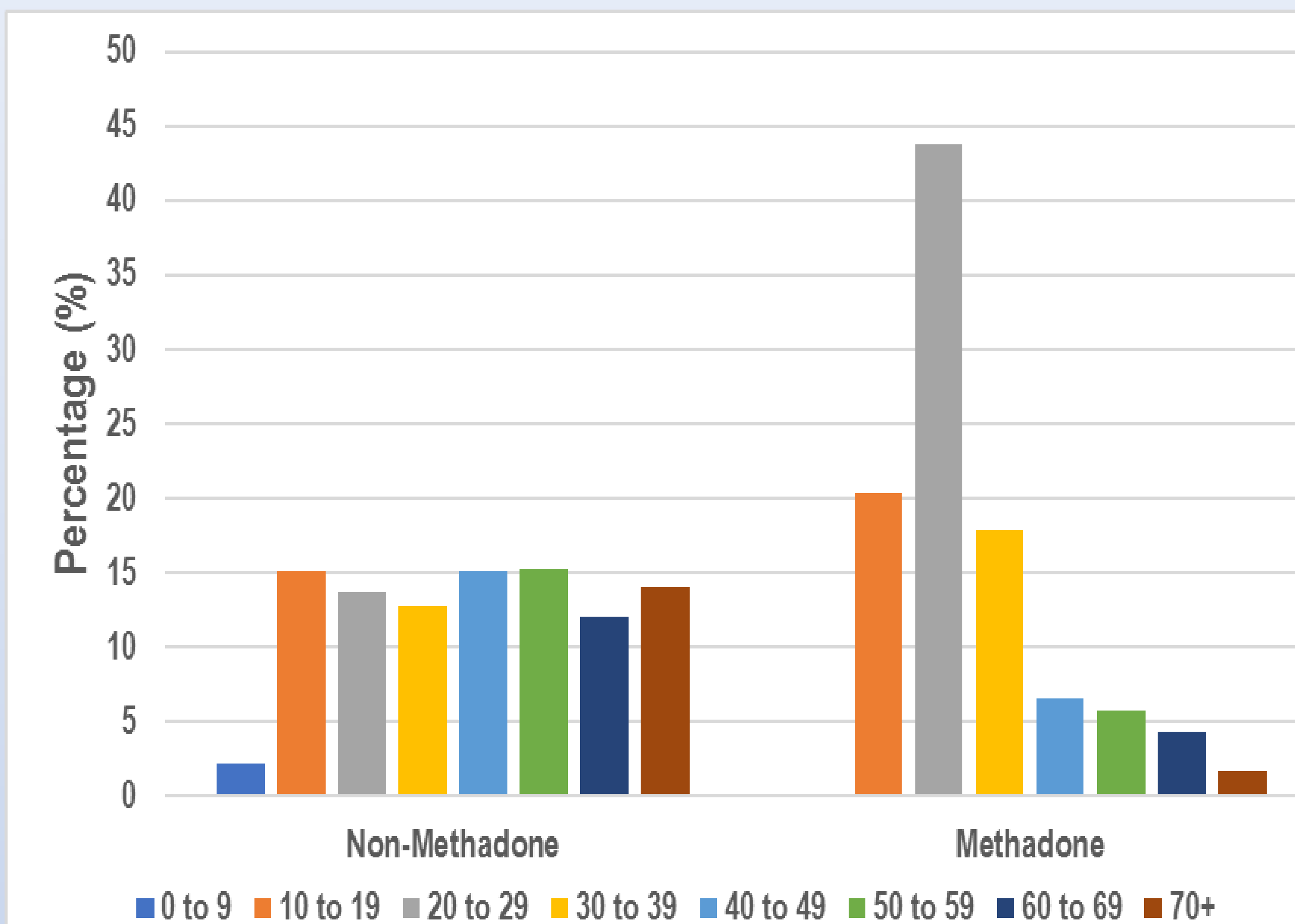


Figure 2: Patients with High Dose Prescriptions (MEQ ≥ 90mg) By Age Group, 2010-2016

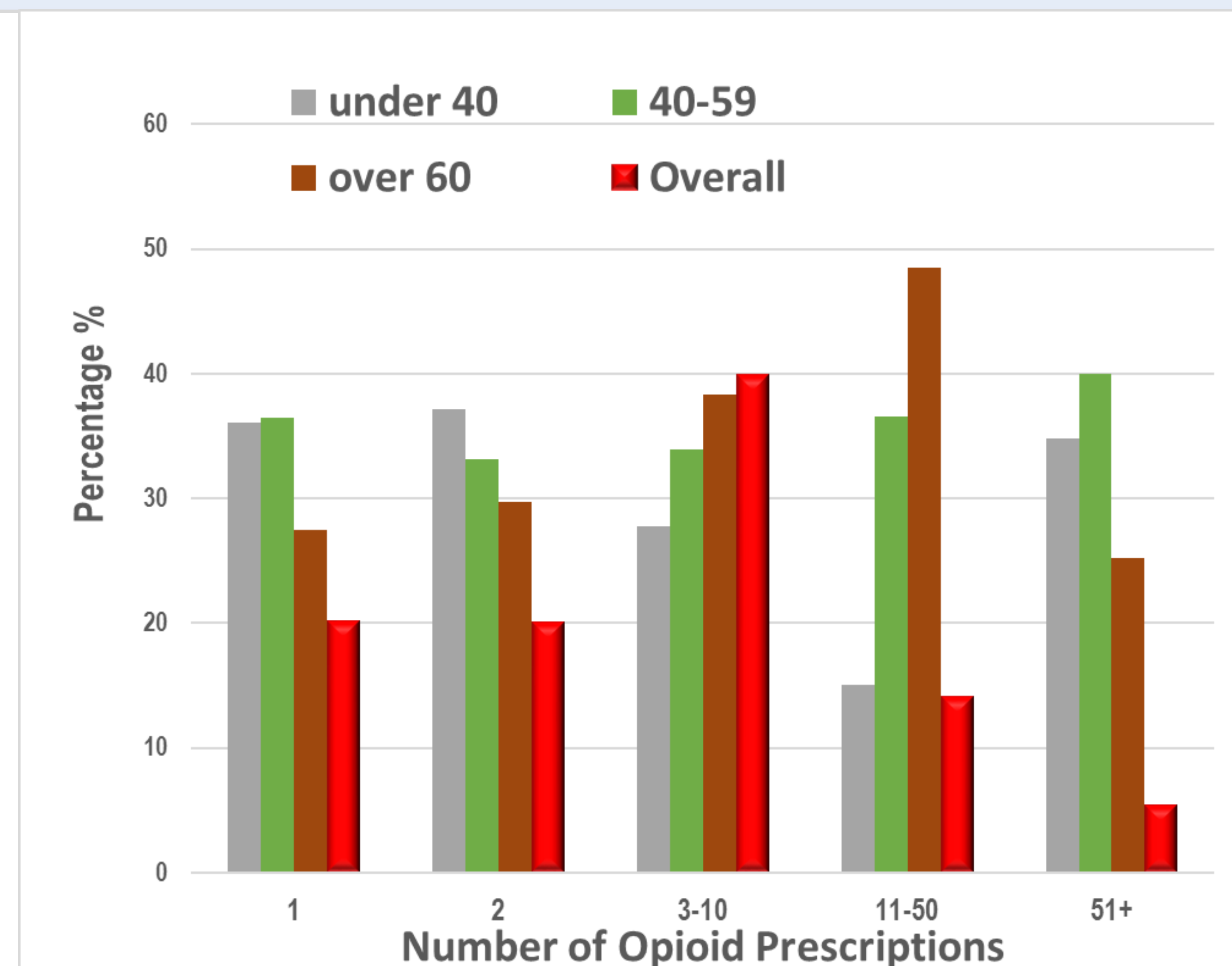


Figure 3: Percentage of hospitalizations by number of prescriptions, 2010-2016

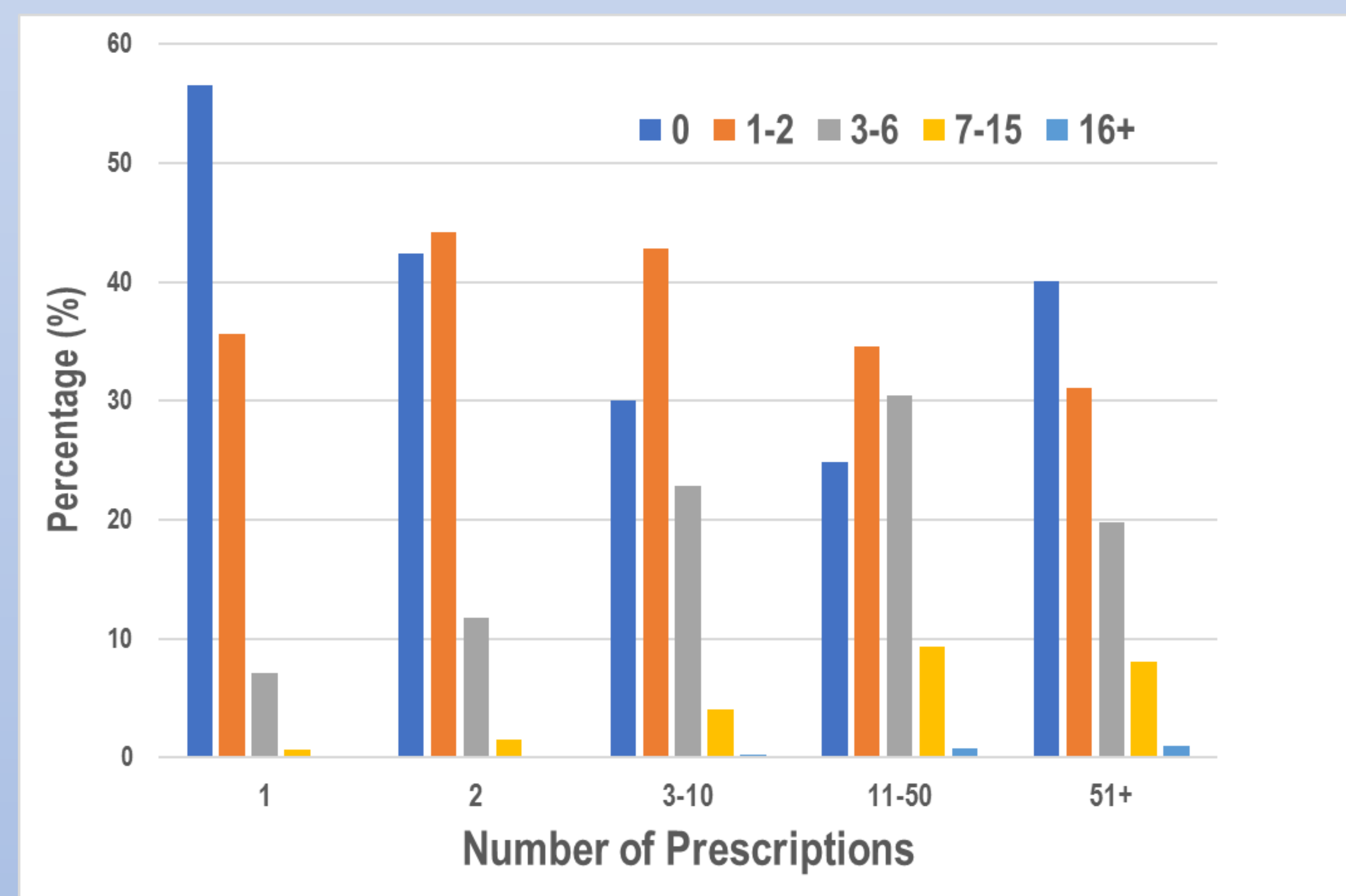
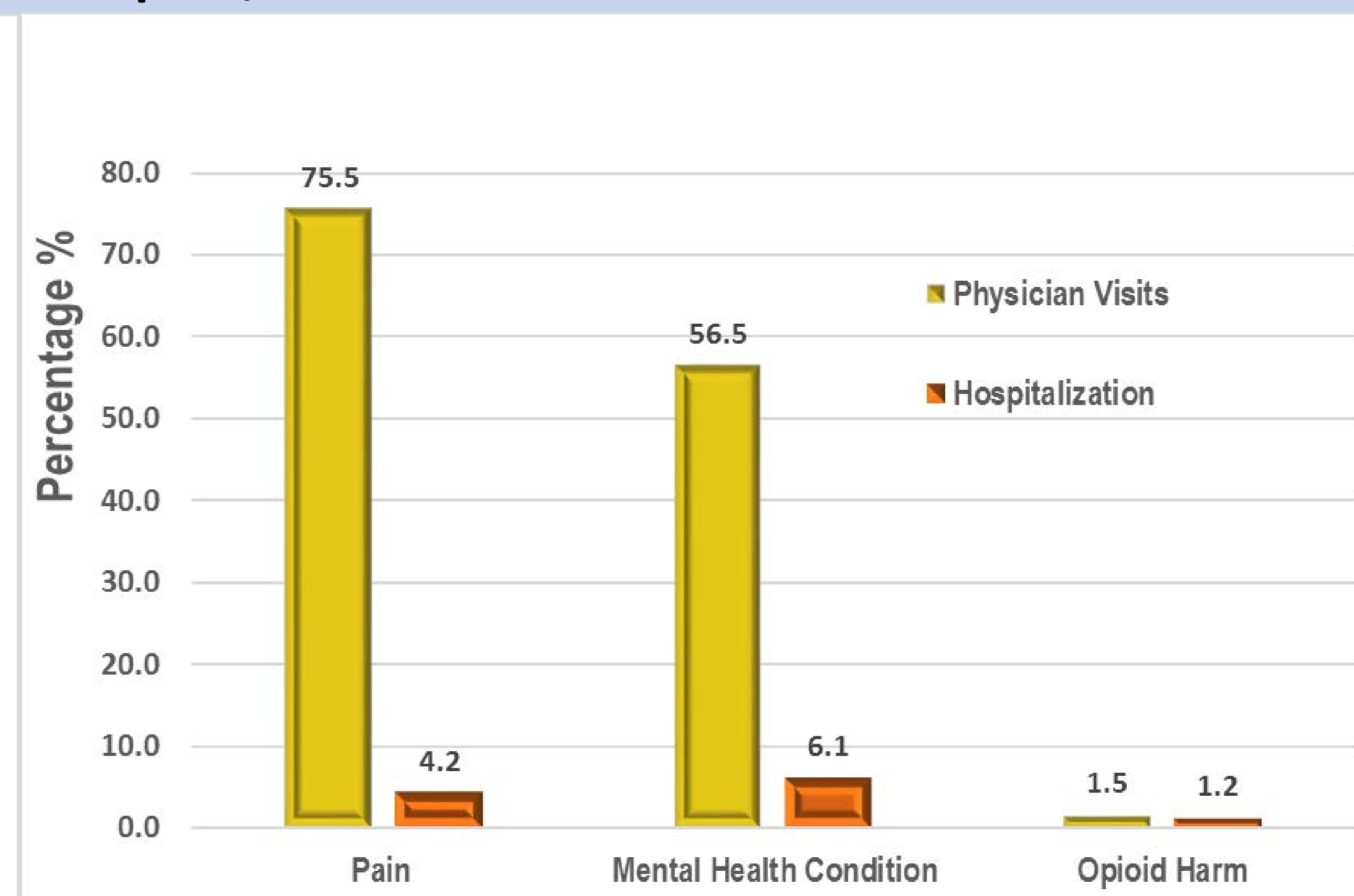


Figure 4: Selected Reasons for Visits to Physician or Hospital, 2010-2016



Discussion

- In 2010, the opioid new start rate in NS was 343 per 10,000 population. Significant differences exist among the four geographic zones, by gender, and by age groups.
- The age distribution of patients with a methadone prescription is younger compared to patients with non-methadone opioid prescriptions.
- 9.0% of male and 7.4% of female patients were prescribed high doses (morphine equivalent MEQ ≥ 90 mg).
- As the number of prescriptions increased, the percentage of patients with >2 hospitalizations also increased
- 75.5% of patients in the cohort had a physician visit for pain and 56.5% had a visit for mental health condition
- The median number of ED visits, and the % with at least one ED visit, increased with increasing number of opioid prescriptions.
- Work on a logistic regression model to determine what factors contribute most to predict high-dose opioid usage and related harms is ongoing.