



# 2020 Annual Report

**Centre antipoison du Québec**

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Centre intégré universitaire  
de santé et de services sociaux  
de la Capitale-Nationale

# **2020 Annual Report**

## **Centre antipoison du Québec**

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# PRESENTATION

Since 1986, the Centre antipoison du Québec (CAPQ) has provided bilingual 24/7 telephone consultation services to the public and health professionals on cases of acute exposure to potentially toxic substances. From 2008 to 2020, the CAPQ handled an average of 46,635 cases annually. This number has, however, increased in recent years – from 47,375 in 2016 to 50,872 in 2020 (in addition to 1,567 requests for information). In terms of caller profiles, 58% were members of the general public, while 41% were health professionals, compared to 30% the previous year. Over 87% of calls were answered in under 30 seconds, and 0.02% of calls were lost.

# OUR MISSIONS

The CAPQ has been tasked with the following missions:

## Clinical Mission

- ❖ Offer the public and health professionals in Québec 24/7 telephone access to poison control specialists in the event of real or potential acute poisonings.
- ❖ Provide a telephone consultation service by on-call medical toxicologists to assist health professionals in the diagnosis and treatment of complex poisonings.
- ❖ Offer toxicology analyses to support centres that do not have the necessary equipment to conduct their own testing. Two laboratories have been mandated by the Ministère de la Santé et des Services sociaux (MSSS) to carry out this task.
- ❖ Participate in activities aiming to prevent and monitor acute poisonings.

## Teaching Mission

- ❖ Play a leadership role in the Québec medical community by educating physicians, residents, medical professionals and paramedics on matters related to acute poisonings.
- ❖ Evaluate and improve the management of poisoned patients.

## Research Mission

- ❖ Contribute to the advancement of knowledge in toxicology by developing better tools for monitoring, prevention, prognosis and treatment.
- ❖ Using an evidence-based approach, contribute to the efficient organization and delivery of health care in cases of acute poisoning.
- ❖ Develop ways to promote the effective transfer of knowledge to the public and health professionals.

## OUR TEAM

Our team currently includes approximately 23 nurses trained in toxicology. Seven toxicologists (Dr. Sophie Gosselin, Dr. Martin Laliberté, Dr. Alexandre Larocque, Dr. Maude St-Onge and Dr. Anne-Érika Vermette-Marcotte) have been on second call 24/7 with the help, since late 2020, of Dr. Maxime Nadeau and Dr. Nancy Murphy, a toxicologist from Nova Scotia. Dr. Josh Wang will be joining the team in February 2021. Pharmacist Audrée Éliott has been with the CAPQ for several years now. The CAPQ also has three administrative officers.

Since 2015, Dr. Maude St-Onge has served as Medical Director of the CAPQ. The head of the department, Eve Pilon, has since resigned from her position, which is now held on an interim basis by Guyllaume Chabot-Pouliot. Since 2018, Guillaume Bélair has worked as assistant to the immediate superior. The former Medical Director, Dr. René Blais is still involved with the team in teaching, mentoring and reviewing protocols.

## OUR SERVICES AND ACTIVITIES

To start, with respect to the clinical services provided in response to the 50,872 actual or potential cases of acute poisoning evaluated and managed in 2020, the male-to-female ratio was 47:53, a trend which has remained stable over time. Just under one-third of patients were 0-5 years old (32%), 22% were 20 to 39 years old and 13.5% were over 60 years old.

Most cases of poisoning were unintentional (general, 57.8%), followed by therapeutic errors (13.8%), suicidal acts (12.4%), workplace accidents (5.1%), drug-abuse related (3.3%) and intentional misuse (2.1%). The most common route of exposure was oral (74.6%), followed by inhalation (8.6%) and ocular (5.8%). Just over half of the cases involved medications; analgesics (7,230 cases) were the most common medications encountered, followed by sedatives/hypnotics/antipsychotics (5,319 cases), antidepressants (3,951 cases) and cardiovascular drugs (2,791 cases). With regard to substances reported, household cleaners ranked first (6,080 cases), followed by cosmetics/personal care products (3,880 cases) and alcohol (2,402 cases).

Data on the surveillance of cannabis use revealed 995 cases, including 301 accidental exposures, primarily in children. No deaths have been reported, but 47 patients suffered moderate to severe effects. The surveillance of opioid use found 671 cases of deliberate exposure, including 457 with suicidal intent.

# STATISTICS ON POISONNINGS

## Number of Case of Exposure by Type

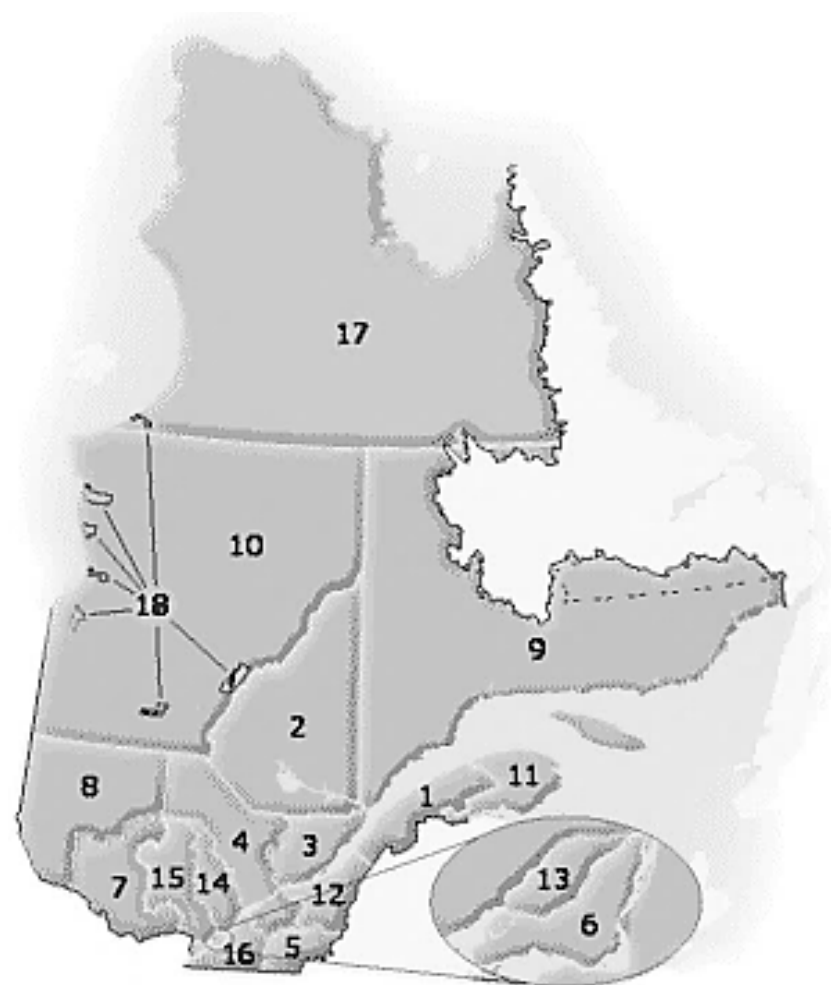
| TYPES                                  | AGE GROUPS |        |         |         |         |         |         |         |         |         |     | Unknown<br><19 | Unknown<br>≥19 | Unknown | Total  |
|--|------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|-----|----------------|----------------|---------|--------|
|  | 0 – 5      | 6 – 12 | 13 – 19 | 20 – 29 | 30 – 39 | 40 – 49 | 50 – 59 | 60 – 69 | 70 – 79 | 80 – 89 | ≥90 |                |                |         |        |
| ACCIDENTAL                             |            |        |         |         |         |         |         |         |         |         |     |                |                |         |        |
| Public health accident                 | 1          | 1      | 3       | 4       | 5       | 4       | 1       | 1       | 0       | 0       | 0   | 0              | 3              | 2       | 25     |
| Workplace accident                     | 6          | 5      | 209     | 779     | 572     | 425     | 304     | 104     | 10      | 1       | 0   | 0              | 156            | 18      | 2 589  |
| Adverse effect: food                   | 16         | 4      | 6       | 20      | 31      | 15      | 9       | 8       | 2       | 1       | 0   | 3              | 40             | 9       | 164    |
| Adverse effect: other product          | 2          | 2      | 6       | 17      | 17      | 5       | 6       | 5       | 3       | 0       | 0   | 1              | 14             | 0       | 78     |
| Adverse effect: medication             | 8          | 9      | 21      | 45      | 30      | 24      | 24      | 33      | 12      | 14      | 5   | 1              | 24             | 12      | 262    |
| Adverse effect: natural health product | 5          | 2      | 0       | 8       | 4       | 8       | 8       | 5       | 2       | 0       | 1   | 0              | 4              | 1       | 48     |
| Therapeutic error                      | 786        | 608    | 395     | 512     | 607     | 557     | 647     | 786     | 821     | 732     | 313 | 3              | 214            | 15      | 6 996  |
| General                                | 15 494     | 1 681  | 992     | 2 137   | 2 178   | 1 600   | 1 170   | 1 117   | 824     | 555     | 211 | 84             | 1 206          | 130     | 29 379 |
| Food poisoning                         | 36         | 2      | 9       | 16      | 23      | 16      | 15      | 18      | 9       | 4       | 1   | 3              | 42             | 2       | 196    |
| Misuse                                 | 11         | 13     | 58      | 113     | 80      | 65      | 69      | 44      | 26      | 30      | 5   | 0              | 8              | 7       | 529    |
| Bite or sting                          | 9          | 3      | 3       | 6       | 11      | 12      | 12      | 3       | 4       | 1       | 1   | 1              | 13             | 4       | 83     |
| INTENTIONAL                            |            |        |         |         |         |         |         |         |         |         |     |                |                |         |        |
| Suicidal intent                        | 2          | 51     | 1 253   | 1 460   | 1019    | 916     | 786     | 439     | 183     | 66      | 17  | 1              | 91             | 36      | 6 320  |
| Misuse                                 | 5          | 29     | 214     | 222     | 174     | 131     | 109     | 66      | 37      | 10      | 2   | 1              | 74             | 19      | 1 093  |
| Drug abuse                             | 0          | 6      | 379     | 496     | 266     | 129     | 100     | 37      | 11      | 1       | 1   | 8              | 181            | 51      | 1 666  |
| OTHER                                  |            |        |         |         |         |         |         |         |         |         |     |                |                |         |        |
| Other                                  | 7          | 9      | 20      | 29      | 20      | 19      | 16      | 17      | 10      | 7       | 4   | 2              | 29             | 3       | 192    |
| Contamination / Alteration             | 7          | 2      | 1       | 4       | 9       | 6       | 1       | 0       | 2       | 0       | 1   | 0              | 7              | 2       | 42     |
| Malicious act                          | 7          | 9      | 20      | 17      | 11      | 15      | 8       | 4       | 3       | 0       | 0   | 1              | 11             | 4       | 110    |
| Unknown                                | 34         | 18     | 95      | 170     | 173     | 111     | 108     | 106     | 95      | 44      | 13  | 2              | 93             | 38      | 1100   |
| Total                                  | 16 436     | 2 454  | 3 684   | 6 055   | 5 230   | 4 058   | 3 393   | 2 793   | 2 054   | 1 466   | 575 | 111            | 2 210          | 353     | 50 872 |

## Definition of Exposure Types

| ACCIDENTAL                             |   |
|--|---|
| Workplace accident                     | Any exposure occurring in the workplace or while performing one's work duties.  |
| Public health accident                 | Any environmental accident, including those related to public health. Excludes workplace accidents.   |
| Adverse effect: medication             | No overdose or contamination. The medication causes an adverse effect at therapeutic dosage.  |
| Adverse effect: natural health product | No overdose or contamination. The natural health product causes an adverse effect at therapeutic dosage.  |
| Adverse effect: food                   | No overdose or contamination. The product causes an adverse effect.<br>E.g., sulfites, monosodium glutamate (MSG), food colouring.  |
| Adverse effect: other product          | No overdose or contamination. The product causes an adverse effect with normal use.<br>E.g., dermatitis after using a cosmetic or detergent.  |
| Therapeutic error                      | Any error in the administration of a medication; error in the dosage, medication, administration route or person.   |
| General                                | Any accident excluding those not listed below.  |
| Food poisoning                         | Suspected food poisoning.   |
| Misuse                                 | Improper use of product: dosage, usage and/or administration route, without suicidal intent. (e.g., F-10 used indoors, mixing bleach and Drano, siphoning fuel, etc.).  |
| INTENTIONAL                            |   |
| Suicidal intent                        | Any action aiming to harm or kill oneself.  |
| Drug abuse                             | Exposure involved in the use or abuse of alcohol, street drugs, medication for the purpose of producing a euphoric or psychotropic effect. Recreational use of a substance to induce any type of effect.  |
| Misuse                                 | Improper use of a product, medication or other: dosage, usage and/or administration route without suicidal intent but with knowledge of the consequences. The abuse of substances to induce psychotropic effects is not included. (E.g., drinking methylene blue to pass blue urine, taking large quantities of caffeine to study for exams, mixing or using more pesticides for more effective results). |
| OTHER                                  |   |
| Malicious act                          | Suspected malicious or criminal act: attempt to cause harm to another person by exposing them to a toxic product or an overdose. E.g., patient thinks he was poisoned by someone even if his mental state is in doubt. E.g., narcotics added to a baby's bottle to make him or her stop crying. E.g., patient exposed to a substance used for crowd control (capsicum or pepper spray).                   |
| Unknown                                | Type of exposure unknown  |
| Contamination / Alteration             | Patient exposed to a substance that is contaminated or altered whether in a malicious or unintentional manner by adding to it a harmful substance.<br>E.g., exposure to cocaine contaminated with levamisole.<br>E.g., exposure to arsenic added to coffee machines.<br>E.g., exposure to fragments of glass or metal that end up in products during manufacturing.                                       |
| Other                                  | Type of poisoning that does not fall into any of the above categories.  |

## Number of Cases of Exposure by Population Group

| Regions                            | Population 2020  | Cases         | %           |
|------------------------------------|------------------|---------------|-------------|
| 01 - Bas-Saint-Laurent             | 197 736          | 1 245         | 0,63        |
| 02 - Saguenay-Lac-Saint-Jean       | 277 897          | 2 072         | 0,75        |
| 03 - Capitale-Nationale            | 751 366          | 5 343         | 0,71        |
| 04 - Mauricie et Centre-du-Québec  | 519 232          | 3 667         | 0,71        |
| 05 - Estrie                        | 329 747          | 3 259         | 0,99        |
| 06 - Montréal                      | 2 050 053        | 8 576         | 0,42        |
| 07 - Outaouais                     | 396 000          | 2 126         | 0,54        |
| 8 - Abitibi-Témiscamingue          | 148 216          | 1 008         | 0,68        |
| 9 - Côte-Nord                      | 91 121           | 724           | 0,79        |
| 10 - Nord-du-Québec                | 46 202           | 122           | 0,26        |
| 11 - Gaspésie-Îles-de-la-Madelaine | 90 634           | 468           | 0,52        |
| 12 - Chaudière-Appalaches          | 428 924          | 2 089         | 0,49        |
| 13 - Laval                         | 439 754          | 1 814         | 0,41        |
| 14 - Lanaudière                    | 515 682          | 3 023         | 0,59        |
| 15 - Laurentides                   | 621 736          | 3 812         | 0,61        |
| 16 - Montérégie                    | 1 581 697        | 7 292         | 0,46        |
| 17 - Nunavik                       | 13 188           | 300           | 2,27        |
| 18 - Terres-Cries-de-la-Baie-James | 1 045            | 262           | 25,07       |
| Municipalité inconnue              | -                | 2             | -           |
| Région inconnue                    | -                | 108           | -           |
| Canada - Autre province            | -                | 77            | -           |
| Autre pays                         | -                | 19            | -           |
| Inconnu                            | -                | 3 464         | -           |
| <b>Total</b>                       | <b>8 500 230</b> | <b>50 872</b> | <b>0,60</b> |



# Number of Cases of Exposure Based on Final Evaluation

| EFFECTS                                   | AGE GROUPS                     |       |         |         |         |         |         |         |         |         |      |             |
|---|--------------------------------|-------|---------|---------|---------|---------|---------|---------|---------|---------|------|-------------|
|   | 0 – 5                          | 6 –12 | 13 – 19 | 20 – 29 | 30 – 39 | 40 – 49 | 50 – 59 | 60 – 69 | 70 – 79 | 80 – 89 | >=90 | Unknown <19 |
|   | Unrelated effect               |       |         |         |         |         |         |         |         |         |      |             |
| Confirmed: no exposure                    | 94                             | 10    | 5       | 9       | 11      | 7       | 9       | 10      | 8       | 1       | 0    | 1           |
| Unrelated symptoms                        | 153                            | 32    | 60      | 215     | 191     | 145     | 153     | 126     | 72      | 40      | 10   | 3           |
|   | Potentially toxic or lost call |       |         |         |         |         |         |         |         |         |      |             |
| Lost call                                 | 19                             | 5     | 4       | 5       | 9       | 3       | 6       | 4       | 6       | 1       | 2    | 0           |
| Potentially toxic – Refusal of treatment  | 10                             | 4     | 10      | 14      | 29      | 13      | 13      | 16      | 8       | 3       | 0    | 0           |
| Potentially toxic – Unable to follow up   | 308                            | 64    | 321     | 458     | 309     | 232     | 216     | 164     | 135     | 129     | 55   | 17          |
|   | No effect or minor effect      |       |         |         |         |         |         |         |         |         |      |             |
| No effect                                 | 950                            | 146   | 243     | 295     | 241     | 191     | 169     | 135     | 114     | 74      | 29   | 5           |
| Possibility of minor clinical effect      | 6 701                          | 827   | 851     | 1783    | 1572    | 1181    | 898     | 758     | 563     | 450     | 193  | 24          |
|   | Non-toxic or mild effect       |       |         |         |         |         |         |         |         |         |      |             |
| Mild effect                               | 552                            | 219   | 797     | 1327    | 1084    | 886     | 729     | 499     | 266     | 127     | 36   | 9           |
| Non-toxic, no follow-up                   | 7 480                          | 1 098 | 1 034   | 1 296   | 1267    | 922     | 750     | 743     | 646     | 520     | 204  | 50          |
|   | Unknown                        |       |         |         |         |         |         |         |         |         |      |             |
| Potentially toxic – No follow-up criteria | 134                            | 35    | 247     | 400     | 284     | 274     | 256     | 176     | 133     | 76      | 37   | 2           |
| End-of-life care                          | 0                              | 0     | 0       | 0       | 0       | 1       | 1       | 0       | 9       | 2       | 1    | 0           |
|   | Death                          |       |         |         |         |         |         |         |         |         |      |             |
| Death                                     | 0                              | 0     | 1       | 3       | 8       | 3       | 9       | 6       | 5       | 1       | 1    | 0           |
| Death ±related (indirect)                 | 4                              | 0     | 0       | 2       | 3       | 1       | 0       | 4       | 1       | 1       | 0    | 0           |
|   | Moderate or severe effect      |       |         |         |         |         |         |         |         |         |      |             |
| Moderate effect                           | 27                             | 9     | 95      | 202     | 180     | 159     | 145     | 116     | 77      | 36      | 7    | 0           |
| Severe effect                             | 4                              | 5     | 16      | 46      | 42      | 40      | 39      | 36      | 11      | 5       | 0    | 0           |
| Total                                     | 16 436                         | 2 454 | 3 684   | 6 055   | 5 230   | 4 058   | 3 393   | 2 793   | 2 054   | 1 466   | 575  | 111         |

## Summary

While a majority of cases were assessed as non-toxic or associated with only minimal or mild clinical effect, 44% of patients were symptomatic. However, 65.4% of cases were monitored at home with the advice of the CAPQ, thus avoiding a visit to the hospital. Among the most symptomatic patients, 1,057 experienced moderate effects, 244 experienced a severe effect and 51 patients died (including 14 in end-of-life care). Despite the increase in the number of cases over the years, the number of deaths has remained relatively stable. Among patients who have died, almost all of them were adults (except for one adolescent), including 14 who were 70 years old and over. More than half of the deaths were intentional exposures (n=29). Analgesics were involved in 20 cases (16 with acetaminophen), antidepressants in 15 cases, sedatives/hypnotics/antipsychotics in 12 cases and cardiovascular drugs in 10 cases.

## ACTIVITIES INVOLVING THE CLINICAL MISSION

- ❖ Since early 2019, the CAPQ has had a new electronic system for patient records.
- ❖ Since June 2019, the CAPQ has had a new telephone system that has improved reporting on wait times and the number of lost calls. A special line dedicated to hospitals has been available since July 2020, allowing health care professionals to skip part of the welcome message, while giving priority to patients deemed unstable based on a triage and acuity scale for emergency departments.
- ❖ The CAPQ regularly reports to public health authorities incidents that might involve more than one person and responds to media requests on a variety of topics as a regular part of its activities.
- ❖ The CAPQ holds scientific meetings four times a year, where, among other things, cases of morbidity and mortality are reviewed and protocols are discussed as are ways to improve the care provided. Toxicologists, telephone response staff, residents on internships or in toxicological subspecialization, consulting pharmacists, partners such as the toxicology laboratories of the Centre hospitalier Sainte-Justine and the Centre de toxicologie du Québec are invited to attend.
- ❖ Telephone response staff receive 15 to 30 minutes of ongoing training every two weeks to ensure their level of expertise is always up to date.
- ❖ With funds from the Canadian Safety and Security Program, the CAPQ has produced the Canadian Emergency Toxicology Antidote Guide in partnership with other Canadian poison control centres (<https://www.ciusss-capitalenationale.gouv.qc.ca/antidotes>). The bilingual guide is available on the Web and as a free downloadable mobile application. It is updated on a regular basis.
- ❖ The CAPQ has also produced a bilingual poster providing guidance on resuscitation in toxicological emergencies. Health professionals can download the poster free of charge in an 8 ½" x 11" or 24" x 32" format from the CAPQ Web section dedicated to health professionals (<https://www.ciusss-capitalenationale.gouv.qc.ca/centreantipoison-du-quebec/capq-professionnels-sante>).

## ACTIVITIES INVOLVING THE TEACHING MISSION

- ❖ In 2020, the CAPQ welcomed 43 resident physicians for a one-month internship in clinical toxicology. They came from universities across the province, whether in specialized emergency medicine, complementary emergency medicine training, intensive care (adult or pediatric), pediatrics, internal medicine, family medicine or public health.
- ❖ Pharmacy residents occasionally conduct observation days.
- ❖ The CAPQ has also contributed to ad hoc projects, including the implementation of a new N-acetylcysteine protocol (<https://www.ciusss-capitalenationale.gouv.qc.ca/centre-antipoison-du-quebec/professionnels-de-la-sante/protocole-de-n-acetylcysteine>), participation in a scientific round table on poisonings at the Musée de la civilisation, the production of two articles for the journal of the Québec order of nurses (Ordre des infirmières et infirmiers du Québec) and the publication of a special issue on poisoning in Médecin du Québec.
- ❖ The medical toxicologists and pharmacist of the CAPQ give lectures at professional conferences on a regular basis.
- ❖ The CAPQ has made available to health professionals 15 hours of free webinars on toxicology (<https://www.ciusss-capitalenationale.gouv.qc.ca/centre-antipoison-du-quebec/capq-professionnels-sante>). These presentations will be updated in 2021.
- ❖ The CAPQ website ([www.antipoison.ca](http://www.antipoison.ca)) provides the general public with reliable information on first aid in the event of poisoning, tips on prevention, educational documents and links to other resources and our partners.

## ACTIVITIES INVOLVING THE RESEARCH MISSION

- ❖ The CAPQ works with several public health authorities (regional and provincial) on studies involving opioids, cannabis and the surveillance of new synthetic drugs being introduced on the market.
- ❖ The CAPQ works with Health Canada and other Canadian poison control centres on a national toxico-vigilance initiative.
- ❖ The CAPQ oversees many research projects by medical residents (e.g., link between media coverage of suicide acts and the incidence of the type of poisoning, the impact of distributing a management protocol for poisoned patients, validation of the Poison Severity Score, etc.)
- ❖ The Medical Director is working on two research projects endorsed by the CAPQ: (1) “Activated CHARcoal in Poisoned Patients” and (2) “CARE for Indigenous Poisoned Patients” with the participation of a PhD student from Université Laval.
- ❖ Two toxicologists (Sophie Gosselin et Maude St-Onge) are part of the Tox Collaborative project aiming to develop international recommendations in toxicology. Dre Sophie Gosselin is also a member of the EXTRIP workgroup building recommendations for dialysis indications in toxicology.

## CONCLUSION

In conclusion, the CAPQ is hard at work accomplishing its clinical, teaching and research missions. In 2021, the CAPQ will invest in updating its computer and telephone work tools while continuing to revise its guides, including the Canadian Anti-Doping Guide in Emergency Toxicology. It also plans on recruiting additional telephone response staff, as well as trained medical toxicologists. The CAPQ will continue to provide a teaching environment for medical and pharmacy residents and will focus on welcoming nursing students on a more regular basis. The research mission is also continuing and will be facilitated by the implementation of the new computerized patient record system.

For any non-urgent questions not involving patient management, please contact us on the administrative phone line: 418 654-2731.

**The CAPQ remains available 24/7 for both the public and the private sector for health professionals at 1 800 463-5060.**

# BIBLIOGRAPHY

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Centre intégré  
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Qu<sup>é</sup>bec

