



## CASE STUDY

### PEPID supports decisions by emergency physicians throughout Québec for improved time-critical care



**Enterprise Partners:** AMUQ, the emergency physician association of Québec, and Santé et Services sociaux Québec, the province's Ministry of Health.

**Service Area:** Province of Québec, Canada. Québec's emergency departments service a general population of 7,651,000 with a total of 107 emergency departments of various sizes in rural clinics and urban hospital centers.

**Physicians and Patients:** There are over 2,300 physicians practicing emergency medicine in the province. Annual emergency patient visits are approximately 2.6 million.

**Challenge:** In Canada, 24,000 preventable hospital deaths were reported for 2004. AMUQ and Québec's Ministry of Health determined that readily available access to standardized decision support would help emergency physicians, throughout the province, reduce the number of adverse events in their departments.

**Solution:** Each of the province's 107 emergency departments received online access to PEPID Emergency Physician Suite (ED). Individual physicians can receive PDA versions of the program through a special AMUQ program.

**Results:**

- Québec's emergency physicians now consult the medical and drug information in PEPID ED over 11 million times per year online
- Emergency department workflow and productivity is improved
- Medical and drug errors reduced
- Faster, easier, well-informed decision making
- Adverse events have declined through better informed patient care

#### CHALLENGE: Provide standardized decision support system

In 2004, *The Canadian Adverse Events Study* (G. Ross Baker et al) reported that there were up to 23,750 preventable deaths per year in Canadian hospitals.<sup>1</sup> The report confirmed the need for changes that were advocated earlier by the emergency physician association of Québec (AMUQ) and the province's Ministry of Health, Santé et Services sociaux Québec.

Primary causes for the number of adverse events have been identified in the literature on the subject and include:

- Systemic problems of under funding and overcrowding
- Individual mistakes by doctors, paramedics and patients
- Fundamental difficulties in medical care
- Balancing diagnosis error versus over-testing
- The impossibility for doctors to stay up-to-date for every situation faced
- Basic impossibility to give accurate care in a time constrained patient encounter

Consulting medical information and confirming dosing is an essential part of daily workflow for physicians. It was clear from the report that a lack of readily available clinical and drug information resulted in medical errors.

“We wanted to improve quality of care and we thought that, with new technologies and web services, we could help emergency physicians find answers to their clinical problems, and avoid some medical errors related to medication interactions through a clinical database,” says AMUQ’s Dr. Martin Pham-Dinh, CCFM-EM.

1. G.Ross Baker et al. *The Canadian Adverse Events Study : the incidence of adverse events among hospital patients in Canada.* JAMC. 25 May 2004; 170 (11); 1678-86.

## **OBJECTIVES: To promote quality of care in emergency medicine**

AMUQ and the Ministry of Health have identified overall goals and objectives for their decision-support program:

1. Reduce the number of adverse events by giving emergency physicians throughout Québec high quality data in a useful format
2. Provide information with high clinical impact; otherwise it isn’t used or useful
3. Provide up-to-date information, so physicians make decisions based on most current data
4. Provide information that embraces the full-spectrum of emergency medicine
5. Standardization of emergency medicine practice in Québec
6. Promote quality care in emergency medicine

“At AMUQ, we initially wanted to create our own clinical database, but this proved to be a complex and costly process. So we started to evaluate solutions from the private sector. It rapidly became evident that PEPID was our best choice for the completeness and quality of the information presented,” adds Dr. Pham-Dinh.

## **SOLUTION: PEPID online and on handhelds provides decision support any time, any place**



AMUQ and the Ministry of Health carefully evaluated PEPID and alternative programs. In their reviews, PEPID ranked first for the depth and quality of information and other factors, such as:

- PEPID is an established leader in point of care medical information
- Independent access via native PDA software, smartphone, wireless and online platforms. Network access to PEPID Online by Static IP address.
- Also available as knowledge base for future systems integration
- Easy-to-use graphical user interface
- No learning required for quick access to concise but complete information

Lifesaving protocols (ALS, ACLS, ATLS, PALS, BLS, RSI, ...)

2,350+ diseases & topics, algorithmic structure, full-spectrum psychiatric information

Complete drug database, over 3,000 medical and dosing calculators, sophisticated drug interactions generator, comprehensive toxicology

Personal & institutional notes—allows standardization and protocol development

You don't need a super computer or a sophisticated IT system behind you to have effective resources at point-of-care

From busy urban emergency departments to the rural medical centers, there is a solution for every work environment

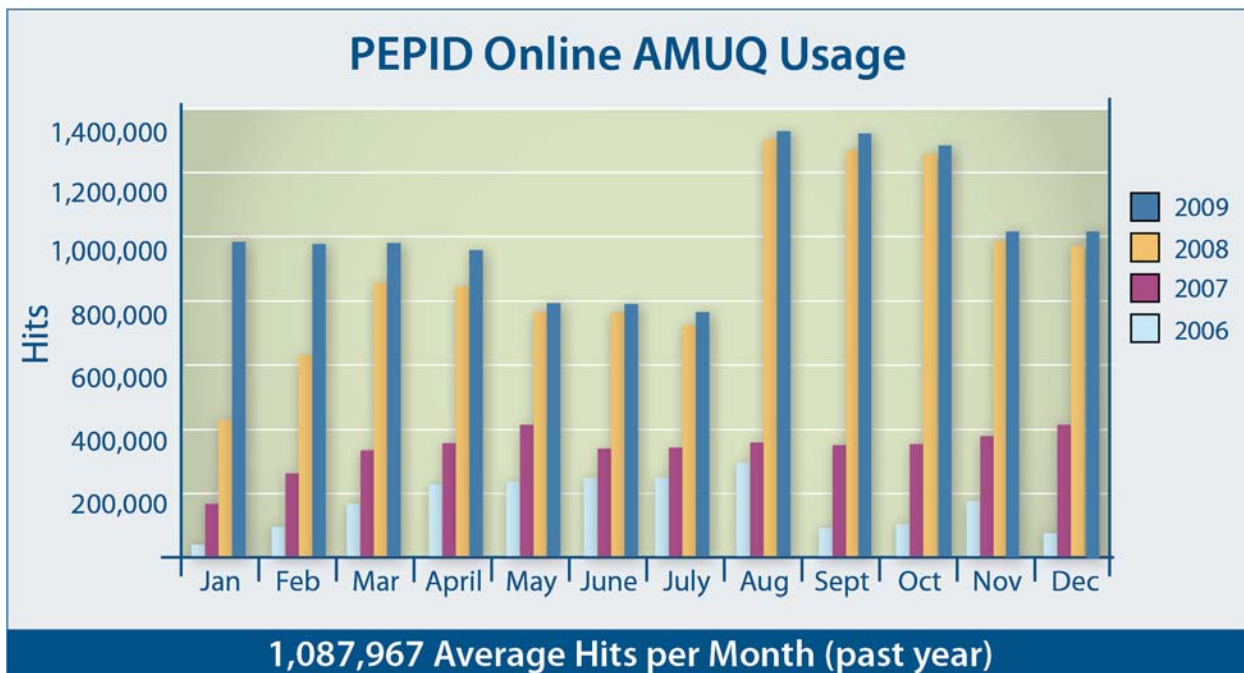
**"It rapidly became evident that PEPID was our best choice for the completeness and quality of the information presented"**

— Dr. Martin Pham-Dinh, CCFM-EM

In 2005 AMUQ, the Ministry of Health, and PEPID reached an agreement, financed by the Ministry, to provide province-wide access to PEPID online for all emergency departments in Québec. In addition, the parties agreed to offer individual physicians subscriptions for use on their personal handheld devices.

## RESULTS: Physician and departmental adoption far exceeds expectations system wide

Today, emergency physicians in Québec are consulting PEPID Online resources 11 million times annually. That is almost 5,000 times per emergency physician in the province. Since program startup, time spent in PEPID Online has quadrupled. These numbers do not reflect PDA and smartphone usage which also reported to be remarkably high as well.



## **RESULTS: Continued from previous page**

Linking emergency professionals with PEPID medical and drug information and decision support tools has helped make the practice of emergency medicine in Québec more accurate and productive. Results have shown that:

- Using PEPID point-of-care information technology supports clinical decisions
- Emergency physicians see more patients within the time-critical windows
- Each patient receives better informed, more accurate care
- Reinforces best practice methods, and
- Results in higher accuracy and decreased medical errors.

“Based on our experience with PEPID, we’ve concluded that the incorporation of electronic clinical decision support should be standard in the complex, fast-paced environment of emergency medicine,” says Dr. Martin Pham-Dinh.

