# ACTIVITY REPORT 1999-2000

HÉMA-QUÉBEC

# MISSION

HÉMA-QUÉBEC's mission is to provide Quebeckers with sufficient quantities of safe, top-quality blood components, derivatives and blood substitutes to meet the needs of hospitals, and to provide recognized expertise and specialized services in the field of immunohematology.



HÉMA-QUÉBEC

# OVERVIEW

1999-2000 was an incredible year. As you will read later, HÉMA-QUÉBEC not only fulfilled its mission to supply Québec's hospitals –even during the difficult Christmas and summer periods–but has also implemented a series of measures to continue improving the safety of the blood supply.

New measures mean change. As we took on our new role, we implemented leukoreduction, nucleic acid testing to detect Hepatitis C, and new exclusion criteria for donors who stayed in the United Kingdom. Moreover, we completely overhauled our working procedures by implementing the PROGESA operating software for the Y2K transition. All of these changes required a great deal of energy and discipline on the part of our employees, who were more than up to the challenge.

HÉMA-QUÉBEC was able to meet hospitals' labile blood product requirements largely because of the unwavering support of the public and donors who helped their fellow citizens. We are grateful to them.

Finally, the leadership demonstrated by the Board of Directors and its advisory committees in ensuring the safety of the blood supply has earned HÉMA-QUÉBEC a letter of support from the Canadian Hemophilia Society.

All in all, this was a year in which we met many challenges.



# 1999-2000 HIGHLIGHTS

## 1. MEASURES TAKEN TO IMPROVE THE SAFETY OF THE BLOOD SUPPLY

### 1.1 LEUKOREDUCTION

On June 14, 1999, HÉMA-QUÉBEC began systematic filtration (leukoreduction) of all blood bags. The purpose of this procedure is to remove most white blood cells (leukocytes) from packed red blood cells and platelet concentrations.

Systematic leukoreduction reduces complications observed in some recipients of blood components, such as fever, platelet transfusion resistance, the transmission of certain viruses linked to leukocytes, and possibly, certain post-operative infections. The Bureau of Biologics and Radiopharmaceuticals issued a directive to this effect in November 1999 – a first in North America.

### 1.2 VARIANT CREUTZFELDT-JAKOB DISEASE (VCJD)

On September 30, 1999, HÉMA-QUÉBEC began excluding donors who have spent a cumulative total of one month or more in the United Kingdom since 1980. This measure–which is consistent with a prudent approach and adheres to the spirit of the Krever Report–was implemented even though the risk of transmission of vCJD through blood is theoretical.

This exclusionary measure was introduced for the United Kingdom because the highest number of cases of bovine spongiform encephalopathy epidemic had been reported there in the 1980s. At the time of the decision, there had been almost 40 human cases of vCJD.

The exclusion is being applied to donors who have spent a cumulative total of one month or more in the United Kingdom. According to a survey of donor's travel habits, 12.4% of donors had spent time in the United Kingdom, even if only for a day, whereas 3% had spent a cumulative total of 30 days or more in that country since 1980. In order to manage the impact to the blood supply, the latter criterion was selected as the basis for this exclusion.

### 1.3 NUCLEIC ACID TEST (NAT)

As part of a research protocol, HÉMA-QUÉBEC began an assessment on November 9, 1999, to determine the operational impact of a new technology for detecting hepatitis C. This new hepatitis C nucleic acid test (NAT) is intended to detect the virus itself, unlike current tests which detect virus antibodies. This new technology significantly reduces the window period – the time between initial infection and the appearance of antibodies that can be detected by current tests. During this window period, the donor is infectious and could contaminate a recipient. US data indicates that NAT reduces the window period from 70-80 days to 10-30 days, theoretically reducing the residual risk of hepatitis C infection by 80% to 90%.

Approximately 102,000 donations had been analyzed by March 31, 2000. None of these samples were found to be positive under NAT and negative under the statutory screening tests. HÉMA-QUÉBEC has subcontracted NAT testing to Infectio Diagnostic Inc. of Québec City. NAT will become a statutory test once Health Canada has approved our operating license.

### 1.4 PROGESA OPERATING SOFTWARE

On November 29, 1999, HÉMA-QUÉBEC implemented the PROGESA software package developed by the French firm MAK SYSTEM. PROGESA is an internal management tool that permits rigorous monitoring and tracking throughout the blood collection and delivery process. The goal is to provide an audit trail between the donor, the donation and the hospital which received it, and ensure that only bags of blood that comply with standards are delivered to hospitals.

The implementation of PROGESA has fundamentally changed how HÉMA-QUÉBEC operating personnel do their work. With this software, large amounts of data that used to be written down on paper can now be entered electronically. Of the 526 standard operating procedures (SOPs), no less than 80 were changed following the implementation of PROGESA. As these changes entailed modifications to our operating licence, an in-depth submission was prepared and subsequently approved by Health Canada's Bureau of Biologics and Radiopharmaceuticals (BBR) before the software was implemented.



### 1.5 Y2K TRANSITION

HÉMA-QUÉBEC acquired computers and other equipment from the Canadian Red Cross that were not guaranteed to be Y2K-compliant. As a result, HÉMA-QUÉBEC allocated the resources needed to prepare for the transition and intervene rapidly on the evening of December 31, 1999, should this be necessary.

A compliance plan was developed, based on a systems audit method suggested by the Canadian government. This plan covered all activities, including operations (MAK) and management (SAP) functions.

An external audit performed in November identified the final preparations to be made.

The measures taken during the night of December 31, 1999 (on-site teams, constant communication with the various internal and external agencies, verification before and after midnight) ensured a smooth transition to the year 2000.

### 1.6 MOBILE UNIT FOR AUTOLOGOUS DONATIONS

HÉMA-QUÉBEC began operating a mobile unit in January 2000 as part of a pilot project. The mobile unit travels between Rimouski and Saint-Hyacinthe to collect autologous donations. In addition to responding to a need expressed by many patients outside the larger cities, this new approach is also in keeping with the recommendations of the interim report of the Krever Commission and the Gélineau Committee. At the end of the project, the program will be reassessed on the basis of the results obtained.

## 2. MEASURES TAKEN TO IMPROVE EFFICIENCY

### 2.1 SAP

Following the successful implementation of SAP R/3 in 1998 during the first months of HÉMA-QUÉBEC's existence, SAP R/3 has been extended to other areas such as inventory management. Transactions performed with R/3 are entered into a data warehouse that can be used to generate a variety of reports. These reports provide the management team with useful indicators.

### 2.2 INFORMATION TECHNOLOGY (IT)

The IT department was set up in March 2000 and is headed by a senior director. This department provides support for proper operation of the hardware and software in use at HÉMA-QUÉBEC.

Based on an analysis of each department's needs, the IT department selects the hardware and software offering the best performance, establishes standards for use, provides training to users and manages all telephony functions. The IT department ensures the security of all information – which is considered a top priority at HÉMA-QUÉBEC.

### 2.3 VEHICLE FLEET

The vehicle fleet acquired from the Canadian Red Cross was obsolete and no longer met HÉMA-QUÉBEC's needs. In view of the considerable cost of replacing the vehicle fleet, coupled with the lack of a preventive maintenance program and computerized fleet-management system, a cost-benefit study was conducted. It was subsequently decided that the management of HÉMA-QUÉBEC's entire vehicle fleet would be contracted out to the *Centre de gestion de l'équipement roulant (CGER)*. The contract allows HÉMA-QUÉBEC to acquire a fleet of vehicles that fully satisfies all its transportation needs at a lower cost.

## 3. FUTURE IMPROVEMENT MEASURES: RESEARCH AND DEVELOPMENT

A team of over 40 people is involved in major hematology research and development efforts.

The primary objective in this sector of activity is to support HÉMA-QUÉBEC's current and future operations, while playing an active role on the international scene.

In October 1999, the Board of Directors approved a research and development program that focused on the following fields: motivating blood donors, the epidemiology of infectious disease markers (safety), the effects of billing on the use of blood, and the development of blood product substitutes. Training and education programs are planned for residents, postdoctoral trainees and graduate students.



## 4. OTHER HIGHLIGHT

### 4.1 SERUM BANK SAMPLE ANALYSIS

Following the transfer of Canadian Red Cross assets, HÉMA-QUÉBEC took possession of 850,000 frozen blood samples taken from all blood donations made between 1988 and 1992 at the Montréal transfusion services.

Of these samples, 176,000 were traced back to donors who had never given blood again after May 1992. It was essential to identify which of these donors could have transmitted the Hepatitis C virus to recipients. There was no test for Hepatitis C from 1988 to May 1990. The first generation test, which had limited sensitivity, was in use from May 1990 to May 1992.

HÉMA-QUÉBEC proceeded once it had obtained the necessary advice. A team of technicians and assistant technicians has been performing the tests since September 27, 1999. Almost 69,000 samples had been analyzed as of March 31, 2000, and 66 donors were found to be carriers of the hepatitis C virus. These donors have been notified and close to 200 lookback procedures have been started in an attempt to identify recipients who may have been infected by the transfusion of blood components from these donors. This activity receives financial support from the *Ministère de la Santé et des Services sociaux (MSSS)*.

# BLOOD DONOR CLINICS AND DELIVERIES TO QUÉBEC HOSPITALS

Following the implementation of the vCJD exclusion measure, new blood donor clinics have been added to the schedule during the past year in order to ensure a stable supply of blood and blood components. For example, blood donor clinics were held in the Magdalen Islands for the very first time, and in Lebel-sur-Quévillon for the first time in 25 years. This activity is illustrated in Table 1.

Agreements with the Canadian Blood Services (CBS) were maintained, enabling the two blood suppliers to exchange the units of blood and blood components they required (Tables 1 and 2).



TABLE 1 :
**Blood Donor Clinics and Blood Collection between April 1, 1999 and March 31, 2000**

| | |
|---|---|
| Number of clinics held | 2,242 |
| Number of donors expected | 316,690 |
| Number of donors received | 278,092 |
| Number of donors excluded | 42,604 |
| Number of bags of blood collected | 235,488 |

TABLE 2 :
**Labile Products Delivered**

| | Hospital | CBS |
|---|---|---|
| Packed red blood cells | 188,682 | 7,264 |
| Platelets | 87,448 | 248 |
| Platelets-apheresis | 1,242 | 0 |
| Plasma | 32,683 | 2,483 |
| Cryoprecipitate | 10,820 | 110 |
| Cryoprecipitate supernatent | 4,773 | 1,411 |
| **TOTAL** | **325,648** | **11,516** |

TABLE 3 :
**Labile Products Received**

| | CBS |
|---|---|
| Packed red blood cells | 103 |
| Platelets | 742 |
| Platelets apheresis | 0 |
| Plasma | 602 |
| Cryoprecipitate | 349 |
| Cryoprecipitate supernatent | 506 |
| **TOTAL** | **2,302** |

# HUMAN RESOURCES

When it was set up, HÉMA-QUÉBEC hired qualified staff to fulfil its mission and ensure its efficiency and effectiveness over the medium term. As of March 31, 2000, HÉMA-QUÉBEC's staff was distributed as indicated in Tables 4 and 5 below. .



TABLE 4 :
**Medical Staff**

| Position | Full-time | Regular part-time | Part-time | Total |
|---|---|---|---|---|
| Physicians | 5 | | | 5 |
| **TOTAL** | **5** | | | **5** |

TABLE 5 :
**Non-medical Staff**

| Position | Full-time | Regular part-time | Part-time | Total |
|---|---|---|---|---|
| Clinic assistants, registration clerks, drivers | 86 | 18 | 123 | 227 |
| Recruiters | 34 | 3 | 18 | 55 |
| Nurses | 83 | 54 | 68 | 205 |
| Laboratory technicians | 71 | 3 | 57 | 131 |
| Assistant laboratory technicians | 36 | 9 | 44 | 89 |
| Professionals, technical staff, support staff and management | 244 | 12 | 53 | 309 |
| **TOTAL** | **554** | **99** | **363** | **1,016** |
| **GRAND TOTAL** | **559** | **99** | **363** | **1,021** |