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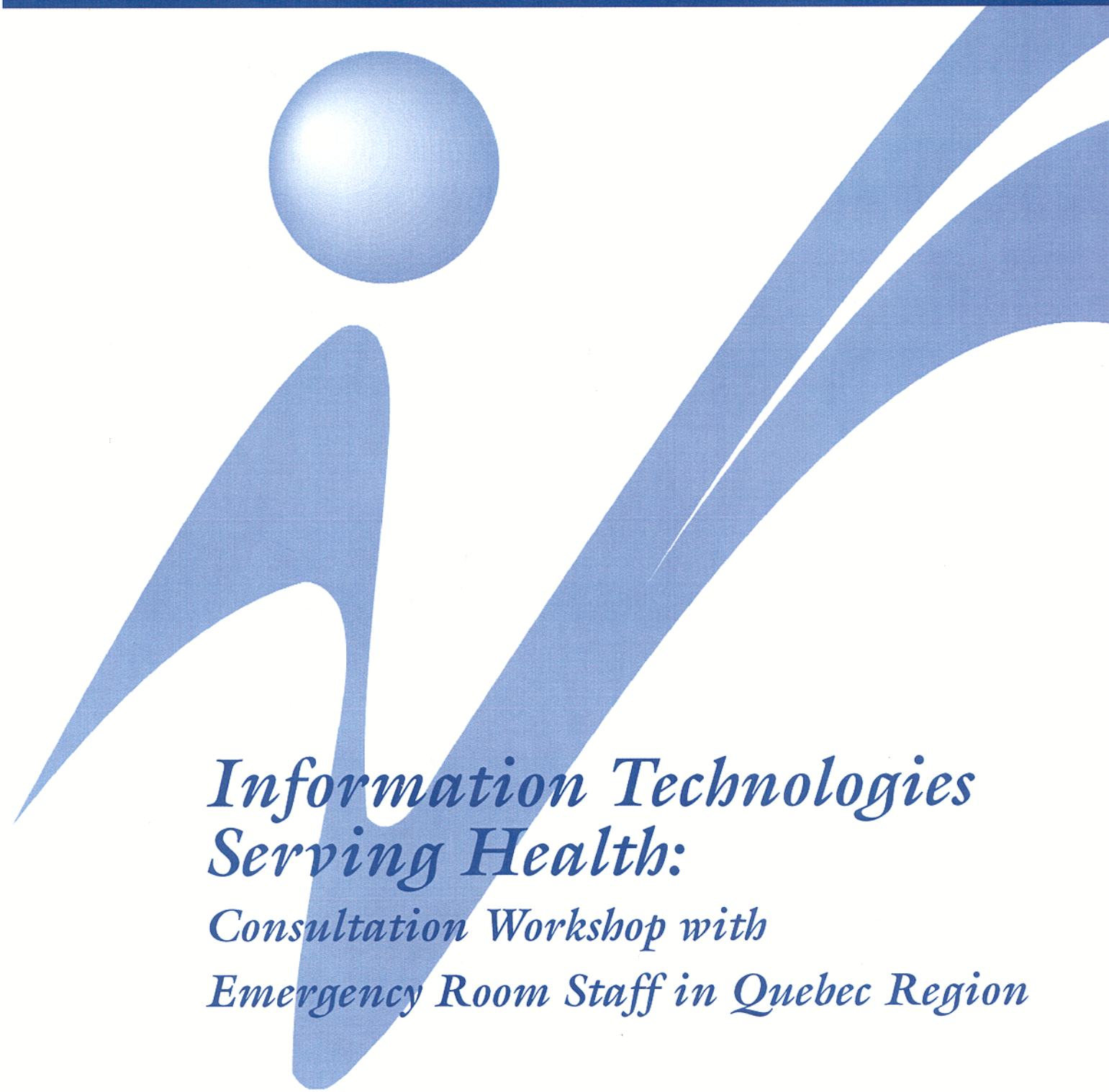

Information Technologies Serving Health:

Consultation Workshop with Emergency Room Staff in Quebec Region

Canada

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Consultation Workshop with Emergency Room Staff in Quebec Region

Office of Health and the Information Highway
Health Canada

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ACKNOWLEDGMENTS

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BACKGROUND

The implementation of the project entitled "*Étude de faisabilité et de coût relativement au raccordement du Centre Anti-Poison du Québec avec six salles d'urgence de la région de Québec et à l'accessibilité en temps réel à l'information sur les risques pour la santé*"(study on the feasibility and cost of linking the Poison Control Centre Quebec with six emergency rooms in the Quebec Region and on real-time accessibility of information on health risks) raised a common concern among those involved. This concern relates to the difficulty in effectively integrating information technologies into the current working process.

Generally, the professionals working in the emergency rooms are very representative of health care professionals overall. These health system workers make daily use of a large quantity of information, and there is reason to believe that they would have much to gain by using the new tools provided by information technologies.

Among the important elements related to the creation of the Health Infostructure, better use of the enormous quantity of data collected daily in the health institutions is fundamental to many recommendations. The concern raised by those working in the emergency rooms therefore seems to reflect certain points that are of interest for the Health Infostructure.

With a view to better understanding the principal and secondary causes of this concern, the stakeholders involved in the project, in co-operation with the Office of Health and the Information Highway, developed an exploratory approach that took the form of a consultation workshop. This half-day workshop brought together emergency room physicians, nurses and managers to evaluate how the issue might be handled and eventually resolved.

CONSULTATION WORKSHOP

The project involved conducting a workshop to examine the approach to case management from the time the patient arrives in the emergency room until he or she leaves. This workshop therefore enabled the participants to determine how the working processes in the emergency rooms might be better integrated by using information technologies.

Consultation workshop objectives

The objectives of the workshop were as follows:

- identify all the activities and efforts involved in providing care to an emergency room patient;
- determine how all these activities could be rethought, taking into account the new tools that are available, including information technologies;
- identify the main concerns of the parties involved in the treatment of a patient in an emergency room; and
- identify a comprehensive vision of care provided in the emergency room, no longer as a certain number of activities carried out by various parties over time, but rather as a continuous process of care.

Activity prior to workshop

Before the workshop, the participants were asked to examine the document "Analysis of Emergency Room Operating Processes" (see Annex A).

Structure of workshop

Activity 1 (large group)

The participants were asked to validate the current emergency room operating process and identify the activities requiring the most effort for information management (sending, receiving, quality, relevance, and so on).

Activity 2 (small working groups)

The participants were asked to identify and validate avenues for improvement, using the model identified in Activity 1 as reference.

Activity 3 (large group)

The participants were asked to express their opinions regarding the measures to be taken and the pitfalls to be avoided in making the improvements described.

Participation in workshop

The success of a consultation workshop is closely tied to the representativeness of the organizations and professionals participating in it. Consequently, it is important that the participants in this workshop were identified.[1]

Institutions represented

- Poison Control Centre Quebec (PCCQ)
- Centre hospitalier universitaire de Québec (CHUQ) :
  - Pavillon CHUL
  - Pavillon Hôtel-Dieu de Québec
  - Pavillon Saint-François-d'Assise
- Pavillon Enfant-Jésus of the Centre hospitalier affilié universitaire de Québec
- Centre de santé des Etchemins

Types of professionals present

- physicians
- nurses
- managers

[1] A detailed list of the institutions and individuals present at the workshop is given in Annex 2.

RESULTS OF CONSULTATION

Current situation

Common vision of current operations

A brief further look at the document “Analysis of Emergency Room Operating Processes” made it possible to arrive at a consensus on a common vision of emergency room operations, independently of the institutions represented by the workshop participants.

Elements involving the most effort

On the basis of the model chosen to define the current operations, the parties involved identified the activities for which significant efforts are needed in information management. The “consultation, complementary investigation and diagnosis” process was unanimously identified as the set of activities generally requiring the most information management efforts. Specifically, the following were pointed out:

- problems encountered in obtaining diagnostic services results;
- relative speed with which these same results are received;
- means used to transmit specimens;
- managing the priority of requests for the institution as a whole (urgency of the emergency); and
- interpretation of the results - imaging results, for example. In some cases, transmission of imaging results to the attending physician can take a relatively long time - from a few hours to a few days, when the process is not computerized. The delays are connected with transcription of the interpretation of the examination and the time required to send the results by mail to the attending physician.

Subsequently, other activities requiring significant efforts were raised by the participants. These have to do with, among other things, access to information concerning the patient, and, in particular, demographic data and the person’s history.

Desired situation

On the basis of the emergency room operations reference model, the workshop participants identified various avenues for improvement for each of the processes.

Intake process

The intake process constitutes the patient's first contact with the emergency room. It is aimed at collecting basic information on the patient, briefly ascertaining the reason for the consultation, and registering the patient, by activating his file or creating a new patient file.

The following avenues for improvement for this process were suggested:

- improving knowledge of the patient by having quick access to his or her file;
- creating the necessary electronic links with outside partners, such as the Commission de la santé et de la sécurité du travail (CSST). It is at the intake point that the patient is registered in the emergency room, and it is generally from there that the information is transmitted to the other parties involved in the network in connection with continuity of care;
- shortening the amount of time it takes to obtain the history containing only principal pathologies;
- merging all the files to obtain a single file per patient; and
- being able to identify patients who have files in other institutions.

Triage process

The purpose of triage is to assign a severity code to each patient newly registered in emergency, in order to determine intervention priorities, the degree of urgency and the acceptable amount of time for dealing with each patient's situation.

The suggested avenues for improvement for this process are as follows:

- throughout the Quebec health network, using a single triage tool, entailing, among other things:
  - decision-making tools to effectively help the medical staff in the triage process or evaluation process; and
  - links with pre-hospital care, including the technicians responsible for ambulance transport and the first response personnel providing the patient with care;
- directing patients passing through the pre-hospital system toward the right type of resources (general, specialized or university hospital); and
- receiving pre-hospital information (for example, information from Poison Control Centre Quebec) through computer links.

Evaluation process

In this process, the attending physician questions and examines the patient to arrive at a diagnosis or medical opinion.

The suggested avenues for improvement for this process are as follows:

- obtaining information that will make it possible to put together the history of the current illness and the observations noted on physical examination in a standard format;
- standardizing the scales and benchmarks for results (lab) -- currently, the benchmarks used for the various examinations vary from one laboratory to another, making it more difficult to compare results and necessary to redo tests in cases of interinstitutional transfer;
- obtaining results, including laboratory results, in electronic form;
- sending the files to the places indicated (care units, intensive care, and so on);
- using the same information collection medium for all interventions and all types of professionals (possible extension of triage sheet);

- passing on the history, as defined in the intake process; and

- obtaining the support of outside organizations — information centres, for example — with a view to providing decision-making tools — this support would be very useful for health professionals, including physicians, working with the patients.

Consultation process

This process is aimed at managing requests for consultation to various health workers and specialists.

The suggested avenues for improvement for this process are as follows:

- having an effective system for requests and results;

- having on hand good management tools covering the administrative aspect of emergency care (statistics, reports and so on); and

- ensuring the availability of consultants in various medical specialties and of other health professionals (social workers, physiotherapists and so on).

Referral process

This process is aimed at directing clients toward the appropriate resources in light of their needs.

The suggested avenues for improvement for this process are as follows:

- properly targeting the information to be sent to the various partners (care units, CLSCs, attending physicians, other hospitals, community resources, and so on); and

- standardizing all of the care interventions within the framework of the care continuum to be followed upon transfer to the other partners.

Other

Some avenues for improvement can be considered more general, including the following:

- having quality monitoring tools for the capture of clinical data (evaluation of quality);
- having computerized access to pharmacy, counselling and decision-making protocols (to help with treatment);
- forwarding the information to the indicated places (care units, intensive care, and so on); and
- being able to electronically send information on reportable diseases (ability to exchange information with health network institutions and organizations).

RECOMMENDATIONS

With regard to the various points raised at this workshop and the objectives targeted, it is possible, following a brief analysis, to formulate certain recommendations. Thus, with a view to helping decision-makers on the next steps to be taken, the following points should be considered:

- ensuring that all new information systems put in place in emergency departments are integrated with the practices and ways of doing things of all the professionals involved;

- ensuring that the information systems provide added value for the stakeholders;

- aiming at standardization of practices with regard to nursing protocols - for example, knowing that a nursing protocol describes a care procedure and, in particular, the steps, indications, precautions to be taken and elements to be monitored;

- aiming at standardization of the elements making up all the information transmitted;

- putting in place an effective system for managing requests and results;

- ensuring continuity, as well as proper management of information, in order that the relevant information may be forwarded to the proper person. One solution would be to establish a summary computerized file containing the principal information on an individual's health and any episode of care received, as well as the patient's profile, his or her health problems, the main diagnosis connected with each care episode, the patient's medications, allergies, and previous surgeries, and so on; and

- providing a framework for the quality of care evaluation process.

Finally, certain recommendations have been made more specific to the project aimed at linking the emergency rooms with the Poison Control Centre Quebec (PCCQ), including the following:

- specifying the informational content required by the PCCQ (demographic data, reason for consultation, laboratory results, primary and secondary diagnoses, main clinical symptoms, and so on); and

- for both the medical and nursing staff, aiming at eventually developing a more comprehensive computerized tool for documenting not only poisoning problems, but also problems connected with multitraumas and cardiac chest pain.

In addition, provision should be made in the system for functions proper to each of the types of clients targeted.

Generally, a tool such as this could contain a computerized longitudinal patient file specific to each broad category of major emergency handled in emergency rooms (poisonings, multitraumas, cardiac problems) and allow for the input of both nursing and medical data. This file could be linked to the requests and results module and to certain decision-making tools, and could replace the various paper forms for these targeted clienteles. It would include the information to be sent subsequently to other organizations (PCCQ) or institutions (continuity of care) and the information needed for evaluating the quality of professional practice and for producing certain results indicators with respect to the identified clienteles.

CONCLUSION

It should be remembered that the objective of this workshop was to raise points for reflection and suggest avenues for action in connection with the use of information technologies as a tool to help with managing and organizing care in emergency departments. Among these points for reflection, the following observations should be noted:

- All of the participants were enthusiastic about the approach used - that is, an approach that would integrate the solutions with the current ways of doing things.

- Information provides added value in the processes in emergency rooms, but few projects now under way concern themselves with this aspect.

- Everyone expressed a desire to participate in a project aimed at improving information and its management within the framework of an approach that would take the current processes into account and thus be better integrated with their reality.

Generally, all the participants had a very positive attitude toward use of information technologies in their day-to-day work. At the same time, they recognize the potential of using information technologies for improving care. However, it is important to note that this openness of the professionals is conditional on achieving greater efficiency, within the framework of current practices.

Finally, it should be noted that, despite the limits imposed by a half-day workshop, the participants in the meetings were able to identify elements for reflection that, in their opinion, warrant further examination, with a view to extending their scope and benefits.

An approach such as this could enable all those involved - both the information systems people and the clinical workers - to develop a better understanding of the possibilities for use of information technologies in connection with improving emergency room care. In addition, this approach would make it possible to develop a common vision of needs and of ways to optimize integration of the information systems into the emergency departments, thereby also making it possible to identify success factors for the implementation of the National Health Surveillance Infostructure.

APPENDIX 1

**Consultation Workshop with Emergency Room Staff in Quebec Region:
Analysis of Emergency Room Operations**

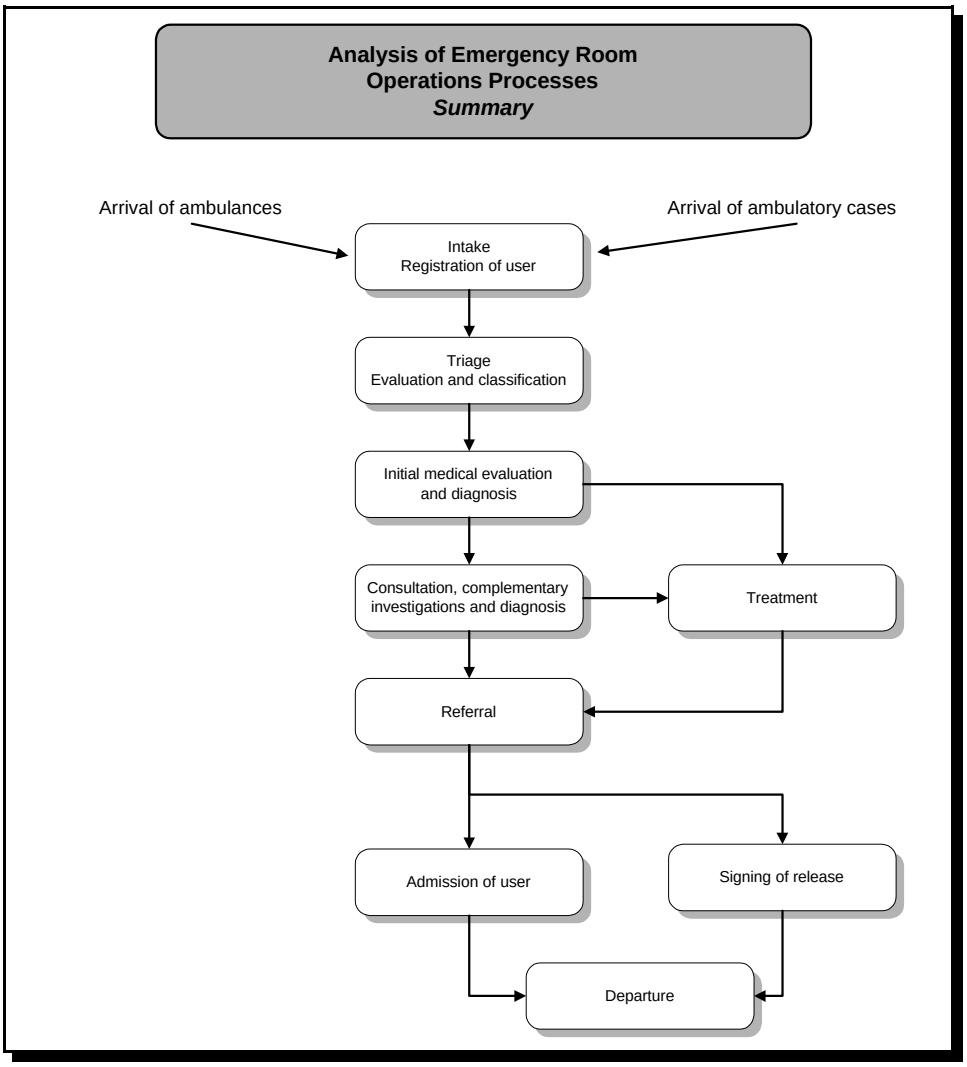
EMERGENCY ROOM OPERATIONS

The analysis of emergency department operations is presented in relation with the following processes:

- summary of emergency room processes;
- intake process;
- medical evaluation process;
- consultation and investigation process;
- referral process.

Summary of processes

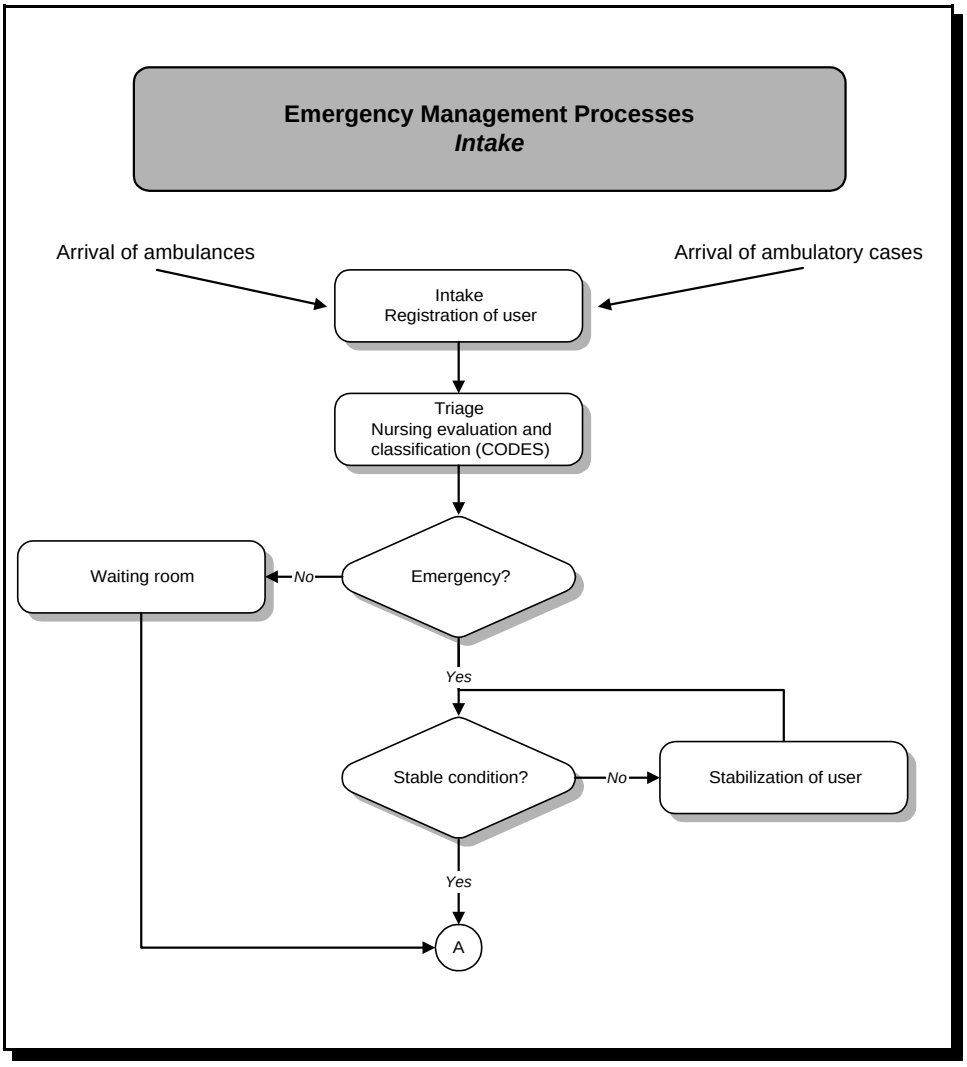
The summary presented covers all of the phases that may be involved in responding to the patient's needs, from the time the patient arrives at the emergency room to the time he or she leaves it.



Process on arrival in emergency room: intake

The intake process constitutes the patient's first contact with the emergency room. It is aimed at collecting basic information on the patient, briefly ascertaining the reason for the consultation, and registering the patient, by activating his file or creating a new patient file.

The patient's first contact with the emergency room should be with the triage nurse. Triage must be done quickly and in accordance with the emergency room's established protocols. The purpose of triage is to assign a severity code for examined cases and determine the module by which the patient is to be seen (stretcher or ambulatory).

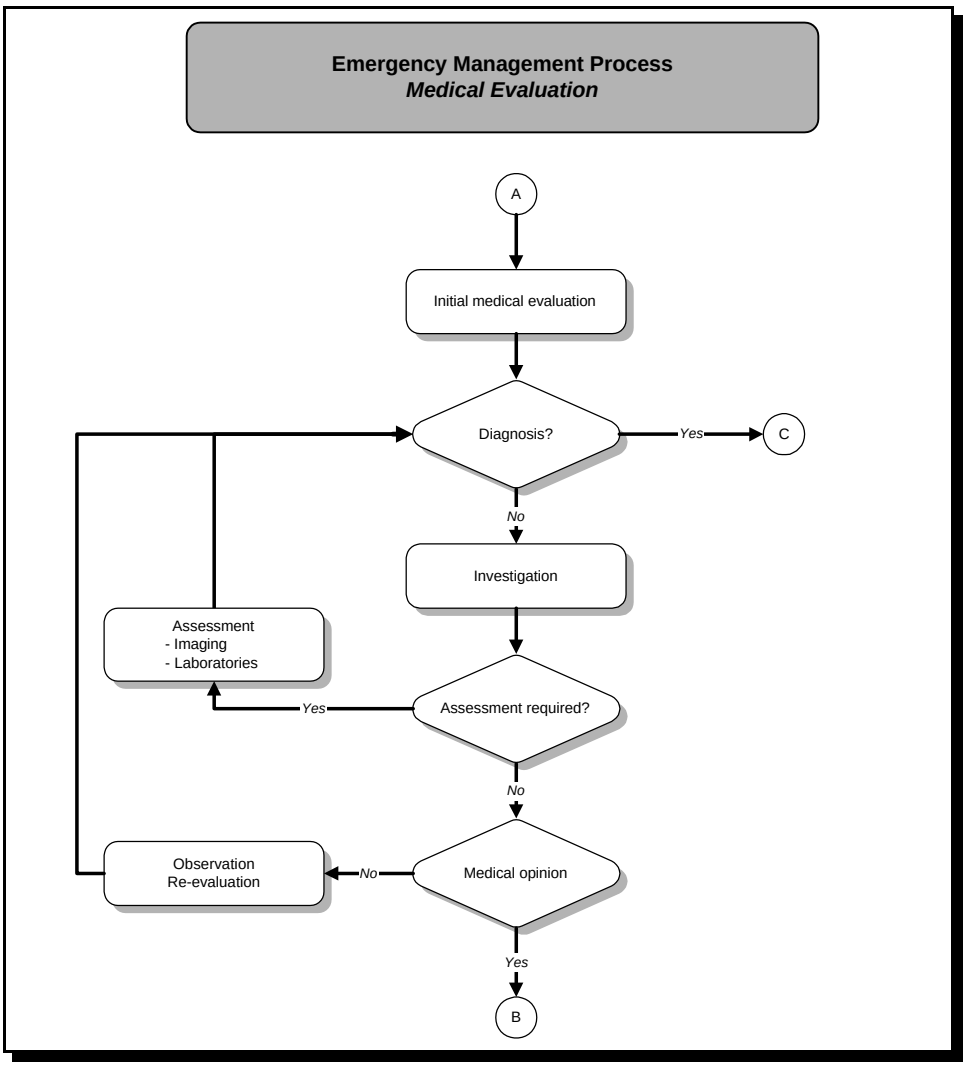


Medical evaluation processes

This process involves the attending physician and is aimed at arriving at a diagnosis or medical opinion.

Evaluation-treatment

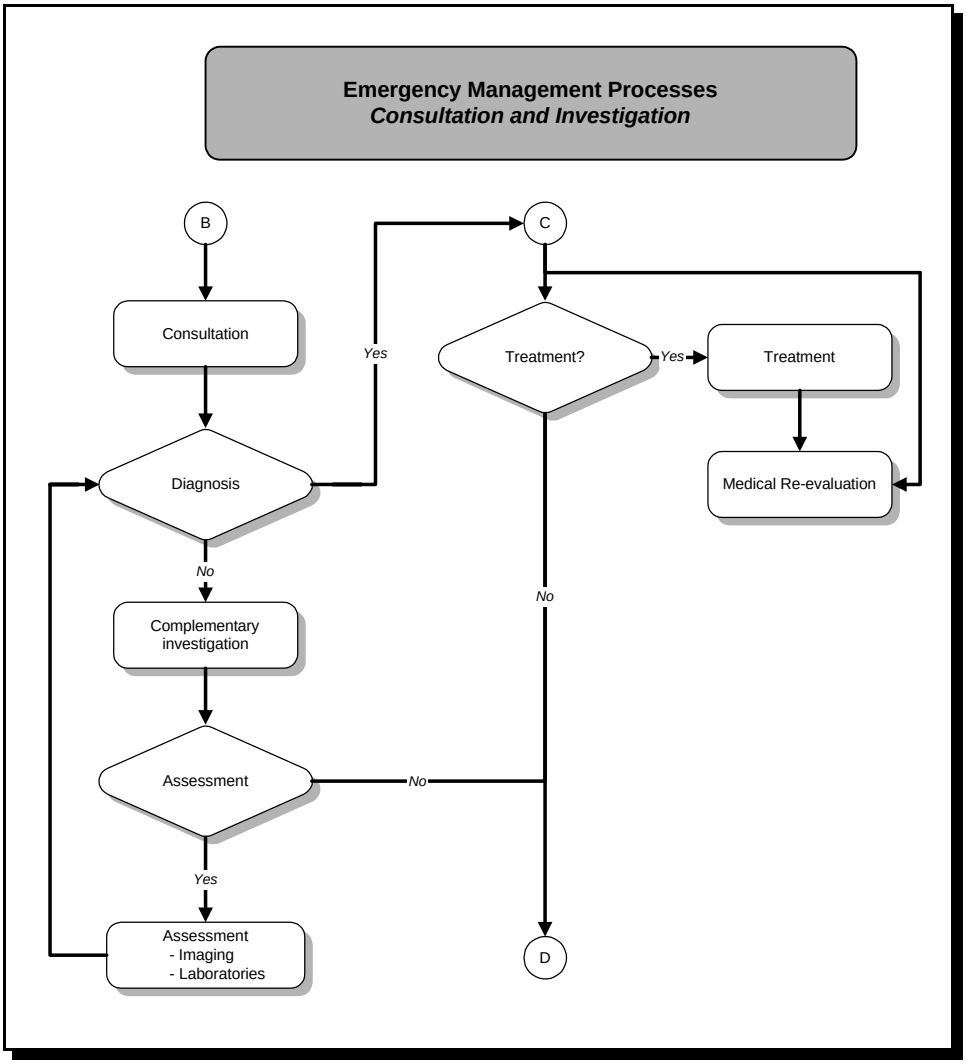
The maximum period for evaluation-treatment by the emergency medical team should be four hours. By the end of four hours, a decision should have been made regarding further action with respect to the patient: release, admission, observation, consultation.



Consultation and investigation process

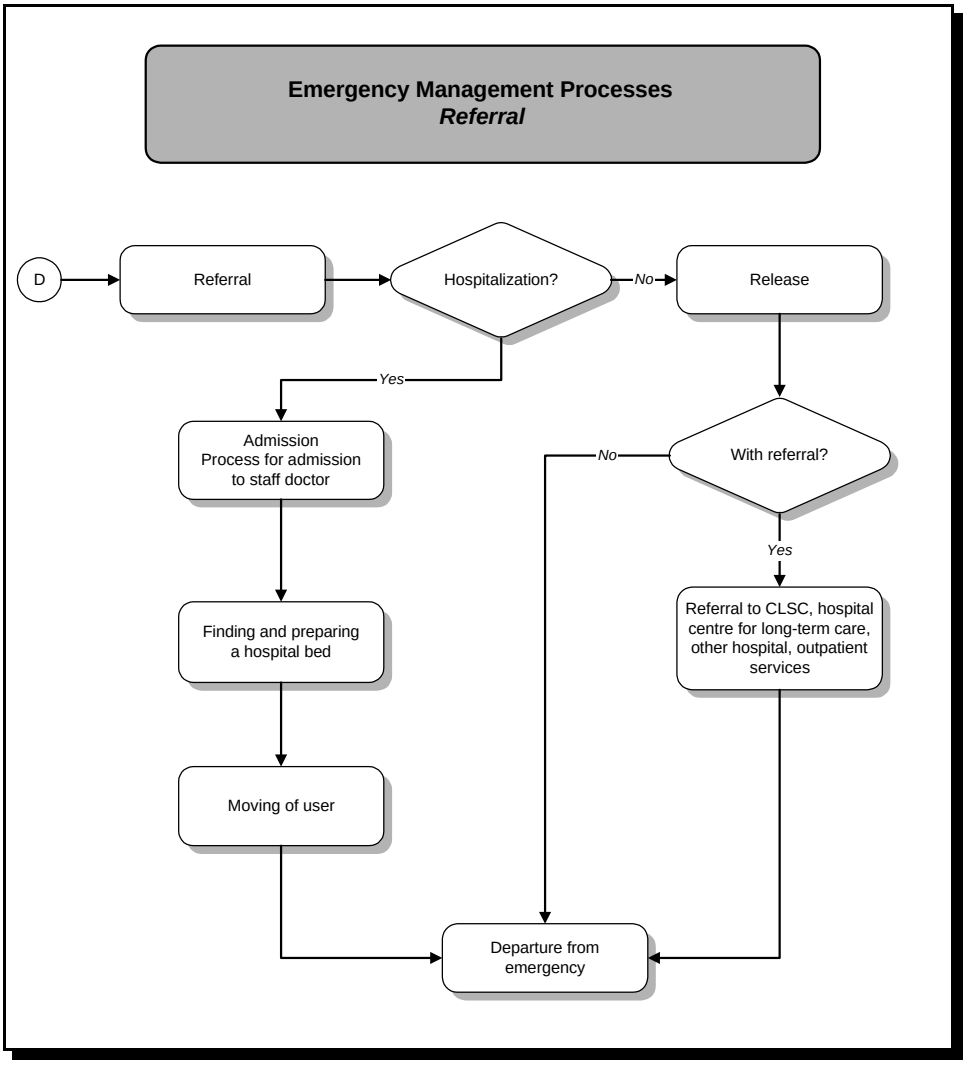
It is essential to have a clear policy regarding emergency consultations. It is recommended that the period between the request for consultation and the decision-making on the part of the consultant be two hours (maximum of four hours if other tests prove necessary). By the end of this period, the consultant should have made one of the following decisions:

- admission;
- release or consultation needed in another specialty.



Referral process

This process is aimed at healthy management of stretcher use in the emergency room and referral of clients to the proper resources on the basis of their needs.



APPENDIX 2

List of Persons Who Participated in Workshop

Participants in consultation workshop

Name	Position	Institution
Dr. Guy Sanfaçon	Director	Poison Control Centre Quebec (PCCQ)
Dr. René Blais	Medical Director	Poison Control Centre Quebec (PCCQ)
Ms. Marie-Édith Ouellet	Nurse	Poison Control Centre Quebec (PCCQ)
Dr. Pierre Savard	Chief, CHUQ Emergency Department	Centre hospitalier universitaire de Québec (CHUQ)
Dr. Stéphane Bergeron	Chief Medical Officer, Emergency Department, Pavillon CHUL	Centre hospitalier universitaire de Québec (CHUQ)
Ms. Gertrude Bourdon	Emergency Manager	Centre hospitalier universitaire de Québec (CHUQ)
Mr. Alain Marcoux	Emergency Manager, Pavillon SFA	Centre hospitalier universitaire de Québec (CHUQ)
Ms. Nicole Plante	Emergency Manager, Pavillon HDQ	Centre hospitalier universitaire de Québec (CHUQ)
Ms. Manon Pelletier	Assistant Head Nurse, Emergency Department, Pavillon HDQ	Centre hospitalier universitaire de Québec (CHUQ)
Mr. Gilles Bond	Nurse, Emergency Department, Pavillon CHUL	Centre hospitalier universitaire de Québec (CHUQ)
Dr. Sylvain Dion	Director, Professional and Health Services	Centre de santé des Etchemins
Ms. Hélène Godbout	Nurse	Centre de santé des Etchemins
Ms. Rébecca Drolet	Emergency Manager	CHA Pavillon Enfant-Jésus
Mr. Daniel Lavoie	Emergency Nurse	CHA Pavillon Enfant-Jésus

Observers at consultation workshop

Name	Position	Institution
Ms. Thérèse Gagnon	Project Manager	Health Canada
Mr. Pierre Levasseur	Senior Analyst	Health Canada

Facilitators at consultation workshop

Name	Position	Institution
Mr. Gilles Bigaouette	Training and Process Review Adviser	CGI
Dr. André Simard	Medical Consultant	CGI
Mr. Marc Vachon	Systems Development Adviser	CGI