Retention of Best Practices by Clinicians after Knowledge Transfer

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ABSTRACT

This thesis examines the retention of best practices by clinicians after the implementation of an integrated care pathway for patients with congestive heart failure. While the literature suggests there are many reasons why the implementation of best practices is difficult, there is little information on the sustainability of best practices once implemented.

Using a qualitative research design guided by Rogers' theory of 'Diffusion of Innovations' the researcher interviewed seven clinicians who participated in the implementation of the pathway. A thematic analysis revealed several themes that ran throughout participants' responses.

While the participants indicated they see value in best practices, they also identified barriers to getting that knowledge into practice and keeping it there. A spectrum of factors, including individual autonomy, time, resources, organizational support and the organization of the system all played a role.

In the end, participants revealed that although small pieces of the pathway remain in practice, the pathway itself is no longer used by clinicians to manage patients with congestive heart failure.

ACKNOWLEDGEMENTS

DEDICATION

I would like to dedicate this thesis to my family.

To my parents for making my education
a priority, and for all your assistance that got me this far.

To William, who asks all the right questions.
May you find the answers you seek.

To Nathan, for helping me see that the future is bright.
You'll never really know what you did for me.

And most of all to Ginelle.
It is here that my words fail me.
I love you.

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Background

1.1 Introduction to the problem

Healthcare is a main interest in the public and private sectors, federal and provincial governments, lobbying organizations and residents of Canada alike. With the escalating costs associated with providing care this is not surprising. Healthcare expenditures continue to climb with the federal government spending $17.3 billion (Department of Finance, Canada, 2005) and the provincial government spending $2.9 billion dollars (Saskatchewan Health, 2005) in 2005/06 alone. As a result there is an onus on governments and health organizations to ensure that clinicians use the most up-to-date and effective tests and treatments available.

The reality is that patients, on the whole, do not receive consistent care from health care practitioner to practitioner, and from clinical setting to clinical setting. Stefanelli (2001) argues that "there are unacceptable delays in the implementation of many findings of research. This results in suboptimal care for patients" (p. 26). Similarly, Rodrigues (2000) argues that "most clinical practice is based on limited evidence" (p. 1344). If clinicians are not relying on scientific evidence in practice, where are they getting their information? There are several answers.

Some practitioners outright reject evidence based medicine because they "associate scientific decision-making with mindless rule-following" (Addis, 2002, p. 372). This attitude is related to the perspective that some clinicians have of knowledge transfer as a top down process (Dobbins, Ciliska, Cockerill, Barnsley & DiCenso, 2002). Part of the problem is that healthcare research and service delivery occur as two independent activities rather than one. Each has its own socio-professional system with activities that occur in large part separate from the other (Lomas, 1997). As a result there is some resistance from clinicians to 'follow

rules mindlessly' when those 'rules' come from an outside source with little relation to the clinician or their organization.

Another major influence on clinical practice is tacit knowledge (or experiential knowledge). For hundreds of years guilds relied on the transmission of tacit knowledge through apprenticeship. Some things cannot be learned except through doing. However, when tacit knowledge is used in practice, and the application contravenes other interventions that are proven to have greater effect on positive patient outcomes, then that professional is providing suboptimal care. "Decisions remain primarily based on healthcare experience and opinion, with little consideration to the available research evidence" (Dobbins et al., 2002, p. 2).

Some studies indicate that clinical practitioners are primarily influenced by their peers (Pearcey & Draper, 1996; Dooks, 2001; Dawes & Sampson, 2003). Other studies (e.g., Estabrooks, 1998) reveal that clinicians tend to primarily use experiential knowledge, followed by knowledge gained in school. Graduates of professional schools are well equipped to deliver health care services, but an intervention that was current when the graduate began practice will likely not be the most effective in the future.

To further illustrate these points, the following is a description of a knowledge transfer research project, which attempted to facilitate the use of scientific evidence in practice.

<div align="center">Use of Research in Practice Project</div>

The project was a collaboration between the Health Quality Council, Saskatoon and Regina Qu'Appelle Health Regions, the University of Saskatchewan and the University of

Regina. The initial study examined two hospitals in Regina, neither of which had guidelines in place for congestive heart failure patients. A summary of the study follows.

Literature reviewed in the report of this study identified that there are between 200,000 and 300,000 people in Canada currently affected by heart failure (HF) and that patients who experience HF have a one-year survival rate of 62% (Cowie et al., 2002). Further, according to the Canadian Institute for Health Information in 2000/2001, heart failure was responsible for the second highest number of days spent in hospital and was the third highest disease for number of cases (Tsuyuki, 2002), and in their specific context the integrated care pathway research group found that "20% of the patients hospitalized were readmitted one or more times within the same year" (Hadjistavropoulos et al., n.d.a., p. 1). Thus, HF accounts for a significant portion of health care services and is a common ailment among Canadians.

According to the literature, current best practices are effective in improving HF survival (Luthi, McClellan, Fitzgerald, Krumholz, Delaney, Bratzler et al., 2002). The best practices identified by the ICP research group follow below:

"Medication
1. ACE inhibitor and beta-adrenergic receptor blocker (β-blockers) should be prescribed for HF patients with left ventricular systolic dysfunction, unless contraindicated or not tolerated (Hunt, Baker, Chin, Cinquegrani, Feldman, Francis et al., 2001; Liu, Arnold, Belenkie, Demers, Dorian, Gianetti et al., 2003).
2.   If ACE inhibitors are contraindicated, Angiotensin II AT_1 receptor blockers (ARBs) are to be considered for use (Liu et al., 2003).
3. Diuretics should be prescribed for all patients demonstrating fluid retention (Packer & Cohn, 1999).

Processes of Care
1. Assessment of left ventricular function via echocardiogram should take place following any clinical event or change in clinical status that could be deemed to have had a significant effect on cardiac function (Hunt et al., 2001; Packer & Cohn, 1999).

2.   Daily monitoring of body weight should be conducted to detect fluid retention and determine diuretic dosing among HF patients (Hunt et al., 2001; Packer et al., 1999; Scott, Denaro, Flores, Bennet, Hickey, Mudge et al., 2003).

3.   Patient mobilization should be achieved within 48 hours of hospital admission (Cardozo & Aherns, 1999).

4.   Education on behavior changes (e.g., limiting salt intake, exercise) should be provided (Buckle, Sharkey, Myriski, Smout, & Horn, 2002; Hunt et al., 2001; Liu et al., 2003; Scott et al., 2003).

5.   Similarly seen as a key component of comprehensive care for HF, discharge summaries should include monitoring parameters such as acceptable blood pressure, goal weight, and most recent serum creatinine and serum potassium (Liu et al., 2003; Packer et al., 1999)."

(Hadjistavropoulos et al., n.d.a., p. 4-5).

The goal of the study was to assess to what extent the guidelines were being followed in the two hospitals. The initial research hypothesis, based on the literature, was that "adherence to practice guidelines would be moderate, and problems with continuity of care and quality of life would be identified" (Hadjistavropoulos et al., n.d.a., p. 4).

Potential subjects were identified from the regional health records database. Patients were contacted "if they had been treated in hospital for HF and then discharged for a period of at least 3 months" (Hadjistavropoulos et al., n.d.a., p. 4). Individuals who fit the study criteria were contacted and asked to participate in scripted interviews. A chart audit was also carried out and included information such as "a diagnosis of HF, comorbidities, processes of care, readmissions, prescriptions in hospital and at discharge, and diagnostic checks performed" (Hadjistavropoulos et al., n.d.a., p. 4). Information was also collected from Saskatchewan Health on prescriptions, admissions, physician visits and home care received. The project was approved by the Regina Qu'Appelle Health Region and the University of Regina Research Ethics Boards.

The study reported the following findings:

Medication

1.   ACE inhibitors were underprescribed and beta blocker prescription rates
        were below guideline rates in-hospital, at discharge and at six months.

2.   Though rates of ACE inhibitor prescriptions were low, alternative drug
        therapies were used more often than the guideline suggested.

3.   Diuretics were consistently used.

Process of Care

1.   Although it is recommended that 75% of patients receive an echocardiogram,
        it was found that just over half of the patients either had an echocardiogram
        in-hospital or within the last year. Echocardiograms provide clinicians with
        valuable information in deciding treatments for patients.

2.   More than half the patients had no documentation indicating they were
        weighed one or more times during their stay in hospital.

3.   Twenty-four percent of patients in the study were mobilized within 48 hours
        of admission.

4.   More than half the patients had no documentation indicating they received
        education during their stay in hospital.

5.   Discharge summaries did not contain information which could be used by the
        patient's family physician in continuing caring for the patient. Serum
        creatinine and serum potassium levels were reported in less than a quarter of
        the summaries (Hadjistavropoulos et al., n.d.a.).

The findings of this study did not demonstrate that patient outcomes would improve if
guidelines were followed. However, the study did reveal that there is some room for

improvement in terms of clinical practice. This study was evidence that the implementation of practice guidelines could improve care for HF patients.

Integrated Care Pathway Project

After it was confirmed that clinicians who were caring for heart patients were not consistently using best practices, a new study began. In 2001, the Health Quality Council, Saskatoon Health Region, Regina Qu'Appelle Health Region, the University of Regina and the University of Saskatchewan received funding from the Canadian Health Services Research Foundation to implement an integrated care pathway based on the findings of the previous study. Clinicians from several disciplines were introduced to the identified best practices with the goal of improving quality and continuity of care for heart patients.

In total two hospitals (each with four units) participated in the integrated care pathway (ICP) study. The information for these charts was obtained from a coordinator of the study (B. Lochbaum, personal communication, July 21, 2007). Table 1 provides a breakdown of how many clinicians from each hospital participated in the pathway implementation. A breakdown for physicians, pharmacists and social workers by unit is not available because they provide services across units.

Table 1. Number of Clinicians that Participated in CHF ICP Implementation

	Hospital 1	Hospital 2
Physicians	17	38
Pharmacists	10	15
Social Workers	6	5
Community Care Nurses	67 (5 were managers)	

Table 2 indicates how many RNs and LPNs from each hospital participated in the pathway and how many did not. It further indicates whether the nurses were full-time or part-time, and which of the four units they belonged to. Table 3 provides a breakdown, by hospital, of how many beds each unit was responsible for. It is important to note that the data in these tables give only a rough idea of the beds and clinical staff for the two hospitals. It was not possible to count everyone who did not participate in the pathway.

Patients that were placed on the CHF integrated care pathway (ICP) "had a primary or most responsible diagnosis of CHF. The pathway was not used with patients who underwent cardiothoracic surgery during their hospital admission, were younger than 30 years of age, resided in a personal care home or nursing home, lived outside of city limits, or were being concurrently treated for chronic renal failure" (Hadjistavropoulos, Pierce & Biem, n.d.b., p. 22).

In total there were 547 CHF patients screened of which 314 were eligible. One-hundred-fifty-five of those patients were placed on the pathway with the remainder serving as a control group. One hundred fourteen patients placed on the pathway participated in the study (Hadjistavropoulos et al., n.d.b.).

The pathway itself consisted of five components:

1. For each day of stay, the ICP outlined assessment, patient care, and treatment in hospital for <u>all</u> providers involved in care.

2. Physician's admitting orders.

3. A discharge summary to be provided to the family physician at time of patient discharge.

4. CHF management sheet for physicians.

5. A pathway for Home Care Nursing in the community (Hadjistavropoulos et

al., n.d.b., p. 22).

Table 2. Number of Nurses that Did and Did Not Participate in the ICP Implementation

	Hospital 1		**Hospital 2**	
	Participated	Did Not Participate	Participated	Did Not Participate
Unit A				
FT RN	12	4	98	33
PT RN	8	9	40	5
FT LPN	10	0	1	0
PT LPN	5	3	0	0
Unit B				
FT RN	27	1	13	1
PT RN	15	7	3	2
FT LPN	0	0	11	1
PT LPN	2	0	5	4
Unit C				
FT RN	19	0	23	2
PT RN	8	0	10	0
FT LPN	8	0	5	0
PT LPN	3	0	2	0
Unit D				
FT RN	15	0	15	0
PT RN	13	0	5	1
FT LPN	2	0	5	0
PT LPN	4	0	7	0

* FT = Full Time, PT = Part Time, RN = Registered Nurse, LPN = Licensed Practical Nurse

Table 3. Number of Beds available

	Hospital 1	Hospital 2
Unit A	35	37
Unit B	12	36
Unit C	32	37
Unit D	28	15

The above components also included the best practices which had been identified by the previous study. Developing the pathway, however, was only one part of the project. The next step was to implement it within an actual health care setting(s). The project hired a full-time pathway coordinator who managed the implementation process. She was responsible for:

1. Delivering educational sessions to all disciplines involved in the pathway (e.g., nurses, pharmacists, family physicians, cardiologists, internists, social workers, occupational therapists).

2. Identifying potential patients and approaching their physicians for consent to place the patient on the pathway.

3. Tracking daily variances from the ICP, reviewing charts, and conducting follow-up phone calls to assist patients with their discharge instructions from the hospital (Hadjistavropoulos et al., n.d.b., p. 22).

The educational sessions were four hours long for the nurses, with one-on-one or abbreviated group sessions for physicians and other clinicians. The sessions included a description of the "concept and potential impact of pathways, and defined the daily roles and responsibilities of all providers involved in the ICP" (Hadjistavropoulos et al., n.d.b., p. 22). The pathway was incrementally implemented on all eight units of the hospitals that cared for CHF patients and was revised throughout the process based on feedback from clinicians. At the end of the ICP implementation process the researchers completed focus groups and interviews with clinicians that participated in the ICP to understand their perceptions of the ICP and the implementation process. The results of those focus groups and interviews (Hadjistavropoulos et al., n.d.b.) are discussed in section *2.2 Literature Review.*

1.2 Statement of the Problem

We need to better understand the processes by which best practices are successfully introduced into clinical settings. The literature suggests that it is not difficult to find variances in clinical practice. Certain interventions and medications still in use are outdated, while others which are not used have been proven as effective treatments. If science has tools to aid clinicians in providing services to patients, and those tools include proven treatments, why are they not consistently used? Part of the problem is that "efforts by researchers and by decision-makers seem to proceed largely independently" (Lomas, 1997, p. 439). They exist as two separate activities within the healthcare system.

The other part of the problem lies in the typical processes of clinical knowledge transfer. Knowledge transfer and acquisition is inherently a social process (Habermas, 1979). This is supported by the fact that clinicians rely on each other, as well as experience, for information on interventions. This knowledge becomes embedded in the individual practitioners and their organization's policies and procedures; and embedded knowledge is hard to replace (Cummings & Teng, 2003). With these obstacles in play it is not an easy task to successfully implement guidelines over the long term.

1.3 Purpose of the Study

The purpose of this study is to assess to what extent the CHF ICP is still in use, and the factors that affect its level of integration. In the literature, assessment of ICP (or best practice) implementation most often occurs immediately after the implementation process concludes (Crawford & Shanahan, 2003; Howel, Butler, Vincent, Watt-Watson & Stearns, 2000; Huby & Rees, 2005; Jackson, Turner-Stokes, Williams & Das-Gupta, 2004), making it

difficult to draw conclusions about the effectiveness and sustainability of ICPs in changing clinician behavior over the long term.

Rogers (1995) argues that individuals or 'decision-making units' may adopt a new innovation and then reject it after it has been put into use. Although the identified best practices were put into use by the clinicians during the implementation phase of the project, when the project concluded the clinicians were left alone to either continue with the behavior change or return to their more familiar practices. Rogers (1995) calls the act of rejecting an innovation after previously adopting it *discontinuance*. It is important to identify rates of discontinuance when best practices are introduced into clinical environments because "a transfer of knowledge is *effective* only when the knowledge transferred is retained" (Berta & Baker, 1998, p. 96). Some studies which have used Rogers Diffusion of Innovation theory have left out an analysis of discontinuance, thereby leaving out valuable information about the innovation/decision (knowledge transfer) process (Pearcey and Draper, 1996).

1.4 Relevance and Significance

With growing attention being placed on the healthcare system in Canada, it is becoming increasingly important that the system provide the best and most effective services possible. With mounting evidence of the discrepancies between which interventions and treatments are the most effective and which are used in practice, and with efforts to introduce best practices to clinicians increasing, it is more important than ever to examine the sustainability of such initiatives.

The study of the factors which expedite or impede the transfer and retention of best practices has received a great deal of attention from many health related fields, from

management to clinician to researcher (Canadian Health Services Research Foundation, 1999; Dobbins et al., 2002). More emphasis needs to be placed on understanding the factors which play a role in the long term sustainability of best practices in clinical environments so that implementation efforts can be more effective.

Literature Review

2.1 Conceptual Framework

2.1.1 Concept Definitions

Knowledge Transfer can include any activity (or multiple activities) which results in the transmission of a concept, practice or innovation from one individual and/or organization to another. The process of transferring knowledge can be initiated by those seeking or disseminating knowledge and is "a highly complex phenomenon extending well beyond considerations of simple dyadic interactions and exchange" (Berta & Baker, 2004, p. 92).

Knowledge Management is better understood as a goal. The goal of knowledge management is to "improve organizational performance by enabling individuals to capture, share and apply collective knowledge to make optimal decisions" (Smith & Farquhar, 2000, p. 17). Knowledge management has a dual focus on both increasing knowledge within the individuals which make up the organization but also between organizational components (Panzarasa et al., 2002).

There is no clear agreement on a definition of *Best Practices* (Stetler, 2001). It relates to concepts like 'evidence-based decision making' which is "the use of best possible evidence when dealing with 'real life' circumstances" (Dobbins et al., 2002, p. 2) and 'evidence-based medicine' which is the "conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" (Bedregal & Ferlie, 2001). It also relates to evidence-based practice which "employs a more discriminating scientific approach that avoids the use of unendorsed and unsystematic information" (Rodrigues, 2000, p. 1344) and includes recommendations for individual clinicians and organizations as a whole (Berta & Baker, 2004). Evidence-based practice also assumes the

creation of formal behavior change based on the review of endorsed scientific information (Stetler, 2001). For the purposes of this thesis the term 'best practices' will encompass all of the above.

Integrated Care Pathways (ICPs) vary in size and scope depending upon the clinical environment. They require a great deal of inter-professional collaboration about individual patients (Paulus, van Raak & Keijzer, 2002) and contain scientifically proven knowledge to aid healthcare decision-making in the treatment of patients (Atwal & Caldwell, 2002). The concept is that increasing both the amount and formats of inter-professional communication will result in more continuous and effective care for the patient. From a knowledge transfer perspective, ICPs are a knowledge management tool for getting, using and keeping evidence in clinical practice.

2.1.2 Diffusion of Innovation

Roger's Diffusion of Innovation theory is suitable to assess knowledge transfer because it emphasizes confirmation that knowledge transfer has occurred and is capable of assessing the sustainability of it. This theoretical perspective has been used both empirically (Pearcey & Draper, 1996) and conceptually (Dooks, 2001; Swanson-Fisher, 2004). Fundamentally this theory is a knowledge transfer theory, trying to understand the many diverse ways which knowledge and innovations are adopted for use. Although this theory was not developed specifically for healthcare settings, Rogers' innovation/decision process offers a helpful way of understanding how the decision to adopt (or not to adopt) an innovation (or best practice) is made.

Rogers' (1995) defines five stages of the innovation/decision process. They are:

1. Knowledge Stage – when an individual (or other decision-making unit) is exposed to an innovation's existence and gains some understanding of how it functions (p. 162).

2. Persuasion Stage – when an individual (or other decision-making unit) forms a favorable or unfavorable attitude toward the innovation (p. 167-8).

3. Decision Stage – when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject an innovation (p. 171).

4. Implementation Stage – when an individual (or other decision-making unit) puts an innovation into use (p. 172).

5. Confirmation Stage – when an individual (or other decision-making unit) seeks reinforcement of the innovation/decision already made or reverses a previous decision to adopt or reject the innovation (p. 181).

This study will primarily focus on the confirmation stage of the innovation/decision process. There is a paucity of information in the literature about the sustainability of ICPs. Rogers argues that even after an individual (or decision making unit) officially adopts an innovation, the use of that innovation may still be discontinued. Rogers (1995) refers to this as discontinuance (p. 182). In part this may be due to individuals' discomfort or uncertainty about an innovation or a clash of values or beliefs. Either way, there are several reasons why clinicians may or may not continue an innovation, and it is important to identify and explore those reasons to better understand the knowledge transfer process and its outcomes.

2.2 Literature Review on Knowledge Transfer

Within the literature there are distinctions made between characteristics of knowledge transfer at the individual, organizational and systemic levels. Some authors discuss knowledge transfer in terms of individual-to-individual interactions (Guetzkow, 1959; Huberman, 1983). This way of understanding knowledge transfer assumes that knowledge travels in a linear fashion from one person to another (ie: researcher to user). This understanding, while useful, does not explain the role of organizations and systems which act upon individuals inside the knowledge transfer process.

Authors since have included an analysis of organizational (Etzkowitx & Leydesdorff, 1997) and systemic factors (Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1995). Ultimately, however, understanding knowledge transfer requires the analysis of factors at the individual, organizational and systemic levels simultaneously (Holzner & Marx, 1979; Rogers, 1995).

At the individual level the factors that influence knowledge transfer relate to the individual's skills and resources; however, these skills and resources are also related to the values and goals of the organization that employs them (Argote, Ingram, Levine and Moreland, 2000). Though individuals are the actors within the knowledge transfer process, how they are grouped and the skill sets they share are largely a function of organizational and systemic factors.

Organizational characteristics such as size, complexity, functional differentiation and vertical differentiation significantly impact knowledge transfer (Dobbins et al., 2002). An organization can be best understood as a subsystem. Within this subsystem a culture (or cultures) forms, described by Dobbins et al. (2002) as "the pattern of basic assumptions and

shared meaning [values] that a group develops to survive its tasks" (p. 4). One of the necessary components of any knowledge transfer attempt must therefore be a formalized administrative component, because not all organizational cultures create space for the implementation and adoption of new ideas (Dobbins et al., 2002; Gladwin, Dixon & Wilson, 2003).

Systemic factors such as the health of the economy, funding availability, public opinion, demographics and socioeconomic infrastructure all impact the use of evidence (Dobbins et al., 2002). For an organization to successfully cope with all of these environmental factors, and for it to be successful, it must participate in interorganizational partnerships to increase its knowledge transfer capacity (Berta & Baker, 2004; Cummings & Teng, 2003).

There are also a number of other factors that influence the success of knowledge transfer efforts. The amount of time invested directly impacts the success of knowledge transfer (Dobbins et al., 2002). Pearcey and Draper (1996) argue that in their project the researcher had limited time due to the nature of project funding. When the project concluded so did the researcher's position which directly affected the sustainability of the best practices which were introduced. Others argue that the amount of time it takes to locate and implement best practices is a deterrent (Addis, 2002; Dawes & Sampson, 2003). Even at the systemic level "interfirm [inter-organizational] transfers of knowledge can be laborious, time consuming and difficult" (Berta & Baker, 2004, p. 95).

Another problem is the interplay between the individual and the organization or system. If the individuals in an organization have a culture that easily allows for the adoption of new knowledge, the hierarchy of the organization may still impede knowledge transfer.

Gladwin et al. (2003) found that the organizational hierarchy 'constrained' the implementation of new knowledge. This is not surprising, as "the healthcare system has a hierarchical model, with separate organization structures for each professional group. The system is often bureaucratic, with social norms that hinder rapid change" (Swanson-Fisher, 2004, 56). While the system may be an impediment in some cases, in others the impediment is the individuals to whom the knowledge is being transferred. Pearcey and Draper (1996) found that when a hierarchical organization or system tries to implement new knowledge the individuals within the system may resist. Some clinicians felt that it undermined their authority to have new procedures and treatments mandated.

The literature also suggests that deterrents – like the amount of time and income which is lost to learning new knowledge (Panzarasa et al., 2002), and a lack of incentive (Wang, Tong & Koh, 2004) prevent individuals from participating in knowledge transfer activities. With clinicians the "cost associated with training in [new] treatments can be prohibitive" (Addis, 2002, p. 369). Also, "broader systemic contingencies may also fail to reward an evidence-based stance" (p. 373), and with no rewards in place this often means that proven evidence goes unused in many clinical settings.

Other authors suggest that the value an organization places on knowledge transfer (Caloghirou, Kastelli & Tsakanikas, 2004; Cummings & Teng, 2003; Dobbins et al., 2002; Stetler, 1994) and the characteristics of the innovation such as compatibility with the organization's roles, abilities, values and policies (Berta & Baker, 2004; Cummings & Teng, 2003; Gladwin et al., 2003), have a significant impact on the success and sustainability of an innovation/decision. These ideas are supported by Rogers (1995) who also argues that the

interplay between the innovation and site of implementation would have a significant effect on the adoption rate and success over the long-term.

Knowledge transfer is not an isolated process, and is effected by individual, organizational and systemic level factors. This study proposes that these factors all played a role in the integration of the ICP, and will be readily identified by respondents during data collection.

2.3 Literature Review on Hospital Management

What makes a hospital such an interesting and complicated organization is that there are two interrelated management strategies at work at any given time. The first management strategy is aimed at the organization itself, which consists of administrative hierarchies that provide functional direction for the hospital. The second management strategy is aimed at treating patients, or managing their disease states. Both are relevant for this study.

It is the responsibility of the hospital administration to outline how resources will be allocated, based partly on the advice of physicians or specialists within any given unit, including those which focus on cardiac care (Carroll, Lacey & Cox, 2004; Rundall, Davies & Hodges, 2004). Each clinical group beneath the broader hospital administration then has its own manager and/or unit manager, including nursing.

One of the challenges to nursing management, however, is that "most cost-containment efforts target reducing the number of nurses within a given unit and/or increasing direct reports to the line manager" (Carroll et al., 2004, p. 254). This decreases the ability of nurse managers to effectively interact with staff and promote changes in practice to improve patient outcomes because they are often inundated with administrative work

(Rundall et al., 2004). It is also of particular concern considering that nurses are already responsible for most of the care heart patients receive while in the hospital including assessment, monitoring, administration of drugs, carrying out physician orders, transporting patients for diagnostics, discharge teaching and general upkeep of patients (though this list is not exhaustive).

As can be illustrated by the implementation of an ICP, the healthcare system is rife with change and the integration of new and more effective treatments (though some initiatives are more successful than others). "This environment of constant change, so characteristic of the current healthcare environment, actually may increase occupational stress for the nurse administrator" (Lee & Henderson, 1996). Considering that the system is already set up in a way that produces shortages of nursing care, it is not surprising that increasing the workload of nurses through the introduction of new and additional best practices may not be supported.

In the case of caring for cardiac patients, while nurses are a key element in patient treatment plans, there exists a multidisciplinary framework for managing patients (DeLong, Allman, Sherrill & Scheisz, 1998). This includes physicians, specialists, nurses, pharmacists, physiotherapists and social workers, each of whom play a specific role in the management of the patient, each of whom impact continuity of care.

This makes it all the more important to ensure that clinicians are up-to-date with best practices. Hospital administrations that provide performance assessments, promotion schemes and education for their staff are far more likely to see knowledge retention and positive patient outcomes (Garcia & de Val Pardo, 2003; Di Salvo & Stevenson, 2003; Polk & Watson, 2006).

As far as the management of the patient's specific condition, however, it is in large part carried out by physicians (Stewart, Stansfield & Tapp, 2004; Luthi, McClellan, Flanders, Pitts & Burnand, 2006). One of the criticisms of this model of patient management is that it impedes nurses from being able to autonomously care for patients. As Stewart et al. (2004) describe, "the nurses' ability to smoothly move patient care forward would be interrupted by the necessity of contacting a physician to initiate an action" (p. 446). Consistent with this concern, other authors note the difficulty in the patient management process of having all involved clinicians communicate with one another around a particular CHF patient to facilitate a care plan (Ayrik, Ergene, Kinay, Nazli, Unal & Ergene, 2006; Reigel, Dickson, Hoke, McMahon, Reis & Sayers, 2006).

In order to address both staff and patient concerns, many authors argue that care plans, or integrated care pathways are an effective management strategy to improve patient outcomes (Grigioni, et al., 2002; Lainscak & Keber, 2006). In particular, pathways outline care specifications eliminating the need to consult with a physician about all details of care, provide for formalized communication among all disciplines and have current best practices built right into them (Lainscak & Keber, 2006).

Method

3.1 Design

The research design was a qualitative, exploratory design that incorporated face-to-face recorded interviews. This approach is well established in the study of healthcare settings and yields valuable information for use in the improvement of service delivery (Chew-Graham, May & Perry, 2002). This qualitative approach made it possible to investigate whether or not the ICP is still being utilized, and more importantly why or why not. As the literature suggests, the decision to utilize the new knowledge or 'innovation' is ultimately at the individual level. By interviewing clinicians involved in the implementation of the ICP it was possible to explore in depth the reasons for its level of integration.

This approach was guided by an established theory, namely Rogers' *Diffusion of Innovation* (1995). This theory is grounded in economics and management but has been applied to many other disciplinary and interdisciplinary settings, including health care. More specifically the research focuses on what Rogers calls the confirmation stage in the innovation/decision process. This theory incorporates both the social and environmental factors that affect the decision to adopt new knowledge, or 'innovations,' and thus provides a comprehensive list of variables on which the interview guide is based. Rogers' theory has been widely used over the last five decades and has been shown to be a reliable framework with which to study the knowledge transfer or diffusion process (Chakravarty & Dubinsky, 2005; Gosling, Westbrook & Braithwaite, 2003).

3.2 Setting

The setting for the implementation of the CHF ICP included the hospital, patients'

homes (including home care), office of the patient's General Practitioner and at the patients'

pharmacies. Each of these settings implies the application of the clinician's specific

knowledge in providing health care services to patients on the ICP. Of course, this also

included the application of the identified best evidence in providing care.

The hospital was the most complex setting. It involved multiple disciplines at the

same site exacting their diverse respective expertise while providing health care services to a

single patient. Doctors, nurses, pharmacists and cardiac specialists provided almost all of the

care/services the patients on the pathway received in the hospital. Each was responsible for

documenting the elements of their care provision on a common chart to enhance

communication between the various clinicians.

The ICP was primarily carried out in the hospital setting, as this was where most of

the care related to the cardiac patients occurred. There were both individual and group

education sessions delivered to the clinicians providing care. These sessions were provided

by members of the research team and incorporated information about how an ICP functions

as well as information on best practices. Other efforts to introduce clinicians to the evidence

included ongoing support provided by the pathway coordinator and clinical educators. Part of

the education process included the patients as well. Clinicians were encouraged to go over

information with patients such as specific aspects of their condition, recommended lifestyle

changes, and information about their medications before and at discharge (Hadjistavropoulos

et al., n.d.b.).

The setting also included the office of the General Practitioner (GP) responsible for the patient following discharge from hospital. One intent of the ICP was that it would encourage communication between GPs and hospital physicians despite the geographic distance between them. The GP was responsible for providing ongoing support to the patient. As such it was important that there were no contradictions in the information the patient received from the multiple clinicians and care sites they visited. If all clinicians at all care sites were operating from the same evidence, and assuming it is the best available, then continuity of patient care would be achieved.

Ensuring the use of best evidence at the pharmacy where patients retrieved their prescriptions was equally important. Physicians and patients rely on information from pharmacists about what medications are appropriate, how they should be administered and in what doses (Cowen, 1992). As a result, it was important to ensure that pharmacists were also included in the pathway so that they too were familiar with the best practices for caring for patients with cardiac problems.

The last setting was the patient's home. Some patients received in home care, and all received follow up phone calls from the pathway coordinator to assess patient satisfaction and to address any of their questions and concerns.

3.3 Sample

It was the researcher's intention to interview clinicians involved in the implementation process from each of the settings. It is important to understand that each clinical discipline not only has a varying level of involvement in patient care, but also a specific set of care and services which they provide.

At the Regina site there were detailed records kept of all the participants in the pathway, including positions and contact information, providing the researcher with a list from which to draw a representative sample of interviewees. The researcher intended to call ahead and arrange for two or three days over which to conduct the interviews.

One concern was that clinicians had agreed to be a part of the initial ICP study, but not to having their information released for any further studies. To address this, the ethics application indicated the researcher had spoken to the study coordinator who was willing to send out a passive opt-in email asking all of the clinicians who had participated in the initial study to indicate if they did not want their information released to the researcher for the present investigation. The University of Saskatchewan Ethics Board had a concern that clinicians who were on vacation or were otherwise busy might have their information released when they did not want it to be.

It was suggested by the Ethics Board that the study coordinator send out an email to the clinicians (there were approximately 440) who participated in the implementation of the ICP asking them to indicate instead if they were willing to have their information released. This approach yielded contact information from only seven people involved in the ICP implementation, each of whom participated in this study; four clinical educators (nurses), one supervisor (pharmacy) and two project coordinators (one nursing and one non-clinical). To maintain the confidentiality of the respondents, the researcher did not attach their professions to their pseudonyms. Their comments coupled with their professions make some of the respondents easily identifiable. Another concern is that no physicians (cardiac specialists) responded to the invitation to participate. This is a limitation considering that these individuals are the prescribers and are central to patient care. Another concern is that no

community care nurses or other frontline clinicians responded. These issues will be addressed later in the Limitations section.

3.4 Data Collection

Data were collected through audio-taped interviews by the researcher. Prior to the interview, consent from the interviewee was obtained. Once the interviews were completed a transcriber transcribed them verbatim. Interview tapes were reviewed with the corresponding transcript both to fill in blanks and check for accuracy. It also provided an opportunity to begin reviewing the interviews for analysis. After review of the transcripts, the participants were given the opportunity to read through the transcript of the interview to correct any inaccuracies. Due to the fact that all interviewees were located in Regina, consent to use the data in the study was obtained via electronic mail.

A pilot interview was conducted prior to the study with a member/coordinator of the research team. This allowed the researcher to assess whether the questions were clear and relevant. The questions which guided the interview were:

1. What elements of the Regina CHF pathway are still being used by clinicians responsible for caring for heart patients?
2. What were the impediments to the sustainability of the elements of the ICP which were discontinued?
3. What enabled the successful implementation and sustainability of the elements of the pathway which were adopted?

3.5 Data Analysis

Data collection and analysis occurred simultaneously. As interviews were finished and transcribed they were reviewed and initial notes were made on emerging themes. Qualitative research requires a reflexive methodology, making it favourable to re-examine occurring themes on an ongoing basis. Transcripts from the participants' personal interviews and the researcher's interview notes were coded using Luborsky's (1994) thematic analysis. Themes (or recurrent statements) "can provide insight into the cultural beliefs and values that instill powerful experiences and motivations and shape how individuals plan, make sense of, and respond to events" (Luborsky, 1994, p. 190). The advantage to using themes lies in the nature of knowledge transfer itself. It is difficult to quantify knowledge transfer because it is predominantly a social process. Thematic analysis permits exploration into the subject while at the same time providing a method of systematically analyzing the data.

Luborsky's (1994) thematic analysis has been used in previous studies (Butcher, Holkup, Park, & Maas, 2001; Fox, Poulsen, Bawden, & Packard, 2004; Park, Butcher, & Maas, 2004) and is a reliable methodology on which to base this analysis.

3.6 Validity

Qualitative methods differ from quantitative methods in that they seek to understand different patterns of knowledge (Carper, 2006). This research attempts to understand what Carper (2006) describes as "personal knowledge", or the subjective experiences of clinicians in relation to other clinicians and patients. The reality is that qualitative methods provide a whole new way of examining phenomena, with a different set of procedures to ensure the data is reliable. In fact, the use of qualitative methods in health research has been encouraged

because of the impact of its findings (Chapple & Rogers, 1998; Patton, 1999). This researcher contends that the use of a quantitative design was not appropriate to answer the research questions for this thesis. Analyzing a social process such as knowledge transfer inherently requires a qualitative approach.

One concern with this research was the limited access granted to participants. The researcher was limited to only those clinicians that responded to the opt-in email. There is validity in the findings in that there is a great deal of commonality among the responses, but it would have strengthened the results to have a wider range of clinicians participate in the study.

Data in the form of transcripts also requires that the researcher take several steps in order to preserve the integrity of the data. Interviews were transcribed verbatim and then listened to again to check for errors in the transcription. Themes were developed using the words of the participants as often as possible. Auditability is attained by keeping the recorded interviews and related documents for a minimum of five years (Rothe, 2000; Patton, 2002). This method has been used in other empirical studies to maintain data validity (Duggleby et al, 2004).

Findings

4.1 Luborsky and Qualitative Analysis

To properly understand the analysis of the data, a description of Luborsky's thematic analysis is necessary. Luborsky (1994) argues that themes provide insight into the beliefs and values of an individual and can be used to capture their experiences, or reality. He writes, "themes can be discovered and reported in a way that preserves their richness of detail and contexts" (p. 190). To understand and analyze the social process that is knowledge transfer, it is important to understand the context in which the clinicians find themselves, while at the same time understanding each as a separate unit. It is the researcher's intention in this analysis to draw on the similarities and differences, or themes, in the responses of the interviewees to identify how both the context (or the system in which clinicians find themselves) and the clinicians themselves, affect the retention of best practices.

Thematic analysis requires the researcher to understand that "themes may be explicitly important personal or sociocultural meanings to the informant; they may be produced situationally as part of a strategy for presenting a credible, coherent, understandable account; and they may be an artifact of the analysis without meaning to the informant" (p. 192). All three of these possibilities must be taken into account when exploring the transcripts for key themes.

At the very center of it all, thematic analysis is a method of telling a story through the words and experiences of the informants. It is important to preserve their language as much as possible in the analysis to yield the best results and maintain validity. The following analysis attempts to do this, while at the same time drawing out the salient issues identified by the informants which have the greatest impact on the retention of the CHF ICP. Yet there

is more to qualitative analysis than simply counting the number of references to a particular theme or phenomenon.

Qualitative analysis is a reflective process, requiring that the researcher "return to the data over and over again to see if the constructs, categories, explanations, and interpretations make sense, if they really reflect the nature of the phenomena" (Patton, 1999, p. 1205). The analysis in this thesis has been 'returned to' a number of times, themes derived and reworked, and mirrored against the words of the informants to ensure that it reflects the realities they conveyed.

One of the primary criticisms of the qualitative approach is that it is rife with the possibility of being influenced by the researcher's biases. Luborsky (1994), among many others, contend that it is the responsibility of the researcher to clearly outline their biases in order to mitigate their interference. That is to say, clearly outlining those biases for the reader is the first step to addressing them in the analysis.

For example, the researcher works for the Health Quality Council, one of the partners in implementing the CHF ICP. Some might argue that such a close relationship with the project lends itself to biased interpretation of the results. However, there are no reservations about making this information known for two reasons. The first is that throughout this process the researcher has been unhindered in his research by the Health Quality Council. The reality is that they have much to gain from the findings in their pursuit of improving the effectiveness of their knowledge transfer efforts. The second reason is that it enables the reader to identify any areas where this bias has entered the research, which ultimately strengthens the validity of the findings.

It is also worth noting that this researcher comes from a sociological framework. That is to say, the researcher's undergraduate training is in sociology with an emphasis on the study of healthcare as a system. In studying healthcare settings it is this knowledge that he relies upon in his analysis. This bias is mitigated by having members of the thesis committee from both nursing and pharmacy, which are clinical disciplines and lend themselves to a different understanding of the healthcare system.

It is the intention of the researcher to present a coherent analysis of the level of integration of the CHF ICP and the reasons for it. This requires an analysis which incorporates systemic, cultural and individualistic factors, and identifies how they play on each other in one of the most complex social settings: the healthcare system.

4.2 The Respondents

To better inform the findings it is first helpful to give an overview of the characteristics of the respondents. There were four clinical educators (nurses), one supervisor (pharmacy) and two project coordinators (one nursing and one non-clinical). To ensure confidentiality their discipline has not been attached to their pseudonym. It is again worth mentioning that due to ethical considerations, and the subsequent response by clinicians to participating in this research, there are no physician (cardiac specialists in particular) responses included in this analysis. The limitations this places on the findings will be addressed later, but there are still other issues to which the lack of physician response relates, and these will be addressed as the analysis proceeds.

One of the advantages to having clinical educators as interviewees over clinicians without that added responsibility is that clinical educators are, by the nature of their work,

more familiar with concepts like 'best practices' and 'knowledge transfer'. Because of their role in the hospital, they were inherently more involved in the implementation of the ICP and thus had a more knowledgeable background with which to understand the ICP, and answer the interview questions.

For the sake of simplicity, each respondent has been assigned the pseudonym R1 through R7. They have been practicing in clinical environments for a range of 12 to 25 years, with an average of 19.3 years, suggesting that as a group they have had ample experience in the healthcare system. This experience is helpful considering part of the analysis is on culture and organizational structure, both of which a clinician would know more about as their career progresses. At minimum all seven respondents have a degree, three have a Masters and two have a Masters and a PhD. This too is helpful, lending weight to the respondents' credibility.

4.3 Integration of the ICP

Before going any further it is necessary to address the level of integration of the ICP. As was discussed in the literature review, the ICP was comprised of several components, ranging from best practices, encouraging the use of specific pharmaceuticals, diagnostic imaging, patient education and other procedures relating to the care of the patient. Respondents were questioned on each of the ICP's components to assess on a point by point basis whether or not it was still in use. The findings follow.

4.3.1 Information to Patients

One of the best ways to improve the care of patients who have CHF is to give them as much information about their condition (and how to manage it) as they can assimilate. Preventative measures such as changing diet, exercising and daily weight monitoring were all

part of the patient teaching component of the pathway. Respondents were asked what

information is given to patients during their stay and at discharge. Four of the seven

respondents indicated that they are unsure what information is given to CHF patients.

> *"We have a fairly extensive standardized medication teaching package that goes out to them... There is a lot of information that goes around optimal treatment to dietary modification, salt restrictions, exercise, etc."* (R1)

R1 indicated that there exists a teaching package available for use with CHF patients;

however, the other respondents were less sure. Some talked about the pathway itself and the

elements within it that outlined what information was to be given to patients.

> *"So they need information about their diet, their drugs, their activities. About the disease process, and all of those are four pieces of the pathway that we developed. How to manage their health at home, how to keep diaries. So a number of things that were built into the pathway that were pieces of information that patients should have to help them understand their disease and how to live with it."* (R3)

> *"On the patient pathway it sort of explained to the patient what they could expect from us each and every day of their hospitalization. We were to review that with them on a daily basis. And then, of course, the pathway also asked us to teach the patient certain things in preparation for discharge, and teach a little bit everyday so that we weren't teaching a huge volume in a hurry, at once, when they were going home, which I think is very advantageous."* (R5)

R5's response in particular is interesting. Rogers argues that one of the key factors in

the innovation/decision process affecting successful implementation is whether or not the

decision maker sees value in the innovation. R5 calls the teaching component of the pathway

'advantageous', indicating that they see value in it. The question which remains, however, is

whether or not this component of the pathway still exists.

> *"I haven't seen them use the heart failure pathway for a long time, so I am not sure."* (R2)

> *"We don't currently use the congestive failure pathway."* (R5)

It became clear that the pathway was not currently being used in either of the two hospitals, which means that the consistency of information given from patient to patient can not be guaranteed. Despite this fact, the pathway seems to have left some mark in the sense that respondents were able to identify what information would be useful to patients and why, even if it is not consistently being given out.

4.3.2 Prescriptions and Diagnostics

With regard to the prescription of ACE inhibitors, beta blockers and diuretics there were two distinct answers. Four respondents indicated without hesitation that there was an effort made to prescribe these treatments for all CHF patients (unless contraindicated). The other three respondents (R3, R4 and R6) said that they were unsure. One of the benefits of the pathway was that there was continuity of care; patients received standardized treatment in hospital which was followed up in the community. Although it is indicated by the respondents that these treatments are now prescribed routinely (based on the responses) it is impossible to say for sure without extensive auditing, which will be addressed later in the analysis.

Another key element of the pathway was that all CHF patients, upon admission, were to receive an echocardiogram. This diagnostic imaging procedure not only provides information valuable in caring for the patient in the hospital, but as will be discussed later it is also useful information for the GP caring for the patient. Respondents were asked whether CHF patients routinely receive an echocardiogram. With the pathway no longer in practice their responses were not surprising.

Five respondents said that they were unsure, R5 said, "most of the time," and R1 said, "likely no." Once again, the primary goal of the pathway was to create continuity and

consistency of care from care site to care site, and from patient to patient. Without the

pathway in place the same inconsistency that existed before the pathway was implemented

appeared to have returned.

Another assessment procedure contained in the pathway was daily weighing of

patients. Sudden increases in weight often indicate fluid retention with CHF patients.

Respondents were asked whether CHF patients were still being routinely weighed every day.

Four respondents indicated that they were unsure, R7 said that they "try to," and R2 said,

"every day." R5 went a little bit further to explain how this procedure takes place.

> *"Their weights would be recorded routinely - only if it was ordered by a*
> *physician. It would not be a nursing function. Nurses would not routinely weigh*
> *CHF patients without a physician's order."* (R5)

The pathway spelled out the procedures for all CHF patients on the pathway

including weighing patients every day, thus negating the need for physicians to give it as an

order. Without the pathway still in place, as with other elements of the pathway, weighing

patients daily appeared to have returned to an inconsistently performed procedure.

The last procedure which the pathway outlined was to ensure that CHF patients were

mobilized within 24 hours of admission. R3, R4, and R6 said that they were unsure if this

was happening, though the rest of the respondents were certain that this procedure was

occurring with all CHF patients unless they were unable.

4.3.3 Records and Administration

One element of the pathway was to ensure that physicians admitting orders were kept

on file. This particular component of the pathway seems to have remained, largely due to the

fact that it was standard practice before the pathway was even in development, much less

implementation. However, beyond this the pathway required detailed charting facilitated by a charting sheet specific to the pathway.

"I haven't seen people use the pathway charts for a long time." (R2)

"Nobody was using it. I phoned the print shop – nobody was using the doctor's orders." (R6)

Respondents were asked if there was anyone to do chart audits and track variances in practice between the pathway (or best practices) and what was actually happening. R1 indicated that they did not know; however, all other respondents said that neither of these activities were occurring. R5 went further to reiterate that there was no evaluation done of the pathway itself, much less ongoing variance tracking.

"There has been no tracking done to my knowledge regarding, you know, how well did we do and what do we need to change." (R5)

As was mentioned earlier, part of the pathway was to have education sessions for patients to give them information about their condition. This was one of the functions performed by the pathway coordinator whose position was funded by the study. Respondents were asked whether the education sessions were still going on. R1, R4 and R6 indicated that they did not know whether such sessions were ongoing. R5 and R7 said that there were no education sessions still going on. Others went on to explain further.

"No… We need classes for heart failure or a heart failure clinic for this group of patients." (R2)

"No. They've gone by the wayside as a result of the end of the study because that position disappeared as well when the study was over." (R3)

Another task of the pathway coordinator was to phone patients at regular intervals after their discharge from the hospital to answer any questions and see how they were progressing. Respondents were asked whether these follow-up calls were still being made.

R1 indicated that they did not know. The other six respondents said that those calls were not being made.

4.3.4 Communication

The pathway asked clinicians to perform a number of activities, but one of the most cumbersome was the additional communication. To facilitate continuity of care, the pathway required clinicians within the hospital setting to improve their communication; but it did not end there. The pathway extended the need for continuity of care to community clinicians as well, requiring physicians (in particular) to improve the amount and nature of their discharge communication with GPs.

Respondents commented that the nature of in-hospital, interdisciplinary communication is informal at best. The pathway included a CHF chart (which is no longer in use) as a formal mechanism for communication for in-hospital clinicians about any given patient. Here is what the respondents said about communication within the hospital.

"It's all informal through discussion, centrally." (R1)

"Only through managers. Around a particular patient probably there is some connectedness, but not formally; it's all informal." (R3)

"It's more informal than anything else. Very often the nurse will say to the doctor – it may or may not be documented – but 'this is what I assess', 'these are the problems I see', 'what do you think', 'what can we do about this' you know... Lots of it is not written down though. So if you were to go into our unit and take patient 'x' and say 'I want to read this chart and find out what all the disciplines are saying about this patient', unfortunately, you wouldn't get the whole picture because lots of it is verbal, maybe not the best way because you can't find out always what's going on." (R5)

"I'd say it's poor. Very – they work independently. And I don't think there's very much communication when everybody is so busy... What we did, and let me tell you – it was difficult trying to be multidisciplinary – was all disciplines would chart on the same sheet of paper. And so what happened was the physiotherapist, who had their plan of care and their milestones independent of what nursing's milestones are, they took them and they incorporated them into the pathway. So, now the nurses see - the rehab milestones are initialed or 'x'd if they didn't meet

physio milestones – on the back of the page. So, they now are quite aware of the rehab component of the patients where they never used to be able to, well – they never used to. Now, it's right in front of their faces, so they can read it and look at the milestones because they're all set into the pathway." (R6)

One of the goals of the pathway, recognizing the value for patients in having formal communication mechanisms, was to improve the connections between in-hospital clinicians that had previously not been formalized. The benefit, best explained by R6, is that clinicians who were responsible for only a piece of the care process now had a better idea of the larger picture. The formalized communication facilitated continuity of care. As with other components of the pathway, this too fell by the wayside.

Yet communication in-hospital was (and is) only part of the communication problem. Community clinicians responsible for providing care to CHF patients, as part of the CHF ICP, received formal and detailed information about their patients after discharge from the hospital including any diagnostics that were done, what pharmaceuticals they were given and any complications they experienced.

> *"Integrated clinical pathways have interdisciplinary communication between hospital and community based practitioners built into their structure. This communication has been a very positive thing... We have heard feedback that they find this helpful. The specialists are so busy that we work with in this hospital that those notes get far behind. So the poor family doctor still has a sick patient show up on his doorstep and he doesn't know what's been going on lately, and what might have changed since this happened. I think that's why that was built into the pathway to start with."* (R5)

> *"The family physician receives a patient and has no information... half the time, they're not even aware that their patient was hospitalized. So the transitions aren't good, so it's all relatively informal... Follow a couple of patients around the discharge process and all hell breaks loose. When a patient is being discharged, more often they're concerned with: how am I going to be able to get home; am I going to be able to drive tomorrow; how is my family going to deal with me. Rather than you need to do these exercises; you need to take these medications. You know it's a jumble for patients."* (R1)

"Now who used it and loved it were the family physicians because the management of CHF, it's not their forte. They have patients that aren't ill enough to be seen by a cardiologist; the doctor's orders were stepped out so nicely that they didn't have to consult with a cardiologist... We as acute caregivers, found out that our discharge planning is terrible. The information that we give and the expectation that home care is just going to step in and just carry right on through. Home care is given such limited information about the patient that they are unable to really set up a good patient care plan for them at a community level. So, I think home care loves pathways if it is a population that they end up getting a lot of referrals to; they love to be involved, and possibly develop their own pathway for nursing." (R6)

"In the community, they have a checklist of things they were supposed to do with patients they were referred to. And same thing with the physicians. They were asked that when they were discharged, that they not do their typical discharge, but they include certain things in their discharge summary that would go to the community physician. No longer have this type of communication." (R4)

The fact that improved communication improved the care of patients seemed to have little impact on the retention of this component of the pathway. Like most of the others, this too is no longer in consistent use.

4.4 The System

As was noted in the literature review, the implementation of best practices is affected by systemic, organizational and individual level factors. Now that the extent to which the pathway has been integrated has been assessed, this study will now look at system level factors and their effect on the implementation of this ICP.

The health system refers to the policies and decisions (from Regional Health Authorities to the provincial government) that set priorities for the distribution of health specific resources and how they are to be used. The 'system' might also refer to the interplay between the public, health care institutions and government in the policy/decision making process, but for the purposes of this thesis, the above, more simplistic definition will be used.

As will be illustrated throughout this analysis, the system is not only uninvolved in the

knowledge transfer process, but it is also structured in a way that does not facilitate or

encourage knowledge transfer. The question that follows is: How does the health system

impact the transfer of knowledge to individual clinicians for use in practice?

Respondents were asked whether the system provides adequate resources to facilitate

the learning and adoption of best practices. R2 indicated that resources were provided to send

nurses to conferences, R3 said that adequate resources were provided "most of the time," R4

and R7 said "no," while the other respondents gave more detail.

"I do know they [clinicians] would like to go to conferences and they should feel
entitled to go to conferences because that's where you have very key people at
one place offering education on your specialty... No. I do not have the resources.
First of all you have to stimulate the interest. The interest is coming... We have
not yet got to the stage where pathways are a recognized measuring tool, whether
it be for quality or utilization. And that's through your variance reporting, and
looking at your key indicators – your outcome indicators that you incorporate
into your pathway... and we need to know that." (R6)

"There is a very large conference called the Canadian Congress of Cardiology,
which is an excellent, wonderful, wonderful conference, which is held yearly,
annually. I was able to go last year and learned a lot. Unfortunately this year I
will not be able to because there are no funds. So, I would say I am not provided
with those resources. I think educators as a whole make those resources happen
and seek out knowledge where it wouldn't happen for us very much. We're not
provided – no." (R5)

"Not really. All, I guess, subscriptions are personal and memberships are
personal; that's out of my pocket, which is fine. Most of my attendance at national
and international conferences occurs one of three ways. Number one, out of
research money that I have. Number two is as an invited lecturer, or number three
on an advisory board or as an expert opinion... And so I received no – virtually
no funding from the region for that. We'd need, probably minimally...absolute
minimum would probably be an additional thirty-five to forty thousand dollars
per year for our department." (R1)

Without adequate resources knowledge transfer is comparable to Sisyphus, ever

struggling to get the boulder to the top of the hill, never accomplishing his task. As with

learning anything new, knowledge transfer takes time, and time in the healthcare system

costs money. The issue of resources will arise again later, more specifically related to the

CHF ICP.

The last question respondents were asked was whether or not there are policies in

place that either hindered or facilitated the adoption of best practices. Without variation every

respondent indicated that there were no policies that existed that went either way. The fact

that there are no policies which impede knowledge transfer is not surprising. Without the

adoption of new knowledge clinical professions would not have been able to come as far as

they have over the last century. However, without systemic support and endorsement for

knowledge transfer, in particular in the form of policy, many improvements in clinical

practice will go unimplemented to the detriment of patient outcomes and continuity of care.

4.5 The Organization

The hospital consists of many levels of clinicians, support staff, managers and

administrators stretching across many different disciplines and levels of training.

Unfortunately it is not as simple as identifying one particular unit or group within the

hospital that deals with CHF patients, making the analysis (and implementation of an ICP)

somewhat complicated.

The hospital, which exists within the above defined system, is one of the settings

where health care services are carried out, and the primary setting where the ICP

implementation was carried out. While the system provides little in the way of support for the

adoption of best practices, this research now turns to the organization to understand its role

with regard to the same.

Respondents were asked if any incentives are offered to encourage the adoption of best practices. R6 said, "not really," while R2 and R7 simply said "personal". Other respondents went into more detail.

"Money and, you know, even opportunity are pretty limited." (R3)

"Not really. Other than personal. You know - personal incentives; that's about it." (R1)

"For sure, in terms of, you know, being able to better help clients that I would work with." (R4)

"Yes. Yes, the incentives are you have confidence in your patient care and you feel like you have more resources at hand. I think the confidence of knowing that you're good at your job and doing a good job. I don't see a lot of incentives, unfortunately, coming from the employer right now. For example, I personally have not had a performance appraisal in about 15 years, so no one's ever told me it's a good thing I read all those journals and that I spend my coffee breaks reading, but I think its imperative to maintain currency in my nursing practice." (R5)

Based on the responses it seems as though the organization is not equipped to encourage the adoption of best practices with any kind of incentives. R5's response goes further, saying that appraisals of how up-to-date clinicians' practices are do not occur on a regular basis. If the organization is not interested in evaluating clinicians, then it makes little sense that there would be any incentives offered. What could be a tool for encouragement to adopt best practices instead relies on whether or not the individual sees value in it without the aid of incentives. But what about using out-of-date practices?

Respondents were also asked if there were any deterrents to using out-of-date practices. R3, R6 and R7 all indicated that there were no deterrents to using out of date practices. The other four respondents agreed, but went further to explain.

"People are sometimes called to task by management with encouragement to change their practice. I'm not seeing that happen too much, and I'm not seeing too many deterrents – no." (R5)

"I guess loss of respect on the team, I would imagine. Lack of empowerment." (R1)

"When you don't keep up, you really don't know what you're doing or what or how effective you are." (R2)

"Well just, you know, reputation, I guess would be a deterrent." (R4)

So not only does the organization not offer any incentives to remain current, but there are few deterrents to using out-of-date treatments, other than personal. This means that during the implementation of the ICP there were no existing incentives (or deterrents) to change behaviors based on the best practices.

Respondents were asked when they were first exposed to the best practices incorporated into the ICP. Only R1 and R2 indicated that they had been exposed prior to the pathway. This suggests, despite the fact that four respondents are clinical educators, the organization is not set up in a way that clinicians are readily put into contact with new and best practices. This may be a function of the organization being set up so that clinical practice and research occur separate from one another. Either way, without measures to facilitate the exposure to, and incorporation of best practices, it will remain a cumbersome and difficult task.

Respondents were asked if the adoption of best practices was encouraged where they worked. Across the board all respondents replied that it was. Keeping current is a way to garner respect on 'the team'. However, encouragement can come in many forms. The answers to more detailed questions tell a much different story.

Respondents were asked whether or not there are mechanisms in place by which a clinician would be able to implement a best practice that they have identified. R2, R4 and R7

simply said that there was nothing formal. Other respondents described the process more specifically.

> *"There's no formal process. It's just however you think would be best. My first strategy as a nurse educator would be to go the management and ask for guidance and support in planning to put changes into practice. Another strategy that I think is important is speaking to our physicians regarding the proposed change to get their opinion and support as nurses work to apply new practices."* (R5)

> *"The manager would need to be involved in any practice changes that one might want to institute as a result of new literature and new information that you think you want to try... I certainly have seen my own practice change over time with things like pain management and different things like management of nausea and vomiting and dementia, and more technical aspects of nursing like the use of physiological monitors. I am also able to influence the practice of others. And then it's really up to the individual clinician to follow the procedure or choose not to follow the procedure. How they know about the procedure is probably the bigger issue, the procedure change. Educators try to provide the background for the change in practice and review the steps in procedures and practice guidelines with staff. At times practice changes are dictated by the manager. And so, there isn't a formal way to make that happen; it's just however it happens."* (R3)

> *"Oh yes. When I bring them to the – I bring all kinds of articles to the table, and research that I've found and some get implemented, some don't."* (R6)

> *"You develop your own mechanisms."* (R1)

Though the hospital seems to have the capacity for knowledge transfer, there is no formal way to capitalize on it. As a result, as is pointed out by R6 in particular, there is no guarantee that best practices will be used even if they are identified, though there are often many reasons for this (including cost and resource issues). At the same time as there are no broad systemic policies to facilitate the incorporation of best practices, there are no requirements at the organizational level either.

In the search for formal mechanisms at the organizational level to support knowledge transfer, respondents were asked whether learning best practices was part of their job description. (Keep in mind that the respondents are either clinical educators or managers in

some capacity within the hospital). All of the respondents except R2 indicated that it was part of their job description, though R2 did indicate that either way it was part of their job. This provides at least minimal evidence that the health care system, or at least organizations within the system, are attempting policies on best practices.

The last component of the organization is the culture which tends to develop within it. Within the hospital setting clinicians are forced, by the nature of their work, to care for patients as a member of multidisciplinary teams. Each member of the team has a certain amount, and type, of tasks that they are to perform in order to facilitate care. As culture becomes embedded in the organization through the individuals within it, patterns are created that can often be difficult to change. Several of the respondents commented on the culture within the care setting and how it impacted the implementation of the CHF ICP.

> *"We worked all on the same page, and as time went it became better, but it really highlighted the challenges of bringing together a very multi-disciplinary group in a unionized setting… Unions tend to have a tremendous impact on, I think, willingness to take on new responsibilities – new roles. It was very clearly demonstrated that some people were fairly resistant to change."* (R1)

> *"Well I guess then that would be true. Reluctance to change might keep a person doing something that they know isn't the best option being advised, but it's just easier to do it kind of the old way."* (R7)

> *"We really focused on the education and the discharge planning, which to them was a little bit more…although they say they did it, they never ever documented it as being done, so it made them more accountable, and they found that frustrating."* (R6)

> *"Well, it's the 'we've always done it this way', that kind of response, or 'this is the way we do it here, so you'll do it the same way we do'. There's that kind of peer push."* (R3)

These comments highlight one of the most common difficulties in effecting change in an organization. The CHF ICP asked not just individuals to change their behavior, but also organizational patterns of behavior to change in order to better meet patients' needs. As

Rogers (1995) argues, if an innovation requires too much deviation from existing practices, the innovation risks not being adopted.

4.6 The Individual

The support which is offered for knowledge transfer at this point seems to end with job descriptions and the limited resources offered therein. Yet, though it may be slow, there is no denying that there have been many changes in clinical practice over the last century. The health system is interesting in that at the same time as it has a cumbersome bureaucracy governed by the interplay of dozens of self-regulatory professions as well as the provincial and federal governments, changes in day to day practice are still influenced heavily by individual clinicians.

4.6.1 Individual Capacity

In order to understand the impact that individuals can have on the adoption of best practices it is helpful to understand the capacity that individuals are given to effect changes in their own practice. Respondents were asked whose decision it is to implement best practices.

> *"I don't know… in the end, I guess it's the person's actual decision how they practice."* (R2)

> *"It's the providers who decide."* (R4)

> *"I would suggest that people, who are interested in changing their practice on an individual basis, can probably do that fairly effectively. So it would be individual clinicians who choose to or choose not to continue to do that."* (R3)

> *"Well I think it definitely falls to the clinical educators to introduce best practice and to know what's out there and to make staff aware of it on an ongoing basis. Then it's still up to the caregivers, that being nursing staff, and physicians, and support workers, to believe that it is best for the patient and to implement it. To a large degree the medical side of it falls to the physicians because they have to*

believe that the prescriptions for care are within their realm of philosophy that's appropriate for the patient." (R7)

"I would hope it's many peoples' decision because I believe we work as a team. Administration, staff nurses, clinical educators – I believe we all have to make that decision. I would like to add physicians, pharmacists, physiotherapist, dieticians, we all learn from each other regarding best practices." (R5)

"I think that would be a joint decision of many... a broad array of individuals, and then within the department level, it would be up to that department level and that department's management team whether or not we would choose to commit that level of resource to that activity." (R1)

"I guess it's ultimately the user." (R6)

There are several answers included in the above responses, but for the most part there seems to be agreement that a great deal of the authority on whether or not they change or maintain their practice rests with the practicing clinician. However, the responses demonstrate that physicians play a role in the implementation of best practices, an issue that will be discussed in more detail later on. Also, some respondents identify managers and teams as responsible for implementing best practices, reflecting the organization's role in the innovation/decision process.

To be absolutely clear, respondents were asked specifically whether or not clinicians had the ability to implement best practices on their own. Four of the respondents simply indicated that yes, it was in their power. The other three gave a little more context for their answers.

"As an educator – with difficulty I'm able to implement. I'm finding that I can plan in-services and plan to teach the staff and they just don't have time to come, and that's a very frequent problem." (R5)

"So, when it comes down to the physician. If you try to encourage them, for instance, the doctors' orders, they can always say no. So, from a physician's perspective, it is them, individually, who decide whether they will use it or not. From a nursing perspective, once an administrative decision has been made with

the pathways, or something that is best practice, they usually don't have a say. They may grumble a lot, but they have to go with it." (R6)

"Say something like they learned that patients should be weighed everyday, well okay, they could just go and do that and put their weight on the chart and monitor that. Like that type of thing I think they could do. If it was something bigger like a major change to education and follow-up, they couldn't just go out and do that. They wouldn't have the resources. So that would need approval." (R4)

While individual clinicians may have the ability to implement best practices, in reality, as is demonstrated by the above responses, there are still constraints. Lack of resources and time, as well as organizational constraints still limit the ability of clinicians to act as individuals. That being said, individual clinicians still play a large role in the knowledge transfer process.

4.6.2 Attitude

Rogers (1995) argues that an individual's attitude is as important to the innovation/decision outcome as the innovation itself. And given the authority that the health system gives the individual clinician in the implementation process, attitudes of clinicians are an important factor that can inform why the implementation of the ICP was not successful.

Respondents were asked whether they needed to know best practices. Across the board every respondent said yes.

"Oh, my God! Absolutely! Like when are we ever going to start dammit? It's been ten years now that we've been trying to get – you know – we know that this is what we have to do. We know that there's tons of new knowledge." (R5)

"In my opinion, yes, it's essential in order to keep up with adequate clinical practice." (R7)

It is important to keep in mind that the cross-section represented in this thesis includes individuals whose job it is to seek out and promote best practices. The above responses can tell us two things. First, the system, although relatively uninvolved in knowledge transfer, is

at least capable of placing individuals who believe in knowledge transfer in positions that

have an impact on the implementation of best practices. Second, there are individuals within

the system who have a positive attitude towards knowledge transfer and best practices.

To be sure, respondents were also asked what sources they relied on most when

identifying best practices. All seven respondents indicated published literature, as well as

clinical practice guidelines, conferences, experts and peers. So not only do they have a

positive attitude towards best practices, they are also aware of how to access and search for

new information. There are, however, many other individuals within the system, and many

other individuals who were involved in the implementation of the CHF ICP.

Within the innovation/decision process, individuals form attitudes towards the

innovation (or best practice) at the beginning of the process, but those attitudes are subject to

change as the process unfolds. In order to understand both the initial and changing attitudes

of clinicians who participated in the implementation of the CHF ICP two questions were

asked of the respondents. First, respondents were asked about clinicians'' first impressions of

the pathway and its content. R2 indicated that they were unsure about the initial impressions.

> *"I think that probably people looked at it and said these are practices that we should be employing. People intuitively thought they were appropriate."* (R3)

> *"Lots of positive feedback about it. People thought that it would be great for education. They thought it would be good for communication. They thought that things made a lot of sense – that it was going to improve practice as it was being done."* (R4)

> *"It was new to them."* (R6)

> *"A little disorganized. Lots of turf issues. Overall positive though. But, you know, there – it was bringing together a number of people. Some converted and some felt there was no need. So it was a first step you could tell, very clearly."* (R1)

> *"I don't think the staff were really informed very clearly about what the findings were… So, I went with some of our staff nurses. Half an hour long, which a good*

*part of that half an hour was watching a video from American Heart Association
regarding congestive heart failure – one that we used to show our patients. We
are cardiac nurses, we did not need to see that video; we show it to our patients
all the time. So, that was really unhealthy. Indeed, what people needed more was
an explanation of what a pathway is. What are they, how they work, why we
needed to incorporate this, who was saying we needed to – things of that nature I
believe."* (R5)

*"I was concerned about congestive heart failure being the choice in our first
cardio science related pathway. But looking at it, I thought that it probably could
work if the proper education was given in regards to the pathway that nurses and
all support workers were very much aware of how it was to work. And secondly I
thought it could work if we had physicians buy in. And I thought that was the
key."* (R7)

In part, some clinicians felt that the pathway, and the best practices included therein,

would be of benefit to clinicians in the hospital. As can be gleaned from these responses,

there is more to the implementation process than just the pathway. Likely due to the

'disorganized' beginning, some clinicians were presented with remedial material that was of

no value to them, which in turn may have influenced their willingness to participate in the

ICP. Others were not clearly informed about how an ICP works, disabling their ability to

participate in its implementation. Rogers (1995) argues that without the ability to understand

an innovation, attitudes towards it will inherently be negative. Individuals have a natural

predisposition to distrust what they do not understand, particularly where change is required.

However, as Rogers argues, impressions can change over time, so the second

question that was asked with regards to impressions was how clinicians viewed the pathway

as the implementation process unfolded. Some respondents were not around to see how

attitudes changed, but those who were had this to say:

*"I would say that there were some that really didn't give it a try at all, and they
had negative views and they stuck with them, and they really didn't try and
change their minds. Some who tried it and felt like 'yeah, this is a good idea, but
this is just too much work and we're not paid to do this, we don't have time to do
this, we have to make do with a lesser, you know, by doing things the way we're*

doing them' or whatever. And then another group who, I think, that they felt like 'oh, I don't know if this is going to be workable', but then when they actually did it, they liked it." (R4)

"Staff after awhile rather gave up on it, and it was – wasn't used properly." (R5)

"We didn't use it a lot here." (R2)

"Well it became obvious I think through the implementation time of the pathway that it probably wasn't going to be a thing that would stick around. And it became obvious because I believe due to physician buy-in. We heard comments like 'I will order it as long as I have nothing to do with it.'" (R7)

As the implementation progressed, though some liked the pathway (as indicated by R4), the CHF ICP became less utilized and people had an unfavorable attitude toward it.

"Certainly when I talk to my colleagues in medical units and in the coronary care unit, they say 'well the pathway's gone. We don't use it anymore. We didn't do it well probably while it was here, but we certainly are not keeping it after we need to', and we certainly had resistance from various groups or individuals within various groups as being part of the pathway process." (R3)

"I think some of it's…I think some of it might be the wrong attitude too, because they feel like they're doing the right thing anyway." (R2)

"Other barriers are sort of negative perceptions of the pathway. A feeling that they're – that people – are being controlled and told what to do… resistance to change in how they were doing things, so just getting everybody to document and actually fill out what they were supposed to fill out was a problem. It's a lot of people we have to tell to do different things, and people respond negatively when they're told to do things differently." (R4)

Concerns about having too much to do, a feeling of a top down process and not understanding the concept of the pathway itself all seemed to contribute to a negative perception not only of the pathway, but even the process of implementation.

4.7 Pathway Sustainability

Let it be said again: A pathway can only be of benefit if it remains in practice. As with any best practice, it can only improve quality and continuity of care if it remains in

place. Below are the factors which affected the sustainability of the pathway, and in turn the perceptions and attitudes of the clinicians who were to maintain it.

It is important to note that none of these factors exist in isolation from one another. Each is affected by, and interrelated with all of the others. The additional resources which the CHF ICP required over and above the existing care plan are further elucidated below.

4.7.1 Time

Some might argue that it is a matter of semantics, but given the nature of learning (i.e. knowledge transfer) it is worthwhile distinguishing between lack of resources, and lack of time. It is true that more financial resources to hire more staff would likely reduce the amount of stress placed on an individual clinician told to learn a best practice, but nonetheless it does take time to do knowledge transfer effectively. It takes time for clinicians to learn and implement best practices.

Throughout the interviews the issue of not having enough time came up again and again. The pathway asked clinicians from all backgrounds (though nursing in particular) to add to their daily tasks a number of procedures that in turn added to their already tight schedules.

> *"The problem, really, that I saw as we continued to discuss the pathway in its various steps along the way was the timing. Whose job was whose and was there really enough time for nursing to do the extra work required with the pathway they probably weren't doing before that."* (R3)

> *"They don't have time is what I find. Whether the opportunity is there, it probably gets lost and if they did have the enthusiasm, there would be no replacement for them to attend education sessions. It's just lack of resources that limits them, and I think the learning is there, but it extends into a point where they've given up, and don't even try... It takes about five years for a unit to be really comfortable with pathways."* (R6)

> *"You know, that this is all good in theory, but in practice, do we have the time? Too much paperwork... Well for what's needed for knowledge transfer – I mean –*

time for one. So dedicated time... Time to get people educated. Time for people to develop it. Time to ensure that it's implemented in a way that's user friendly. Time and resources." (R4)

"I think, everybody is so busy. I think getting their time is probably difficult." (R2)

The pathway asked that clinicians communicate with one another in ways that were not occurring before, for additional charting, that patients be weighed every day; the pathway asked for clinicians to do more, with the same amount of time. This issue is best summed up in the words of R3.

"Anytime we perceive that there is more work involved in whatever that best practice might be, that will take more time than what we normally do then and there so there is a great deal of resistance to being part of using that particular piece. Unless you're somehow given the time that is required." (R3)

I asked R3 whether they thought there was enough time invested in the pathway.

"I think probably in the development side there may well have been, and what may not have happened is that we didn't change the practice environment so that the nurses could do the things that the pathway suggested should be done. And the pathway certainly emphasized education of patients in a way that we would not previously have had the time to do. So, I think if we'd have been able to invest – nurses had been able to invest their time – for education of patients and working with patients to move them along the pathway, it would have been more successful than otherwise." (R3)

R3's comment about the need to change the practice environment reflects the constraints that the organization and system place on clinicians. Without the proper support (or time in this case) it is unreasonable to assume that clinicians, who have a great deal of autonomy, will change their practice.

4.7.2 Pathway Coordinator

The coordinator played a very influential role in the administration of the pathway. The pathway coordinator performed many functions which kept the pathway going. They found patients to place on the pathway, they checked to make sure that clinicians were

following the pathway, they conducted education sessions about how the pathway worked, they made follow-up phone calls to patients and generally maintained the ICP.

It was no surprise that the respondents mentioned the role of the pathway coordinator in relation to the fact that the pathway is no longer in practice.

"Now with this pathway, I should say that there was a coordinator hired to educate the staff about it and that predominantly fell to her. So the formal education came through the coordinator." (R7)

"And we asked that question from the beginning. Who is going to be doing this? As long as it's part of the study we might be able to do it, but we didn't make the study long enough to complete the process. We should have maybe done a one year, done some analysis, made some changes to the pathway and then move forward, and we didn't do that because, of course, planning for the study didn't include that, and the ongoing commitment of the region didn't exist in terms of funding that. And we probably need someone like a clinical nurse specialist to take on that role and really analyze that pathway and carry that pathway in an effective way would be my suggestion." (R3)

"She could contact them and say, we've got a congestive heart failure, can I put him on the pathway, and it would be a verbal order, and it would be initiated in no time... Right from the beginning it was a 'study'. It was in collaboration with Saskatoon. The person that was hired, was hired in a temporary position to implement. She was also available for the whole time of the study period, that was her only job - was to implement. So, it was the exception. Here was this person walking around constantly checking, and although she was collecting data for the research, she was busy, but there was a presence - an ongoing presence. Once the study was over, she was gone. What that nurtured - was a babysitter. Unless you have somebody – a coordinator onsite, who has access to admissions, and seeks a physician out and says 'gee, this patient would be ideal on the pathway', will we be able to introduce medical pathways successfully." (R6)

"During the study period – we had a nurse. So her position was done. She was hired through the grants, and so she would look for patients who met our study criteria and then she would talk to the physician and say 'will you put the patient on the pathway', and if the physician said yes, then the patient went on the pathway and the whole team followed the pathway. So as soon as she left, there was no one designated to do this... The set funding was done. And, you know, that can be a barrier too, that they were sort of used to her doing it, and if nobody's doing it... And also, you know, she would make sure that all the paperwork was there and that all the forms were there." (R4)

"We don't have a pathway coordinator. We don't have anybody that places patients on the pathway." (R2)

One of the reasons why it became so difficult to address the sustainability of the pathway was because it was implemented as a study. This meant that it came with limited funding over a set time period, and unfortunately with a coordinator who became pivotal to the pathway that disappeared when the study did. As a result, not only did the pathway disappear with the coordinator, but there was never any evaluation done with regards to the success of the pathway, or any variance analysis. As R3 puts it:

"So no one's really evaluated the glitches in the pathway in the way that it needs to be." (R3)

It might be argued that the role of the coordinator only became so pivotal because the staff did not take ownership over the pathway, as reflected by their attitude towards the pathway. Either way, without ongoing funding to resource the pathway, particularly in the form of a coordinator, it is not surprising that the pathway is no longer in use.

4.7.3 Support

Related to the issue of the coordinator position is the need for support in maintaining the pathway. Respondents expressed in a number of ways that support was lacking and that there was an absence of effort to maintain the CHF ICP. One of the main issues where respondents called for additional and ongoing support was for variance reporting.

"I think there is going to have to be some investment in maintaining these things. Resourcing them. Ensuring that there's pathway coordinators, people doing the variance reporting because perception is, and we've done a lot of treatment gap research, perception always is, is my patient getting the best care from practitioners, nurses, physicians, pharmacists, whomever. Reality is when you go back and audit it, you find out that there are gaps there, so unless there is ongoing feedback, things tend to drift a little bit. So I think as a health care region, I am sure that's something we'll have to invest more in terms of resources in the future." (R1)

"In terms of working with patients and seeing a need to change practice, or a need to do something different, there are many opportunities to see that kind of incentive in your practice. But to be able to articulate them and then to go ahead and make the changes is more difficult in our current economic climate in health care... One of the problems with the pathway concept is this whole idea of identifying variances and then doing something with the variances. And we haven't assigned resources to do that. So I'm not sure who it is who will do that. And we have implemented a number of additional pathways now that I've been marginally involved with, and I would say that one of the criticisms that we have as a region, or that we should be listening to as a region, is that we have not assigned resources to do the variance analysis and then decide what it is we need to do differently to improve the quality of care." (R3)

"If you were going to use the pathway properly, you would be variancing everyday, and it was just a lot of work when a patient's on a pathway and you're variancing all the time." (R5)

Respondents identified quite clearly that without the resources to do variance reporting, even if best practices have been implemented, there is no way to identify how effective those new implementations have been, or how consistently they have been applied. Likewise, with the CHF ICP, without variance reporting there is no way to identify who is following the best practices and whether or not they truly create better outcomes or continuity of care for patients. But this was not the only area where respondents identified need for additional support.

Some respondents identified the need for managers to be more involved in the implementation process. As was noted earlier, many clinicians resisted the pathway because they felt that it was being implemented with a top down approach, however, managers can play a role in encouraging and supporting changes in practice by remaining involved with their staff.

"I'm very much a fence post sitter on this. I can see it from the staff nurses' viewpoint, where they're just saying 'we can't do anymore; we've had enough – like – we can only do what we can do', and I certainly can see it from management's side too. Management needs to develop strategic plans to

addressing the staffing shortage, ensuring staff have the resources needed to learn best practice." (R5)

"To do a better job and to support these nurses a little bit more – is the managers to show an interest and go around and look at documentation. You know, just more visual. And we don't have that on a lot of units. We do on some, and they're the ones that do really well. You can just tell that managers have played a very big part in it, and they've either assured their staff, or made them – they've just encouraged it. And I think the more times you hear somebody talking positive about it, the more it becomes adopted as something positive, but if you have managers who aren't interested and such, and let chaos happen, or they could have prevented it, it just becomes that much more frustrating. So, in our RQHR, I would say…there's not one manager that has said 'I'm not going to like this pathway'. They're all very supportive in implementing it, but they don't help sustain it." (R6)

"You make your own things happen, you don't always get help from the higher levels. That maybe would help and maybe wouldn't help, but it would certainly send a stronger message in my opinion." (R1)

The concept of sending a positive message about knowledge transfer and best practices to clinicians is key. By providing resources for knowledge transfer, and by having managers who expect and encourage it from staff, an environment is created where it can happen more steadily and easily.

The last issue that respondents raised in terms of where more support would help with knowledge transfer is the need for ongoing education for clinicians. Without exposure to best practices, there is little hope that clinicians will be able to incorporate them. The CHF ICP is a prime example of this. In the ICP project there was considerable energy put into educating clinicians not only about the best practices, but about the pathway itself. If they did not know what to do differently, how could they be expected to change practice?

"There needs to be more education, encouragement and motivation built into the system to assist people to learn and maintain best practice." (R5)

"People need to be educated on an ongoing basis, and so, you know, it was just too huge to do it and so we did what we could." (R4)

"There was not enough money – it would have been a huge amount of money – to have people come in as, you know, on their days off or whatever it was – to pay them. So, we were limited to when we could introduce it. We had to use an education day." (R6)

This is not just an issue for the CHF ICP, or even just for pathways. Based on the responses, the system does not adequately support clinicians by providing learning materials and resources to help improve practice. The initial variance analysis that was done identified that there were gaps between the identified best practices and how clinicians were actually practicing. Clinicians, at the very least, cannot be expected to do anything different if they do not know any better.

4.8 Physicians

Respondents mentioned a number of times that physicians were a key component to the pathway, and that their general lack of participation in, and endorsement of the pathway created an environment where it could not be successfully implemented and maintained. Not only do pathways create more work, but clinicians already work in an environment where they are strapped for time. Perhaps this is why no physicians were willing to participate in this study. Either way, based on feedback from respondents, physicians played a key role in where the pathway is today.

"And you work with the physicians as well, in terms of what's out there. And what practice changes they might want to see from a physician's point of view especially if it could impact nursing. So it's a physician that's in contact with all disciplines, as you work toward improving the quality of care of the patients." (R3)

"Physicians can be swayed, I guess, if administration were to step in, I don't know, hand slapping or dangle carrots, I don't know what they do to support physician change of practice. They make themselves as busy as they want to be. There are very few that are interested in research, and I wonder how successful they are in changing practice amongst their groups." (R6)

"When I talked to nurses, they thought physicians had a key role, like that was the big thing to get physicians to sign orders for the pathway, and that was a big thing for them. I think it's the physicians. You really have to get them on board. You know, you can have the guidelines, but then they're the ones that really have to do it." (R2)

"Well it became obvious I think through the implementation time of the pathway that it probably wasn't going to be a thing that would stick around. And it became obvious because I believe due to physician buy-in. We heard comments like 'I will order it as long as I have nothing to do with it'. And so it became basically a nursing initiative. The nurses implementing it, carrying it out… It was more work for the nurses to some degree so they weren't exactly warm and fuzzy about it I guess. But – but they actually – I was pretty pleased with how they did adopt it and work with it to the best of their ability. But without physician buy-in, without physicians carrying through into the home care setting, it couldn't survive. So I guess to answer your question whose decision is it to accept or reject it, I think finally it has to be the physician's… Even though it was definitely stressed that this was not – that pathways aren't made to dictate practice or to keep you from choosing your own practice, or choosing your own regimen, I think – and again, you'd have to ask them, but I believe physicians felt like it was sort of dictating their practice. That what need was there for them anymore if they could just – we could follow this recipe to care for the patient. And that's a bit odd because we've always, for years, had things called pre-printed orders, standing orders is an improper term for it, but pre-printed orders where physicians have agreed that this is – these are adequate orders for a patient who comes in with chest pain. They've agreed on those things for years and to me it's kind of the same thing, only it isn't a day-by-day, you know, we have those initial orders and it's not, sort of, new orders everyday like the congestive heart failure pathway was. So I'm not sure, but I feel that they felt that their treatment was being dictated to some degree." (R7)

As illustrated in the above comments, many factors like time, resources and attitude, played a role in the involvement physicians had in the implementation of the pathway and its lack of integration. However, the point is this: within the clinical environment physicians held a great deal of the responsibility in the implementation of the pathway and whether or not it remained in practice.

4.9 The Value of Pathways

As has been demonstrated throughout this analysis, despite the benefits of having pathways, they are cumbersome and difficult to implement. The question remains: Are pathways worthwhile given all of the challenges associated with implementing them?

> *"Oh, absolutely – absolutely. You're going to get better care. You're going to have decreased contact with the health care system. You're going to save money. It will save money, and it will decrease utilization of our health care system. It will enhance patient outcomes."* (R1)

> *"I think so. There's lots of barriers to using them, but I think that it is an appropriate way. It's an excellent educational tool, you know, because it gives guidelines, basically, within the pathway for all sorts of disciplines so they each, sort of, get updated, and then secondly, they have a better idea of what everybody else is doing."* (R4)

> *"The research has been done, the committee has looked at what are the best practice issues, put it into a – usually a very logical, easy-to-read, step-by-step approach. I understand that often times they do result in less days of admission for the patients so we know that research base. They have been seeming to work."* (R7)

> *"You can map that out so everybody uses it. You tie in documentation – becomes standardized. You address physician orders in a sense that you use best practice. That's where you bring in your clinical practice guidelines; current practice; best practice, and you incorporate them into standard physician orders that reflect – or the pathway reflects – those orders. It's multidisciplinary – it brings everybody to the table. We have gotten away, unfortunately from working as a team. We piecemeal. Each discipline works independently in managing one patient. So, there's not that continuity of care that's being given, as well as, it hinders continuum of care. So, it is an opportunity to bring all disciplines to the table to collaborate and to work together to address: 'what are our barriers, bottlenecks? What aren't we doing well? What are we doing well? What can we do better?'"* (R6)

> *"I think pathways are really good."* (R2)

In the end, despite the fact that the CHF ICP is no longer in practice, there still remains a positive outlook on ICPs. Some of the respondents went further to explain why there is hope for future pathways.

"One of the other barriers, a lot of the people – the nurses – because they didn't do it on a routine basis, and the first pathway they had was the heart failure pathway, they found it very difficult to implement." (R2)

"It was the first time to use a ICP for our unit." (R5)

"Pathways will become easier because this was a new initiative to many people, and there's been even now a change in people's perception and willingness to participate, so that's a good thing." (R1)

It is the hope of this researcher that in the future, as pathways become more commonplace, that factors identified as having an impact on their success will be more adequately addressed. Though respondents were quick to point out that the pathway is no longer in place, and the reasons why, they still hold the view that pathways are valuable and of benefit.

Discussion

5.1 Conclusions

At the core of this thesis is the assumption that the use of best practices by clinicians will improve consistency and quality of care for patients. There are numerous examples of variance within the system, as well as implementations of best practices, but it is not enough to stop the analysis there. Even when presented with the ICP, despite the fact that it was the 'best practice', clinicians still ended up rejecting it. Though there are a few components of the pathway that respondents indicated are now commonly practiced, many of the key elements of the pathway have disappeared. If the value of best practices can only be realized by keeping them in practice, then it is necessary to understand why. Why, despite clinicians seeing value in best practices and even the pathway itself, is it no longer in practice?

At the system level there is no formal support for knowledge transfer. At the organizational level there is minimal support for knowledge transfer. Only the inclusion of learning best practices in the job descriptions of clinical educators resembles any policy on this issue. Currently clinicians are too busy to include learning best practices as part of their jobs. It is not surprising that the implementation of the ICP began as a result of a research study and not a required change to the delivery of care for CHF patients.

To complicate matters, as pointed out by respondents, resources set aside for knowledge transfer by the system or the hospitals are minimal at best. Though there are positions called *clinical educators* within the walls of the hospitals, those individuals do not have all of the resources they need to do their jobs effectively. Clinicians, like all humans, require time to learn and assimilate new information. Resources have to be set aside to locate and make information available, and then to adapt it to the clinicians' particular settings.

They need information about how they are currently practicing and how that is different from what is expected by the evidence. Knowledge transfer needs to be supported and encouraged or else best practices become synonymous with extra work.

For the ICP project the support came in the form of a pathway coordinator whose salary was paid for with external and limited research funding. The coordinator was responsible for finding appropriate patients and arranging for them to be placed on the pathway, educating clinicians about the best practices associated with caring for CHF patients, educating clinicians about what a pathway is and why it too is considered best practice, reporting on variances and doing follow-up phone calls with patients. When the research funding ended, so did this support.

Even with the support of the coordinator the strain of the additional work (like weighing patients daily) and the additional communication required within and outside of the hospital, did nothing to relieve already busy schedules. When the study was over and coordinator position no longer existed, it is not surprising that there was no one to take on those responsibilities. There were no incentives to maintain the pathway.

At the individual level there are many reasons why the pathway is no longer in practice. At the same time as there is limited support for knowledge transfer at the system or organizational level, individual clinicians were required by the pathway project to add more to their workload. Without a system and organizational environment that makes room for knowledge transfer, and work environments where best practices are implemented, this mixed message can only result in negative attitudes.

Figure 1. Comparison between care plan before pathway and with pathway
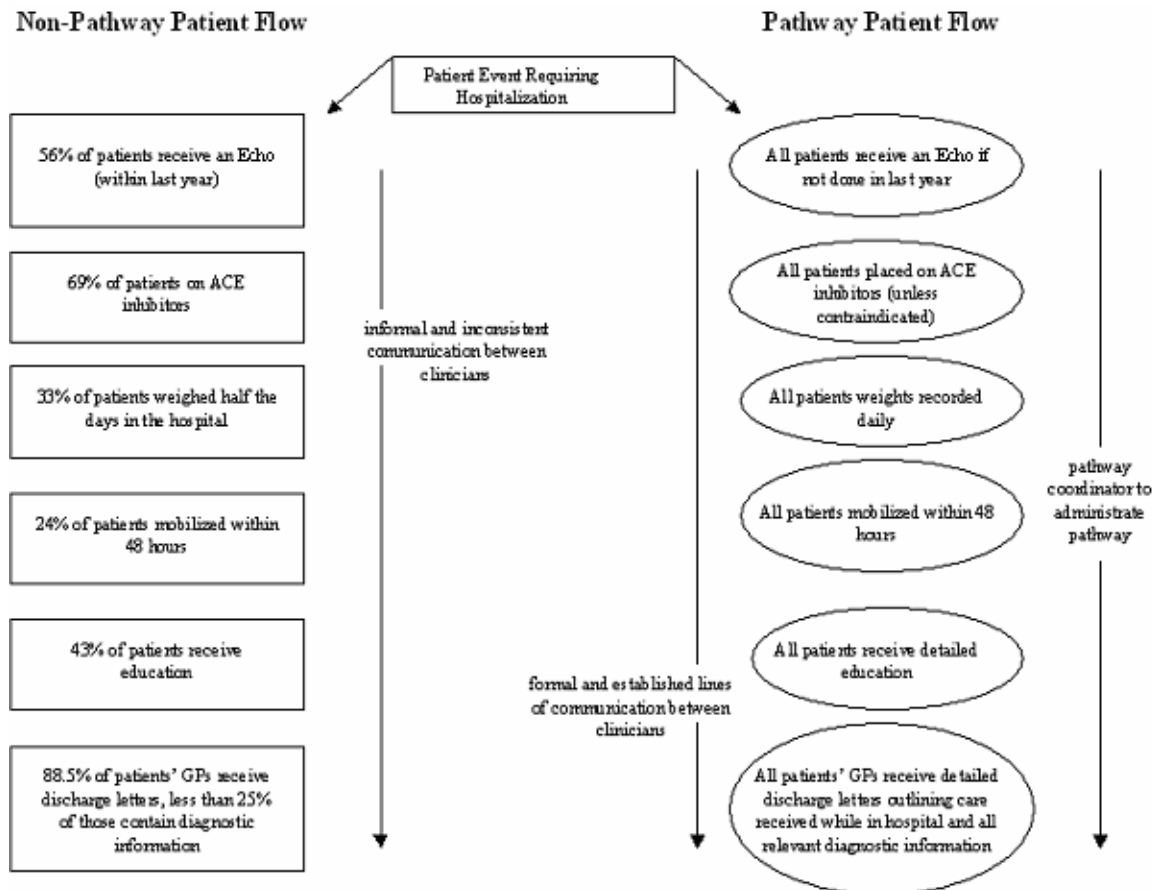
(This chart was designed by the researcher; however, the data in the chart comes from Hadjistavropoulos et al., n.d.a.)

It is useful here to return to Rogers' innovation/decision process. Rogers (1995) outlines the innovation decision process in five stages:

1. Knowledge Stage – when an individual (or other decision-making unit) is exposed to an innovation's existence and gains some understanding of how it functions (p. 162).

2. Persuasion Stage – when an individual (or other decision-making unit) forms a favorable or unfavorable attitude toward the innovation (p. 167-8).

3. Decision Stage – when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject an innovation (p. 171).

4. Implementation Stage – when an individual (or other decision-making unit) puts an innovation into use (p. 172).

5. Confirmation Stage – when an individual (or other decision-making unit) seeks reinforcement of the innovation/decision already made or reverses a previous decision to adopt or reject the innovation (p. 181).

Imagine for a moment a system in which the incorporation of best practices is habit. Every day clinicians are expected to take a few minutes and see what new information is available. Getting to the knowledge stage would be easy. Having been exposed to best practices before, and with the experience of incorporating new information on a regular basis, at the persuasion stage clinicians would be able to review the information and determine its quality. If the information was of good quality, and looked as though it would improve patient outcomes, at the decision stage they may also decide to implement any necessary changes. After seeing the new information in practice, at the confirmation stage clinicians would decide whether to reject or retain the information. Though in this system, the merit of the information (based on patient outcomes) would be the deciding factor, not the workload. In this system not only is learning best practices a part of everyone's job description, the system has as a policy that time and resources must be set aside each day to make it happen.

Theoretically this is how Rogers' innovation/decision process progresses. Theory and practice, however, are often two very different things. The reality is that the system clinicians currently work in does not make knowledge transfer this easy. It is a cumbersome task because the system is not ordered in a way that makes learning new information a favorable option for clinicians. Axelrod et al. (2006) call it engagement, or the 'engagement gap'. In

the current system in order for best practices to be implemented it must occur as something different from the ordinary clinical environment; in this case it was a research study. The study, while involving clinicians in the design and implementation of the pathway, only involved a handful of engaged clinicians. They, along with the research team, found the best practices useful and found what they thought was a good way to implement those practices. The problem was that a significant number of other clinical staff were not engaged.

Consider again Rogers' innovation/decision process. For a vast majority of the clinicians the innovation/decision process began at the implementation stage. While the research group began at the knowledge stage, and progressed through the process normally, most of the clinicians had it decided for them that the information was of good value and that the ICP was going to be implemented. During the implementation stage, when the clinical staff was pulled through the knowledge stage it did not matter whether they were persuaded. This disruption in the process, coupled with the extra work, could not have had a positive effect on the attitudes of clinicians.

It is true that clinicians must accept some responsibility for engaging the knowledge transfer process, but the limitations of the current system must not go unchecked. If the system is not internally making knowledge transfer a priority, then it is not surprising that initiatives like the ICP implementation project arise. The disruption in the innovation/decision process intuitively makes it a top-down process. An additional problem is that it is an outside source from which the information (or change) is coming. Most people are not comfortable with change, much less when it comes from an unfamiliar source in a top-down fashion. This is particularly true for physicians who are responsible for a great deal of the decisions regarding CHF patient care.

Physician participation is crucial to the success of best practice implementation (Costenbader et al., 2007; McAlearney et al., 2006; Putnam et al., 2004). Physicians play a central role in managing patients' treatment plans making physician support crucial to the longevity of any best practice implementation. It is unfortunate that no cardiologists or general practitioners agreed to participate in this study, as it would have been helpful to better understand their role in maintaining the CHF ICP. Some authors argue that there is simply no time in busy clinical environments for physicians to invest in learning and maintaining new best practices (Geboers et al., 2001; McAlearney et al., 2006), while others argue that administrative and policy constraints prevent successful maintenance of implemented best practices (Katz, 1999; Halm et al., 2000).

Despite these barriers, however, other clinicians embraced the pathway as a way to improve patient care because they trusted the evidence. Hansen et al. (2007) found that even though efforts to increase the level of knowledge of physicians were successful, it did not alter patient care. Having the knowledge is not enough to change behavior. As is articulated by Rogers' model, innovations can be rejected as early as the persuasion or decision stage. At any rate, comments made by the respondents clearly reflect a lack of support from the hospital physicians involved in the ICP, despite the fact that it was based on sound evidence.

While the retention of knowledge transfer by clinicians is not a simple issue, it is an important one. In the coming years, as new and better ways of providing care are discovered, there will be an increasing onus on the health care system to provide better care. Without a system that makes it possible for clinicians to readily engage the learning process, achieving successful and sustainable improvements in care will be difficult at best.

5.2 Implications

All too often the focus of improving health care is at the clinical level. While it is true that there are many discrepancies between actual practice and best practice this study shows that it is not enough to know better. Clinicians are not isolated; nor are units or hospitals. There is a health care system that binds it all together. It is this system that says how clinicians are paid, that care is a publicly funded service, how care is organized for the population, and without any explicit requirement for clinicians to be continually learning best practices. Best practices will not improve care until the system environment changes so that they can be readily adopted.

This research suggests that implementing best practices, particularly in an environment as complicated as heart care units, is difficult at best; but not unmanageable. The success of the ICP implementation rested on the willingness of clinicians to adopt and maintain it; to engage in the process. For future endeavors it will be important for implementers to carefully create engagement with potential adopters, and more importantly change the practice environment so that there is enough time to accomplish all necessary tasks and create the capacity (likely through a coordinator) to maintain the pathway and do variance reporting. Each of the factors addressed in this study has the potential to foster discontinuance if not accounted for.

5.3 Limitations

The greatest limitation to this study is the lack of physician involvement. The analysis made it quite clear that physicians are pivotal players in implementing best practices, and the

lack of their participation in this study leaves this researcher without valuable insight into the management of CHF patients.

Also missing from the respondents were any representatives from Home Care. Respondents indicated that for many patients Home Care nurses played a significant role in the care process after discharge. Input from this group of clinicians would have added valuable information about how the pathway worked and what its value was outside of the hospital.

Another limitation of this study is that there is no variance reporting to supplement the qualitative information. Part of the problem is that it is an expensive and time-consuming process, a likely explanation as to why it was never done.

The last limitation, which this researcher also considers a strength of this study, is that all respondents in some way had a role in managing the implementation process. More than a hundred clinicians participated in the CHF ICP, many of whom did not carry the title 'Clinical Educator'. It might be argued that the responses of a front-line nurse or pharmacist, without that added responsibility, would have been valuable.

5.4 Future Research

Additional research needs to be done into the sustainability of ICPs, and other knowledge transfer activities. Future studies would be of great value if they included variance analyses, physician input and had an evaluation component built into the study to examine the knowledge transfer process over longer periods of time. Such research would provide decision-makers with vital information in planning how to most effectively use health care resources and to promote the use of best practices in clinical settings.

Ultimately, however, we need to explore in greater detail how the system constrains knowledge transfer. Further research may also include a more detailed analysis of the structure of the policies within the system and how they relate to the provision of care and patient outcomes.

5.5 Summary

This thesis illustrates both the value of knowledge transfer and the difficulty in making it successful. The health care system is so complex, and the roles within it so differentiated, that ongoing learning has become a cumbersome task. Structural changes (or allowances) must be made in order to improve communication among members of the healthcare system, and time needs to be invested to make knowledge transfer effective and sustainable.

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APPENDIX A

Consent to Participate

Researchers

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Description of the Research

The purpose of this study is to discover the long-term effects of Knowledge Transfer efforts in clinical settings. Evidence, while useful in practice, is only useful if it is retained. The interview consists of open-ended questions that will take approximately one hour to answer. With your consent, this interview will be audio-recorded. This form indicates your consent to participate in the interview.

Potential Risks

There is some risk that participants will be identifiable. To minimize this risk, all potentially identifying data will be kept confidential. Securing approval for transcript release will also minimize risk of participation: only information you are comfortable sharing will be included in the research. The information collected from participants is not expected to be sensitive in nature as it deals with care processes rather than actual patients receiving care.

The project has possible benefits for future studies. By identifying those characteristics of knowledge transfer that have the greatest impact over time, this research may be able to inform future knowledge transfer endeavors.

The consent forms, interview tapes, typed transcripts of interviews, transcript release emails, and all research field notes will be securely stored in a locked cabinet by my research supervisor in the College of Nursing, accessible only by the researcher and advisory committee, for a minimum of five years. The consent forms and contact information forms will be stored separately from the other documentation.

Confidentiality

There are no anticipated concerns about maintaining the confidentiality of participants, though participants may be identifiable based on responses given during interviews. Responses of the participants will be compared across disciplines. To minimize possible identification of participants they will never be identified by sex or name. You are under no obligation to talk about anything that you are uncomfortable sharing. The findings may be presented at conferences and in published journals and reports. The data collected during this study will be stored in a locked cabinet in my supervisor's office for a minimum of five years upon completion.

Right to Withdraw

You are free to withdraw from this study at any time, for any reason, without any penalty. If you withdraw from the study, any data you have provided will be destroyed.

Questions

Throughout the interview process you are encouraged to comment on the research process and ask questions. Please feel free to contact the researchers at any point during the research process with any questions or concerns. This study has been approved on ethical grounds by the University of Saskatchewan Behavioral Sciences Research Ethics Board on June 27, 2005. Any questions about your rights as a participant may be addressed to that committee through the offices of research services at (306) 966-2084. The results of the study will be made available to the Health Quality Council in the form of a short report based on the analysis of the data.

Consent to Participate

I have read and understood the description provided above; I have been given an opportunity to ask questions, and questions have been answered satisfactorily. I consent to participate in the study described above, understanding that I may withdraw this consent at any time. A copy of this consent form has been given to me for my records.

I agree to have this interview audio-taped ____Yes ____No

I wish to receive a summary of the research findings ____Yes ____No

_____ _____

(Signature of Participant) (Date)

_____

(Signature of Researcher)

APPENDIX B

Interview Schedule for Clinicians Practicing In-Hospital

General

1. How long have you been with your unit?
2. What is your educational background? Other work experience?
3. What information source do you rely on most to inform your practice?
4. Are there any incentives to learn and apply new practices?
5. Are there any deterrents to using outdated practices?
6. Is there a need to be aware of and incorporate new and proven research findings into practice?
7. Are integrated care pathways (ICPs) a practical means of improving patient care?

Rogers' Diffusion of Innovation Theory

8. When were you first exposed to the best practices associated with treating congestive heart failure (CHF) patients?
9. What was your first impression of these best practices?
10. What was your impression of these best practices after they had been put into use?
11. Whose decision is it to retain or reject best practices? What factors influenced that decision with regard to the ICP?

Organizational

12. Is learning new and better practices a part of your job description? If so, in what ways does this occur?
13. Are you provided with the necessary resources to improve your practice through knowledge acquisition? If so, please describe the resources. If not, what additional resources would you require?
14. Is the adoption of new practices encouraged where you work? If so, how is it encouraged and what are the results? If not, is it discouraged?
15. Did policies regarding service procedures interfere with the use of the CHF evidence in practice?

    If so, what were the policies and how did they interfere?

    If not, did any policies accelerate the use of evidence in practice?

If so, what were the policies and how did they help?

Decision Processes

16. Are you able to implement new practices that you yourself have identified?

17. If you identify a better way of providing care, is there a process available for making that a standard practice where you work? If so, what is the process?

18. Who is responsible for setting standards of practice?

Communication

19. Are there any formal lines of communication established between clinicians who care for patients inside and outside the hospital (ie: GPs, Pharmacists, Home Care)? If so, what are they? …what is communicated?

20. Are there any formal lines of communication established between the different clinicians caring for patients within the hospital setting? If so, what are they? …what is communicated?

21. Are there formal lines of communication established between your organization/unit and other health related organizations? If so, what are they? …what is communicated?

22. Do you have any direct contact with health researchers or research organizations?

Integrated Care Pathway

23. What information do you give to patients during their stay in hospital (ie: about their condition, medications, diet,)? What information is given to family members?

24. What information is given to patients at discharge? Is it formal policy to give patients information upon discharge?

25. Are ACE inhibitor and beta-adrenergic receptor blocker (β-blockers) prescribed for CHF patients with left ventricular systolic dysfunction?

26. If ACE inhibitors are contraindicated, are Angiotensin II AT1 receptor blockers (ARBs) considered for use?

27. Are diuretics prescribed for all patients demonstrating fluid retention?

28. Are CHF patients given an echocardiogram? If so, when are patients given an echocardiogram?

29. How often is a patient's weight recorded?

30. Is there an effort made to mobilize patients in the first 48 hours of hospital stay?

31. Are care guidelines written into any formal policy or manual?

32. Are physician's admitting orders kept on file anywhere?

33. Is a discharge summary for the family physician provided to the patient at time of discharge?

34. Do physicians still use the CHF management sheet from the ICP?

35. Are there any formal means of communicating with home care practitioners regarding the care of CHF patients?

ICP Administration

36. Are there any ongoing CHF-related educational sessions?

37. If the ICP is (partly) in use, is there anyone responsible for placing patients on it?

38. Is there anyone to track daily variances from the identified best practices? …review charts? …conduct follow-up phone calls to assist patients with their discharge instructions?

APPENDIX C

Interview Schedule for Clinicians Practicing Outside of the Hospital

General

1. How long have you been with your practice?

2. What is your educational background? Other work experience?

3. What information source do you rely on most to inform your practice?

4. Are there any incentives to learn and apply new practices?

5. Are there any deterrents to using outdated practices?

6. Is there a need to be aware of and incorporate new and proven research findings into practice?

7. Are integrated care pathways (ICPs) a practical means of improving patient care?

Rogers' Diffusion of Innovation Theory

8. When were you first exposed to the best practices associated with treating congestive heart failure (CHF) patients?

9. What was your first impression of these best practices?

10. What was your impression of these best practices after they had been put into use?

11. Whose decision is it to retain or reject best practices? What factors influenced that decision with regard to the ICP?

Organizational

12. Is learning new and better practices a part of your job description? If so, in what ways does this occur?

13. Are you provided with the necessary resources to improve your practice through knowledge acquisition? If not, what additional resources would you require?

14. Is the adoption of new practices encouraged where you work? If so, how is it encouraged and what are the results? If not, is it discouraged?

15. Did policies regarding service procedures interfere with the use of the CHF evidence in practice?

    If so, what were the policies and how did they interfere?

    If not, did any policies accelerate the use of evidence in practice?

    If so, what were the policies and how did they help?

Decision Processes

16. Are you able to implement new practices that you yourself have identified?

17. If you identify a better way of providing care, is there a process available for making that a standard practice where you work? If so, what is the process?

18. Who is responsible for setting standards of practice?

Communication

19. Are there any formal lines of communication established between yourself and clinicians within the hospital setting who have cared/are caring for your patients? If so, what are they? …what is communicated?

20. Are there formal lines of communication established between your organization and other health related organizations? If so, what are they? …what is communicated?

21. Do you have any direct contact with health researchers or research organizations?

Integrated Care Pathway

22. What information do you feel is important for your patients to have? …family members?

23. Are ACE inhibitor and beta-adrenergic receptor blocker (β-blockers) prescribed for CHF patients with left ventricular systolic dysfunction?

24. If ACE inhibitors are contraindicated are Angiotensin II AT1 receptor blockers (ARBs) considered for use?

25. Are diuretics prescribed for all patients demonstrating fluid retention?

26. Are CHF patients given an echocardiogram? If so, when are patients given an echocardiogram?

27. How often is a patient's weight recorded?

28. Are care guidelines written into any formal policy or manual?

29. What information do your patients provide you after they have been to the hospital?

30. Are there any formal means of communicating with home care practitioners regarding the care of CHF patients?

ICP Administration

31. Do you attend any ongoing CHF-related educational sessions?

32. If the ICP is (partly) in use, is there anyone responsible for placing patients on it?