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Key Implications for Decision Makers

As long as service providers in the healthcare system — hospital, homecare, private physicians' practices, pharmacies, residential and chronic care centres — are not integrated and information on patients, care and services is scattered or stored on separate and incompatible media, it is difficult to deliver efficient, quality care.

Integrated information and communication technology is an acknowledged performance factor that gives physicians and managers quick access to up-to-date clinical and administrative data.

The study shows that:

- The most striking effects on healthcare network performance are fewer treatment mistakes due to avoidance of lost information, and greater efficiency. This is achieved by cutting down on paperwork, eliminating retranscription of information, and reducing duplication of tests or loss of requests.
- Patients are very satisfied when this technology is used because they see improvements in accessibility and quality of care, while the confidentiality of information about them is preserved.
- When this type of technology is almost totally deployed and widely used by professionals, we note an improvement in communication among professionals working with a given patient (whether in the same organization or not), enhanced access to clinical information, especially test results, and improved clinical decision-making in various circumstances.
- To promote effective deployment of this technology, advocates must have a clear vision, adopt an effective information strategy on the project, make a sustained effort using financial incentives where necessary for the purchase of equipment, and obtain support from government authorities. However, they must avoid making several organizational changes at the same time and avoid excluding clinical users from being a part of developing the implementation plan.
- To encourage use of this very expensive technology, emphasis must be placed on adequate training, smooth operation of software, competent and accessible technical support, as well as a range of equipment that meets the needs of professionals.
- Incomplete deployment and concentration of use of technology among certain categories of professionals are factors that adversely affect their use. Physicians especially like the fast access to test results rather than the information about care. Nurses instead favour the functionality of the care plan that supports their practice.

Executive Summary

Healthcare systems are facing pressure that is forcing them to make changes in the way they organize and deliver care and services to improve performance. One obstacle to meeting performance targets is the lack of truly integrated networks in most communities in Quebec. So as long as the various service providers in the healthcare system — hospital, homecare, private physicians' practices, pharmacies, residential and chronic care centres — are not integrated and information on patients, care and services is scattered or stored on separate and incompatible media, it is difficult to deliver efficient, quality care. These shortcomings contribute to care fragmentation, therapy duplication, inappropriate delivery of care, delays in delivering care, and patient dissatisfaction.

Reliance on integrated information and communication technology linking various clinicians in various institutions is a recognized factor for success in meeting established performance targets. This technology gives clinicians and managers quick access to up-to-date clinical and administrative data on patients, clinical conditions, care received, to support development and implementation of critical paths and facilitate the clinical and organizational decision-making process in the direction expected by the network.

Results

Introduction of Info-Route-Santé (IFS) in the Brome-Missisquoi subregion can be described as relatively successful. Most targeted users have taken ownership of IFS and its various components, despite a demanding implementation context involving a wide variety of adaptations. IFS was seen by many as a disruptive factor in the organization but its use has grown steadily over the years. Introduction of IFS within and outside hospital is fairly comparable in terms of the existing number of sites, but there are more users and workstations at Brome-Missisquoi-Perkins Hospital.

The nurses group has the most users and generates more than half of existing transactions, within and outside hospital. However, there are some discrepancies between IFS as

planned and as implemented, because some planned elements are missing. These are:

- failure to integrate some types of professionals;
- problems with the clinical integration required for pathologies requiring continuity of care;
- failure to integrate private pharmacies;
- closure of the hospital pharmacy for two of three shifts;
- a poorly integrated ambulatory component; and
- failure by physicians to take ownership of IFS.

Private pharmacies did not become integrated because they saw no potential benefits. Full appropriation of this tool by physicians did not occur because the only component that interested them was obtaining laboratory and imaging results. The care plan is considered a nursing tool and physicians believe that submitting requests can be handled by other people.

IFS was implemented by nurses and the core of the system remains the nursing care plan. To generate more interest among physicians, the system must be rethought to provide other components and functions that offer immediate, tangible benefits for their practice. Some physicians mentioned the case summary as a missing factor for making decisions. Incentives linked to the wait for results should also be considered. The perceived effects on accessibility, continuity and mistakes in the pharmacy component are generally moderate. Other studies must be conducted to measure health, with a view to determining quality. Some perceived effects are more important for efficiency with respect to reducing duplicate tests and lost requests. Finally, patients are satisfied with respect for confidentiality and quality of care.

We believe it worthwhile to promote development of IFS. This is a necessary tool for improving clinical integration. We currently see two obstacles to this. Quebec still lacks a strategic vision for development of this new technology in the healthcare system. Incentives must also be used to promote IFS to foster the operation of genuine clinical networks.

Approach

The evaluative research focused on computerization of nursing care and treatment plans, pharmacies, and medical imaging and laboratory requests and results for Brome-Missisquoi-Perkins Hospital in Quebec's Montérégie area — an Info-Route-Santé project.

Patient information has been made available and accessible to clinicians in hospitals, CLSCs (homecare and blood test centres), and some fifteen private medical clinics. Physician participation in the project is voluntary. Deployment of the technology also planned to link the Centre public d'hébergement de soins de longue durée (CHSLD) and the two private pharmacies in the community.

The purpose of the research was to provide knowledge on the implementation conditions and effects produced by IFS by:

- analysing the implementation strategy, conditions and context;
- analysing the degree and type of use of IFS;
- identifying which players use IFS and for what reasons;
- identifying the conditions that promoted (or discouraged) use of the system; and
- assessing the effects of IFS, that is, patient satisfaction, user satisfaction, and clinical effectiveness: continuity, treatment errors, technical efficiency and productivity.

The evaluative research covered a period of three years. The healthcare network includes one 83-bed general care hospital, the Centre local de services communautaire (CLSC), CHSLD de la Pommeraiie, with three service points and 498 extended-care beds in four municipalities, as well as 15 private medical clinics. More than 400 users have had access to IFS since 1995. Several measurement instruments were used, specifically interviews with the developer and people in charge of the project, a questionnaire for all users (nurses, paramedics, physicians) and a questionnaire administered to two patient samples. The IFS data logging supported analysis of actual use of IFS and continuity of care for some pathologies.