The Impact of a Standardized Information System Between the Emergency Department and the Primary Care Network: Effects on Continuity and Quality of Care

February 2003

Dr. Marc Afilalo
Dr. Eddy Lang
Dr. Jean François Boivin

Decision Maker Partners:
Collège des Médecins du Québec
Collège de Médecine Familiale du Québec
Réseau de Recherche en Urgence de Québec

Funding Provided by:
Canadian Health Service Research Foundation
Fonds de la Recherche en Santé du Québec
Ministère de la Santé et des Services Sociaux
Ministère de la Recherche de la Science et de la Technologie
Régie régionale de la Santé et des Services Sociaux
Association des Médecins d’Urgence du Québec
Emergency Department, Sir Mortimer B. Davis, Jewish General Hospital
Information Services Department, Jewish General Hospital
Principal Investigators:

Dr. Marc Afilalo  
Emergency department, D-012  
SMBD – Jewish General Hospital  
3755, Côte St-Catherine road  
Montreal, Quebec  H3T 1E2  
Telephone: (514) 340-8222 ext. 5568  
Fax: (514) 340-7519  
E-mail: marc.afilalo@mcgill.ca

Dr. Eddy Lang  
Emergency department, D-027  
SMBD – Jewish General Hospital  
3755, Côte St-Catherine road  
Montreal, Quebec  H3T 1E2  
Telephone: (514) 340-8222 ext. 5568  
Fax: (514) 340-7519  
E-mail: eddy.lang@mcgill.ca

Dr. Jean François Boivin  
Epidemiology department  
SMBD – Jewish General Hospital  
3755, Côte St-Catherine road  
Montreal, Quebec  H3T 1E2  
Telephone: (514) 340-8222 ext. 3647  
E-mail: jean-f.boivin@mcgill.ca

This document is available on the Canadian Health Services Research Foundation web site (www.chrsf.ca).

For more information on the Canadian Health Services Research Foundation, contact the foundation at:  
1565 Carling Avenue, Suite 700  
Ottawa, Ontario  
K1Z 8R1  
E-mail: communications@chrsf.ca  
Telephone: (613) 728-2238  
Fax: (613) 728-3527

Ce document est disponible sur le site web de la Fondation canadienne de la recherche sur les services de santé (www.fcrss.ca).

Pour obtenir de plus amples renseignements sur la Fondation canadienne de la recherche sur les services de santé, communiquez avec la Fondation :  
1565, avenue Carling, bureau 700  
Ottawa (Ontario)  
K1Z 8R1  
Courriel : communications@fcrss.ca  
Téléphone : (613) 728-2238  
Télécopieur : (613) 728-3527
The Impact of a Standardized Information System Between the Emergency Department and the Primary Care Network: Effects on Continuity and Quality of Care

Dr. Marc Afilalo
Dr. Eddy Lang
Dr. Jean François Boivin
Antoinette Colacone
Dr. Howard Goldstein
Dr. Alex Guttman
Sophie Lapierre, PhD
Alain Vandal, PhD
Dr. Steve Rosenthal
Dr. Bernard Unger
Claudine Giguère

1 Emergency Department, Jewish General Hospital, McGill University
2 Epidemiology department, Jewish General Hospital, McGill University
3 Department of Family Medicine, Jewish General Hospital, McGill University
4 École Polytechnique, Université de Montréal
5 Department of Mathematic and Statistic, McGill University

Acknowledgements:

The members of the research team would like to thank the following persons for their invaluable collaboration during the study:

The 23 family physicians participating in the study: Dr. D Alper, Dr. D Amdursky, Dr. J Backler, Dr. I Benjamin, Dr. A Bourkas, Dr. A Elbaz, Dr. N Fox, Dr. S Heisler, Dr. P Lipes, Dr. R Ludman, Dr. M Malus, Dr. L Newman, Dr. J Rivilis, Dr. G Rosenthal, Dr. G Rubin, Dr. D Steg, Dr. M Zigman, Dr. A Zylbergold, Dr. B ElFassy, Dr. ZM Jast, Dr. D Shahin, Dr. N Ubani, Dr. M Rajakesari.

Collaborators from other centres: Dr. Bruno Baril, Dr. Yves Rouleau, Marie-Josée April.

The research assistants: Maria Gordon, Elana Ptack, Mady Virgona, Aicha Lewis, Krystyna Zaluski, Marie Gdalewitch, Perry Gdalevitch, Manon Goulet.

The Information Services Department of the SMBD-Jewish general Hospital: Frédéric Abergel, Ramin Abedan, Josée Brassard, Helene Jean-Baptiste.

SMBD-Jewish General Hospital, Emergency Department: All emergency physicians and support staff.
Key Implications for Decision Makers

- There is a great deal of inefficiency and duplication in patient care due to a large gap in information-sharing between emergency departments and the primary care network.

- A standardized communication system can provide automatic updates on patient emergency department care to family physicians using a secure web site.

- While a standardized communication system can bridge gaps in patient information, it requires the support of all stakeholders: hospital managers, information technology departments, clerical staff, and emergency and primary healthcare physicians.

- The standardized communication system does not appear to reduce emergency department overcrowding.

- Patient confidence in the healthcare system is increased by knowing their family physician has information about their emergency department use.

- Primary care providers also need detailed information about their patients’ hospitalizations as well as their emergency department use.

- Communication tools need to be tailored to each type of healthcare professional, such as CLSCs, specialists, emergency physicians, etc.
Executive Summary

Context

Inadequate communication between the various components of the healthcare system leads to a lack of co-ordination, a breakdown in continuity of care, and inefficient use of resources because of duplication. More specifically, there is a crucial gap in information-sharing between the emergency department and primary care providers. The aim of this project was to explore these deficiencies and develop a computer-based network that would serve as a standardized communication system linking the emergency department and primary care providers.

The project was completed in the three phases. First, a series of focus groups were held at three Quebec hospitals with emergency and family physicians to better understand the state of communication between emergency departments and primary care providers. Second, an Internet-based communication system was designed to provide physicians with the information they had identified as important. Third, the impact of the standardized communication system was evaluated in light of four healthcare delivery outcomes: improved follow-up by family physicians; reduced resource use; family physician value; and patient value.

Phase One: Focus Groups

These sessions allowed the research team to gauge the importance of sending patient information to the emergency rooms from the family physician’s office, as well as in the other direction. The team also determined what information each set of physicians needed the most, and how an ideal communication tool should work. The focus groups confirmed that communication between emergency departments and primary care facilities is poor, resulting in difficulties organizing follow-up care. Physicians also noted significant duplication of tests and evaluations, due to a lack of information on what was done in the emergency department.
Phase Two: Development of the Standardized Communication System

On the morning following the emergency department visit of a patient whose family physician was a participant in the project, an e-mail message would be automatically sent to this physician indicating that a patient of his (not identified by name) had been in the emergency department within the previous 24 hours. The e-mail contained a link to a password-secured web site where the physician could read a detailed report. The report contains information on the patient’s presentation to the emergency department, the results of any examinations performed (electrocardiographic, laboratory, and radiologic), and consultation reports completed in the emergency department by a physician specialist or consulting service. There is also information on the patient’s final diagnosis, disposition (including new medications), and follow-up plan. All reports were made printer-friendly for inclusion in the primary care provider’s dossier.

For information going in the other direction, emergency physicians were asked if they required information from a primary care provider for any patient who had consented to participate in the project. As none of the family physicians in the project used electronic patient records, primary care information could only be obtained during the hours of 8 a.m. to 4 p.m. When the emergency physician wanted information, a detailed request would be sent by fax from the hospital to the family physician, and the data would be faxed back to the emergency department. There were very few instances where emergency physicians took advantage of the system.

Phase Three: Evaluation

Four questions were asked to evaluate the impact of the standardized communication system:

1. Does the standardized communication system improve continuity of care for patients cared for in the emergency department by enhancing follow-up of acute medical problems and reducing duplication?
2. Does the standardized communication system lead to a reduction in resource use within the emergency department as a result of enhanced follow-up of patients discharged from the emergency department?
3. Do primary care providers value the standardized communication system?
4. Do patients value the standardized communication system?
1. The standardized communication system showed significant benefits in continuity of patient care, including enhanced follow-up of patients by their primary care physicians. Similarly, primary care providers with access to the system reported far superior knowledge of their patient’s medical circumstances as they related to the recent emergency visit. The system did not appear to achieve significant reductions in the duplication of tests and other consultations at the point where primary care providers followed up with their patients after an emergency department visit.

2. The intervention did not demonstrate any of the anticipated benefits for emergency department-based evaluations (fewer tests and consultations in the emergency department and fewer return visits.)

3. The majority of physicians who participated in this project were extremely positive about the system, perceiving it as a vast improvement over existing methods of transmitting information on patients who sought emergency department care. Physicians reported direct benefits to the quality of care provided to their patients, the physician-patient relationship and satisfaction with clinical practice. Most family physicians also felt that the scope of the tool should be widened to include information on their patients’ hospitalizations.

4. The patients recruited into this trial reported that the standardized communication system resulted in appreciably enhanced transmission of medical information from the emergency department to their primary care provider. This rapid transfer of information was perceived as being beneficial to the quality of the patient care that the patient’s physician was able to provide.

Limitations

While the project was envisioned as a multi-centered trial involving three Quebec hospitals, a number of significant technological barriers — primarily a lack of standardization between hospital computer systems — forced the application to be implemented only at the Sir Mortimer B. Davis Jewish General Hospital.