

Program sustainability begins with the first events

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Abstract

This study examines the process by which a program becomes sustainable. In health promotion, sustainability is usually modeled as the final stage of a program's evolution. In practice, however, this stage model appears deceiving. This article proposes that processes for implementing programs and for ensuring their sustainability are concomitant. Using a multiple-case study methodology, we examined routinization—the sustainability process in organizations—of the Quebec Heart Health Demonstration Project in five community health centers over 10 years. Data came from documents and interviews. The analysis considered themes using the Critical Incident Technique. Our results suggest routinization-related events occurred as soon as the project began, and the occurrence of specific routinization events foresaw the presence of program-related routines. These events were concomitant with those associated with implementation. This supports the proposition. It suggests health promoters should consider program sustainability from the very beginning, and can take inspiration from the events presented herein when looking for ways to influence the sustainability of their programs.

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1. Introduction

In health promotion, the evolution of programs is usually modeled as a series of successive stages. According to this stage model, sustainability is the last stage, notably occurring after the implementation stage. However, this model could be theoretically deceptive, and may lead to contradictory recommendations for program actors (Pluye, Potvin, & Denis, 2004). The implementation of a program and its sustainability are defined, respectively, as the launching of program-related activities and their

continuation. In the alternative conceptualization of program evolution discussed in this paper, implementation and sustainability processes are concomitant, with the process of sustainability beginning as soon as programs are implemented. This article examines these propositions by exploring the process of program routinization.

Routinization consists of sustainability in organizations. We concur with other researchers in seeing routinization as the primary process of sustainability (Pluye et al., 2004; Shediak-Rizkallah & Bone, 1998; Steckler & Goodman, 1989; Weber, 1995; Yin, 1981). We propose elsewhere that at any given time, a routinized program results from routinized activities (Pluye, Potvin, Denis, & Pelletier, in press). Drawing on Weber's definition (1995), an activity is the understandable behavior of individuals with respect to the behavior of others. Programs prescribe the activities required to achieve a set of objectives that direct the behavior of actors involved. In turn, these activities consist of tasks to be completed while drawing on financial, human and material resources. Programs are routinized when these

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activities satisfy the characteristics that define organizational routines. Routinization is the process that leads to the establishment of such routines.

According to the organizational literature, events are the relevant observation units for studying processes (Mohr, 1982; Peterson, 1998; Van de Ven, 1992; Van de Ven & Poole, 1995). Drawing from Abbott (1995), we define events as elements in sequences where *sequences* ‘refers to an ordered sample of things’, this order usually being temporal (p. 207). A pattern of elements suggests a typical sequence, namely where ‘certain events occur in a characteristic order’ (p. 207). Together these patterns and their effects may contribute to explaining organizational processes. This explanation is based on a ‘basic theoretical story of conceptual events’ (p. 212) and a ‘qualitative analysis of the events involved’ (p. 213). Events are distinguished by what is set off in time by a before and an after, but ‘despite the apparent temporal precision indicated by the word *event*, there are clearly different levels of events: an event may be anything from a bad year, a merger, a decision, a meeting, a conversation, or a handshake’ (Langley, 1999, p. 693).

According to the conceptualization of implementation and sustainability as concomitant, either specific events have to be associated with each process or some events have to be shown to influence different processes in different directions (Pluye et al., 2004). To explore the existence of events specific to each process, the contributions of Scheirer and colleagues on implementation (Roberts-Gray & Scheirer, 1988; Scheirer, 1994) were juxtaposed with those of Pluye, Potvin, and Denis (2000) and Yin (1981) on sustainability processes. This juxtaposition suggests three types of events: (1) those specific to sustainability; (2) those specific to implementation; (3) and joint events that belong to both sustainability and implementation. In order to explore the routinization process specifically, we will examine the events that mark program-related activities in organizations. Empirical studies of organizational routines and the routinization of health promotion programs point to the following list of routinization events.

2. Routinization events

The literature on routinization presents eight events that are associated with the presence or absence of routinized activities. Among those, two are specific routinization events and six are joint routinization and implementation events.

2.1. Specific routinization events

2.1.1. Resource stabilization

The literature suggests that the stabilization of financial, human and material resources encourages routinization.

In a study of six types of innovations, Yin (1981) provides three types of events that stabilized resources and encouraged the survival of innovations: equipment turnover (renewal of material resources when needed), turnover in key personnel (change of original personnel after an appropriate period of time) and attainment of widespread use of the new activities in the organization (use by all relevant components). The literature on health promotion suggests several similar examples. For Goodman et al. (1993), the incorporation of program activity financing in the ‘core funding’ of an organization encourages the routinization of the program. Butterfoss et al. (1998) report that securing financing was ‘a milestone’ in the routinization of a coalition program (p. 220). In a study of schools participating in the Minnesota Heart Health Program, Bracht et al. (1994) conclude that ‘school health programs may not be expected to survive long without a support structure that regularly revises, repackages and resells programs’ (p. 253). Conversely, several examples indicate that a destabilization of resources hinders program routinization, particularly when there is a substantial reduction in the financial resources committed to program-related activities (Bracht et al., 1994; Goodman & Steckler, 1988; Shediak-Rizkallah & Bone, 1998; Sorensen et al., 1995; Thompson, Lichtenstein, Corbett, Nettekoven, & Feng, 2000; Wickizer et al., 1998).

2.1.2. Risk-taking

The literature suggests that risk-taking encourages routinization. When the organization takes risks in support of program activities, it builds confidence among actors involved in activities and encourages the routinization of programs (Pluye et al., 2000). March (1996) proposed that organizations balance the exploitation of recognized activities with the exploration of new activities. Exploration is organizational risk-taking in order to pursue activities ‘of new knowledge, of things that might come to be known’ (Levinthal & March, 1993, p. 105). The organization takes risks in trying activities, so the actors adopt a ‘can do’ attitude with and become ‘overconfident’ in order to carry them out (p. 109). In other words, the exploration of new activities at the organizational level involves risk-taking while the early adoption of new behaviors at the individual level is not necessarily related to risks. In the literature on organizations, empirical studies support these theoretical propositions. New products and new activities benefit from a larger window of opportunity to be routinized: ‘More extraordinary or exceptional learning will occur during product debuts, and have a greater effect, than the more incremental change made during a product’s production life’ (Levin, 2000, p. 634). Exploration leads to the presence of organizational routines (exploitation): ‘once the knowledge gained through exploration has become embodied in a prototype, the firm’s attention then turns to exploitation processes’ (Rothaermel & Deeds, 2004, p. 204).

No empirical illustration of these propositions was found in the health promotion literature.

2.2. Joint routinization and implementation events

2.2.1. Incentives

The literature suggests that incentives encourage permanence in human resources and routinization. According to Yin (1981), the promotion of personnel (into positions of greater responsibility and power) encouraged the routinization of innovations. Adding concrete benefits to human resources also constitutes an incentive (for example, in the form of convenience or reduced effort). All incentives reward actors. In a study of 10 programs, Steckler and Goodman (1989) suggest that when ‘benefits associated with the program outweigh costs, individuals become predisposed to supporting the program’s continuance’ (p. 38). In health promotion the incentives often cited include ‘networking, information sharing, resources sharing, involvement in an important cause, enjoyment, enhancing one’s skills and receiving personal recognition’ (Butterfoss, Goodman, & Wandersman, 1993, p. 322). For example, Prestby, Wandersman, Florin, Rich, and Chavis (1990) specifically studied the role of incentives in the routinization of a program in neighborhood associations. They point out that ‘the frequency of incentive management efforts was significantly higher in active associations’ (p. 137). Other studies support these results (Butterfoss et al., 1998; Sorensen et al., 1995; Sutherland, Cowart, & Harris, 1998). Conversely, some costs specifically discourage permanence in human resources and hinder routinization. The costs most often cited are ‘time consuming, losing autonomy, expending scarce resources, overcoming an unfavorable image, lacking direction, lack of recognition, becoming burned out, lacking the necessary skills and feeling pressured’ (Butterfoss et al., 1993, p. 322).

2.2.2. Adaptation of activities

The literature suggests that the adaptation of activities according to their context or environment has an influence on the routinization process. As suggested by Fiol and Lyles (1985) and Weick (1982), adaptation refers to the incremental adjustment of activities in accordance with local circumstances and environmental variation. In health promotion, the routinization of a program is encouraged when activities are adapted to obtaining the support of a public health agency to get the appropriate resources which may change characteristics of the program. For their part, Goodman and Steckler (1989) suggest that program activities appropriate to the needs of the population are a critical condition for routinization to take place. For example, according to Jackson et al. (1994), the routinization of the Stanford Five-City Project, which involved heart health promotion, was difficult in those organizations where the mandate did not allow them to satisfy the more pressing needs of their community.

By contrast, competition and the recognition of failure work against routinization. The routinization of activities in a given program is hindered when these activities compete with others that give the organization a competitive advantage (Pluye et al., 2000). For example, in their discussion of the routinization of a Kaiser Foundation program in a coalition, Wickizer et al. (1998) note that ‘over time, other pressing problems surfaced, such as urban violence, that absorbed the energy, making it difficult to maintain the coalition’s interest in promoting health’ (p. 143). In the same vein, failed or ineffective activities, when recognized, hinder routinization. The recognition of a failure to deliver activities hampers the ends of routinization, because the organization then reinforces its traditional activities, which are considered sure to succeed. Bracht et al. (1994), for example, maintain that ‘some Minnesota Heart Health programs were dropped because they were simply not attracting enough interest or participants’ (p. 252).

2.2.3. Objectives fit

The literature suggests that routinization is more likely when a program and organizational objectives are coordinated; namely when program objectives fit with the values of the organization and staff. According to Goodman and Steckler (1989), routinization occurs when the goals of organizations and programs are fitted to work together in an adjusted way. In the same vein, Wickizer et al. (1998) underscore ‘the importance of the fit between the goals of the program and the mission or the orientation of the organization’ (p. 144). Conversely, a poor fit works against routinization. Bracht et al. (1994) suggest that ‘some agencies dropped the Minnesota Heart Health Program because they no longer viewed it as integrating well into their organizational framework or mission; a medical clinic incorporated a grocery-store product labeling program for a period, but later dropped it in part because it did not integrate well with its usual activities’ (p. 252). We propose that a change in strategic direction can be evidence of a poor fit between organizational and program goals. Changes in direction are changes in organizational strategies, and they take the form of changes in objectives or activities. They hinder routinization when they interfere with program-related activities.

2.2.4. Transparent communication

The literature indicates that transparent communication between the actors is necessary to achieve congruence among objectives, to share cultural artifacts, and to take corrective actions, thus promoting routinization. In health promotion, it is generally understood that ‘open communication helps the group focus on a common purpose, increases trust and sharing of resources, provides information about one another’s programs, and allows members to express and resolve misgivings about planned activities; durable coalitions often have frequent meetings

and a well-developed system of internal communication' (Butterfoss et al., 1993, p. 324). For example, Florin, Chavis, Wandersman, and Rich (1992) looked at the routinization of a program running in neighborhood associations, and suggest that the 'active associations used more methods to communicate with members' than those that were inactive. Conversely, misinformation indicates a poor congruence, and hinders routinization (Pluye et al., 2000). For example, Lackey, Welnetz, and Balistrieri (2000) studied the routinization of a program in five community centers and concluded that the routinization process is hindered by distorted information: 'When a committee designated the sponsor for the fifth center, accusations proliferated that the selection process had been narrowed' (p. 358). This center is no longer in operation.

2.2.5. Sharing cultural artifacts

The literature suggests that routinization is encouraged when cultural artifacts from program activities are shared with organizational artifacts. In keeping with Cook and Yanow (1996), we define artifacts as myths, symbols, metaphors and rituals that express a set of organizational values, beliefs and feelings. The sharing of cultural artifacts is one of the ways programs and organizations adapt to each other and encourage routinization. According to Goodman and Steckler (1989), routinization is the mutual adjustment of both the program and organizational standards: 'normative adjustments include accommodations between program and organizational structures, functions, beliefs, and behaviors' (p. 75). This is illustrated by a senior citizen exercise program, routinized in a coalition within a university community, from which some departments 'began to recognize health promotion' as a consequence of the sharing program-related belief (p. 75). In the same vein, Sorensen et al. (1995) state that 'a participatory program, such as the Well Works project, may be best suited to companies where employee participation is the norm' (p. 61). For their part, Lytle, Ward, Nader, Pederson, and Williston (2003) indicate that certain symbols of the CATCH program (the Child and Adolescent Trial for Cardiovascular Health in elementary schools), namely posters, were integrated into science classes outside of the well-defined heart health promotion curriculum.

2.2.6. Integration of rules

Finally, the literature suggests that routinization is encouraged when program rules are integrated into the rest of the organization's rules. For Yin (1981), routinization is encouraged when 'program functions become part of job descriptions and prerequisites' of organizations or when 'the use of innovation becomes part of statute, regulation, manual, etc.' (p. 63). In other words, routinization is promoted by the supervision of program-related activities, the planning of these activities and the task descriptions. For example, Florin et al. (1992) state that 'active (sustained)

block associations were more likely to operate with rules and procedures written and precisely defined' (p. 228).

3. Implementation events

Two additional events described by Roberts-Gray and Scheirer (1988) and Scheirer (1981) appear to be specific to implementation. *Adequate investment of resources*: 'There is an adequate amount of qualified staff, staff time, financial support, and materials' to carry out the activities (p. 70). This includes individual staffing components, such as leadership, the presence of organizational champions, staffing skills or capacity, and staff expertise or training. *Compatibility of the activities with those of the organization (vs. disruption of the operating work flow)*: activities are introduced into the organization and prove to be compatible with other organizational activities both in practical and technical terms. 'There is a compatibility of roles and staff contributions' (p. 74) and 'an ability to carry program requirements into actual practice' (p. 77). Thus, this review of empirical studies of organizational routines and the routinization of health promotion programs leads us to distinguish three categories of events: (1) specific routinization events, (2) joint routinization and implementation events, and (3) specific implementation events (Fig. 1).

4. Background

In order to explore the routinization process, we conducted a study of the routinization of the Quebec Heart Health Demonstration Project, hereinafter called 'the project'. We studied the events that marked project activities in five rural community health centers (Pelletier, Moisan, Roussel, Gilbert, 1997; Potvin et al., 1992). Heart health education began in these centers in 1987, when the regional public health authority and health center directors identified heart health as a priority. From 1987 to 1997, the regional public health authority coordinated quarterly meetings with all the actors involved in heart health in the community centers. The results of these meetings were used in planning the pilot project.

From 1987 to 1991, the five centers implemented a community action initiative in heart health. This project benefited from federal and provincial financing from 1991 to 1997, which was used to reinforce community action implemented by the centers. In 1997, the regional public health strategy was reoriented. The administrative functions of the governing regional public health authorities of two regions were merged, and the new organization no longer supported community action in heart health. In 2000, the project's basic activities in the 12 communities were overseen by 12 heart health volunteer committees.

<p>Specific routinization events</p> <ul style="list-style-type: none"> • Stabilization of organizational resources devoted to activities: equipment turnover, turnover in key personnel and attainment of widespread use of new activities* • Organizational risk-taking with respect to these activities
<p>Joint routinization and implementation events</p> <ul style="list-style-type: none"> • Incentives or benefits to the actors (vs. costs discouraging the actors) • Adaptation of the activities (vs. competition or failure) • Objectives fit (vs. reorientation) • Transparent communication (vs. misinformation) • Sharing of cultural artifacts • Integration of rules relative to activities into those of the organization
<p>Specific implementation events</p> <ul style="list-style-type: none"> • Investment of adequate resources to complete the activities • Technical or practical compatibility of the activities with those of the organization (vs. disruption of the operating work flow)

*Program-related activities that may become routinized

Fig. 1. Routinization or implementation events.

We reported the following project routinization results in 2000 elsewhere (Pluye et al., in press). Project activities were observed in each center in 2000. The data came from documents and interviews with project actors. *Centers A, B and C*: activities that came out of the project in these centers were routinized; they satisfied all the characteristics of organizational routines. *Center D*: several activities came out of the project, but they were not routinized; not all characteristics of organizational routines were met. *Center E*: no official activity resulted from the project; thus, no organizational routine derived from the project in this center.

The specific objective of the present paper is to assess the variability of the events that marked the project-related activities in the five centers. This variability is examined in terms of the categories of events presented in our literature review, the passage of time and the presence or absence of routinized activities derived from the project in 2000.

5. Method

The method used is a retrospective multiple-case study. The five cases studied correspond to the five community health centers. According to the method proposed by Van de Ven and Poole (1995) for studying organizational processes, ‘we defined a qualitative datum, and entered raw data into incidents; we evaluated the reliability and validity of incidents; we coded incidents into qualitative events constructs; and we evaluated the reliability and validity of coded events’ (p. 164). Building an exhaustive biographical collection of data on the events is an onerous task. We decided instead to collect only data concerning events that

project actors judged important among those that occurred between 1987 and 1997. The data was collected in 2000. The project’s regional coordinator supplied activity reports and a list of actors involved in the project in the centers between 1987 and 1997. Twenty actors out of a group of 23 were able to participate in the study (Table 1). On the basis of the annual activity reports written between 1987 and 1997, we elaborated chronological lists of project-related activities that suggested 10 different activity categories: (1) the promotion of physical activity, (2) the promotion of healthy eating habits, (3) clinics for measuring blood pressure, (4) cardiovascular risk factors screening, (5) heart health education through the media, (6) other heart health educational activities, such as conferences, (7) meetings with volunteer committees (activity programming, follow-up and assessment), (8) volunteer training sessions, (9) activities in concert with the regional public health authority, (10) various other activities, such as fund-raising.

We then conducted interviews with project actors to gather detailed information on each of these activities.

Table 1
Project actors and additional informants

	Actors	Actors interviewed	Actors having validated narratives	Additional informants	Informants interviewed
Center A	2	2	2	2	1
Center B	3	3	3	1	1
Center C	8	6	6	2	1
Center D	6	5	3	2	1
Center E	4	4	4	2	0
Total	23	20	18	9	4

After each category of activity was read, actors were asked the following question: *what were the important events, positive or negative, related to this category of activity?* Once they had responded, several generic questions were posed, as required, to further explore the significance given to the events (Chell, 1998). *How did this happen? Why? With whom? What did the people involved feel? How did you deal with the situation? What tactics did you use? What happened afterward or what were the perceived consequences?* Each interview lasted between 45 min and 3 h. Each actor was also asked to specify additional informants. Of these additional interviewees, four out of the nine identified participated in the study (Table 1). The discussion was centered on the events in which they took part. These interviews lasted between 15 h and 30 min.

All interviews were recorded on audio cassette and transcribed, the transcriptions read and a list of events assembled. We then reread the interview excerpts for each event and summarized them by theme. A narrative was written to summarize the excerpts using the critical incidents technique to clarify the importance of the events. According to Flanagan (1954), ‘in order to be critical an incident must take place in such a manner that it is clear to the observer, and the consequences of the critical incident must be clearly defined’ (p. 327). A ‘vague incident’ cannot be critical (p. 340). This technique has long been known to be reliable, valid and accurate for observing a process (Anderson & Nilsson, 1964; Tijus, 1985). For each event judged by the actors as important, we analyzed data according to the generic questions listed above. The absence of a response and the presence of contradictory responses suggest a vague event that is therefore not critical. We considered critical events those that were clearly described, and whose consequences, in terms of changes to activities, were clearly defined. Only the critical events were retained for subsequent analysis (interpreted as specific routinization events, joint routinization and implementation events, and specific implementation events). Finally, the actors and the project regional coordinator validated the events’ narratives.

6. Results

6.1. Center A

Narrative overview of the heart health promotion activities: our data showed that between 1988 and 2000, two actors from Center A, a nurse and a community organizer, involved themselves in activities related to a pilot project promoting heart health. They became the key actors in this center’s project. Between 1991 and 1997, the project received financial support from the federal and provincial governments. The project’s intervention strategy consisted of local community development action. The core of

the project was the establishment and maintenance of four volunteer committees in four localities.

The observed and interpreted events from Center A are presented in Table 2. This center presents a collection of specific routinization events and no joint event. *Event A1*: in 1988, the Center offered a position to a staff member for implementing project-related activities. This actor considered it a way to gain access to better working conditions. We interpret this as an incentive. *Event A2*: in 1989, the Center changed its strategy regarding ongoing activities. We interpret this realignment as risk-taking. It was one of the first of two centers to implement community action on heart health. *Event A3*: in 1993, as a result of the distribution of heart-friendly recipes, activities linked to the promotion of healthy eating survived the loss of a project distributing messages on heart health. *Event A4*: in 1995, with the introduction of physical activity logs, activities for promoting physical activity survived the end of walking clubs. *Event A5*: in 1997, activities linked to cardiovascular risk factors screening survived a change in Canadian standards. In accordance with the new standards, the actors continued their activities in the form of screening target groups. *Event A6*: in 1997, activities to support volunteer committees survived the end of federal and provincial government financing because the relative autonomy of committees substantially reduced the actors’ workloads. We interpret events A3 to A6 as the stabilization of resources. Events A3 to A5 ensured that activities derived from the project survived an equipment turnover, and event A6 ensured that activities derived from the project survived a budget cycle.

6.2. Center B

Narrative overview of the heart health promotion activities: our data showed that between 1987 and 2000, three actors from Center B, a doctor and two nurses, became involved in activities related to a pilot project promoting heart health. They became the key actors in this center’s project. Between 1991 and 1997, the project received financial support from the federal and provincial governments. The center’s intervention strategy consisted of local community development action. The core of the project involved the establishment and maintenance of four volunteer committees in four localities.

The observed and interpreted events from Center B are presented in Table 3. In this center, one specific routinization event occurred early. In addition, joint events that encouraged routinization were in conflict with events discouraging it. *Event B1*: in 1987, the Center offered positions to two actors for implementing project-related activities. These actors saw the positions as opportunities to improve their working conditions. This event is interpreted as an incentive. *Event B2*: in 1988, the Center suddenly changed its intervention strategy with respect to activities initially planned. It was the first in the region to implement community action for heart health. We interpret this event

Table 2
Critical events at center A

Center A: themes and narratives of the observed critical events	Conceptual events
<p><i>Event A1: a heart health part-time position becomes available</i> In 1988, the Center had an opening that would involve introducing heart health promotion activities. <i>This event led to few initial activities (some cardiovascular risk factors screening).</i> The actor who took the position considered it an opportunity to do another kind of work</p>	Incentive: for the actor, obtaining this position was an incentive
<p><i>Event A2: change of intervention strategy</i> In 1989, the Center changed its intervention strategy. Before that time, an actor organized cardiovascular risk factors screening in the workplace. <i>This was changed to two actors engaged in community action in heart health, training volunteers and supporting their committees.</i> The change came out of meetings held by the regional public health authority</p>	Risk-taking: at the time, Center A was one of the only two centers that had initiated community action in heart health
<p><i>Event A3: heart-healthy recipes</i> The actors supported committee volunteers in their heart-healthy eating education activities. In 1993, the actors and volunteers recognized that they were failing to get their message out. The volunteers suggested distributing heart-healthy recipes. <i>The Center produced the recipes and the actors assisted volunteers in their distribution.</i></p>	Stabilization of resources: these recipes suggest that the activities survived an equipment turnover
<p><i>Event A4: physical activity logs</i> The actors had assisted the committees in forming walking clubs but by 1995, the actors and volunteers recognized that these clubs had failed. In response, they created logs for keeping track of any physical activity. <i>The volunteers accepted the idea and distributed the logs (assisted by the actors), which had been printed by the regional public health authority.</i></p>	Stabilization of resources: these logs suggest that the activities survived an equipment turnover
<p><i>Event A5: targeted cardiovascular risk factors screening</i> In 1997, the actors put an end to cardiovascular risk factors screenings in the average citizen for two reasons: there had been a radical change in Canadian standards, and the regional public health authority no longer had the funds to maintain the instrument for measuring cholesterolemia (federal and provincial project financing having ended). The actors reluctantly put a stop to these activities. They said that this threatened the survival of the committees, because the screening was a popular activity. <i>One actor, with the approval of management and the Center's doctors, continued to support volunteers in the screening of targeted populations</i></p>	Stabilization of resources: the implementation of targeted cardiovascular risk factors screening suggests that the activities survived an equipment turnover
<p><i>Event A6: relative autonomy of three out of four committees</i> In 1997, federal and provincial project financing ended. The volunteers on three out of four committees were relatively autonomous actors with regard to the promotion of physical activity, distribution of heart-healthy recipes and clinics for measuring blood pressure. <i>Their need for support from the Center in their activities was minimal, and this substantially reduced actors' workloads.</i></p>	Stabilization of resources: the relative autonomy of committees suggests that the activities survived a budget cycle (federal and provincial financing)
<p><i>Event A7: regular support from the regional public health authority</i> Starting in 1988, the regional public health authority organized quarterly meetings with actors from the centers in order to plan the pilot project. After 1991, it also organized annual meetings with actors and volunteers. <i>During all these meetings, the actors and volunteers shared their experiences, were trained and received encouragement.</i></p>	Investment in adequate resources: these meetings were quarterly or annual investments in training and material

The consequences of observed critical events are in italics.

as risk-taking. *Event B3*: in 1992, the Center decided to respond to needs expressed by the population for physical rehabilitation activities for cardiac patients. This event demonstrates an adaptation of project activities according to needs. *Event B4*: in 1997, the Center stopped doing cardiovascular risk factors screening. The actors had doubts about the effectiveness of such screenings. This event is interpreted as recognition of failure. *Event B5*: also in 1997, organizational changes brought about a significant reduction in resources available for accomplishing activities derived from the project. These changes are evidence of a center strategic reorientation.

6.3. Center C

Narrative overview of the heart health promotion activities: our data showed that between 1988 and 2000, eight actors

became involved in activities relating to a pilot project promoting heart health in Center C: these actors included a doctor, four nurses and three community organizers. They became the key actors in this center's project. Between 1991 and 1997, the project received financial support from the federal and provincial governments. The project's intervention strategy consisted of a community action which was at once local development-oriented and social planning-inspired. The core of the project involved the establishment and maintenance of volunteer committees in heart health in one locality, as well as the undertaking of educational activities promoting heart health in another locality.

The observed and interpreted events from Center C are presented in Table 4. One specific routinization event is observed. Joint events that encouraged routinization opposed some that hindered it. *Event C1*: in 1989, this Center had formed a community volunteer committee to meet needs

Table 3
Critical events at Center B

Center B: themes and narratives of the observed critical events	Conceptual events
<p><i>Event B1: two heart health positions become available</i> In 1987, this Center had two openings involving programming heart health promotion activities. The actors who took these positions considered them opportunities to do other kinds of work. <i>They initiated heart health activities.</i></p>	Incentive: for two actors, obtaining positions was an incentive
<p><i>Event B2: change of intervention strategy</i> The actors had programmed heart health activities as part of the Center's existing activities. In 1988, they met with an expert, followed his advice and programmed heart health community action. <i>The Center accepted this change to its intervention strategy.</i></p>	Risk-taking: at the time Center B was the only center to have initiated community action in heart health
<p><i>Event B3: need for physical rehabilitation services for cardiac patients</i> A committee leader asked for an assessment of the needs of cardiac patients. The actors organized two community forums in 1992 during which the need for physical rehabilitation activities for cardiac patients was discussed. <i>With the approval of the Center's management, the actors decided to respond to this need with community action.</i></p>	Adaptation: these activities were adapted to the needs of cardiac patients
<p><i>Event B4: end of cardiovascular risk factors screening</i> The cardiovascular risk factors screening was a popular activity. The actors doubted the results because the people being tested were often already aware of their risk factors. <i>In 1997, the actors stopped their screening at the request of the regional public health authority and in accordance with the new Canadian standards.</i></p>	Failure: the actors' doubts about the screening suggest that they recognized that this activity was a failure
<p><i>Event B5: strategic reorientation of the Center</i> In 1997, organizational changes took place across the Center's territory and throughout the public health region. These changes involved the replacement of management personnel and a change in strategic direction that worked against community action in heart health. <i>As a result, the time actors had to support the committees was substantially reduced.</i></p>	Reorientation: this reorientation ran counter to community action activities in heart health
<p><i>Event B6: regular support from the regional public health authority</i> Starting in 1988, the regional public health authority organized quarterly meetings with actors from the five centers in order to plan the pilot project. After 1991, it also organized annual meetings with actors and volunteers. <i>These meetings trained, raised the standing of the actors and volunteers, and encouraged a sense of belonging.</i></p>	Investment in adequate resources: these meetings were quarterly or annual investments in training and material
<p><i>Event B7: support for programming rehabilitation activities for cardiac patients</i> The actors did not have adequate sources of information in order to program community-based physical rehabilitation activities for cardiac patients. In 1993, they met with an expert in the field, who gave them technical support and provided enough expertise <i>such that they could program these activities according to accepted standards.</i></p>	Investment: This support is interpreted as an investment in qualified personnel
<p><i>Event B8: support for implementing rehabilitation activities</i> In 1994, the actors assisted the volunteers in implementing rehabilitation activities. The committee was incorporated as a community agency in order to obtain funding, be insured and rent space. <i>Doctors and nurses were found to supervise the rehabilitation sessions.</i></p>	Investment: this support was an investment in qualified staff, time, funding and materials

The consequences of observed critical events are in italics.

expressed by the local population. This event demonstrates an adaptation of project activities according to expressed needs. *Event C2*: there was turnover among the community organizers assigned to the project in 1991, 1992, 1993 and 1995. Between 1991 and 1997, these workers had very little involvement in the project because they did not consider it a priority. This event demonstrates competition between project activities and other community activities. *Event C3*: in 1994, project activities contributed to the adoption of a regulation prohibiting smoking in one school. Once it had been adopted, the activities required to reinforce this regulation commanded negligible resources. This event is interpreted as a stabilization of resources (guaranteed survival with respect to budget cycles). *Event C4*: in 1994, the Center brought an end to the promotion of physical activity. The walking clubs were not working. This event is

interpreted as recognition of failure. *Event C5*: there was turnover among the key actors assigned to the project in 1994 and 1995. Between 1994 and 1997, in addition to the uncertainty surrounding working conditions, these actors felt isolated and overworked. This event demonstrates a cost that discourages actors. *Event C6*: in 1995, the Center stopped cardiovascular risk factors screening. The actors had come to doubt the usefulness of this screening. The screening was taken up again in 1996 following changes among actors in key positions. This indicates poor transmission of information between actors (misinformation).

6.4. Center D

Narrative overview of the heart health promotion activities: our data showed that between 1988 and 2000, six

Table 4
Critical events at Center C

Center C: themes and narratives of the observed critical events	Conceptual events
<p><i>Event C1: an opportunity to create a committee</i> In 1989, a community organization of elderly people in a rural community asked the actors to organize some health-related activities. <i>The actors formed a volunteer committee to deal with heart health issues and organized monthly clinics to measure blood pressure.</i></p>	Adaptation: these activities were adapted to the needs of the elderly
<p><i>Event C2: turnover in community organizers</i> There was a succession of four actors in community organization between 1988 and 1997. The changes were in 1991, 1992, 1993 and 1995. <i>Most of these actors gave community action in heart health lower priority than community action for improving the general or social environment.</i></p>	Competition: these actors gave higher priority to competing programs
<p><i>Event C3: declaring a school a non-smoking zone</i> In 1994, a school became a non-smoking zone. The actors assisted the school in its adoption of an internal regulation prohibiting smoking before it was covered by a provincial law. <i>Once this regulation was adopted, no additional involvement by the actors or other community health center resources were required.</i></p>	Stabilization of resources: the reinforcement of the rule requiring a negligible quantity of resources
<p><i>Event C4: failure in physical activity promotion</i> In 1994, two obstacles put an end to the development of physical activity promotion as part of the pilot project. These activities were in competition with other programs. <i>The walking clubs, started by the actors, ended their activities because people preferred walking on their own or in small groups of friends.</i></p>	Failure: the actors recognized that the walking clubs they had formed had failed
<p><i>Event C5: turnover in key actors</i> There was a succession of three key actors between 1988 and 1997. The actors who were nurses played an important role and were essential to the project. The turnover in these positions took place in 1994 and 1996. <i>In addition to the uncertainty surrounding their positions, the two last actors felt isolated and overworked, and gave heart health lower priority.</i></p>	Costs: these changes were linked to important costs for the actors (uncertainty, isolation and overwork)
<p><i>Event C6: reinstatement of screening</i> The actors organized cardiovascular risk factors screenings in average citizens and in schools between 1988 and 1994, then took it up again in 1996. In 1995 they suspended the screenings because they had doubts about the value of these activities. <i>In 1996, after some personnel changes, the new actors reinstated this activity.</i> They did not know why the activity had been suspended</p>	Misinformation: this reinstatement of the activity suggests that the misinformation between actors was due to the changes in personnel
<p><i>Event C7: regular support from the regional public health authority</i> Starting in 1988, the regional public health authority organized quarterly meetings with actors from the five centers in order to plan the pilot project. After 1991, it also organized annual meetings with actors and volunteers. <i>All these meetings trained, raised the standing of and gave encouragement to actors and volunteers.</i> They were enriching and rejuvenating</p>	Investment in adequate resources: these meetings were annual or quarterly investments in training and material
<p><i>Event C8: involvement of two actors in heart health in 1988</i> In 1988, two actors organized cardiovascular risk factors screenings, in particular in schools where the Center already had activities. The Center did not create any heart health positions. <i>The Center authorized this screening on the condition that no additional resource would need to be invested.</i></p>	Technical and practical compatibility: the screening was introduced into center activities

The consequences of observed critical events are in italics.

actors from Center D became involved in activities related to a pilot project promoting heart health: these consisted of three nurses, two community organizers and one doctor. They became the key actors in this center’s project. Between 1991 and 1997, the project received financial support from the federal and provincial governments. The project’s intervention strategy consisted of community action which was at once local development-oriented and social planning-inspired. The core of the project involved the establishment and maintenance of five heart health volunteer committees in five localities, as well as the undertaking of educational activities promoting heart health.

The observed and interpreted events from Center D are presented in Table 5. Two joint events that occurred in this center worked against routinization. *Event D1*: in 1996,

the Center stopped project activities involving the promotion of physical activity. The walking clubs were not working. *Event D2*: in 1997, the Center stopped cardiovascular risk factors screening because the actors doubted their usefulness. These two events are interpreted as recognitions of failure.

6.5. Center E

Narrative overview of the heart health promotion activities: our data show that between 1988 and 2000, three actors from Center E, a nurse, a doctor and a community organizer, became involved in activities related to a pilot project promoting heart health. They became the key actors in this center’s project. Between 1991 and 1997, the project received financial support from the federal and provincial

Table 5
Critical events at Center D

Center D: themes and narratives of the observed critical events	Conceptual events
<p><i>Event D1: failure of walking clubs</i> In 1996, the walking clubs ended their activities. <i>Starting in 1993, the actors were forming and supporting walking clubs. The walks organized by the clubs failed, in particular because they were organized according to fixed schedules and club members preferred flexible schedules.</i></p>	Failure: the actors recognized that the walking clubs had failed
<p><i>Event D2: end of cardiovascular risk factors screening</i> The cardiovascular risk factors screening was free for volunteers and a popular activity. The actors doubted the results because the people being tested often were already aware of their risk factors. <i>In 1997, the actors stopped these screenings at the request of the regional public health authority and in accordance with the new Canadian standards.</i></p>	Failure: the actors' doubts about the screening suggest they recognized that this activity had failed
<p><i>Event D3: regular support from the regional public health authority</i> Starting in 1988, the regional public health authority organized quarterly meetings with actors from the centers in order to plan the pilot project. After 1991, it also organized annual meetings with actors and volunteers. <i>During all these meetings, the actors and volunteers shared their experiences, were trained and received encouragement.</i></p>	Investment of adequate resources: these were annual or quarterly investments in training and material
<p><i>Event D4: a budget specifically for heart health</i> In 1991, the Center was able to establish a budget for heart health with project financing from the federal and provincial governments. <i>The budget enabled actors to begin organizing heart health educational activities in community organizations as well as cardiovascular risk factors screenings</i></p>	Investment: this budget represents an adequate amount in financial and human resources

The consequences of observed critical events are in italics.

Table 6
Critical events at Center E

Center E: themes and narratives of the observed critical events	Conceptual events
<p><i>Event E1: an opportunity to form a committee</i> In 1990, the actors formed a volunteer committee in a community where the population had expressed a need for regular visits by a doctor. The Center did not want to provide this medical service. The new committee met part of the need expressed by the population, in particular as it concerned measuring blood pressure</p>	Adaptation: these activities were in part adapted to the needs of the population
<p><i>Event E2: a volunteer committee ends operations, becoming a walking club</i> A committee of four or five heart health volunteers met several times in 1993 and 1994 in another community. <i>In 1995, this committee ended operations, except for its walking club.</i> The walking was the only activity it had initiated</p>	Failure: the actors recognized the failure of the committee they had formed
<p><i>Event E3: end of cardiovascular risk factors screening</i> In 1995, cardiovascular risk factors screening ended. The actors decided to organize screening in the workplace and stop screening the average citizen on the street, which had been popular, but the actors doubted its relevance. Screening in the workplace failed because the employers refused to let their employees be tested during working hours</p>	Failure: the actors' doubts concerning the screening suggests they recognized that the activity had failed
<p><i>Event E4: lack of actors</i> In 1995, an actor left the project to set up another program in the Center that dealt with medical care. During the same period, a second actor left the project to get more involved in clinical activities. <i>A third actor felt that the three of them had abandoned the project.</i></p>	Competition: this lack of human resources was associated with the actors' involvement in other competing programs
<p><i>Event E5: strategic reorientation of the Center</i> In 1997, the change in the Center's strategic direction was detrimental to activities derived from the project. The Center had merged with a hospital and this had increased care services while causing a reduction in health promotion services. The Center's management changed. Before 1997, management supported the project, but <i>in 1997 the new managers did not reinvest in heart health promotion.</i></p>	Reorientation: this reorientation was at the expense of community action activities in heart health
<p><i>Event E6: regular support from the regional public health authority</i> Starting in 1988, the regional public health authority organized quarterly meetings with actors from all five centers in order to plan the pilot project. After 1991, it also organized annual meetings with actors and volunteers. <i>All these meetings were warmly received and they rewarded, motivated and provided training for actors as well as volunteers.</i></p>	Investment in adequate resources: these meetings were quarterly or annual investments in training and material
<p><i>Event E7: a heart health position becomes available</i> In 1988, the Center's management created a part-time position for heart health promotion. It was complementary to another, existing position that was focused on disease prevention. <i>This new position gave the actor one day per week for organizing heart health educational activities.</i></p>	Investment: this position was an investment in qualified staff time

The consequences of observed critical events are in italics.

governments. The project's intervention strategy consisted of action which was at once local development-oriented and social planning-inspired. The core of the project involved the establishment and maintenance of a volunteer committee in one locality and a walking club in another, as well initiating educational activities promoting heart health in different organizations. In 2000, none of the actors was officially involved in heart health promotion in this center.

The observed and interpreted events from Center E are presented in Table 6. One joint event that encouraged routinization was up against five that worked against it. *Event E1*: in 1990, the Center formed a community volunteer committee to respond to needs expressed by the population. This event demonstrates an adaptation of activities to needs. *Event E2*: in 1995, a second volunteer committee ended its activities (with the exception of a walking club). The actors recognized that they had failed with this committee. *Event E3*: in 1995, the Center stopped cardiovascular risk factors screening because the actors doubted its usefulness for the average citizen. They then tried to organize screenings in the workplace, but the companies' managers refused. This event is also recognition of failure. *Event E4*: in 1995, the actors were no longer available for project activities because of competing activities, particularly health care clinics. This demonstrates competition between the project and other activities. *Event E5*: in 1997, organizational changes effectively ended project activities, demonstrating a strategic reorientation.

In Fig. 2 we provide a schematic representation of all critical events that marked project activities in the five centers from 1987 to 1997. It also links these events with the presence or absence of the project related routinized activities in 2000. There were meaningful variations in the observed events across centers. These variations suggest that specific routinization events, joint routinization and implementation events, and specific implementation events occurred throughout the evolution of the project. In addition, centers where specific routinization events occurred were also those where routinized project activities were observed in 2000. Table 7 presents these events in chronological order, and shows the presence or absence of each element of the conceptual framework, and starting dates, within each Center.

7. Discussion

These results support our proposition concerning concomitant events of implementation and routinization processes. The project routinization process began early in Centers A, B and C. These results also support the proposition that specific routinization events characterize the routinization process of health promotion programs in organizations: risk-taking and stabilization of resources in Center A, risk-taking in Center B and stabilization of

resources in Center C. Results suggest that there was no specific routinization event in Centers D and E where activities were not routinized. Variability in events by center through time and by the presence/absence of project routinized activities in 2000 is in accordance with the definition of processes as cumulative sequences of events. A cumulative sequence is a series of events that can enrich or work against each other (Van de Ven & Poole, 1995).

All these results support the idea that the occurrence of a specific routinization event foresees the routinization of programs or the presence of routinized activities. The results from Centers A and B suggest that routinization can begin with a specific routinization event. This in turn may set in motion a cumulative sequence of events that can lead to routinized activities. It is as if the first specific routinization event put project-related activities on the road to routinization, thus leading to routinized activities. Furthermore, two conceptual events are not illustrated by observed events: sharing of cultural artifacts and integration of rules. This absence may derive from the methodological selection of a limited number of critical events over a 12–13 year period.

The method used nevertheless provides some guarantees in terms of reliability of the data and validity of the results. *Reliability*: the critical incident technique has allowed for a homogeneous definition of events, reducing two shortcomings inherent in retrospective studies: for researchers, the definition of events stands as a major challenge (Langley, 1999). Reliability of data in any retrospective study is also a major issue because the past is never recalled precisely as it was, but reconstituted as memory (Van der Maren, 1995). The critical incident technique reduces these risks in three ways. First, this technique led us to characterize critical events homogeneously across the data. Second, critical incidents are inevitably emotionally charged events, of which memories will be more detailed than other types of events. Third, critical incidents are landmarks in time; they seem less removed in time than ordinary events. For example, a trip is often marked by a critical incident. Memories of the trip will usually be structured in terms of what happened before and after this incident.

7.1. Validity

Given that a multiple case study adopts a 'logic of replication', the comparison between centers supports the validity of the results (Yin, 1994, p. 45). Nevertheless, the instrumentation used has at least a partial effect on validity for two reasons. First, the small number of events observed in each center gives the impression that we lack a logical link between these events and routinized activities. In other words, if we had used a biographical approach, we could have observed all the events in each center which modified activities between 1987 and 1997. 'Biography and narrative do their work by constructing the causal unity of objects

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	2000
Center A												
<i>RSE*</i>			A2	Risk-taking		A3	Stabilization		A4	Stabilization	A5 A6	Stabilization
<i>Joint events</i>		A1	Incentive									
<i>ISE**</i>		A7	A7	A7	A7	A7	A7	A7	A7	A7	A7	
Center B												
<i>RSE*</i>		B2	Risk-taking									
<i>Joint events</i>	B1	Incentive				B3	Adaptation				B4	Failure
											B5	Reorientation
<i>ISE**</i>		B6	B6	B6	B6	B6	B6	B6	B6	B6	B6	
		Investment					B7	Invest.	B8	Invest.		
Center C												
<i>RSE*</i>								C3	Stabilization			
<i>Joint events</i>		C1	Adaptation			C2	C2	C2		C4	Failure	
									C5	C5		
<i>ISE**</i>		C7	C7	C7	C7	C7	C7	C7	C7	C7	C7	
		Investment								C6	Misinformation	
		C8	Compatibility									
Center D												
<i>RSE*</i>												
<i>Joint events</i>											D1	Failure
											D2	Failure
<i>ISE**</i>		D3	D3	D3	D3	D3	D3	D3	D3	D3	D3	
		Investment										
						D4	Investment					
Center E												
<i>RSE*</i>												
<i>Joint events</i>				E1	Adaptation				E2	Failure	E5	Reorientation
									E3	Failure		
									E4	Competition		
<i>ISE**</i>		E6	E6	E6	E6	E6	E6	E6	E6	E6	E6	
		Investment										
		E7	Investment									

*RSE: Routinization specific events
 **ISE: Implementation specific events

Fig. 2. Distribution of events observed according to center, time and routinized activities in 2000.

over time' (Heimer, 2001, p. 47). Second, events that occurred in 1998 and 1999 clearly influenced project routinization, but we did not observe these events because there were no written activity reports covering these years. Thus, we could not include activities completed in 1998

and 1999 in the activity summaries, and we could not collect data on the events of this period according to the method selected. As mentioned in the background section, the presence of routines in 2000 was nevertheless observed and reported elsewhere (Pluye et al., in press).

Table 7
Distribution of events observed according to time and conceptual events

Conceptual events	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
<i>Specific routinization events</i>											
Organizational risk-taking		B2	A2								
Stabilization of resources						A3		C3	A4		A5 A6
<i>Joint routinization and implementation events</i>											
Incentives (vs. costs)	B1	A1						C5	C5		
Adaptation (vs. competition or failure)					C2	B3 C2	C2	C4	C2E2E3E4	D1	B4 D2
Objectives fit (vs. Reorientation)											B5 E5
Transparent communication (vs. misinformation)										C6	
Sharing of cultural artifacts											
Integration of rules											
<i>Specific implementation events</i>											
Investment of adequate resources		A7B6C7 D3E6E7	A7B6C7 D3E6	A7B6C7 D3E6	A7B6C7 D3E6	A7B6C7 D3E6	A7B6C7 D3E6	A7B6B7C7 D3E6	A7B6B8C7 D3E6	A7B6C7 D3E6	A7B6C7 D3E6
Technical or practical compatibility (vs. disruption of work flow)		C8									

A#, B#, C#, D# and E#: events number # occurred, respectively, in Center A, Center B, Center C, Center D and Center E.

8. Lessons learned

This process analysis of routinization provides logical arguments by which we can understand and foresee program evolution according to two pathways: a routinization pathway (Centers A, B and C) and a non-routinization pathway (Centers D and E), as shown in Fig. 2. In turn, these pathways suggest two important applications for program actors in health promotion. First, they invite actors to consider the events that influence program-related activities from the very beginning of programs in terms of their routinization. We therefore support the approach put forward by Paine-Andrews, Fisher, Campuzano, Fawcett, and Berkley-Patton (2000) in which the planning of sustainability begins at the very start of programs. This reflexive approach departs from the recommendations suggested by the stage model traditionally used in health promotion, in which sustainability is only considered after programs are implemented (Pluye et al., 2004).

Second, these pathways materialize the proposition that the routinization process is marked by specific routinization events. In three cases, the occurrence of such events leads to routinized programs. This should encourage health promoters to trigger such specific routinization events, a recommendation supported by Jackson et al. (1994). Moreover, health promoters can take inspiration from these events and the joint events we have studied to initiate similar events. In this way they can influence program routinization. All of this supports the conclusions of Goodson, Murphy Smith, Evans,

Meyer, and Gottlieb (2001) that program routinization is not a linear process.

9. Conclusion

We began with eight routinization events inferred from the literature of which two were specific routinization events. Our empirical work documented the distribution of events that modified the activities of a heart health promotion project in five community health centers. The results suggest that specific routinization events may occur at the outset of health promotion programs. They also suggest that the occurrence of at least one such event foresees the presence of routinized activities that are derived from the programs. Considering that routinization is the primary process of program sustainability, these results support the proposition that implementation and sustainability are concomitant processes. Moreover, they suggest two pathways by which we can understand and foresee program evolution: a routinization pathway and a non-routinization pathway. This proposition and these pathways appear to better represent the empirical reality than the stage model that is usually used in health promotion.

This article also indicates a method that adds to the body of knowledge on health promotion, providing the means to analyze processes' proverbial 'black boxes' (Scheirer, Shediak & Cassady, 1995). Future research using a similar method and drawing on a larger sample could identify 'patterns of sequences of events' that represent different

routinization strategies and may suggest recommendations for actors involved in health promotion programs (Abbott, 1995; Van de Ven & Poole, 1995).

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