PRESCRIPTION REVIEW PROGRAM

education | collaboration

A Program administered by the College of Physicians and Surgeons of Saskatchewan

2020 Annual Report
(For the period of April 1, 2020 – March 31, 2021)

Respectfully submitted by:

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Prescription Review Program Overview

The Prescription Review Program (PRP) is an educationally focused program administered by the College of Physicians and Surgeons of Saskatchewan (CPSS) on behalf of the Ministry of Health. The Program monitors a provincially designated panel of prescription medications with known misuse, abuse and diversion potential for possible inappropriate prescribing by physicians, and possible inappropriate use by patients.

It is important to note that qualified clinical staff, including licensed pharmacists (Pharmacist Manager PRP/OATP and program pharmacist) and a licensed pharmacy technician (Analyst) are authorized to provide all clinical advice, information, and analysis for the program. The program pharmacist position became vacant in January 2020 and recruitment was underway into the new fiscal year. Operations oversight (human resources, reporting) and administrative support are provided by the Operations Manager and the administrative Assistant.

This small team also fulfills the program requirements for the Opioid Agonist Therapy Program, and work related to First Nations Inuit Health Branch (FNIHB) project funding.

Program Workflow and Operational Plan

The PRP team began creating an operational plan for the Program in the fall of 2020 and presented it to the Ministry in early April 2021. Led by the Pharmacist Manager PRP/OATP, a cross country environmental scan was completed, and monitoring parameters and program algorithmic flow were then created. The process included substantial literature analytics to ensure that parameters were based on current best practices and evidence-based recommendations. **Appendix A**

Collaboration and Educational Outreach

Between April 1, 2020 and March 31, 2021, PRP staff logged 392 calls related to the program. A few examples of calls include physicians seeking therapeutic advice regarding a patient, pharmacists asking for clarification/support for prescriptions they are filling and the general public reporting alleged misuse of medications. Phone calls often involved assisting with coordination of care for patients and recommendations of additional resources.

After collaboration with key stakeholders in 2019, twelve additional drugs of concern and exempted codeine products (ECP), were added to the panel of monitored drugs in early 2020. The updated Panel of Monitored Drugs is listed in CPSS Regulatory Bylaw 18.1. **Appendix B**

Twenty five referrals were made to the Medication Assessment Centre Interprofessional Opioid Pain Service (MAC iOPS) program to assist physicians working with challenging patient cases. The program delivers individualized, patient-centered access to chronic pain management in Saskatchewan. The Pharmacist Manager PRP/OATP also serves as a member of the advisory committee.

medSask is another service recommended to physicians for their patients. It is a free service for Saskatchewan residents with questions about their prescriptions, over-the-counter medications, and herbal remedies. The program is supported by CPSS Council and the Pharmacist Manager PRP/OATP sits as a member of the advisory committee.

The Pharmacist Manager and Analyst continued providing presentations to SIPPA candidates in 2020 and the Pharmacist Manager was invited as a guest lecturer for two sessions at the University of Saskatchewan.

Students from the College of Medicine and College of Pharmacy and Nutrition completed projects over the summer focused on understanding appropriate and inappropriate opioid prescribing in Saskatchewan and analysis of the PRP Prescriber Snapshot tool. Findings from the projects will be used to inform future work.

Request forms for PRP related information were updated including a generic form for the majority of requests. The new forms ensure consistency and accuracy of requests and most importantly, confirms the authority to provide the requested information is specified.

The Pharmacist Manager and Analyst continue to provide clinical expertise to the CPSS Legal, Registration and Quality of Care departments as requested. Input can range from assisting with a patient referral to providing prescribing trend analysis for physicians and completing security checks for physicians.

Work is underway on Goal #4 of the CPSS 2020-2025 Strategic Plan: Optimal Physician Prescribing of Opioids. The Pharmacist Manager PRP/OATP, provides expertise and guidance to the work and has developed several items to date including:

- A survey to identify information physicians indicate may assist them to improve their own prescribing
- Opioid Prescribing Self-Assessment Tool that is being piloted as part of the Quality of Care Department interviews with physicians
- Methadone for Analgesia Guidelines developed and approved by CPSS Council in January 2021. Methadone for Analgesia Practice Standards and Guidelines
- 29 PRP referrals were made to CPSS: 18 specific prescribing concerns and 11 overall prescribing concerns

Prescription Monitoring

The PRP clinical staff request prescribing rationale from physicians when data indicates possible concerns and/or inappropriate prescribing. After reviewing a physician's response, recommendations are provided through a response letter to the physician.

Types of Program Correspondence (April 1, 2020 – March 31, 2021)	Count*
Explain Letter (1st Contact) – letters sent to physicians to obtain their rationale for prescribing. Common triggers can include, but are not limited to a pattern of early refills, chronic use of benzodiazepines, potentially dangerous drug combinations, large quantities, history of unexpected UDS, use of brand name vs generic	**213** letters sent to **145** physicians
Response/Recommendations – letters sent in reply to a physician's Explain letter response. These most often contain recommendations and helpful resources	**197**
Alert Letter – letters sent to physicians to alert them of potential diversion, or other patient concerns – typically does not require a response, but does include specific advice and follow-up analysis	**56** Alerts sent to **31** physicians and **2** NP (through SRNA)
Multi-Doctor Letters (MDLs) – letters sent to physicians where ≥3 similar prescriptions (generic vs. brand name) from ≥3 prescribers at ≥3 locations	**107** letters sent regarding **52** patients
Law Enforcement Requests – when a patient's medication profile is provided to law enforcement for an active investigation	**156**
CPSS Quality of Care Requests – when a patient's medication dispenses, related to the panel of monitored drugs, is provided to the CPSS Quality of Care team for an active investigation	**25**
Educational letters • **Pediatric codeine use (Appendix C)**	**51** letters sent to **48** physicians *(information was also sent to CDSS and SRNA for distribution to their respective members)*
• **Talwin (Appendix D)**	**13** letters sent to 13 physicians

** It's important to note that the program databases were inaccessible from July 22 – Sept 24, 2021 while eHealth worked to fix data discrepancies. During this time only three Explain letters were sent to physicians.*

PRP Medication Use in Saskatchewan for 2020 - Trends and Insights

An overview of the PRP medications dispensed in Saskatchewan is available in (***Appendices E through N***). Dispensing quantities from 2016 to 2020 are provided to allow for a comparison and to identify possible trends. Graphs have been included for the twelve newly added drugs and comparative analysis will be included in future reports.

Stimulants

The extended-release formulations of methylphenidate (e.g., Concerta™, Ritalin® SR, generics) have shown a gradual dispensing trend upward. The current 2020 Canadian ADHD Resource Alliance (CADDRA) practice guidelines recommend the use of long-acting psychostimulants as first-line treatment agents to improve compliance, treatment response and tolerability (compared to short-acting psychostimulants).[1]

There have been higher than normal RCMP reports of suspected diversion/trafficking of Concerta™ in south-east Saskatchewan.

Opioids

Fentanyl (transdermal) dispenses have all decreased compared to the previous fiscal year, while injectable dispenses have increased. Prescribed and primarily illicit fentanyl (and fentanyl analogues) continue to garner a lot of media attention as a source of overdoses, likely continuing to contribute to reduced prescribing.

Hydromorphone remains one of the most prescribed opioids in Saskatchewan and is considered an alternative to morphine for patients who experience adverse effects or renal impairment. Despite the flexible dosing, hydromorphone has a high misuse potential and chronic use may lead to significant psychological and/or physical dependence. The Saskatchewan Coroner's Service report shows that hydromorphone continues to be a potentially contributing medication in many fatal overdoses.

Morphine dispenses increased by 13% for Kadian® and decreased by 6% for M-Eslon® in 2020. In 2020, there were drug shortages for M-Eslon®. The previously upward trend for morphine syrup has started to trend downward. Morphine solution may be used for neonatal abstinence syndrome secondary to in-utero opioid exposure. However, current evidence recommends the use of more or equally effective strategies with reduced adverse effects as preferred options for managing NAS.

Over the past 5 years, there has been a reduction in the dispensing of **oxycodone** immediate release. Similarly, there has been a downward trend for controlled release formulations of oxycodone. Many patients prescribed chronic oxycodone struggle with deprescribing plans and fortunately, there have been some successes in Saskatchewan with opioid switching from oxycodone to more preferred options at reduced doses.
Of the **acetaminophen/codeine** combination products analyzed, the 30mg codeine product continues to be the most dispensed of the products. Given the risks and questionable efficacy of codeine use in pediatrics, the PRP has made educational efforts to reduce risky prescribing and optimize pain management for this population.

Anticonvulsants

Gabapentin continues to be a highly diverted and misused medication in Saskatchewan. Over half of the RCMP's profile requests to the PRP have included gabapentin as one of the medications involved in the diversion/trafficking investigation. For 2020, the 300mg capsules continued to be the most dispensed strength.

Benzodiazepines

Clonazepam, a long-acting benzodiazepine (BZ) and continues to be the most commonly dispensed benzodiazepine with over 3.3 million tablets dispensed in Saskatchewan.

Opioid Related Deaths

Unfortunately, the pandemic has contributed to a tragic increase in fatal and non-fatal overdoses in Saskatchewan. Evidence suggests that contributing factors have included increases in the tainted illicit supply; loss of social connections and support; increases in social isolation; concerns with drug supply, quality, contamination and potency; increases in unstable housing, leniency for prescribed pharmaceutical supplies; reductions in laboratory screening (e.g., urine drug screens); and reductions in hospital accessibility.

Moving forward, some strategies that we must focus on include:

- Preventing new cases of opioid and substance use disorder through appropriate prescribing and dispensing of high-risk medications
- Reducing ongoing inappropriate prescribing and dispensing and encouraging the uptake of evidence-based management
- Providing access to trauma-informed care for those struggling with opioid and substance use disorder
- Reducing harms associated with the illicit supply through increased access to harm reduction

1. CADDRA - Canadian ADHD Resource Alliance: Canadian ADHD Practice Guidelines, 4.1 Edition, Toronto ON; CADDRA, 2020.
2. https://www.ccsa.ca/sites/default/files/2020-07/CCSA-COVID-19-Impacts-on-People-Who-Use-Substances-Report-2020-en.pdf

Appendix A: PRP Operational Plan 2021 - 2023

A Program administered by the College of Physicians and Surgeons of Saskatchewan

Operational Plan 2021 - 2023

Respectfully submitted by:

Dr. Karen Shaw, Registrar, CPSS
Nicole Bootsman, Pharmacist Manager
Lorie Langenfurth, Operations Manager
January 18, 2021

Prescription Review Program Overview

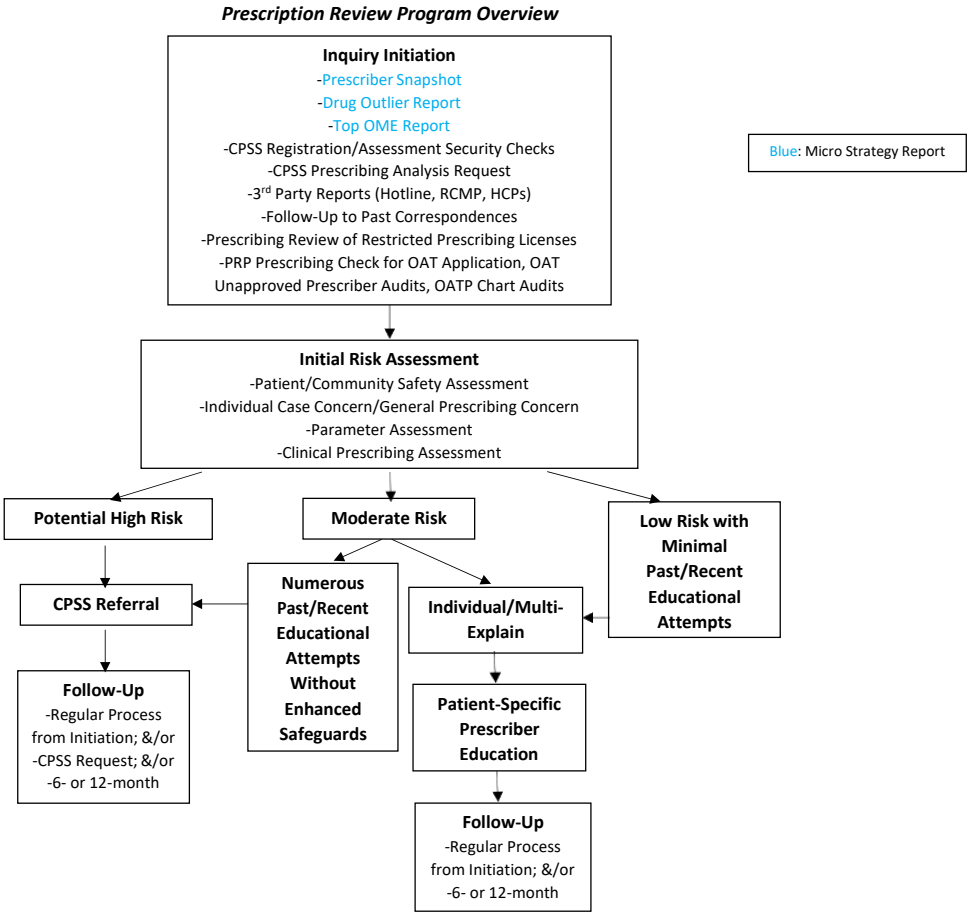
The Prescription Review Program (PRP) is an educationally focused program administered by the College of Physicians and Surgeons of Saskatchewan (CPSS) on behalf of the Ministry of Health (MoH). The Program monitors a provincially designated panel of prescription medications with known misuse, abuse and diversion potential for possible inappropriate prescribing by physicians, and possible inappropriate use by patients.

Specifically, the following services are provided by the Program as stated in the Agreement between the MoH and CPSS:

- Generate and review prescription information to attempt to identify possible misuse of medication(s) by patients or inappropriate prescribing by provider groups;
- Upon request from a prescriber, provide accurate and up-to-date prescribing information;
- Issue initial 'alert letter', to providers where data suggests inappropriate use of medication(s) by patients, or provide the information to a provider's regulatory body to allow that regulatory body to provide such alert letters;
- Generate prescriber, patient and pharmacy profiles relevant to the panel of monitored drugs; and
- Generate statistics and reports relevant to the panel of monitored drug

Saskatchewan Prescription Review Program Flow

The following algorithm provides a general approach to identifying and managing potential inappropriate prescribing and possible misuse of medications, as assessed by qualified clinical staff.



NB.PRP Flow Algorithm

Background: Environmental Scan of Canadian Prescription Review/Monitoring Parameters

The Pharmacist Manager completed an in-depth environmental scan to highlight current (late 2019) and comparator (2015) provincial monitoring parameters.

Province	Monitoring Parameters/Criteria
British Columbia (College of Physicians & Surgeons of BC)	*Current:* • Proposal to move from PRP to PMP which will include all Colleges under the Ministry of Health • Currently they are working off 100% 3rd party referrals/complaints-driven • OAT reviews – prescribing audit after 1 year • New PMP proposal will likely include algorithms to include: • New opioid starts • Geographical analyses to look at "problem areas" • Focus on best practices *2015 Parameters[13]:* • Patients with multiple opioids, high morphine equivalents • >300 pills per dispense • Opioids + benzodiazepines *2015 Interventions[13]:* • Quality Assurance Process • 1st, 2nd, 3rd letters to physicians • Attend interview • Risk Inquiry Committee
Alberta (College of Physicians & Surgeons of Alberta)	*Current:* • Multi-doctoring: ≥6 practitioners, 50+ total OME & ≥3 pharmacies over 3 months • Snapshot-Prescribing: individualized audit & feedback (opioid & BZD/z drug prescribing) • Parameters: • High opioid prescribing (daily OME of 2000+) • Prescribing 4+ BZDs (in a 3-month period) • Prescribers with patients on 300+ OME & seeing 3+ prescribers & going to 3+ pharmacies (in a 3-month period) • Prescribers with patients on 3+ opioids & 3+ BZDs & going to 3+ pharmacies in a 3-month period • Demerol/Talwin prescribing • Large quantities of opioids at a time • Rapid & significant increase or decrease in OMEs *2015 Parameters[13]*: • Multi-doctoring • High quantity (≥1,000 doses at a time) • High risk: 600mg morphine equivalents daily from >2 physicians & >2 pharmacies

	2015 Interventions[13]: • Multi-doctoring: flagged monthly • High quantity: flagged monthly • High risk: flagged quarterly • Prescribers receive letters • Pharmacies receive notices about high-risk patients identified • Letters sent to regulatory bodies for NPs & pharmacists
Nova Scotia (Medavie BlueCross)	*Current:* • Utilization reviews every 2 months by molecule • Utilization thresholds based on MEQ (≥120 MEQ) • Review of responses may prompt intervention and/or escalation to a practice review committee • Upcoming criteria-based reviews • Increasing dosages • Concurrent opioid/benzo usage • First prescriptions • Prescriber risk tool – top scores will be reviewed quarterly *2015 Parameters*[13]: • Multiple prescriber report every 30 days • Every methadone patient monitored through weekly reports • Specific drug usage review for different types of drugs every 56 days • High volume prescribers *2015 Interventions*[13]: • Patient/prescriber agreement monitoring: Program monitors to ensure adherence to patient agreement • Medical consultant: available to health care professionals, the Program and the Program's committees • If the Program has reason to believe that a doctor, dentist or pharmacist may be practising in a manner inconsistent with the mandate of the Program, it may refer the case to the Program committee and/or the applicable regulatory body
Manitoba (College of Physicians & Surgeons of Manitoba)	*Current:* • Unknown *2015 Parameters/Interventions*[13]: • Unavailable

Newfoundland (Oversight by the Minister of Health & Community Services)	*Current:* • Patients receiving ≥ 2 monitored drugs from ≥2 prescribers in a defined time period • Patients receiving ≥2 monitored drugs from ≥2 pharmacies in a defined time period • Patients on monitored drug dependence treatment receiving prescriptions for other monitored drugs • Inordinate dispending/prescribing practices which may include dispensing/prescribing monitored drugs for > a 90 days supply or in excessive quantities • Patients without MCP (Medical Care Plan) number who were dispensed a monitored drug • Random reviews of prescriptions for monitored drugs may occur to ensure the patient's medication profile was accessed by the prescriber & dispenser prior to the prescription being written or filled
New Brunswick (NB Department of Health)	*Current:* • Working re-vamp their program • Automatic multi-prescriber/multi-pharmacy alerts have previously gone out to ≥2 in a 90-day period, causing alert fatigue • Working to report to show overlay of prescribers • Current prototype for prescriber feedback reports *2015 Parameters*[13]: • Multi doctoring or multi pharmacy alert • ≥500 units of monitored drugs at one time alert • Early/part-fill refill (not defined yet) or duplicate drug (same DIN, same day) alert *2015 Interventions*[13]: • College can register physician with a history of overprescribing to restrict what is prescribed • If Patient Monitoring Agreement in place, physician or pharmacist can register patient with PMP (if patient consents) to restrict who can prescribe to them & where they can pick up monitored drugs • All reports will be done in real time, proactive not reactive, intended primarily for prescribers and dispensers at point of prescribing & dispensing • Real-time initiated alerts at time of prescribing & dispensing to prescribers based on criteria for parameters
Prince Edward Island	*Current:* • Real time DIS, not a monitoring program

Ontario (Ministry of Health)	*Current:* • NMS is a central database to enable reviews of prescribing & dispensing • Warnings issued by NMS: • May be double doctoring: ≥3 different prescribers in the past 28 days • Poly-pharmacy: including the current claim, the patient has obtained monitored drugs from ≥ 3 different dispensaries in the past 28 days • Refill too soon • Fill/refill too late • Duplicate drug other pharmacy: same transaction exists Primary use is to identify drug utilization patterns & trends to detect unusual activities and to inform harm reduction strategies, education initiatives and improve prescribing and dispensing *2015 Parameters[13]*: • Double doctoring • Polypharmacy • Refill too soon • Fill/refill too late • Duplicate drug other pharmacy *2015 Interventions[13]*: • Pilot stage

Saskatchewan Prescription Review Program Monitoring Parameters

Coalescing monitoring parameters utilized by other Canadian provinces with current national guidelines, best practices and evidence-based recommendations, the Pharmacist Manager developed Saskatchewan-specific drug parameters to guide Program educational and interventional strategies. The following parameters are employed as part of the comprehensive Initial Risk Assessment in the Prescription Review Program Flow. Parameters will be modified and updated based on up-to-date evidence, observed provincial patterns related to misuse, expert opinion and ongoing revisions to the list of monitored drugs.

******Each parameter or concurrent parameters must be assessed within the clinical context by a qualified health care provider(s).***

Each category highlights primary behavioural focus (Prescriber, Pharmacist, Patient) to guide educational strategy/referral

General Program Parameters

Prescriber

- Multi-doctoring (≥3 similar prescriptions (generic vs. brand) from ≥3 prescribers at ≥3 locations, as determined by the physician-clinic activity algorithm with MSB)
- Co-prescribing of high-risk combinations[1,9]
- Assessment:
  - Beers/STOPP criteria[3]
  - Patient-specific risk factors for adverse events/toxicity (e.g. advancing age, alcohol use, liver dysfunction, reduced kidney function, active substance abuse)[11]

- Patients prescribed monitored drug dependence treatment receiving prescriptions for other monitored drugs (using different or sole prescribers)[1]
- Potentially inordinate prescribing/dispensing[1] which may include ongoing >34-day supplies
- Frequent, early renewals[10]
- Use of brand name formulations vs. generic formulations (generic formulations for other medications may increase suspicion for misuse)[10]

Pharmacist

- Multi-doctoring (≥3 similar prescriptions (generic vs. brand) from ≥3 prescribers at ≥3 locations, as determined by the physician-clinic activity algorithm with MSB)
- Use of multiple pharmacies
- Potentially inordinate prescribing/dispensing[1] which may include ongoing >34-day supplies
- Frequent, early renewals[10]
- Use of brand name formulations vs. generic formulations (generic formulations for other medications may increase suspicion for misuse)[10]

Patient

- Multi-doctoring (≥3 similar prescriptions (generic vs. brand) from ≥3 prescribers at ≥3 locations, as determined by the physician-clinic activity algorithm with MSB)
- Patients prescribed monitored drug dependence treatment receiving prescriptions for other monitored drugs (using different or sole prescribers)[1]
- Use of multiple pharmacies
- Referrals (Hotline, RCMP, HCPs) regarding potential misuse
- Use of brand name formulations vs. generic formulations (generic formulations for other medications may increase suspicion for misuse)[10]
- Unexpected random urine drug screen(s) from RRPL (especially if screen(s) reveal potential patient and/or community risk – e.g. diversion, substance use)[10]
- Patient-specific risk factors for adverse events/toxicity (e.g. advancing age, alcohol use, liver dysfunction, reduced kidney function, active substance abuse)[11]
- Beers/STOPP criteria[3]

Opioids

Prescriber

- High opioid prescribing (daily OME of 2000+) – harms associated with higher doses[5,7]
- Chronic utilization threshold >90 OMEs per day (primarily with lack of rotation and taper)[1,5]
- Demerol/Talwin/Fiorinal prescribing[7,8]
- Rapid and significant increase or decrease in OMEs (decrease of >5-10% morphine equivalents every 2-4 weeks[1])[10]
- Inappropriate initiations for chronic conditions (duration, >50 OMEs per day, initiation with long-acting formulations, escalation limited to 2-3 times during trial)[1,2,4,5]
- For chronic, long-term treatment, ongoing use of short-acting products without a long-acting product trial to reduce pill burden and high quantities[5,10]

Benzodiazepines

Prescriber

- Chronic, long-term use (e.g. >4-6 weeks for anxiety as adjunct; ≥4 weeks for hypnotic)[5,11]
  - If long-term use is indicated, preference for long-acting agents at the lowest effective dose with regular attempts to revisit the need for therapy and re-evaluation of risk vs. benefit
- Assessment of co-morbidities (e.g. sleep apnea, COPD, myasthenia gravis, severe depression)[5,11]
- Inappropriate taper strategy[12]

Pharmacist

- Chronic, long-term use (e.g. >4-6 weeks for anxiety as adjunct; ≥4 weeks for hypnotic)[5,11]

Patient

- Co-morbidities (e.g. sleep apnea, COPD, myasthenia gravis, severe depression)[5,11]

Simulants

Prescriber

- Chronic, long-term use of immediate-release formulations without a sustained-release formulation trial
- Potentially inappropriate dosing according to guideline (especially in the absence of specialist consultation)[14]:

Table 5.10 Medical Treatment for ADHD – Children (6-12 Years)

Brand Name	Active Ingredient	Dosage Form	Starting Dose[1]	Titration Schedule [2]		Total Maximum Daily Dose[3]	
				Product Monograph	CADDRA[4]	Product Monograph	CADDRA[4]
FIRST LINE AGENTS - Long-acting psychostimulants							
Adderall XR®[5]	amphetamine mixed salts	5, 10, 15, 20, 25, 30 mg cap	5-10 mg q.d. a.m.	↑ 5-10 mg	↑ 5 mg	30 mg	30 mg
Biphentin®	methylphenidate	10, 15, 20, 30, 40, 50, 60, 80 mg cap	10-20 mg q.d. a.m.	↑ 10 mg	↑ 5-10 mg	60 mg	60 mg
Concerta®[5]	methylphenidate	18, 27, 36, 54 mg tab	18 mg q.d. a.m.	↑ 18 mg	↑ 9-18 mg	54 mg	72 mg
Foquest®	methylphenidate	25, 35, 45, 55, 70 mg cap	25 mg q.d. a.m.	↑ 10-15 mg	↑ 10-15 mg	70 mg	70 mg
Vyvanse®	lisdexamfetamine	10, 20, 30, 40, 50, 60, 70[6] mg cap 10, 20, 30, 50, 50, 60 mg chewable tab	20-30 mg q.d. a.m.	↑ 10-20 mg	↑ 10-20 mg	60 mg	60 mg
SECOND LINE / ADJUNCTIVE AGENTS - Short-acting and intermediate-acting psychostimulants ***Indications for use: a) p.r.n. for certain activities; b) to augment[7] long-acting formulations early or late in the day, or early in the evening and c) when long-acting agents are cost prohibitive***							
Dexedrine®[5]	dextro-amphetamine	5 mg tablet	2.5-5 mg b.i.d.[8]	↑ 2.5-5 mg	↑ 2.5-5 mg	40 mg	20 mg
Dexedrine® Spansule®[9]	dextro-amphetamine	10, 15 mg capsule	10 mg q.d. a.m.	↑ 5 mg	↑ 2.5-5 mg	40 mg	30 mg
Ritalin®[5]	methylphenidate	10, 20 mg tablet (5 mg generic only)	5 mg b.i.d. to t.i.d.[8]	↑ 5-10 mg	↑ 5 mg	60 mg	60 mg
Ritalin® SR[10,5]	methylphenidate	20 mg tablet	20 mg q.d. a.m.	↑ 20 mg	↑ 20 mg	60 mg	60 mg
SECOND LINE / ADJUNCTIVE AGENTS - Long acting non-psychostimulants Selective Alpha$_{2A}$-adrenergic receptor agonist ***Indications for use: Monotherapy and as an adjunctive therapy to psychostimulants***							
Intuniv XR®	guanfacine	1, 2, 3, 4 mg tablet	1 mg	Increments of 1 mg every 7-14 days		4 mg	4 mg
SECOND LINE / ADJUNCTIVE AGENTS - Long-acting non-psychostimulants **Selective norepinephrine reuptake inhibitor** ***Indications for use: Monotherapy (off-label: prescribed as an adjunctive therapy)***							
Strattera®[5]	atomoxetine	10, 18, 25, 40, 60, 80, 100 mg capsule	0.5 mg/kg/day	Adjust dosage every 7-14 days; to 0.8 mg/kg/day, then 1.2 mg/kg/day		Lesser of 1.4 mg/kg/day or 60 mg/day	

Table 5.11 – Medical Treatment for ADHD – Adolescents (13-17 Years)[1]

Brand Name	Active Ingredient	Dosage Form	Starting Dose[2]	Titration Schedule[3]		Total Maximum Daily Dose	
				Product Monograph	CADDRA[4]	Product Monograph	CADDRA[4]
FIRST LINE AGENTS - Long-acting psychostimulants							
Adderall XR®[5]	amphetamine mixed salts	5, 10, 15, 20, 25, 30 mg cap	5-10 mg q.d. a.m.	↑ 5-10 mg	↑ 5 mg	20-30 mg	50 mg
Biphentin®	methylphenidate	10, 15, 20, 30, 40, 50, 60, 80 mg cap	10-20 mg q.d. a.m.	↑ 10 mg	↑ 5-10 mg	60 mg	80 mg
Concerta®[5]	methylphenidate	18, 27, 36, 54 mg tab	18 mg q.d. a.m.	↑ 18 mg	↑ 9-18 mg	54 mg	90 mg
Foquest®	methylphenidate	25, 35, 45, 55, 70 mg cap	25 mg q.d. a.m.	↑ 10 or 15 mg	↑ 10 or 15 mg	70 mg	70 mg
Vyvanse®	lisdexamfetamine	10, 20, 30, 40, 50, 60, 70[6] mg cap 10, 20, 30, 40, 50, 60 mg chewable tab	20-30 mg q.d. a.m.	By clinical discretion	↑ 10 mg	60 mg	70 mg
SECOND LINE / ADJUNCTIVE AGENTS - Short-acting and intermediate-acting psychostimulants **Indications for use: a) p.r.n. for certain activities; b) to augment[7] long-acting formulations early or late in the day, or early in the evening and c) when long-acting agents are cost prohibitive**							
Dexedrine®[5]	dextro-amphetamine	5 mg tab	2.5-5 mg b.i.d.[8]	↑ 5 mg	↑ 2.5-5 mg	40 mg	30 mg
Dexedrine® Spansule®[9]	dextro-amphetamine	10, 15 mg cap	10 mg q.d. a.m.	↑ 5 mg	↑ 2.5-5 mg	40 mg	30 mg
Ritalin®[5]	methylphenidate	10, 20 mg tab (5 mg generic only)	5 mg b.i.d. to t.i.d.[8]	↑ 5-10 mg	↑ 5 mg	60 mg	60 mg
Ritalin® SR[10,5]	methylphenidate	20 mg tab	20 mg q.d. a.m.	↑ 20 mg (add q2pm dose)		60 mg	80 mg
SECOND LINE / ADJUNCTIVE AGENTS - Long-acting non-psychostimulants Selective Alpha$_{2A}$-adrenergic receptor agonist ***Indications for use: Monotherapy and as an adjunctive therapy to psychostimulants***							
Intuniv XR®	guanfacine	1, 2, 3, 4 mg tab	1 mg	Increments of 1 mg every 7 to 14 days		7 mg for monotherapy and 4 mg for adjunctive therapy	
SECOND LINE / ADJUNCTIVE AGENTS - Long-acting non-psychostimulants - Selective norepinephrine reuptake inhibitor ***Indications for use: Monotherapy (off-label: prescribed as an adjunctive therapy)***							
Strattera®[5]	atomoxetine	10, 18, 25, 40, 60, 80, 100 mg cap	0.5 mg/kg/day	Adjust dosage every 7-14 days; to 0.8 mg/kg/day, then 1.2 mg/kg/day[11]		Lesser of 1.4 mg/kg/day or 100 mg/day	

Table 5.12 – Medical Treatment for ADHD – Adults (18+)

Brand Name	Active Ingredient	Dosage Form	Starting Dose[1]	Titration Schedule[2]		Total Maximum Daily Dose	
				Product Monograph	CADDRA[3]	Product Monograph	CADDRA[3]
FIRST LINE AGENTS – Long-acting psychostimulants							
Adderall XR®[4]	amphetamine mixed salts	5, 10, 15, 20, 25, 30 mg cap	10 mg q.d. a.m.	↑ 10 mg	↑ 5 mg	20-30 mg	50 mg
Biphentin®	methylphenidate	10, 15, 20, 30, 40, 50, 60, 80 mg cap	10-20 mg q.d. a.m.	↑ 10 mg	↑ 5-10 mg	80 mg	80 mg
Concerta®[4]	methylphenidate	18, 27, 36, 54 mg tab	18 mg q.d. a.m.	↑ 18 mg	↑ 9-18 mg	72 mg	108 mg
Foquest®	methylphenidate	25, 35, 45, 55, 70, 85, 100 mg cap	25 mg q.d. a.m.	↑ 10 or 15 mg	↑ 10 or 15 mg	100 mg	100 mg
Vyvanse®	lisdexamfetamine	10, 20, 30, 40, 50, 60, 70[5] mg cap 10, 20, 30, 50, 50, 60 mg chewable tab	20-30 mg q.d. a.m.	By clinical discretion	↑ 10 mg	60 mg	70 mg
SECOND LINE / ADJUNCTIVE AGENTS - Short-acting and intermediate-acting psychostimulants ***Indications for use: a) p.r.n. for certain activities; b) to augment[6] long-acting formulations early or late in the day, or early in the evening and c) when long-acting agents are cost prohibitive***							
Dexedrine®[4]	dextro-amphetamine	5 mg tab	2.5-5 mg b.i.d.[7]	↑ 5 mg	↑ 2.5-5 mg	40 mg	50 mg
Dexedrine Spansule®[8]	dextro-amphetamine	10, 15 mg cap	10 mg q.d. a.m.	↑ 5 mg	↑ 2.5-5 mg	40 mg	50 mg
Ritalin®[4]	methylphenidate	10, 20 mg tab (5 mg generic only)	5 mg b.i.d. to t.i.d.[7] consider q.i.d	↑ 5-10 mg	↑ 5 mg	60 mg	100 mg
Ritalin® SR[9,4]	methylphenidate	20 mg tab	20 mg q.d. a.m.	↑ 20 mg (add q2pm dose)		60 mg	100 mg
SECOND LINE / ADJUNCTIVE AGENT - Long-acting non-psychostimulant - Selective norepinephrine reuptake inhibitor **Indications for use: Monotherapy (off-label: prescribed as an adjunctive therapy)**							
Strattera®	atomoxetine	10, 18, 25, 40, 60, 80, 100 mg cap	40 mg q.d.[10]	Adjust dosage every 7-14 days; to 60 then 80 mg/ day[11]		Lesser of 1.4 mg/kg/day or 100 mg/day	

Gabapentin

Prescriber

- Exceeded maximum dose (pain): 3.6g per day (renal adjustments may be necessary)[6]
- Co-prescribing potentially dangerous combinations[9]

Prescription Review Program Drug Additions (2020)

Consideration of General Parameters + Drug-Specific Parameters

Drug	Maximum Recommended Daily Dose	Prescribing Monitoring Parameters
Zopiclone	7.5mg (5mg for elderly)[5,6]	-≥15mg daily ± concurrent CNS depressant(s) -Prescribing for the elderly -High quantity dispenses -Long-term use (treatment should not generally exceed 7 to 10 consecutive days)[6]
Zolpidem	10mg (5mg for elderly)[5,6]	-≥20mg daily ± concurrent CNS depressant(s) -Prescribing for the elderly -High quantity dispenses -Long-term use (intended for ≤4 to 8 weeks)[6]
Baclofen	80mg[5,6]	->80mg daily ± concurrent CNS depressant(s) -Prescribing for the elderly -Abrupt withdrawal after long-term use -High quantity dispenses
Oxybutynin	20mg daily for OAB (30mg XL), 10mg for hyperhidrosis[5,6]	->20mg daily (IR) ->30mg daily (XL) -Prescribing for the elderly -High quantity dispenses -For patients on OAT, when prescriber(s) for oxybutynin are other than the OAT prescriber
Ketamine, Remifentanil, Sufentanil		-Any community dispenses
Diphenoxylate	20mg[5,6]	->20mg daily -Prescribing for the elderly -High quantity dispenses -Long-term, high doses (once control is achieved, maintenance doses should usually be reduced)[6]
Pregabalin	600mg[5,6]	->600mg daily ± concurrent CNS depressant(s) -Prescribing for the elderly -High quantity dispenses -For patients on OAT, when prescriber(s) for pregabalin are other than the OAT prescriber -Abrupt withdrawal or rapid reductions after long-term use
Tapentadol	500-600mg[5,6]	->500mg daily ± concurrent CNS depressant(s) -Prescribing for the elderly -High quantity dispenses -Abrupt withdrawal or rapid reductions after long-term use
Tramadol	300-400mg (depending on formulation)[5,6]	->400mg daily ± concurrent CNS depressant(s) -Prescribing for the elderly -High quantity dispenses -Abrupt withdrawal or rapid reductions after long-term use

****High quantity dispenses include ongoing >34-day supplies, more medication than what is required if taken as prescribed*

Future Progress

Continued progress will involve measurement, assessment and ongoing re-evaluation as part of a quality improvement strategy to ensure overall Program consistency and effectiveness. To date, the Pharmacist Manager has engaged with the Clinical Quality Improvement Program as an aid to develop evaluative tools for effectiveness in achieving the Program mandates. For further learning, the Pharmacist Manager has been accepted into CQIP where her quality improvement project focus will assess and measure interventions associated with concurrent opioid and benzodiazepine prescribing. While the program was scheduled to begin in Winter 2020, CQIP partner organizations (Saskatchewan Health Authority, Saskatchewan Medical Association, Ministry of Health, and Health Quality Council) have postponed the start of CQIP – Cohort 5 to Spring 2021.

The PRP will continue to be flexible enough to deal with any specific problems/concerns that may arise in the province and to work with stakeholders to ensure patient safety.

References

1. Busse JW, Craigie S, Juurlink DN, Buckley DN, Wang L, Couban RJ, Agoritsas T, Akl EA, Carrasco- Labra A, Cooper L, Cull C, da Costa BR, Frank JW, Grant G, Iorio A, Persaud N, Stern S, Tugwell P, Vandvik PO, Guyatt GH. Guideline for opioid therapy and chronic non-cancer pain. CMAJ, 2017;189(18):E659-E666.
2. Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and the Likelihood of Long-Term Opioid Us – United States, 2006-2015. CDC MMWR, 2017;66(10):265-269.
3. Geri-RxFiles, 3rd edition, 2019.
4. Shah A, Hayes C, Martin BC. Factors Influencing Long-Term Opioid Use Among Opioid Naïve Patients: An Examination of Initial Prescription Characteristics and Pain Etiologies. J Pain, 2017;16(11):1374-1383.
5. RxFiles Drug Comparison Charts, 12th edition, 2019.
6. Lexi-Comp, Inc., 2020.
7. Consistent with/similar to TPP.
8. College of Physicians & Surgeons of Alberta. Meperidine(Demerol): a relic misfit for chronic pain, Clinical Toolkit.
9. Gomes T, Juurlink DN, Antoniou T, Mamdani MM, Paterson JM, van den Brink W. Gabapentin, opioids, and the risk of opioid-related death: A population-based nested case-control study. PLoS Med, 2017;14(10):e1002396. Published 2017 Oct 3. doi:10.1371/journal.pmed.1002396.
10. Crawley A, Regier L. Prescribing Opioids Safely: An Approach. RxFiles, 2020.
11. College of Physicians & Surgeons of Alberta. Benzodiazepines: Use and Taper, Clinical Toolkit, 2016.
12. Pottie K, Thompson, W, Davies S, Grenier J, Sadowski C, Welch V, Holbrook A, Boyd C, Swenson JR, Ma A, Farrell B. Evidence-based clinical practice guideline for deprescribing benzodiazepine receptor agonists. Can Fam Physician, 2018;64:339-351.
13. Sproule B. Prescription monitoring programs in Canada: best practice and program review. Ottawa: Canadian Centre on Substance Abuse, 2015.
14. CADDRA – Canadian ADHD Resource Alliance: Canadian ADHD Practice Guidelines, 4.1 Edition, Toronto ON; CADDRA 2020.

Appendix B: CPSS Regulatory Bylaw 18.1

18.1 The Prescription Review Program

(a) Panel of Monitored Drugs – The Prescription Review Program shall apply to all dosage forms of the following drugs, except where indicated otherwise:

AMPHETAMINES - in all dosage forms
ANABOLIC STEROIDS ANILERIDINE - in all dosage forms
BACLOFEN
BARBITUATES
BENZODIAZEPINES – in all dosages and forms
BUPRENORPHINE – in all dosages and forms
BUTALBITAL - in all dosage forms
BUTALBITAL WITH CODEINE - in all dosage forms
BUTORPHANOL
CHLORAL
HYDRATE
COCAINE - in all dosage forms
CODEINE- in all dosage forms
DIACETYLMORPHINE
DIETHYLPROPION - in all dosage forms
DIPHENOXYLATE
FENTANYL - in all dosage forms
GABAPENTIN
HYDROCODONE - DIHYDROCODEINONE - in all dosage forms
HYDROMORPHONE - DIPHRYDROMORPHONE - in all dosage forms
KETAMINE
LEVORPHANOL - in all dosage forms
MEPERIDINE - PETHIDINE - in all dosage forms
METHADONE - in all dosage forms
METHYLPHENIDATE - in all dosage forms
MORPHINE - in all dosage forms
NORMETHANDONE-P-HYDROXYEPHEDRINE - in all dosage forms
OXYBUTYNIN OXYCODONE - as the single active ingredient or in combination with other active ingredients in all dosage forms
OXYMORPHONE
PANTOPON - in all dosage forms
PENTAZOCINE - in all dosage forms
PHENTERMINE - in all dosage forms
PREGABALIN
PROPOXYPHENE - in all dosage forms
REMIFENTANIL
SUFENTANIL
TAPENTADOL
TRAMADOL – in all dosage forms
ZOLPIDEM
ZOPICLONE

(b) Prescriptions for drugs covered by the Prescription Review Program shall be issued by physicians according to the policies and procedures agreed to and amended from time to time by the College of Dental Surgeons of

Saskatchewan, the College of Physicians and Surgeons of Saskatchewan, the Saskatchewan Registered Nurses Association and the Saskatchewan College of Pharmacists.

(c) In order to prescribe a drug to which the Prescription Review Program applies, physicians shall complete a written prescription which meets federal and provincial legal requirements and includes the following:

(i) The patient's date of birth;

(ii) The patient's address;

(iii) The total quantity of medication prescribed, both numerically and in written form;

(iv) The patient's health services number; and,

(v) The prescriber's name and address.

(d) For the purpose of this bylaw, "written prescription" includes an electronic prescription that meets the requirements for electronic prescribing under the Pharmaceutical Information Program.

(e) A physician who prescribes a drug to which the Prescription Review Program applies, and who provides the prescription directly to a pharmacy by electronic prescribing, by email or by FAX, or who transmits a prescription in accordance with the policies and protocols of the Pharmaceutical Information Program, need not include both the quantity numerically and in written form.

(f) If a physician is registered on the Educational Register, the physician shall, in addition to the information in paragraph (c) above, include the following in a prescription for a drug to which the Prescription Review Program applies:

(i) The training level of the physician writing the prescription;

(ii) The legibly printed name of the Most Responsible Physician (the physician to whom queries regarding the prescription should be addressed);

(iii) The legibly printed name of the physician writing the prescription.

(g) Physicians shall only prescribe part-fills of medications to which the Prescription Review Program applies if the following information is specified in the prescription:

(i) The total quantity;

(ii) The amount to be dispensed each time; and

(iii) The time interval between fills.

(h) The office of the Registrar may gather and analyze information pertaining to the prescribing of medications to which the Prescription Review Program applies in Saskatchewan for the purpose of limiting the inappropriate prescribing and inappropriate use of such drugs. In order to fulfill that role, the office of the Registrar may, among other activities:

(i) Generally, provide education to physicians in order to encourage appropriate prescribing practices by physicians registered by the College;

(ii) Alert physicians to possible inappropriate use of medications to which the Prescription Review Program applies by patients to whom they have prescribed such drugs;

(iii) Alert physicians to possible inappropriate prescribing of medications to which the Prescription Review Program applies;

(iv) Make recommendations to a physician with respect to the physician's prescribing of medications to which the Prescription Review Program applies;

(v) Require physicians to provide explanations for their prescribing of medications to which the Prescription Review Program applies. In making requests for explanations, the office of the Registrar may require the physician to provide information about the patient, the reasons for prescribing to the patient, and any knowledge which the physician may have about other narcotics or controlled drugs received by the patient;

(vi) Cause information, concerns or opinions of general application to the profession to be communicated to the physicians registered by the College without identifying the particular physician to whom such information relates;

(vii)Provide information gathered in connection with the Prescription Review Program to another health professional body including the College of Dental Surgeons of Saskatchewan, the Saskatchewan College of Pharmacists or the Saskatchewan Registered Nurses Association, provided the information gathered is required by that body to perform and carry out the duties of that health professional body pursuant to an Act with respect to regulating the profession. Where the personal health information relates to a member of the health professional body seeking disclosure, disclosure by the Registrar of that information may only be made in accordance with The Health Information Protection Act, and in particular section 27(5) or that Act.

(i) Physicians shall respond to such requests for explanation, as described in paragraph (h)(v) above, from the office of the Registrar within 14 days of receipt of such a request for information.

(j) The Registrar, Deputy Registrar, or Prescription Review Program Supervisor may extend the deadline for reply at their discretion, upon receipt of a written request for extension from the physician.

(k) All physicians who receive such a request for information will comply, to the best of their ability, fully and accurately with such requests for information.

(l) Failure to comply with paragraphs (h)(v), (i) and (k) above is unbecoming, improper, unprofessional or discreditable conduct.

(m) Members shall keep a record of all drugs to which the Prescription Review Program applies that are purchased or obtained for the member's practice and a record of all such drugs administered or furnished to a patient in or out of the physician's office, showing:

(i) the name, strength and quantity of the drug purchased or obtained;

(ii) the name, strength, dose and quantity of the drug administered or furnished;

(iii) the name and address of the person to whom it was administered or furnished, and, if applicable, the name and address of the person who took delivery of the drug; and

(iv) the date on which the drug was obtained and the date(s) on which the drug was administered, furnished or otherwise disposed of.

(n) The record referred to in paragraph (m) shall be kept separate from the patient's medical record.

Appendix C: Pediatric codeine use education letter

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******Informational: Response NOT Required******

DATE

{Doctor IMIS address info}

PERSONAL AND CONFIDENTIAL

Re:
HSN:
DOB:

Dear Dr.

The *Prescription Review Program* (PRP) is Saskatchewan's educationally focused prescription monitoring program administered by the **College of Physicians and Surgeons of Saskatchewan**.

Recently, we conducted an analysis to assess codeine prescribing in Saskatchewan patients under the age of 18 years in response to the updated Health Canada advisory warning that individuals under 18 years of age should not use non-prescription pain relief products containing codeine (previously not recommended for children under the age of 12 years)[1]. Health Canada provided an additional warning about the use of prescription cough and cold products containing opioids and the risk of opioid use disorder in children and adolescents (<18 years of age) as well as the risk of opioid toxicity[10]. Current literature suggests that early exposure to opioids in childhood and adolescence may put patients at risk for opioid-related adverse events throughout life[2,6].

Historically, codeine was the preferred opioid analgesic in pediatrics, given the perception of safety and wide therapeutic index[2]. While there may be a lower incidence of CNS and respiratory depression after a single dose, the lower risk may not exist after subsequent doses[9]. As such, the thinking surrounding codeine safety changed around 2011 when the WHO noted that "efficacy and safety were questionable in an unpredictable portion of the pediatric population"[2]. Today, unless codeine has already been prescribed for a chronic condition, initiating treatment with codeine is not recommended.

Codeine, a prodrug with weak binding to the mu opioid receptor, has highly unpredictable metabolic properties, making it a risky therapeutic option for the pediatric population. The bioactivation to morphine provides the analgesic properties of codeine. Codeine is converted to morphine with the hepatic cytochrome P450 2D6 enzyme and analgesia is dependent on the individual's CYP2D6 gene. As a result, those with inactive CYP2D6 are "poor metabolizers" and will experience reduced pain relief as a result of the medication, given the reduced conversion to morphine. On the other hand, "ultra-rapid metabolizers" are at risk of overdose and adverse/toxic effects (which have resulted in pediatric deaths)[13], even at lower doses, because of the rapid and complete metabolism to morphine[3,4].

It has been estimated that anywhere from 77-92% of patients are considered "normal metabolizers", suggesting expected enzyme activity and morphine formation; thus "normal metabolizers" are candidates for dosing based on labeled recommendations[3]. Unfortunately, without genetic testing, gene variation is largely unknown in our general population.

It is always important to consider stepwise non-opioid and non-pharmacological options in pediatrics as first-line therapy. Multimodal analgesia for acute pain is most effective for pediatric pain management, preventing transition from acute to chronic pain[13]. For chronic pediatric pain, a multidisciplinary approach is recommended (e.g. physical therapy; occupational therapy; psychological intervention; "normalizing" life with school, sleep, and social activities; etc.)[13].

WHO Principles for Pharmacologic Management of Pain[14]
Treatment of persisting pain due to medical illness relies on key concepts:

- Two-step strategy:
  - Step 1 (mild pain): acetaminophen and ibuprofen are the medicines of choice
  - Step 2 (moderate to severe pain): morphine[±] is the medicine of choice
    - *Bypassing Step 1 requires cautious clinical judgment (e.g. pain severity, consideration of disability caused by pain, cause of pain, expected prognosis, etc.)*
- Dose at regular intervals, while monitoring side-effects
- Consider the appropriate route of administration (e.g. IM can be painful with erratic absorption; rectal can have unreliable bioavailability)
- Adapt treatment to the individual child

Therapeutic Options[5]

Minor Burns	-Cold compress -Ibuprofen or acetaminophen
Earache	-Warm cloth -Ibuprofen or acetaminophen (initiate quickly) -Auralgan (antipyrine & benzocaine) – avoid with perforated ear drum
Emergency Trauma	-Musculoskeletal: ibuprofen (superior to acetaminophen or codeine) -Opioids* (e.g. morphine[±]) if moderate to severe pain**
Heel Poke	-Breastfeeding, sucrose
Immunization	-Pressure at site -Sucrose (infants up to 12 months of age) -Topical anesthetics
Open wound (foreign body ruled out)	-Topical anesthetic (e.g. LET, lidocaine 4%/epinephrine 0.1%/tetracaine 0.5%) – avoid mucous membranes; avoid epinephrine on digits, nose tip, ear, penis -Tissue adhesive

**Appropriate monitoring for respiratory depression, sedation and reduced consciousness is essential*[8]
[±]For acute/persisting pain treatment, if an opioid is indicated, morphine is usually preferred over codeine because of the CYP 2D6 polymorphisms and case-reports associated with overdose from codeine[11,14]
***In an RCT of children presenting to the ED with an uncomplicated extremity fracture, children received oral morphine (0.5mg/kg) or ibuprofen for 24 hours after discharge. No significant difference in analgesic efficacy was noted between oral morphine and ibuprofen; morphine was associated with significantly higher adverse effects*[7].

Topical Anesthetics (for Intact Skin)[5]

Drug	Application	Caution
Emla (lidocaine + prilocaine)	60+ min prior with occlusion	-Vasoconstriction -Rare risk of methemoglobinemia
Lidocaine cream	60+ min prior with occlusion	-Vasoconstriction (venous access?)
Maxilene (Liposomal Lidocaine)	30+ min prior	-Minimally vasoactive

Topical analgesics may also be considered for chronic pain[8].

General Non-Pharmacological Suggestions (as age appropriate)[5,8]

- Affirmative language
- Parental counselling – parental anxiety in the context of children undergoing acute procedural pain is one of the most powerful predictors of pain outcomes[15]
- Consider psychology/psychiatry consult if necessary
- Physical comfort strategies (e.g. kangaroo care, comfort positioning)
- Distraction (books, bubbles, TV, breathing, breastfeeding, music, virtual reality, conversation)
- Hot/cold compresses (not for neonates)
- Warm blanket
- Massage
- Activity out of bed
- Elevation
- Splinting, bandaging, dressing
- Injury site pressure

Oral Analgesic Therapies and Dosing[5]

Drug	Dosing	Max Daily Dose
Acetaminophen[#]	10-15 mg/kg/dose every 4-6 hours	75 mg/kg/day Newborn (4-40 wks.): 60 mg/kg/day
Ibuprofen[#]	5-10 mg/kg/dose every 6-8 hours	40 mg/kg/day
Naproxen	2.5-5 mg/kg BID	20 mg/kg/day
Antidepressants (e.g. TCAs), anticonvulsants (e.g. gabapentin)		

[#]*Consider initiating opioid-sparing analgesics (with side-effect monitoring) using upper doses to get the pain under control.*

Alternating between acetaminophen and an NSAID is not recommended because of the increased risk of adverse effects and potential for errors. Monotherapy is preferred, however, if insufficient, switching is an alternative or combining acetaminophen + NSAID may be used short-term (noting the different dosing frequency is important). Post-operative pain should be dosed as scheduled ("around the clock") and pre-ambulation or pre-procedure (excluding vaccination) analgesics are usually dosed PRN[8]. Acetaminophen and NSAIDs may have a "ceiling effect" meaning that escalations above the recommended daily maximum dose are unlikely beneficial and may put the patient at a higher risk of adverse effects[8].

As a reminder, if adequate non-opioid measures are ineffective and an opioid is indicated based on clinical judgment, it is strongly recommended that for acute pain and as initial therapy for chronic pain, the opioid prescription duration should not exceed 3 days (with back-up analgesia for beyond 3 days and plans for follow-up, as necessary) at the lowest effective dose alongside appropriate patient/parent/caregiver counselling for use, risk, management of adverse effects (including overdose), storage and potential for misuse[2]. One study

showed that 14% of parents gave zero doses of prescription opioids to their children and 79% had leftovers after day 3 post-procedure; as such, discussion around proper disposal is also essential[6]. It is recommended that acetaminophen and opioids are prescribed individually (i.e. not combination products such as acetaminophen with codeine) so that acetaminophen can be administered regularly, and the opioid can be used for breakthrough pain[12].

Pediatric pain matters and needs to be treated safely and effectively. This correspondence is provided in hopes of assisting with the management of pediatric pain, incorporating some of the current evidence and resources on the topic.

Sincerely,

Prescription Review Program
College of Physicians and Surgeons of Saskatchewan
Phone: 306-244-7355
Fax: 306-244-0090

Excellent Resources:

- *Solutions for Kids in Pain (SKIP): https://www.kidsinpain.ca/*
- *Commitment to Comfort: https://www.commitmenttocomfort.com/*

References:

1. Government of Canada. Non-prescription pain relief products containing codeine are not recommended for use in people under 18 years of age. Recalls and safety alerts, 2020. Available from: https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2020/73635a-eng.php
2. Matthews DC, et al. Patterns of opioid prescribing by dentists in a pediatric population: a retrospective observational study. CMAJO, 2019;7(3): E497-E503.
3. Dean L. Codeine Therapy and CYP2D6 Genotype. 2012 Sep 20 [Updated 2017 Mar 16]. In: Pratt VM, McLeod HL, Rubinstein WS, et al., editors. Medical Genetics Summaries [Internet]. Bethesda (MD): National Center for Biotechnology Information (US); 2012-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK100662/
4. Regier L. Opioid Analgesics: Comparison Chart. RxFiles 12th ed. Saskatoon, SK: RxFiles; 2019.
5. Regier L, Jensen B, Kessler B. Pediatric Pain: Treatment Considerations, Q&As. RxFiles 12th ed. Saskatoon, SK: RxFiles; 2019.
6. Voepel-Lewis T, Wagner D, Tait AR. Leftover prescription opioids after minor procedures: an unwitting source for accidental overdose in children. JAMA Pediatr, 2015;169: 497-8.
7. Poonai N, et al. Oral administration of morphine versus ibuprofen to manage post fracture pain in children: a randomized trial. CMAJ, 2014;186(18): 1358-1363.
8. SHA Department of Pharmaceutical Services (RUH, SCH, SPH). Policies and Procedures: Pain Management – Pediatric Care. Available from: https://www.saskatoonhealthregion.ca/about/NursingManual/1045.pdf
9. Sick Kids. Use of Codeine in Children. Available from: http://www.sickkids.ca/PDFs/Pharmacy/28845-HSC%20codeine%20memo_external%20Apr%2023%202010.pdf
10. Government of Canada. Prescription cough and cold products containing opioids and the risk of opioid use disorder in children and adolescents (<18 years of age). Recalls and safety alerts, 2020. Available from: https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2020/73741a-eng.php.
11. Blott S, Regier L. Acute Pain Tx: Special Populations. RxFiles 12th ed. Saskatoon, SK: RxFiles; 2019.
12. O'Donnell FT Rosen KR. Pediatric Pain Management: A Review. Mo Med, 2014;111(3): 231-237.
13. Friedrichsdorf SJ, Goubert L. Pediatric pain treatment and prevention for hospitalized children. PAIN Rep, 2020;5(1): e804.
14. World Health Organization. WHO guidelines on the pharmacological treatment of persisting pain in children with medical illnesses. Geneva: WHO Press, 2012.
15. Alberta Pain Strategy 2019-2024. Available from: https://c36f002a-8c54-42d7-906f-b68d77154ebf.filesusr.com/ugd/21223c_e7d98c0da5fa44048f56a9b264fb681c.pdf

Appendix D: Talwin education letter

PRESCRIPTION REVIEW PROGRAM
education | collaboration

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******Informational: Response NOT Required******

DATE

Dr.

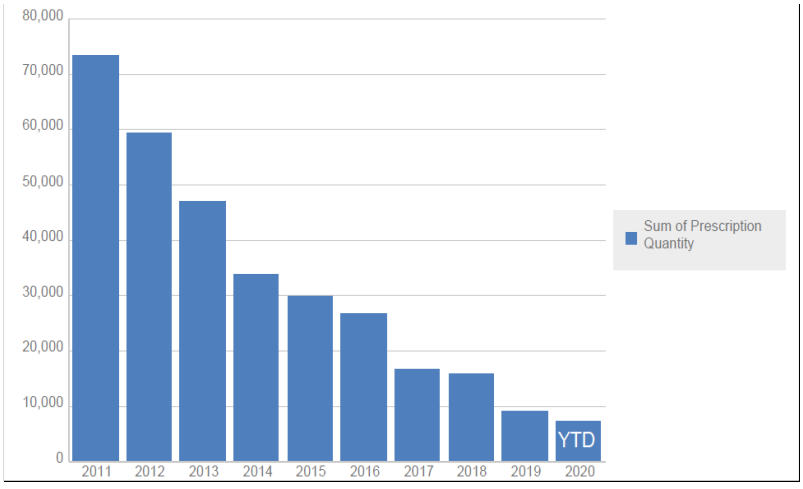
PERSONAL AND CONFIDENTIAL

Re:
HSN:
DOB:

Dear Dr.

The *Prescription Review Program* (PRP) is Saskatchewan's educationally focused prescription monitoring program administered by the **College of Physicians and Surgeons of Saskatchewan**. If you choose to share this letter with your patient, please advise the patient how the PRP works, including the College's role as the oversight body for the safe prescribing of PRP medications, and that it remains the physician's decision to either continue to prescribe or alter the prescribing for appropriate reasons.

In a recent national environmental scan, it was identified that numerous provinces monitor pentazocine (Talwin®) prescribing and dispensing. Similarly, we conducted an analysis to assess prescribing trends in Saskatchewan:



For initiating opioid therapy, pentazocine is not recommended as a trial due to evidence of inadequate effectiveness and high incidence of dysphoria[1]. In general, most current opioid initiations leading to chronic therapy in Saskatchewan do not involve pentazocine likely due, in part, to drug coverage challenges.

Mechanistically, pentazocine is an agonist of kappa opiate receptors and a partial agonist of mu opiate receptors in the CNS. Thus, it causes inhibition of ascending pain pathways and alters the perception of and response to pain[2]. The current literature reports that pentazocine is less effective than nonsteroidal anti-inflammatory drugs and other opioids[3].

Chronic use of pentazocine, like any opioid, should not be discontinued abruptly. For patients who are candidates for deprescribing, a recommended approach involves gradually reducing the dose. Reductions may have to be slowed further during the final stages of the taper[2]. If withdrawal symptoms become problematic at any time, tapers should be paused and restarted when the patient is ready. Additionally, non-opioid adjunctive treatments may be beneficial for symptomatic management. Combinations of mixed agonist/antagonist opioids (e.g. pentazocine) with opioid agonists (e.g. codeine, fentanyl, hydromorphone, oxycodone, meperidine, morphine, etc.) should be avoided due to enhanced withdrawal from the antagonistic properties[2,3,4]. Discontinuance, approached individually with ongoing monitoring, can be accomplished with minimal difficulty[4].

This information is intended to further strengthen pain management while reducing unintended medication-related effects in our province.

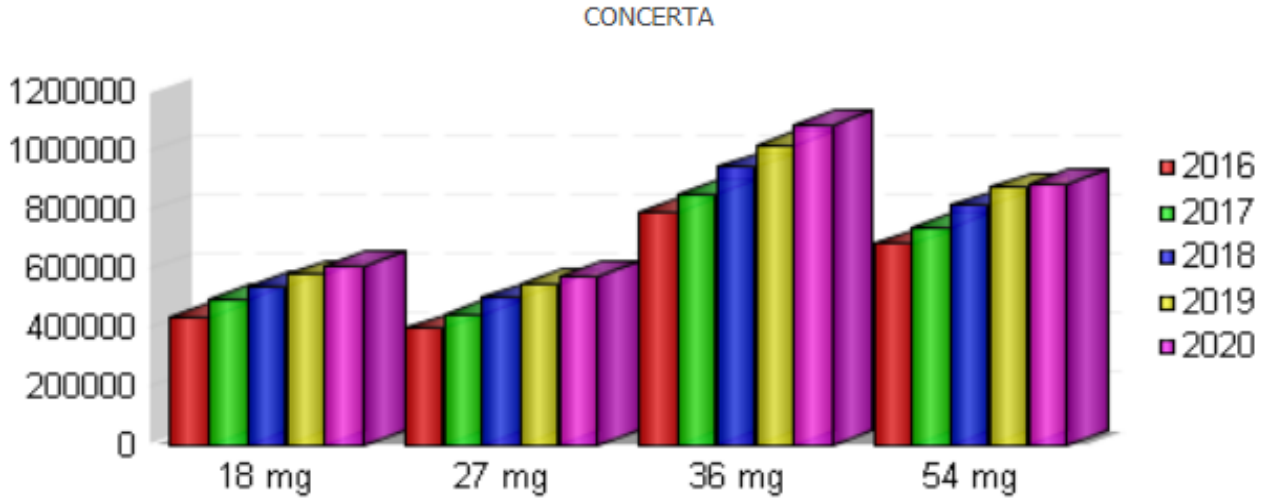
Sincerely,

Prescription Review Program
College of Physicians and Surgeons of Saskatchewan
Phone: 306-244-7355
Fax: 306-244-0090

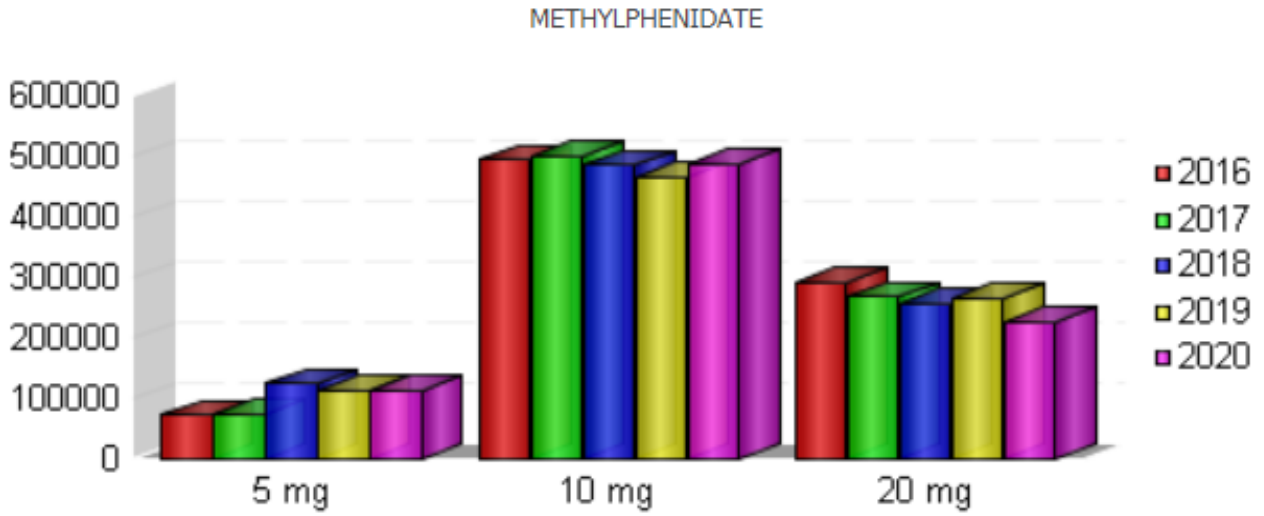
References:

1. Busse J, et al. The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain. Hamilton (ON): McMaster University, 2017: 28.
2. Wolters Kluwer Clinical Drug Information, Inc. Lexicomp 5.7.1: pentazocine, 2020.
3. Regier L. Opioid Analgesics: Comparison Chart. RxFiles 12th ed. Saskatoon, Sask: RxFiles, 2019:127.
4. Sanofi-aventis Canada Inc. Talwin®: Prescribing Information. Laval, Que, 2018. Available from: http://products.sanofi.ca/en/talwin.pdf

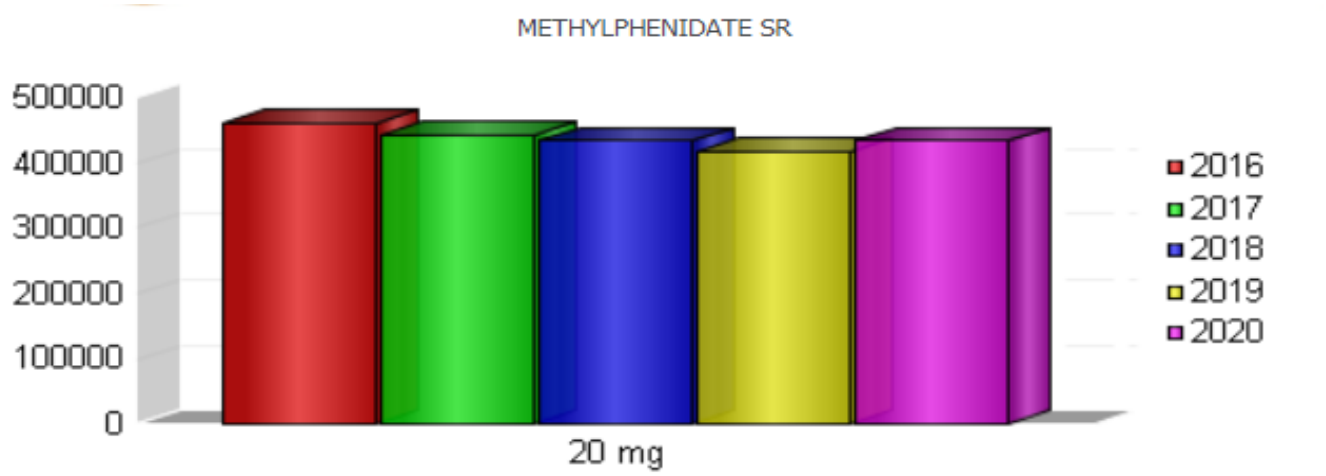
Appendix E: Stimulants



	18 mg	27 mg	36 mg	54 mg
2016	439,109	398,191	794,116	683,384
2017	497,578	447,769	855,272	739,515
2018	538,966	502,568	947,347	816,655
2019	578,853	548,141	1,022,104	874,968
2020	608,923	574,868	1,091,603	890,280

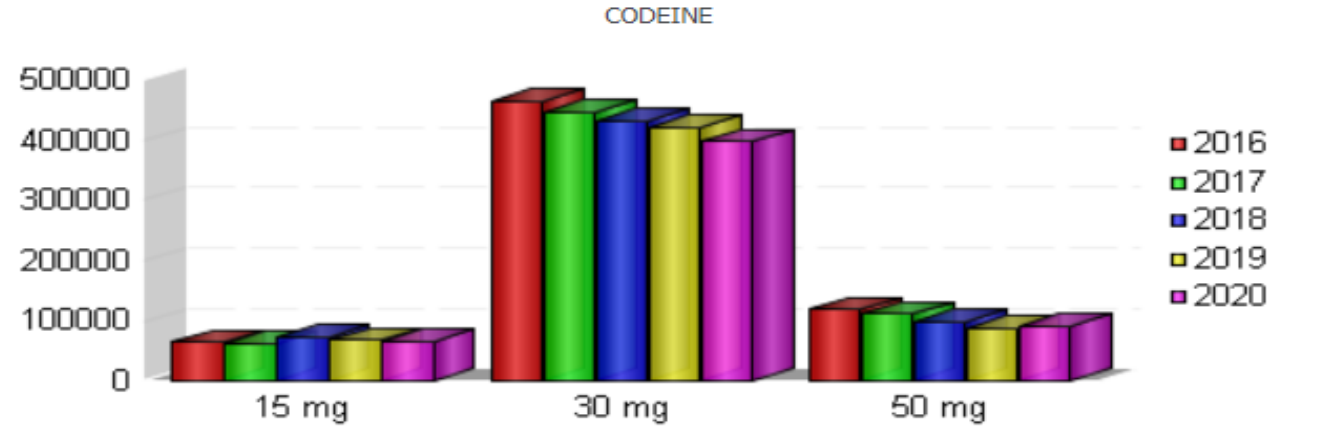


	5 mg	10 mg	20 mg
2016	73,315	494,074	292,125
2017	74,526	500,044	267,844
2018	124,843	485,504	258,317
2019	114,003	467,130	266,935
2020	113,761	489,069	226,438



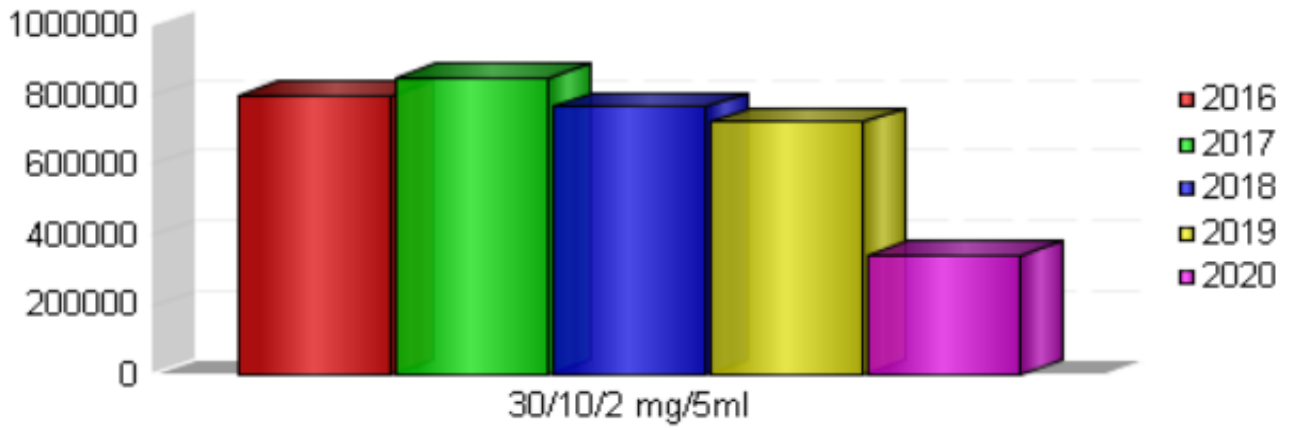
	20 mg
2016	461,459
2017	443,295
2018	433,615
2019	418,169
2020	433,391

Appendix F: Opiate Agonists



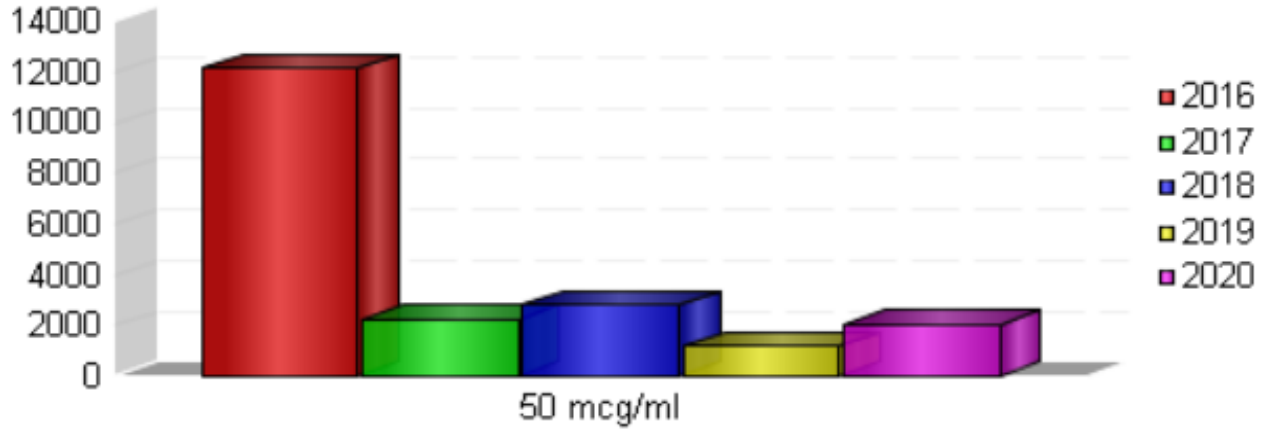
	15 mg	30 mg	50 mg
2016	64,726	464,351	119,137
2017	62,545	447,421	110,737
2018	74,254	431,865	97,848
2019	67,940	422,219	87,601
2020	65,212	398,199	91,698

CODEINE SYRUP



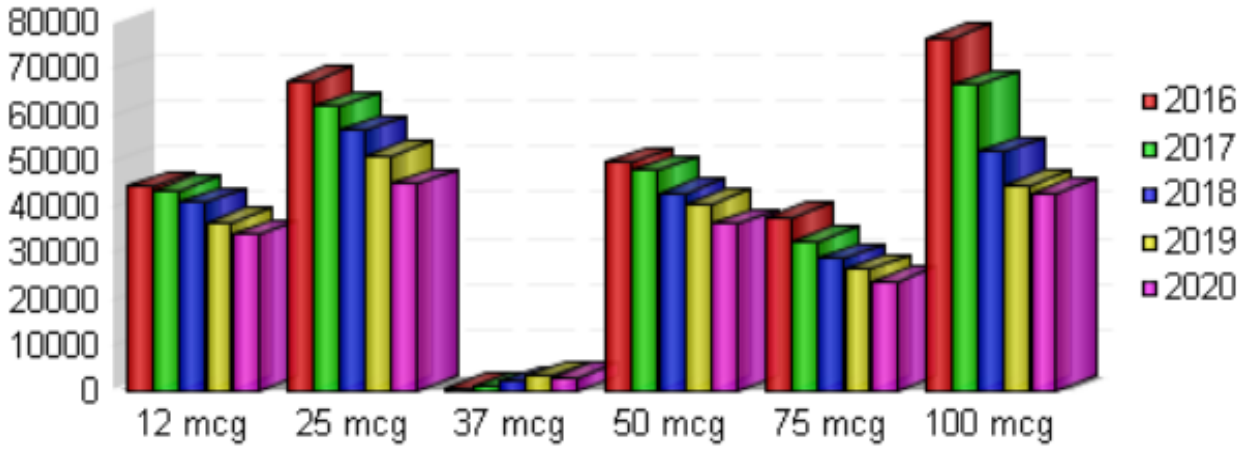
	30/10/2 mg/5ml
2016	800,774
2017	848,091
2018	765,185
2019	724,310
2020	343,778

FENTANYL INJECTION



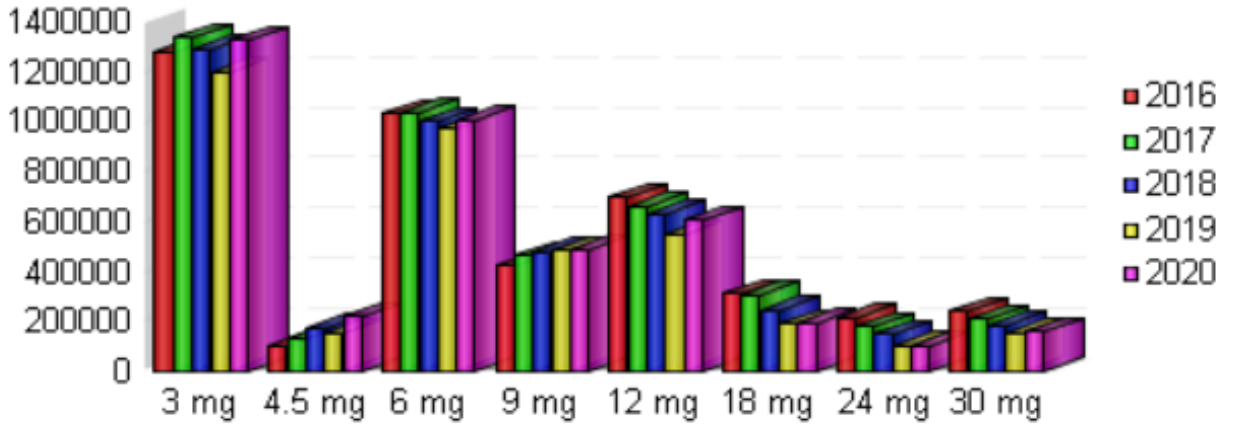
	50 mcg/ml
2016	12,166
2017	2,256
2018	2,800
2019	1,184
2020	2,071

FENTANYL PATCH



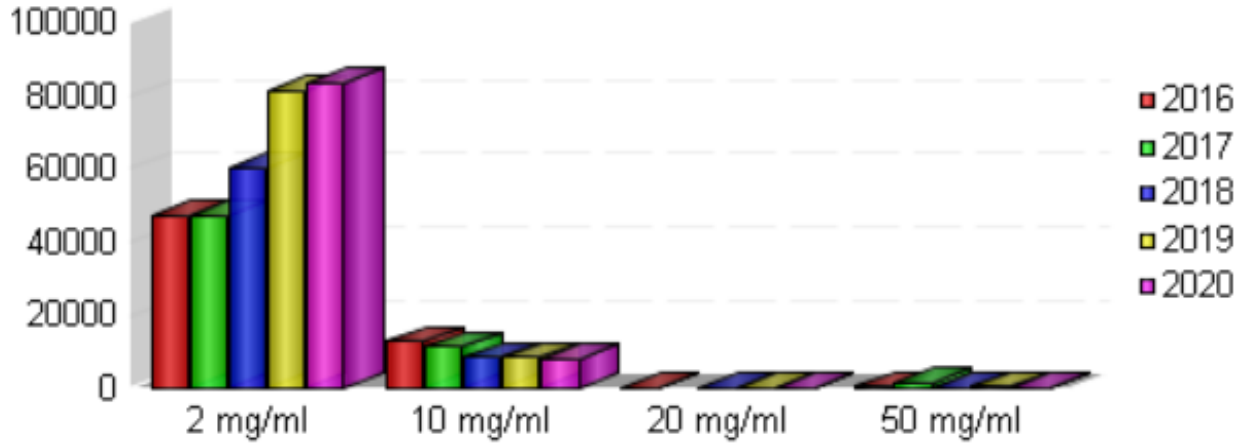
	12 mcg	25 mcg	37 mcg	50 mcg	75 mcg	100 mcg
2016	44,445	67,567	870	49,644	37,887	76,775
2017	43,600	61,952	926	47,967	32,486	66,457
2018	41,079	56,692	2,110	43,062	28,934	52,136
2019	36,770	51,296	3,367	40,867	26,592	44,636
2020	34,034	45,132	3,018	36,368	24,003	43,006

HYDROMORPH CONTIN



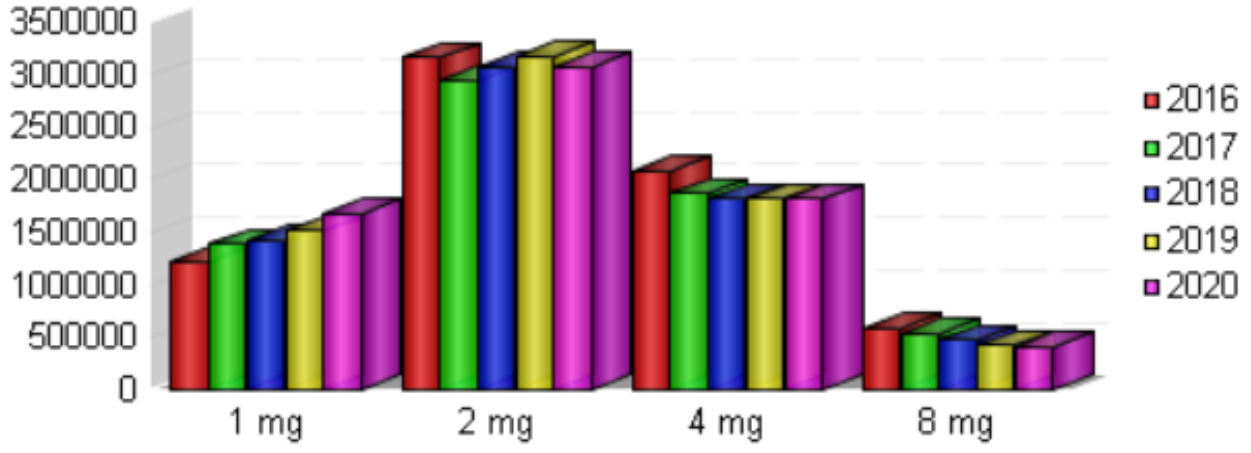
	3 mg	4.5 mg	6 mg	9 mg	12 mg	18 mg	24 mg	30 mg
2016	1,282,031	103,773	1,033,136	424,814	696,110	313,560	214,552	239,531
2017	1,338,439	131,774	1,038,510	462,857	664,665	304,078	180,446	208,496
2018	1,293,010	176,253	1,001,901	479,110	631,510	247,569	149,971	183,328
2019	1,199,533	151,982	979,617	482,908	548,112	191,100	105,099	153,016
2020	1,327,492	220,717	1,007,976	491,991	604,162	196,125	105,842	159,188

HYDROMORPHONE INJECTION



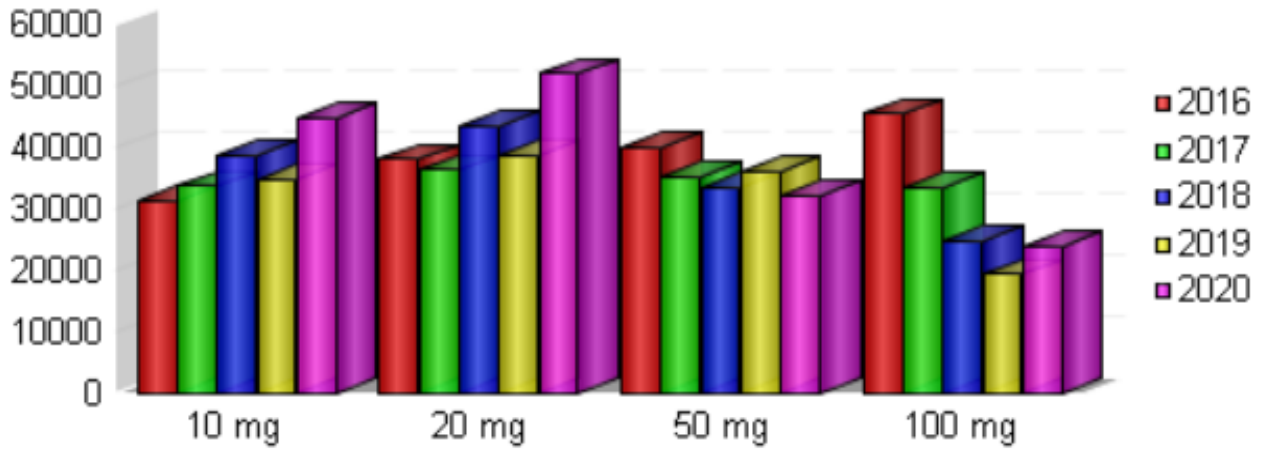
	2 mg/ml	10 mg/ml	20 mg/ml	50 mg/ml
2016	47,472	12,865	50	403
2017	47,492	11,254		1,530
2018	60,415	8,504	250	30
2019	81,275	8,522	250	505
2020	83,730	8,340	200	50

HYDROMORPHONE IR



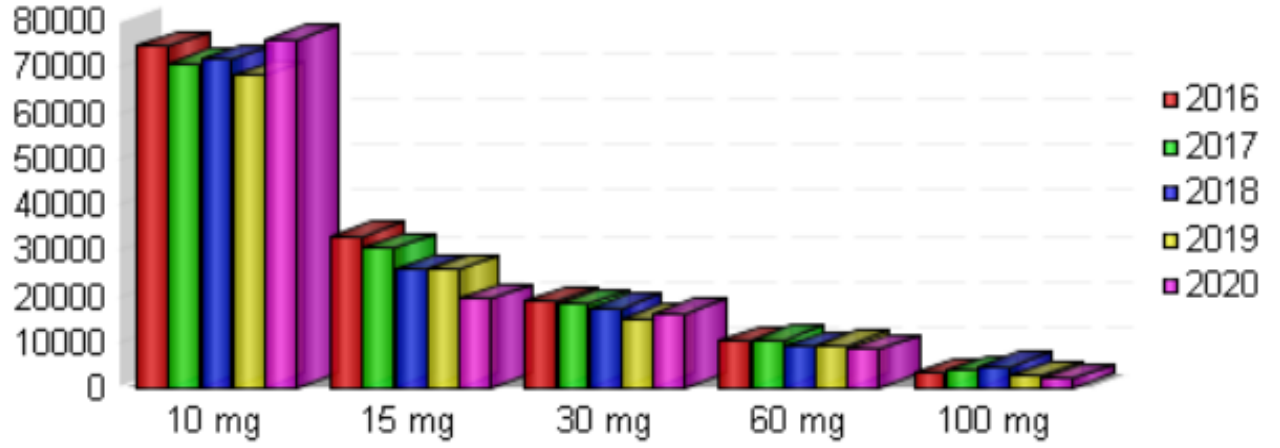
	1 mg	2 mg	4 mg	8 mg
2016	1,223,625	3,161,275	2,086,915	581,526
2017	1,389,449	2,948,742	1,872,870	530,423
2018	1,427,866	3,079,197	1,815,222	471,953
2019	1,513,694	3,177,346	1,819,428	423,157
2020	1,681,644	3,069,051	1,822,514	412,388

KADIAN



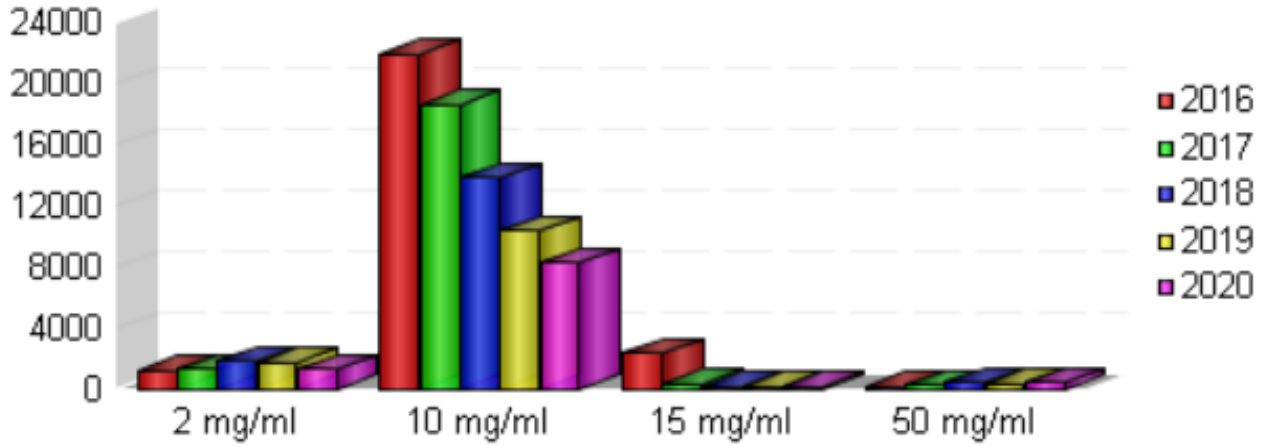
	10 mg	20 mg	50 mg	100 mg
2016	31,283	38,090	40,163	45,541
2017	33,795	36,354	35,267	33,573
2018	38,794	43,542	33,561	24,974
2019	34,801	38,890	36,289	19,437
2020	44,943	52,054	32,245	24,097

M-ESLON



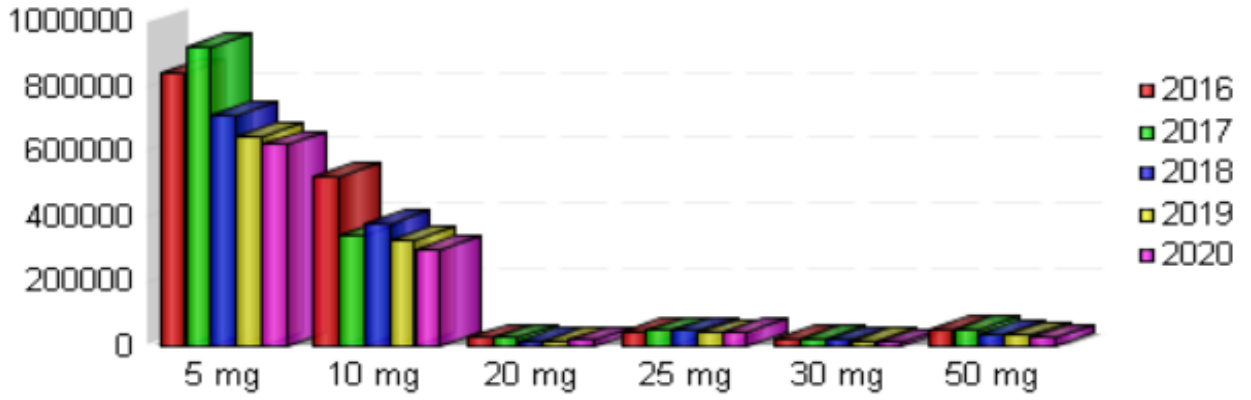
	10 mg	15 mg	30 mg	60 mg	100 mg
2016	74,600	33,325	18,871	10,329	3,235
2017	70,749	30,570	18,468	10,440	3,938
2018	71,666	25,976	17,432	9,190	4,626
2019	68,287	25,946	15,225	9,280	2,822
2020	76,254	19,509	16,305	8,522	2,040

MORPHINE INJECTION



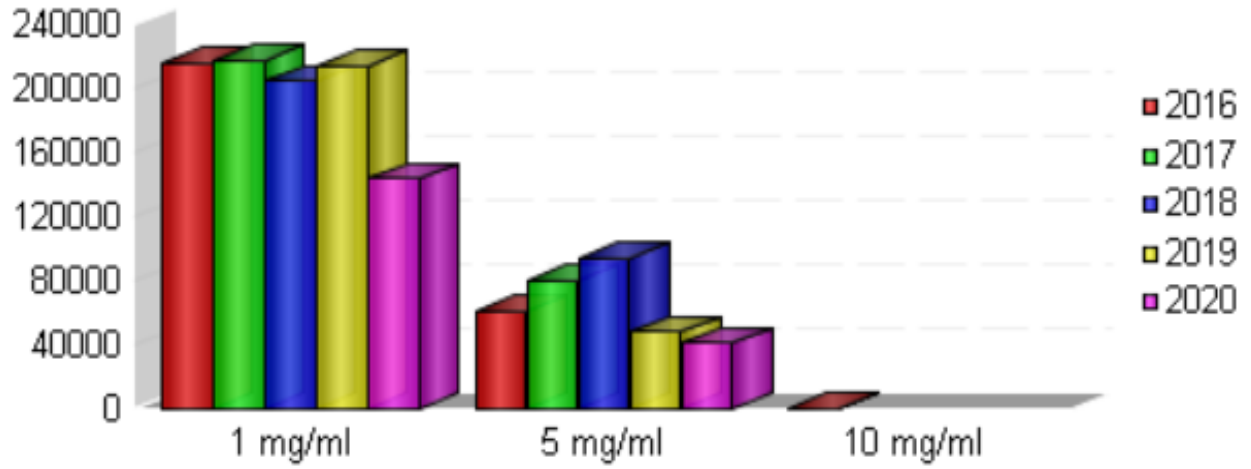
	2 mg/ml	10 mg/ml	15 mg/ml	50 mg/ml
2016	1,286	22,012	2,359	200
2017	1,337	18,677	372	280
2018	1,890	13,892	177	454
2019	1,731	10,385	174	416
2020	1,307	8,308	260	450

MORPHINE IR



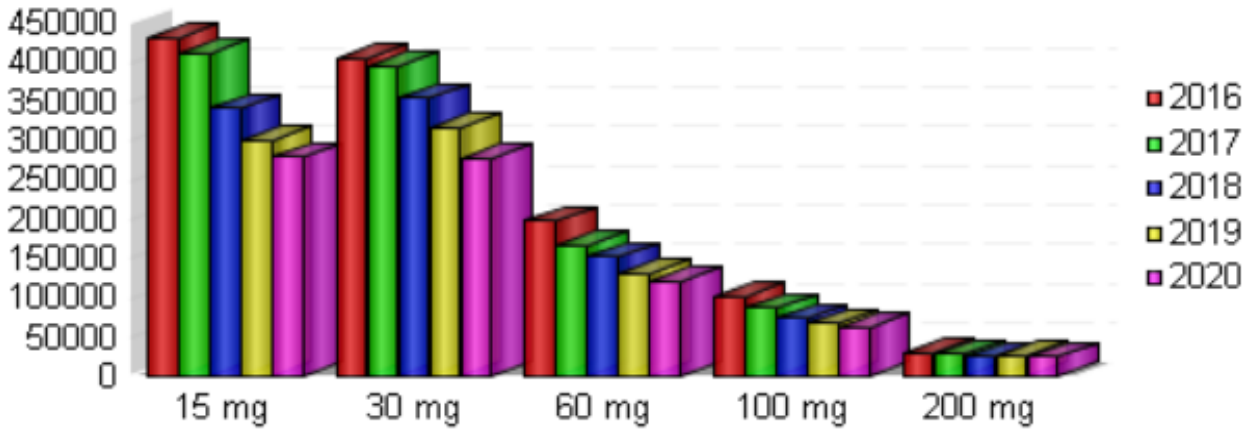
	5 mg	10 mg	20 mg	25 mg	30 mg	50 mg
2016	844,000	522,623	27,933	46,834	23,878	54,068
2017	920,652	342,214	26,409	49,702	21,185	51,860
2018	710,301	378,617	16,384	47,854	19,471	37,368
2019	648,665	326,321	16,314	41,806	14,885	33,671
2020	621,193	297,888	18,759	46,909	12,249	26,786

MORPHINE SYRUP



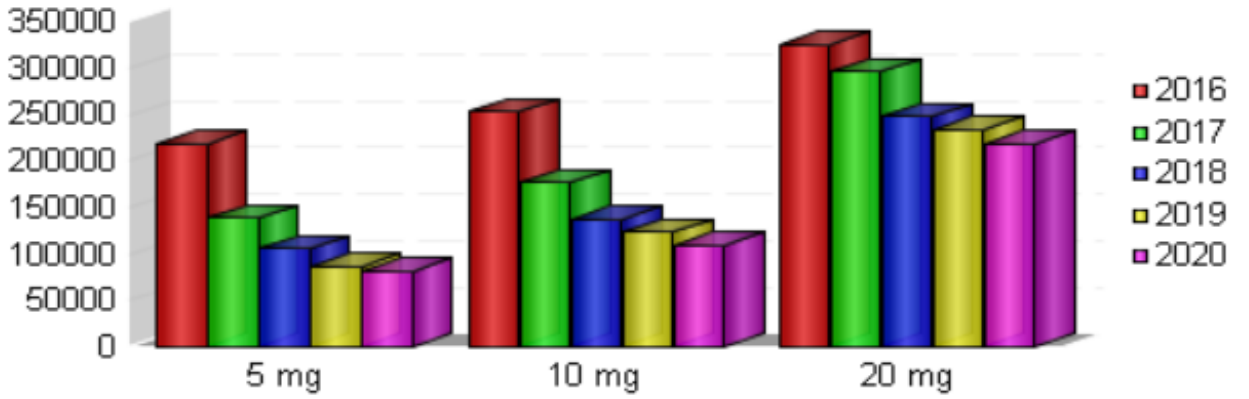
	1 mg/ml	5 mg/ml	10 mg/ml
2016	215,959	61,422	294
2017	218,362	80,705	
2018	205,069	94,442	
2019	214,365	48,329	
2020	143,757	41,196	

MORPHINE SR



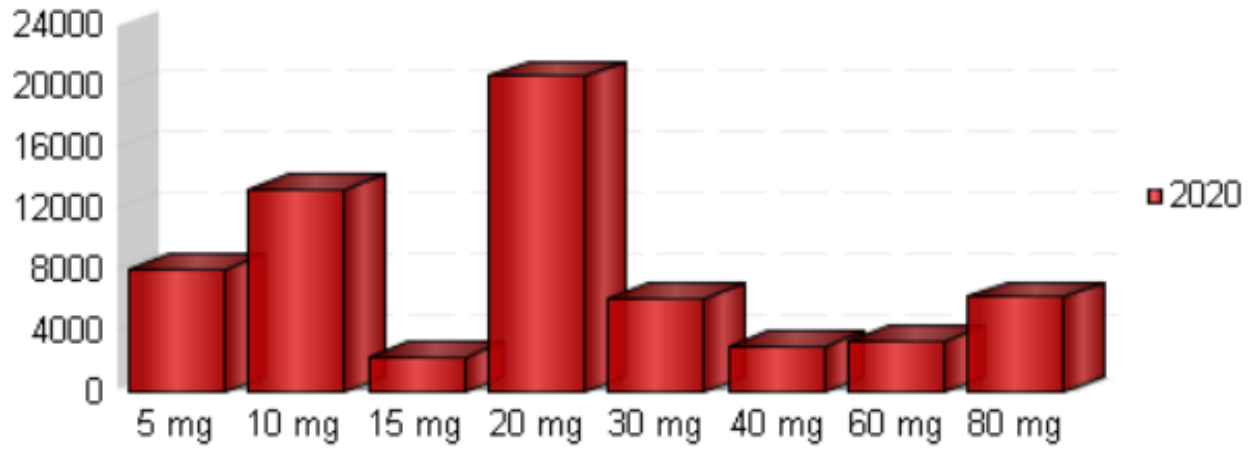
	15 mg	30 mg	60 mg	100 mg	200 mg
2016	430,575	405,955	197,950	102,609	30,410
2017	412,282	395,018	166,814	87,133	28,814
2018	341,699	355,136	152,729	74,371	25,310
2019	301,654	316,461	131,780	68,049	26,348
2020	279,500	277,415	122,154	62,838	24,518

OXYCODONE IR



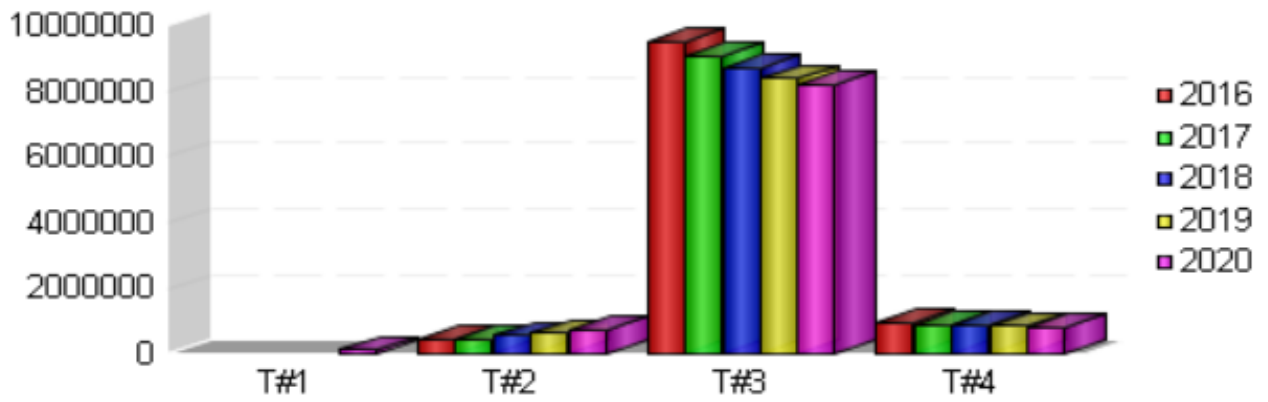
	5 mg	10 mg	20 mg
2016	218,099	252,881	325,262
2017	138,613	176,546	296,664
2018	105,672	137,697	248,334
2019	86,658	123,559	233,516
2020	82,259	109,004	219,250

OXYCODONE CR



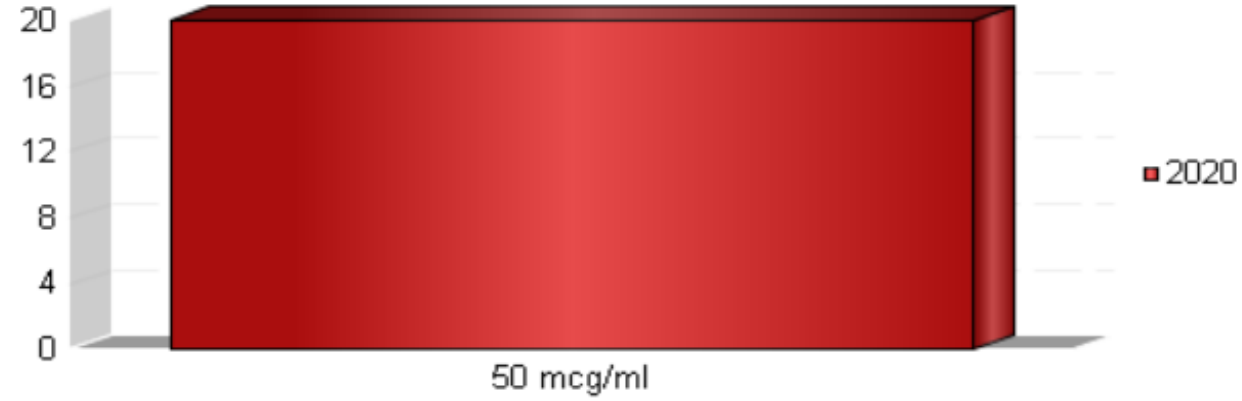
	5 mg	10 mg	15 mg	20 mg	30 mg	40 mg	60 mg	80 mg
2020	8,046	13,210	2,257	20,689	6,176	2,988	3,370	6,220

TYLENOL WITH CODEINE



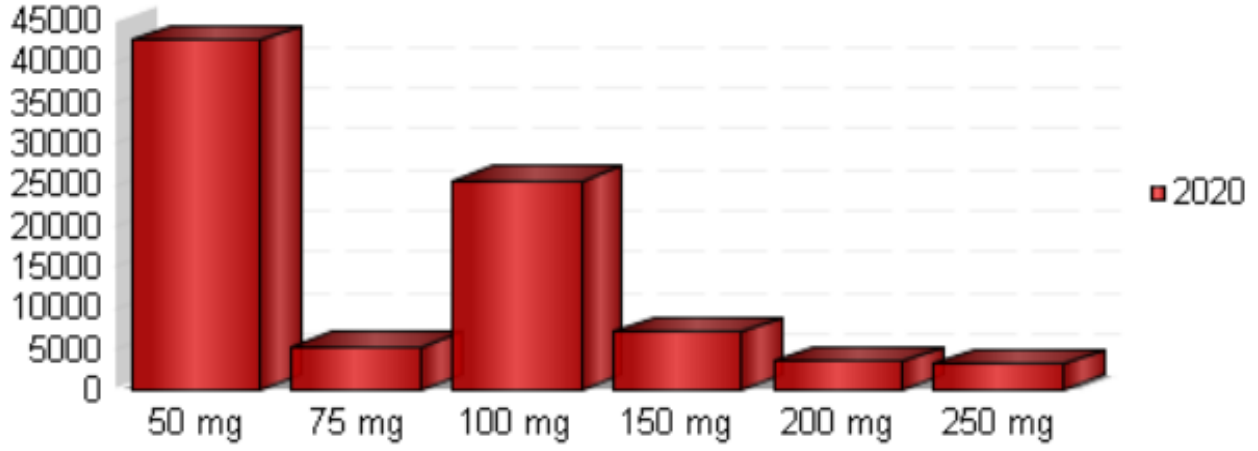
	T#1	T#2	T#3	T#4
2016		447,777	9,511,357	942,535
2017		468,081	9,092,773	904,470
2018		570,495	8,721,936	870,008
2019		622,502	8,389,824	838,582
2020	120,288	724,896	8,225,893	804,361

SUFENTANIL INJECTION



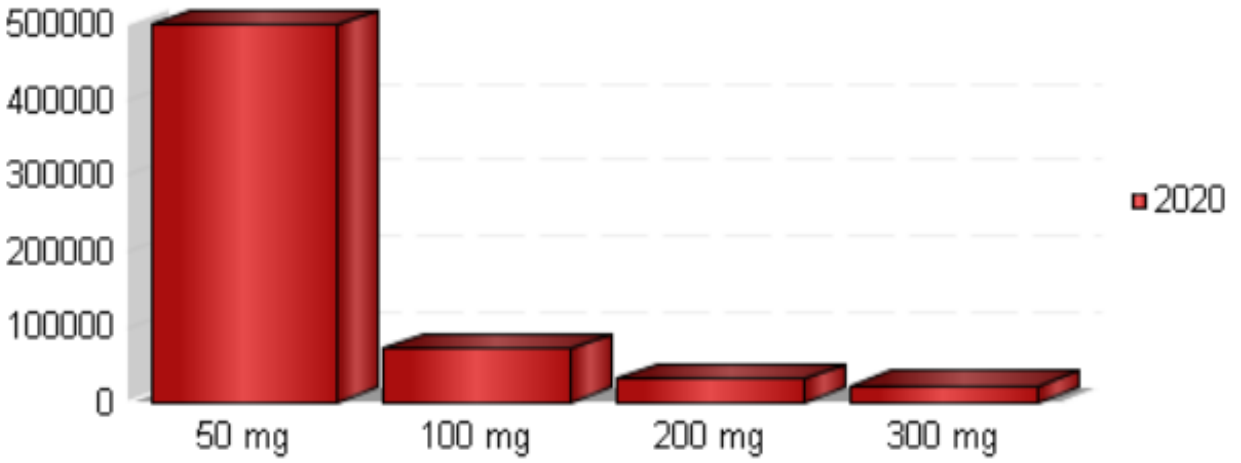
	50 mcg/ml
2020	20

TAPENTADOL



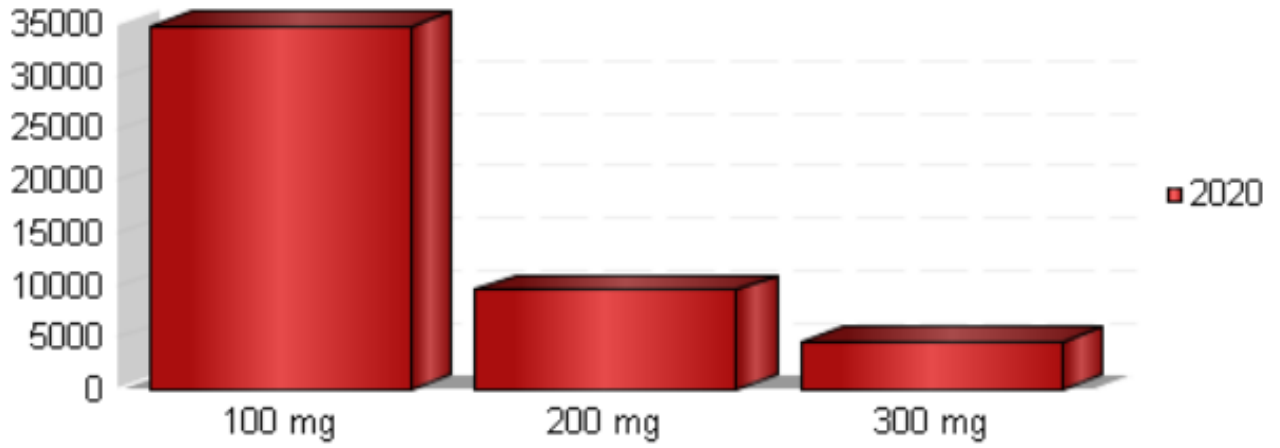
	50 mg	75 mg	100 mg	150 mg	200 mg	250 mg
2020	42,642	5,374	25,508	7,136	3,532	3,217

TRAMADOL



	50 mg	100 mg	200 mg	300 mg
2020	499,173	71,681	32,034	21,686

TRAMADOL ER



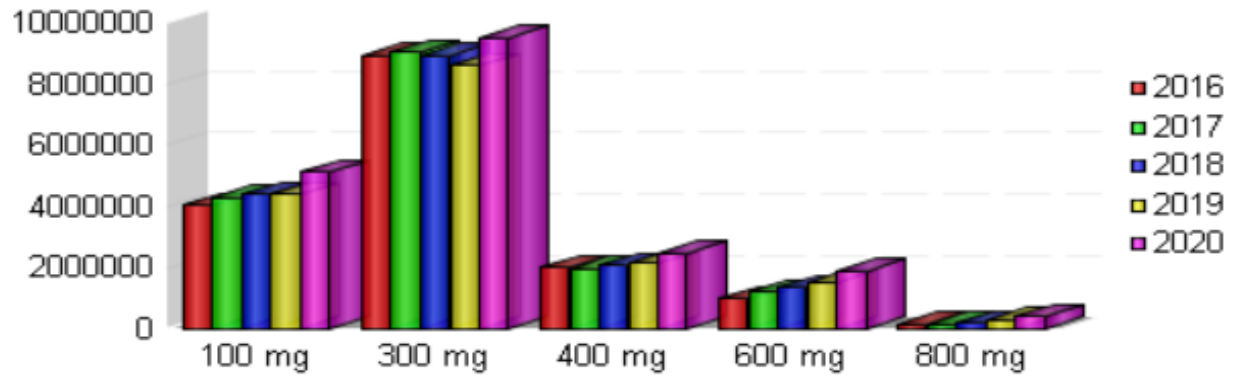
	100 mg	200 mg	300 mg
2020	34,863	9,551	4,603

TRAMADOL / ACET

	37.5/325 mg
2020	1,371,071

Appendix G: Anticonvulsants

GABAPENTIN



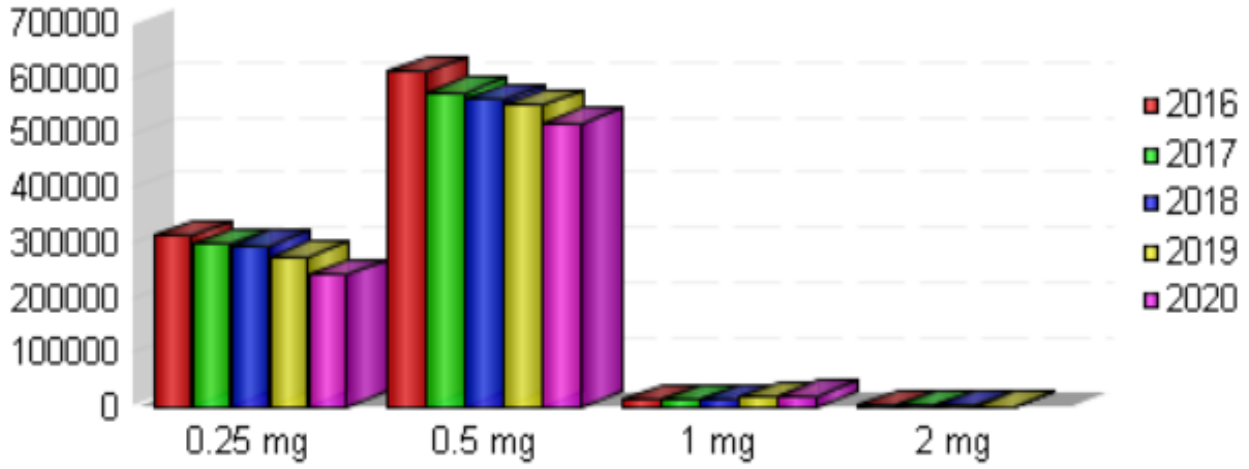
	100 mg	300 mg	400 mg	600 mg	800 mg
2016	4,032,202	8,914,318	2,004,820	1,004,913	151,045
2017	4,276,593	9,049,652	1,962,595	1,197,147	165,204
2018	4,409,041	8,921,411	2,071,265	1,350,422	209,219
2019	4,410,776	8,614,563	2,141,561	1,524,389	295,015
2020	5,122,298	9,508,780	2,476,047	1,912,563	413,354

PREGABALIN

	25 mg	50 mg	75 mg	150 mg	225 mg	300 mg
2020	971,460	1,757,414	2,482,931	1,604,385	5,724	159,578

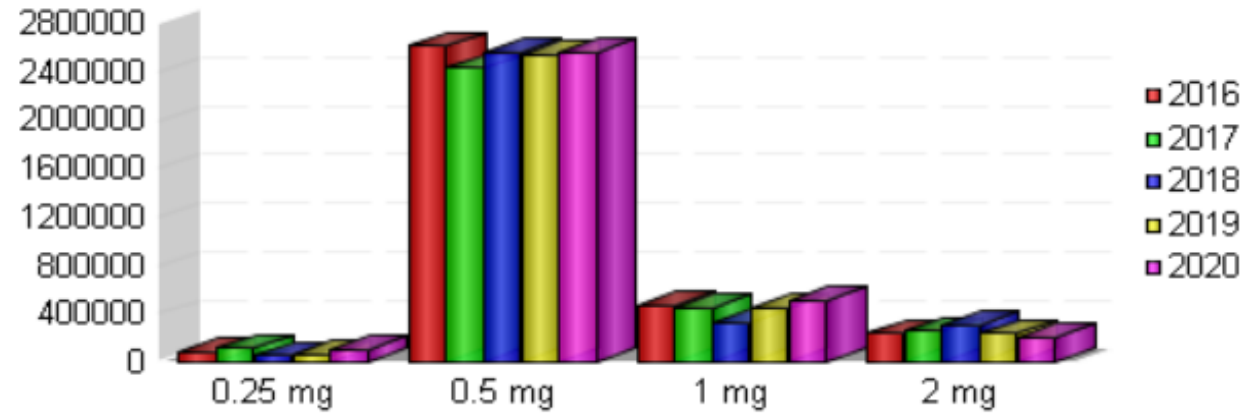
Appendix H: Benzodiazepines

ALPRAZOLAM



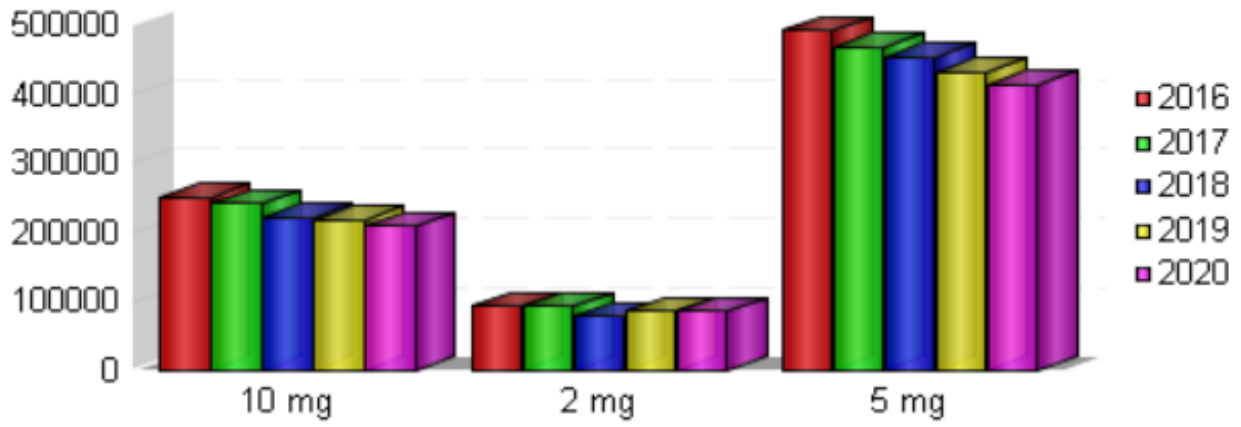
	0.25 mg	0.5 mg	1 mg	2 mg
2016	312,754	613,150	14,046	2,760
2017	298,706	574,571	13,005	3,329
2018	294,428	562,607	12,915	2,841
2019	275,670	552,188	18,390	243
2020	242,208	518,629	22,337	

CLONAZEPAM



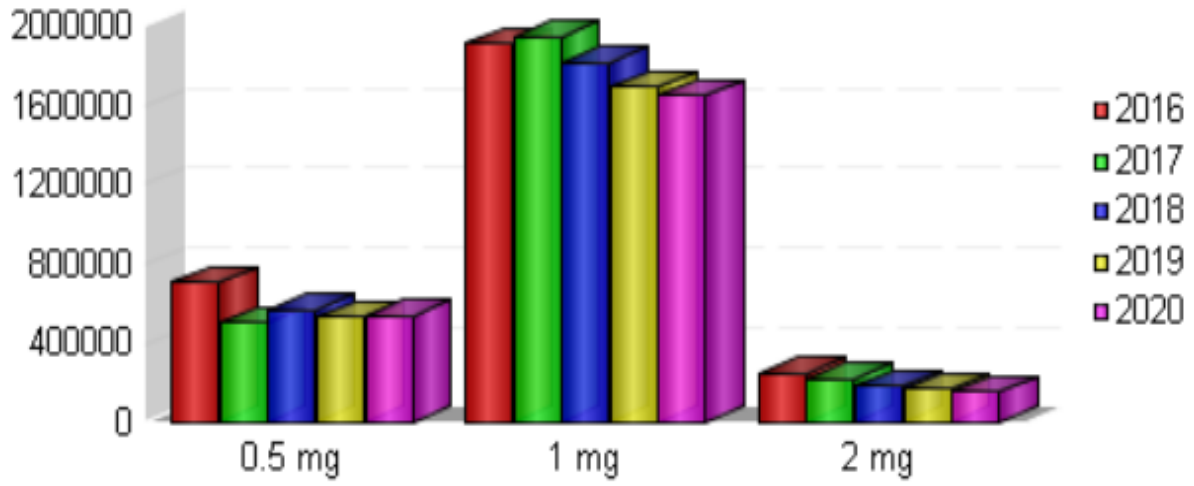
	0.25 mg	0.5 mg	1 mg	2 mg
2016	89,888	2,616,597	473,670	234,213
2017	113,732	2,433,103	446,314	261,569
2018	57,764	2,567,749	322,862	303,513
2019	71,111	2,543,695	448,450	237,963
2020	102,474	2,560,771	510,151	208,350

DIAZEPAM



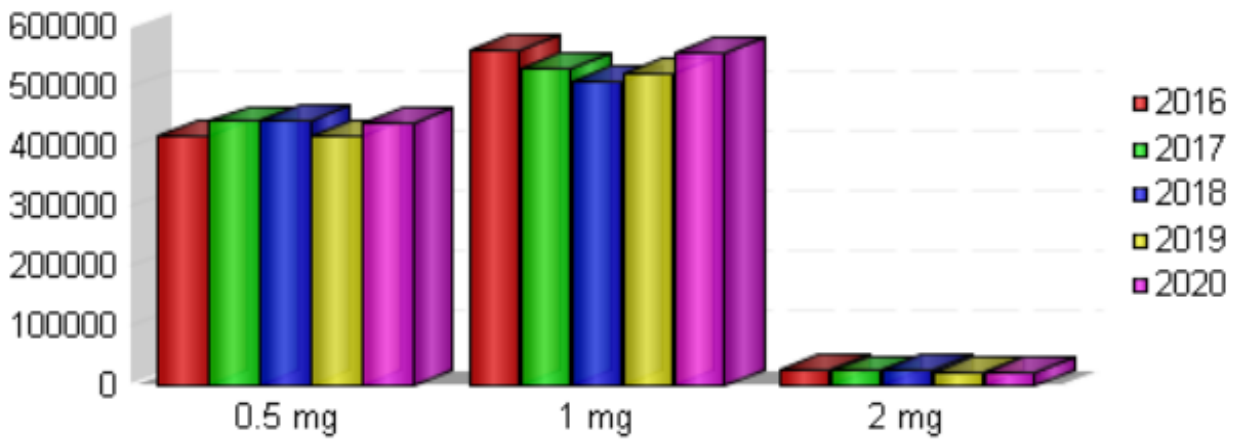
	10 mg	2 mg	5 mg
2016	251,520	93,258	492,198
2017	241,151	93,652	467,343
2018	221,328	78,950	452,901
2019	218,221	85,345	432,604
2020	209,678	85,959	414,933

LORAZEPAM



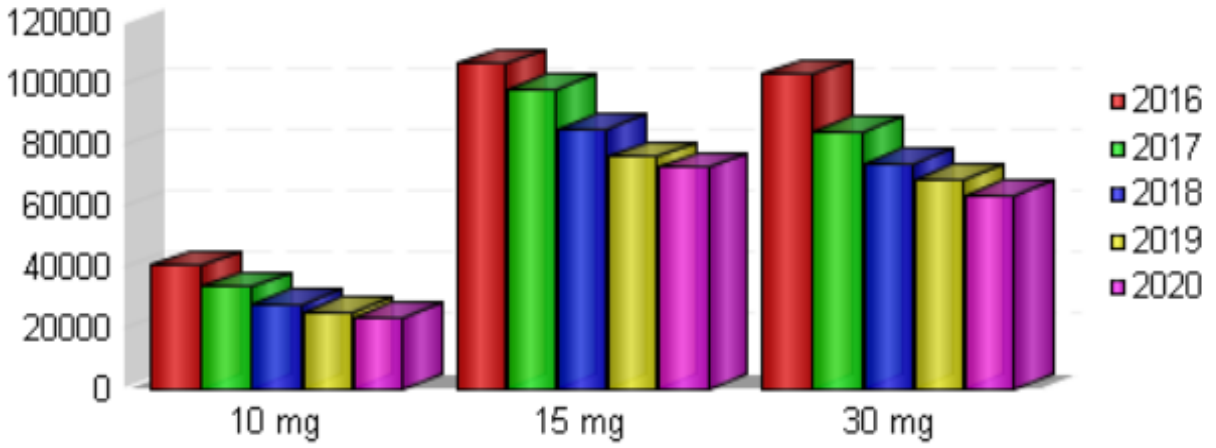
	0.5 mg	1 mg	2 mg
2016	706,648	1,912,257	247,349
2017	505,710	1,947,151	219,532
2018	571,829	1,818,750	182,788
2019	531,472	1,693,274	171,172
2020	542,068	1,648,518	155,934

LORAZEPAM SL

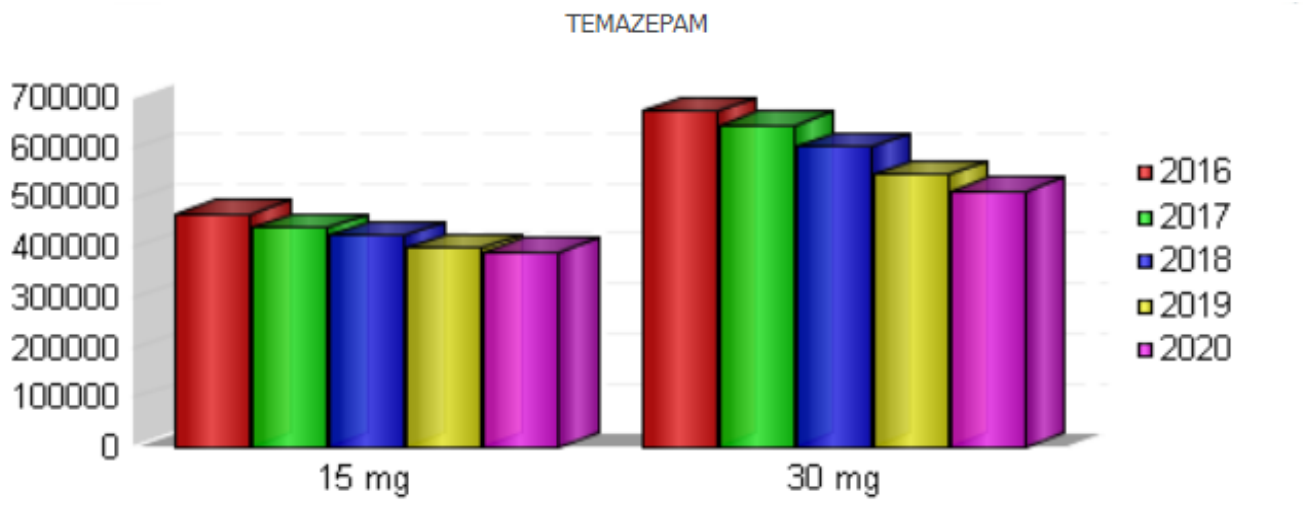


	0.5 mg	1 mg	2 mg
2016	417,556	561,465	25,859
2017	442,596	531,597	25,255
2018	443,363	511,206	26,458
2019	419,370	522,796	22,194
2020	439,427	557,305	23,288

OXAZEPAM

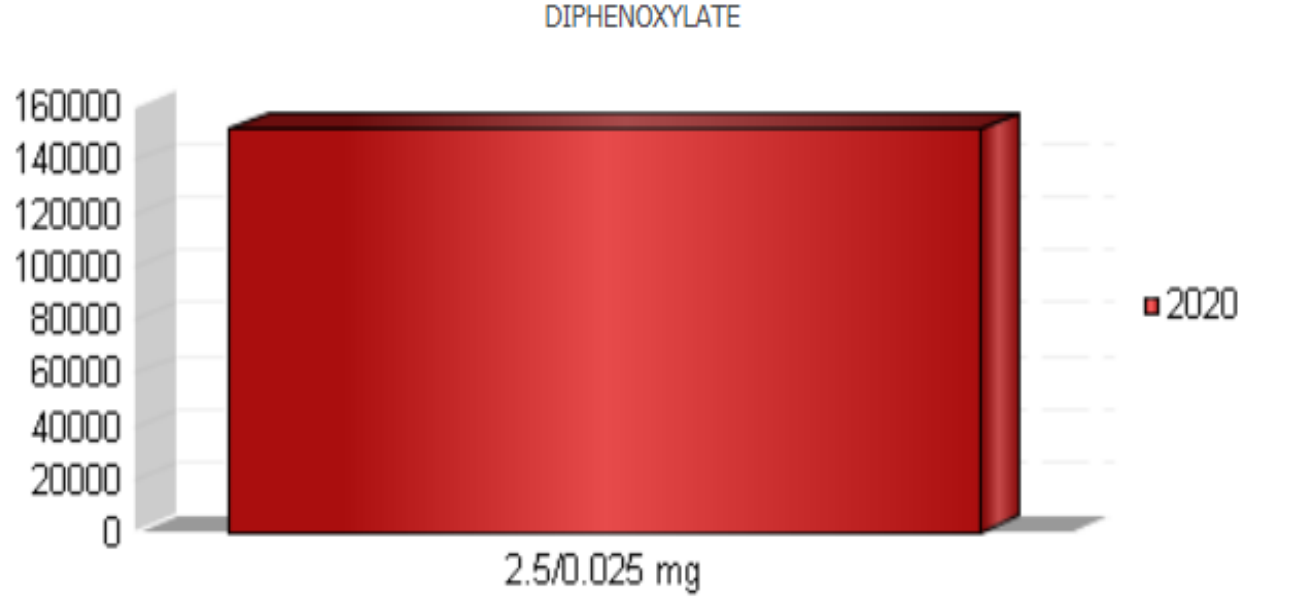


	10 mg	15 mg	30 mg
2016	40,757	106,769	103,315
2017	33,642	98,473	84,514
2018	27,893	85,648	73,921
2019	25,517	76,410	68,946
2020	23,658	72,773	63,787



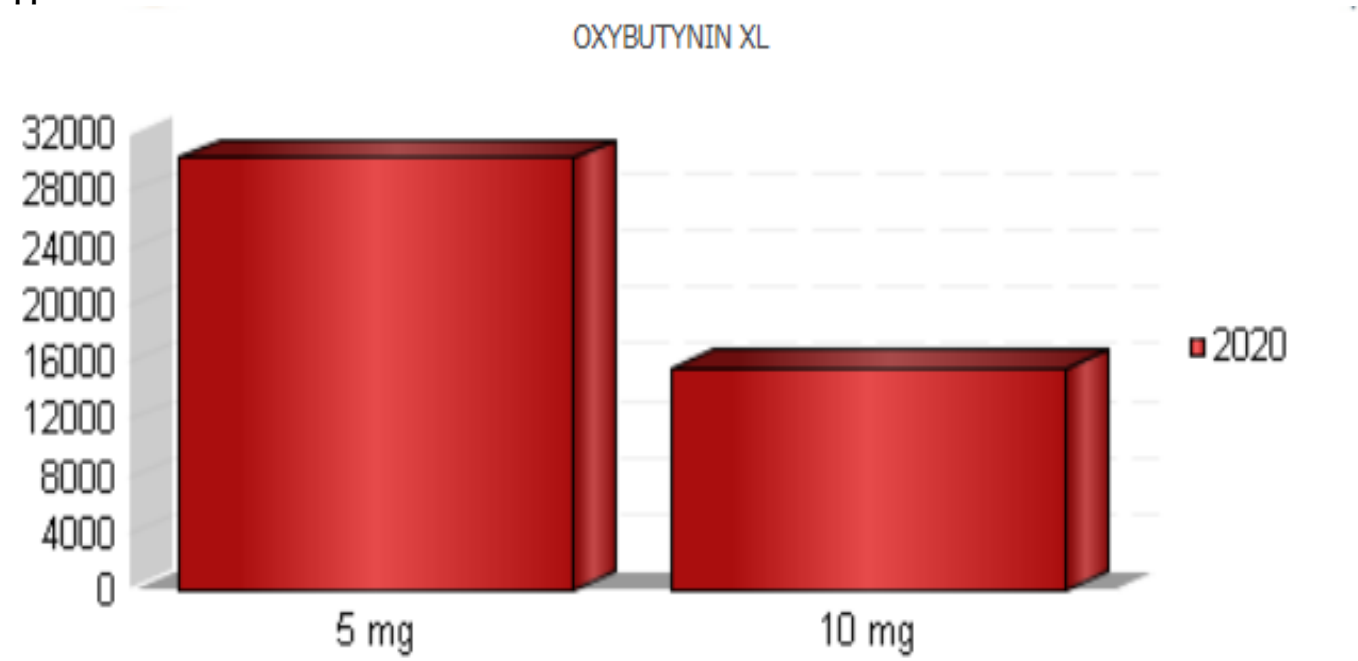
	15 mg	30 mg
2016	466,500	674,190
2017	439,158	646,301
2018	425,192	601,947
2019	398,759	546,755
2020	391,011	515,049

Appendix I: Antidiarrhea Agents

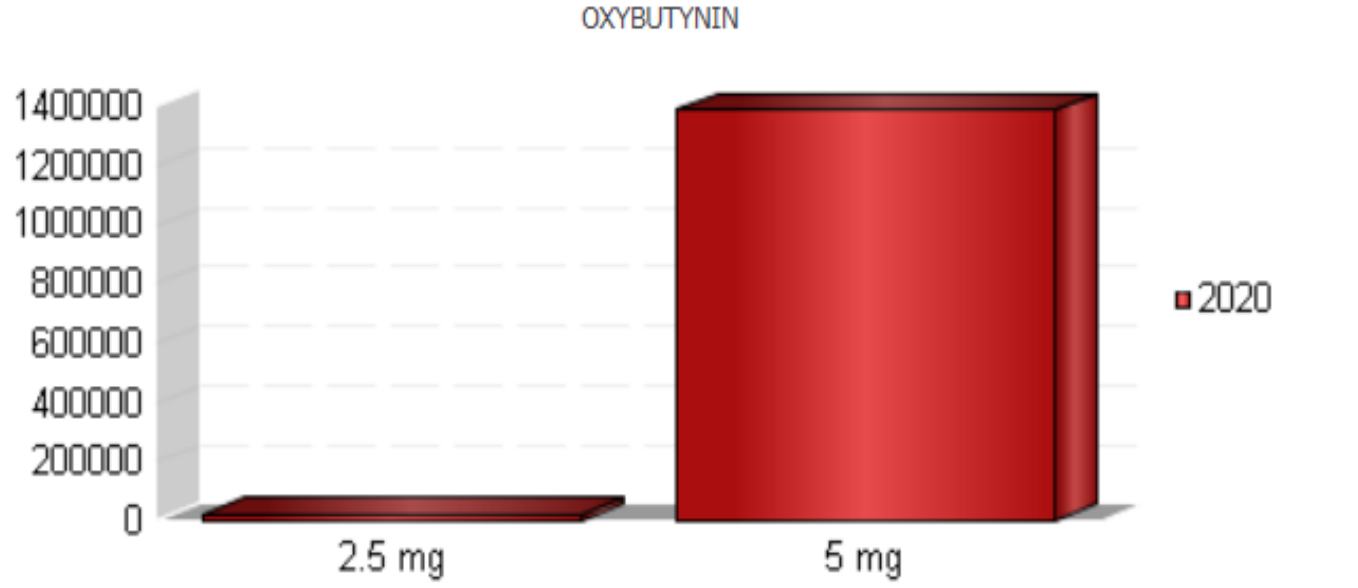


	2.5/0.025 mg
2020	151,491

Appendix J: Antimuscarinics

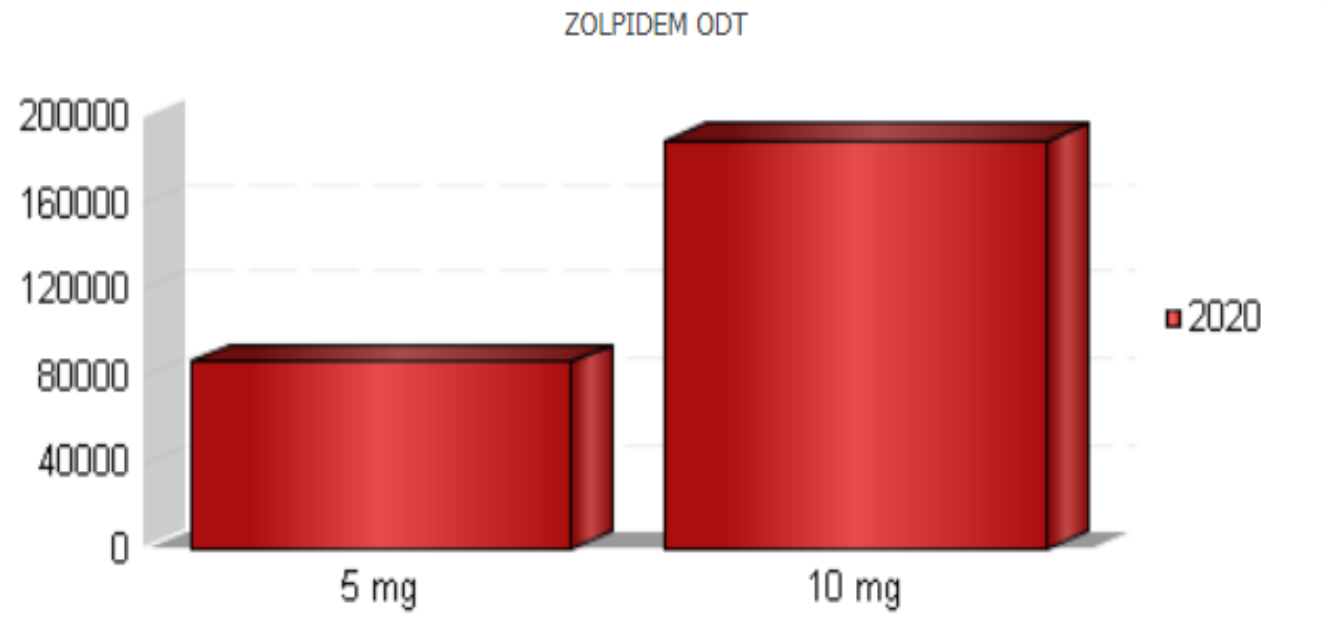


	5 mg	10 mg
2020	30,325	15,607

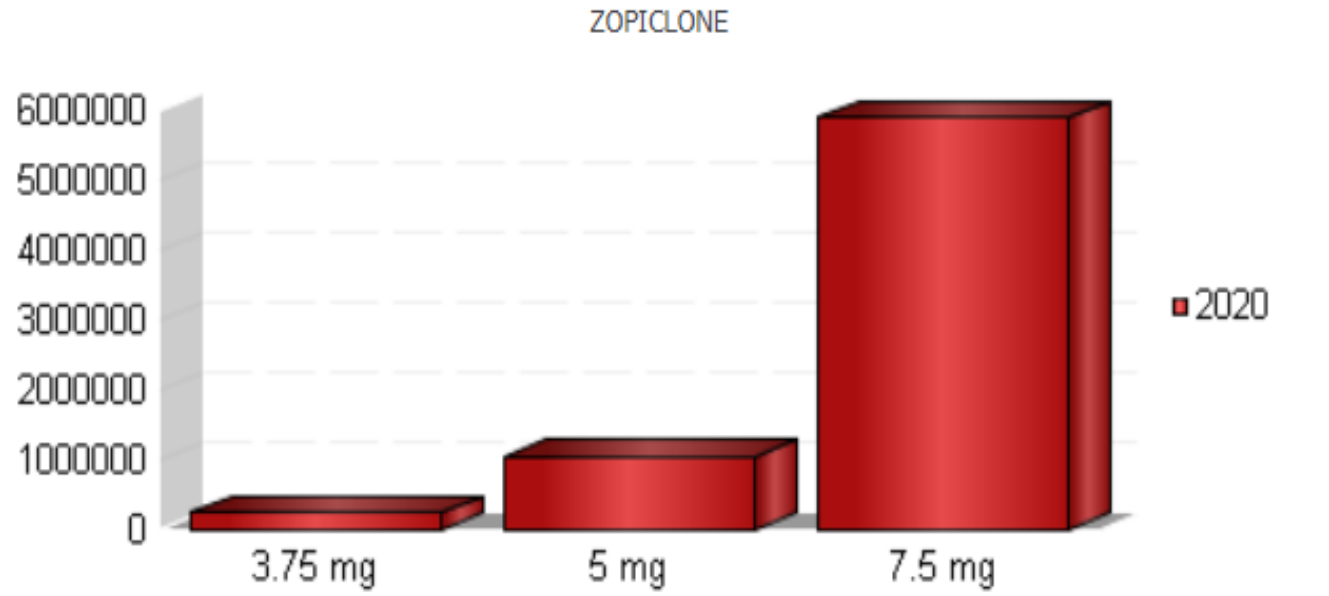


	2.5 mg	5 mg
2020	19,875	1,386,709

Appendix K: Anxiolytics Sedatives and Hypnotics

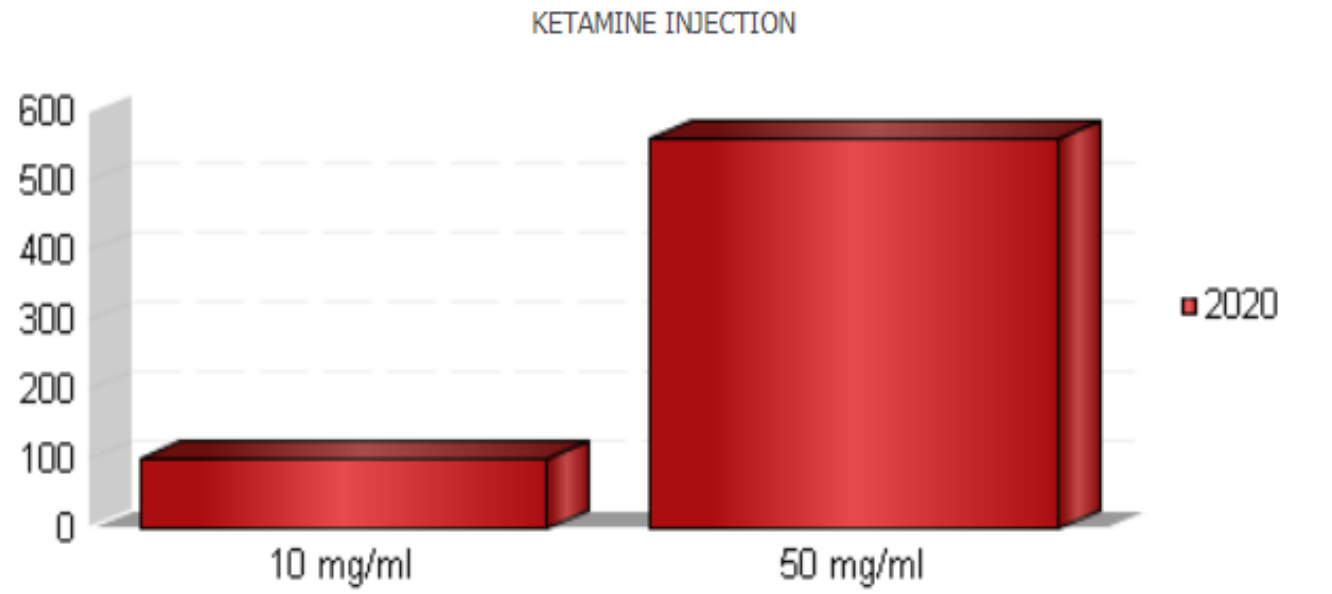


	5 mg	10 mg
2020	86,727	188,418



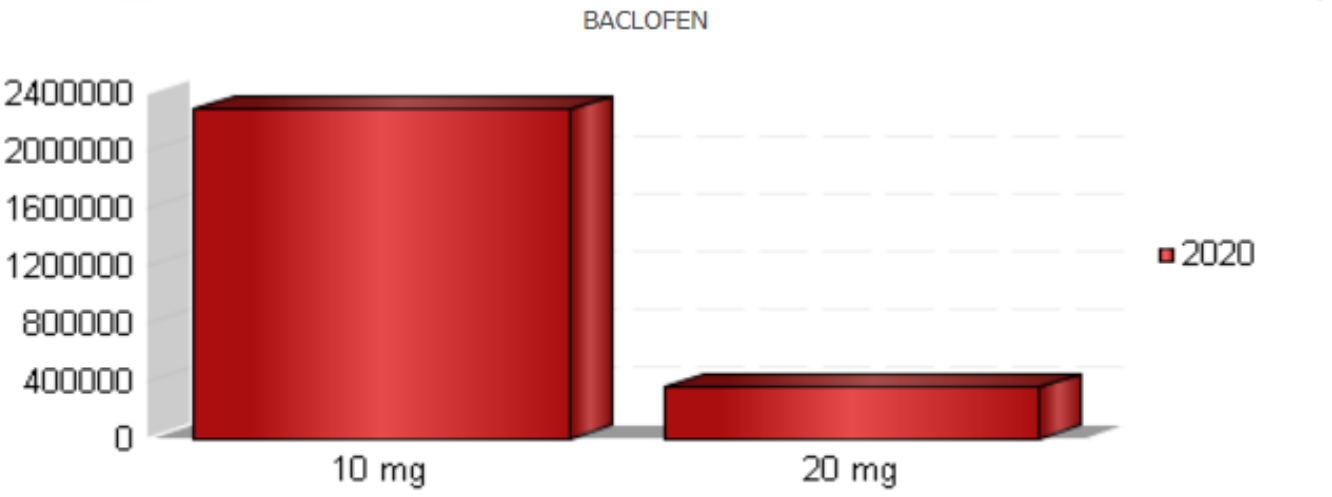
	3.75 mg	5 mg	7.5 mg
2020	247,985	1,045,703	5,897,342

Appendix L: General Anesthetics



	10 mg/ml	50 mg/ml
2020	100	562

Appendix M: Muscle Relaxant



	10 mg	20 mg
2020	2,293,388	361,244

Appendix N: Coroner Report – Opioid Related Deaths

Saskatchewan Coroners Service

DRUG TOXICITY DEATHS
Saskatchewan, 2010 to 2021
(Confirmed Drug Toxicity Deaths Updated – June 2, 2021)
(Suspected Drug Toxicity Deaths Updated – June 2, 2021)

The data in the following tables include all death investigations concluded by the Saskatchewan Coroners Service (SCS) **between January 1, 2010 and June 2, 2021** where the cause of death was due to a **Drug Toxicity (Single or Combined Drug Toxicity)**. The statistics shown are subject to change as new investigations are undertaken and/or on-going investigations are concluded.

For the following tables please note:

- 'Undetermined' indicates that after completing an investigation, there is equal evidence, or a significant contest between one or more classifications.
- The statistics for 2019, 2020 and 2021 are preliminary given that not all death investigations for these years have been concluded.
- There is 1 death waiting to go to inquest in 2018 where the underlying cause of death is likely to be from a drug toxicity (single or combined). However, this number will not be reflected in the tables until the inquest has been held and the jury makes their findings.
- All statistics in these tables have been confirmed drug toxicity deaths with the exception of the table "Suspected Drug Toxicity Deaths, January 1 to December 31, 2020" and "Suspected Drug Toxicity Deaths, January 1, to June 2, 2021". At the time of this printing, the statistics in this particular table are preliminary data and may change once the cases have been concluded.

Confirmed Drug Toxicity Deaths by Manner of Death, 2010 – 2021

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Accident	52	56	60	62	67	91	92	95	138	152	259	43
Suicide	21	24	17	21	13	23	13	16	27	21	13	3
Homicide	--	--	--	--	--	--	--	--	--	--	--	0
Undetermined	5	6	9	5	5	7	4	8	6	4	1	0
Total	78	86	86	88	85	121	109	119	171	177	273	46

Suspected Drug Toxicity Deaths, January 1, 2020 to December 31, 2020

Total	67*

Suspected Drug Toxicity Deaths, January 1, 2021 to June 2, 2021

Total	125*

*At the time of this printing, this is preliminary data and these numbers are SUSPECTED drug deaths. These numbers may change once the cases have been concluded.

*To provide an aggregate number for 2020, please add the Suspected Drug Toxicity Deaths to the 2020 Confirmed Drug Toxicity Deaths shown above. To provide an aggregate number for 2021, please add the Suspected Drug Toxicity Deaths to the 2021 Confirmed Drug Toxicity Deaths shown above.

Breakdown of Opioid Drugs Identified in Confirmed Drug Toxicity Deaths by Manner of Death, 2010 – 2021

		Codeine	Fentanyl	Heroin	Hydrocodone	Hydromorphone	Methadone	Morphine	Oxycodone	Opioid (Unknown)	W-18*	Carfentanyl	Acetyl fentanyl	Monoacetyl morphine	Meperidine	Furanyl Fentanyl	Furanyl UF-17
2010	Accident	4	2	--	--	12	11	12	10	--	--	--	--	--	--	--	--
	Suicide	2	--	--	--	2	--	3	--	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	--	--	--	--	3	1	1	--	--	--	--	--	--	--	--
2011	Accident	7	2	--	--	19	20	12	5	--	--	--	--	--	--	--	--
	Suicide	2	--	--	--	1	3	3	4	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	1	--	--	3	1	--		--	--	--	--	--	--	--	--
2012	Accident	12	6	1	--	16	14	19	3	--	--	--	--	--	--	--	--
	Suicide	4	--	--	--	1	1	--	2	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	2	1	--	--	--	2	2	2	--	--	--	--	--	--	--	--
2013	Accident	3	9	--	--	17	21	10	7	1	--	--	--	--	--	--	--
	Suicide	2	1	--	--	4	2	4	1	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	--	--	--	2	2	--	1	--	--	--	--	--	--	--	--
2014	Accident	5	9	--	--	22	20	15	4	--	--	--	--	--	2	--	--
	Suicide	--	2	--	--	1	4	2	1	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	--	--	--	1	--	1	2	--	--	--	--	--	--	--	--
2015	Accident	10	21	--	--	30	27	21	5	--	1*	--	--	--	--	--	--
	Suicide	1	1	--	--	4	2	3	2	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	1	--	--	--	3	--	3	--	--	--	--	--	--	--	--	--
2016	Accident	8	8	1	--	26	34	20	4	--	--	--	--	--	--	--	--
	Suicide	1	--	--	--	1	2	--	--	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	1	1	--	--	1	1	--	--	--	--	--	--	--	--	--	--

Breakdown of Opioid Drugs Identified in Confirmed Drug Toxicity Deaths by Manner of Death, 2010 – 2021

		Codeine	Fentanyl	Heroin	Hydrocodone	Hydromorphone	Methadone	Morphine	Oxycodone	Opioid (Unknown)	W-18*	Carfentanyl	Acetyl fentanyl	Monoacetyl morphine	Meperidine	Furanyl Fentanyl	Furanyl UF-17
2017	Accident	14	14	--	5	28	30	27	3	--	--	4	--	--	--	--	--
	Suicide	3	--	--	1	7	1	2	--	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	1	--	--	1	2	1	1	--	--	--	--	--	--	--	--
2018	Accident	14	46	--	7	41	38	27	8	--	--	6	--	7	--	--	--
	Suicide	7	1	--	1	2	1	9	4	--	--	--	--	--	2	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
2019	Accident	13	43	--	5	55	45	36	5	--	--	4	10	3	--	--	--
	Suicide	3	--	--	--	7	--	2	--	--	--	--	--	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--
2020	Accident	22	138	--	8	82	43	42	4	--	--	6	118	1	--	1	2
	Suicide	3	3	--	--	6	--	3	--	--	--	--	2	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2021	Accident	--	35	--	--	6	5	3	--	--	--	--	29	--	--	--	1
	Suicide	--	1	--	--	--	--	--	--	--	--	--	1	--	--	--	--
	Homicide	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Undetermined	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

* Illicit Drugs Containing W-18 – As part of a 2015 investigation into the combined drug toxicity death of a male, age 25, there were tablets found at the scene which were analyzed and found to contain fentanyl and W-18. Given the limitations of toxicology testing, it is not possible to quantify W-18 beneath a certain level within a person's blood. The Saskatchewan Coroners Service was unable to determine whether W-18 contributed to this individual's death. Also, based on the circumstances of the death, it could not be confirmed whether the deceased ingested any of the tablets that contained the fentanyl and W-18. The individual's cause of death was combined drug toxicity involving a number of drugs including fentanyl and morphine which are reflected in the statistics contained in the tables of this report.

Appendix O: 2020 Audited Financial Statements

(see attached)