Perceptions of team effectiveness following the introduction

of a cardiology acute care nurse practitioner role

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Abstract

Background: Cardiology acute care nurse practitioners (ACNP) enacting their roles in health care teams faced a number of challenges including a mix of positive and negative views of the ACNP role from health care team members, ACNP roles crossing the boundaries between the medical and nursing professions, and an expanded scope of practice that was not clearly defined. Understanding the process by which ACNP roles were enacted in teams is important since the boundaries between professions may change following the introduction of an ACNP role and affect the team's perceptions of its effectiveness. Little is known of how ACNP role enactment affects the team's perceptions of its effectiveness.

Objectives: Following the introduction of a cardiology ACNP role in the health care team, the study aims to: 1) describe ACNP role components, 2) describe ACNP role enactment, and 3) explore how ACNP role enactment and boundary work of team members affect the team's perceptions of team effectiveness.

Methods: The study was conducted in two university-affiliated teaching hospitals in Quebec. A descriptive multiple case study design with qualitative and quantitative data sources was used. The study produced a valid and reliable time and motion tool to measure cardiology ACNP activities. The study used Bales' interaction process analysis to identify differences in patterns of communication among team members.

Findings: Team members believed they were more effective following the introduction of an ACNP role because the ACNP role filled a gap in patient care and improved team processes. The ACNP role components that were enacted

were sensitive to the surrounding context and responsive to the needs of team members and patients.   The patterns of communication among team members were aligned with the structural dimensions surrounding the team.

A conceptual framework was developed. It highlighted the key inter-related dimensions and concepts that different stakeholder groups need to consider when introducing ACNP roles in health care teams. The study identified proximal indicators used by team members to assess their team's performance. Further study is needed with other teams and patients and families, and to identify team-level outcomes of care.

Keywords: Acute care nurse practitioner, perceptions of team effectiveness, boundary work, conceptual framework, case study

Abrégé

Contexte : Les infirmières praticiennes spécialisées (IPS) en cardiologie qui exercent leur rôle au sein des équipes soignantes rencontrent certains défis. Des points de vue tant positifs que négatifs sont exprimés par les membres des équipes soignantes à l'égard du rôle même de l'IPS, du développement d'un rôle qui traverse les frontières entre les professions médicale, infirmière et autres professionnels et des modalités de pratique élargies non clairement définies. Par conséquent, il importe de comprendre le processus par lequel la pratique des IPS s'intègre aux équipes soignantes et bouleverse les frontières interprofessionnelles, et comment la présence des IPS influe sur les perceptions d'efficacité des équipes soignantes. Nous disposons de peu de données sur la relation entre le rôle des IPS et les perceptions d'efficacité des membres des équipes soignantes.

Objectifs : Suite à l'introduction d'IPS en cardiologie au sein d'équipes soignantes, l'étude vise à : 1) décrire les composantes du rôle des IPS en cardiologie, 2) décrire le processus de développement du rôle des IPS, et 3) explorer comment ce processus et les changements au niveau des frontières interprofessionnelles entre les membres de l'équipe influencent leurs perceptions d'efficacité.

Méthodologie : Nous avons réalisé une étude de cas multiples dans deux hôpitaux universitaires au Québec. Cette étude s'appuie sur des données qualitatives et quantitatives. Un outil de mesure des temps et mouvements valide et fiable a été développé afin d'étudier les activités des IPS en cardiologie. De

plus, le système d'analyse des processus d'interaction de Bales a été utilisé pour identifier des modes de communications entre les membres des équipes.

Résultats: Les membres des équipes soignantes estiment que l'introduction des IPS a amélioré leur efficacité parce qu'elles comblent une lacune en matière de soins aux patients et qu'elles permettent d'améliorer les processus au sein des équipes. Les composantes du rôle développées sont adaptées au contexte ambiant et tiennent compte des besoins des membres des équipes soignantes et des patients.

Un cadre conceptuel a été élaboré. Il identifie les dimensions et concepts clés à considérer lors de l'introduction d'un rôle d'IPS au sein des équipes soignantes. L'étude nous a permis d'identifier les indicateurs proximaux utilisés par les membres des équipes pour apprécier leur efficacité.

Des recherches ultérieures doivent être menées auprès d'autres équipes soignantes de même que des patients et des familles afin de déterminer la portée du nouveau cadre conceptuel. De plus, d'autres études sont nécessaires afin de déterminer les résultats en matière de soins de santé qui sont susceptibles d'être influencés par les soins dispensés par les IPS et les équipes.

Mots-Clés : Infirmière praticienne spécialisée, perception d'efficacité, équipes soignantes, frontière interprofessionnelle, cadre conceptuel, étude de cas

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List of Abbreviations

Abbreviation	Full designation
ACNP	Acute Care Nurse Practitioner
ADON	Associate Director of Nursing
AHN	Assistant Head Nurse
APN	Advanced Practice Nursing
CABG	Coronary Artery Bypass Grafting
CHSRF	Canadian Health Services Research Foundation
CIHI	Canadian Institute for Health Information
CMQ	Collège des Médecins
CNA	Canadian Nurses Association
CNPI	Canadian Nurse Practitioner Initiative
CNS	Clinical Nurse Specialist
CPDP	Council of Physicians, Dentists, and Pharmacists
DON	Director of Nursing
ECG	Electro-Cardiogram
FLM	Front-Line Manager
GP	General Practitioner
IPS	Infirmière Praticienne Spécialisée
IV	Intravenous
κ	Kappa
LPN	Licensed Practical Nurse
MD	Medical Doctor
MSSS	Ministère de la Santé et des Services Sociaux
MUHC	McGill University Health Center
N Educ	Nurse Educator
NP	Nurse Practitioner
OIIQ	Ordre des Infirmières et Infirmiers du Québec
OT	Occupational Therapist
Physio	Physiotherapist
PT	Patient
RN	Registered Nurse
RT	Respiratory Therapist
SW	Social Worker
US	United States
UK	United Kingdom
VRE	Vancomycin-Resistant Enterococcus

Chapter 1 – Problem Statement

Acute care nurse practitioner (ACNP) roles were introduced in the United

States and in Canada in the 1990s (DiCenso et al., 2009). Specialty-specific

ACNP roles were introduced in Quebec in 2005 (Ordre des Infirmières et

Infirmiers du Québec/Collège des Médecins du Québec, 2006a) and the largest

group of ACNPs is in cardiology. ACNP roles have been developed in a variety

of clinical specialties (Becker, Kaplow, Muenzen, & Hartigan, 2006). ACNP

roles have been added to health care teams to assume the medical and nursing

care of patients and families with complex acute or chronic health conditions in

acute care settings (Kleinpell, 2005). Cardiology ACNPs contribute to patient

care by using processes such as an expanded scope of practice, collaboration and

coordination of care to meet patient care needs (Munro & Taylor-Panek, 2007;

O'Brien, 2007). Although positive outcomes have been accrued for patients and

families with the addition of ACNP roles to cardiology teams (Holland et al.,

2005), little is known of the effects of ACNP roles on team members, and some

study findings are contradictory (Hoffman, Happ, Scharfenberg, DiVirgilio-

Thomas, & Tasota, 2004; Wright, Lockyer, Fidler, & Hofmeister, 2007).

 Hoffman et al. (2004) examined the perceptions of physicians, registered

nurses (RNs)[1], and respiratory therapists (RTs) about the contributions of ACNPs

to the medical management of critically ill patients and found that the other

providers perceived the ACNP role to be medically oriented while maintaining a

nursing focus. Vazirani and colleagues (2005) argued that the introduction of an

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[1] In Quebec, the role label Nurse or Nurse Clinician designates nurses who deliver patient services
at the point of care. In this document, RN will be used to designate this role.

ACNP improved communication and collaboration among members of the health care team of a sub-acute medical intensive care unit. Wright et al. (2007) argued that intra- and inter- professional tensions could affect team practice and impede the development of an effective team. They identified issues around autonomous or collaborative decision-making, and the role of the physician in the team. However, the findings of these studies provided few insights into what goes on in the team to explain differences in perceptions.

Martin and Hutchison (1999) reported that nurse practitioners (NP)s[2] confronted a number of challenges in the day-to-day enactment of their scope of practice. NPs in their study encountered a number of obstacles when enacting their role including a lack of preparedness in organizations, inadequate resources, conflicting expectations, being ignored, undermined, verbally abused, and made invisible (Martin & Hutchison 1999). These constraints needed to be addressed and processes needed to be negotiated over time for NPs to establish boundaries for the role and create a space for the role in the organization (Martin & Hutchison, 1997).   Processes such as these were dynamic (Pettigrew, 1992) and events needed to be examined directly in their environment to understand how and why events play out over time (Van de Ven, 1992).

Few researchers have examined the processes that unfold in teams and even less is known for teams in health care (Amundson, 2005). Van de Ven (1992, p. 178) stated: "There may be several equally effective ways to achieve a goal". Pettigrew (1992) asserted that such differences were best understood by

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[2] In Canada, advanced practice nursing roles include nurse practitioner roles in acute and primary care and clinical nurse specialist roles.

examining processes. Poulton and West (1999) determined that team processes accounted for 23% of the variation between teams in their effectiveness. Borrill, West, Shapiro, and Rees (2000) found that team processes predicted team effectiveness in their study. Team member perceptions of team effectiveness were defined as the beliefs and attitudes that the team can perform across a range of dimensions (Haward et al., 2003) and work together on an ongoing basis (Sundstrom, De Meuse, & Futrell, 1990).

Studies so far have measured processes in teams and their effects on patient and staff using questionnaires (Haward et al., 2003; Poulton & West, 1999). Cummings, Fraser and Tarlier (2003) identified scope of practice, boundaries and staff reactions to advanced practice nursing (APN) roles as important issues to consider when introducing APN roles in health care teams. Few researchers have examined processes in health care teams in great depth (Gallagher & Malone, 2005; Reay, Golden-Biddle, & Germann, 2006) and little is known of the processes that affect the day-to-day enactment of scope of practice in health care teams (White et al., 2008). Finally, no researcher has explored the health care team's perceptions of its effectiveness following the introduction of an ACNP role. These perceptions of team effectiveness are important to understand because they affect the actions undertaken by teams to improve care (Shortell et al., 2004). Health care team perceptions of its effectiveness seem to be affected by communication, an opportunity to solve problems, participation in decisions, coordination, the development of inter-related roles (Lemieux-Charles & McGuire, 2006), and a focus on patients and families (Donaghy & Devlin, 2002).

A description of cardiology ACNP role components and an in-depth description of processes appear important since ACNP roles cross the boundaries between the medical and nursing professions (Tye & Ross, 2000), and a well defined scope of practice can affect team effectiveness (Davies & Fox-Young, 2002). Effective inter-professional teamwork has been recognized as a key strategy to reform Canada's health care system (Health Canada, 2004) by improving patient, provider and system outcomes (Strasser et al., 2005). Finally, the identification of processes that influence perceptions of team effectiveness can inform the decisions related to the introduction of ACNP roles in the health care teams and, potentially, improve care for patients and families. The recent introduction of cardiology ACNP roles in Quebec represents an opportunity to explore how the role enactment of cardiology ACNP and the boundary work of members of the health care team affect the health care team's perceptions of team effectiveness.

Chapter 2 – Literature Review

The first section of the literature review provides an overview of what is known about health care teams and the effectiveness of ACNP roles in health care teams. The search strategy is outlined in Appendix A. The second section explores processes, scope of practice and role enactment, boundary work and the development of intra- and inter-professional role boundaries, and the factors affecting perceptions of team effectiveness in health care teams. The third section discusses the influence of the context on health care teams. Finally, the fourth section describes the conceptual framework for evaluating the ACNP role by Sidani and Irvine (1999) as the conceptual framework informing the study's development, and proposes adaptations to the framework. The following section reviews what is known about teams in health care and the effectiveness of ACNP roles.

Health Care Team

Teams have been used in health care to deliver services to patients and families (Poulton & West, 1999; Strasser & Falconer, 1997). There is a general consensus in the literature regarding the common definition and features of teams in health care (Cohen & Bailey, 1997; Lemieux-Charles & McGuire, 2006; Mickan & Rodger, 2000) where teams have been defined as "a set of two or more individuals interacting adaptively, interdependently and dynamically towards a common and valued goal (Salas, Burke, & Canon-Bowers, 2000, p. 341)". However, there was little consensus about a common understanding of teamwork in health care (Xyrichis & Ream, 2008).

Effective inter-professional teamwork has been recommended as a standard for accreditation of health care institutions (Canadian Health Services Research Foundation, 2006). Effective teamwork has been related to a reduction of medical errors, improved quality of care, increased satisfaction with care, improved role clarity and better inter-professional collaboration (Clements, Dault, & Priest, 2007; Strasser et al., 2005). The Institute of Medicine in the United States (US) identified the development of teams and teamwork in health care as key components to focus on in order to improve the quality of patient care (Berwick, 2002).

According to Vinokur-Kaplan (1995) teams in health care have a long tradition. Nurses and other health care providers worked together to provide patient care by dividing tasks (Anthony, Casey, Chau, & Brennan, 2000; Clements et al., 2007) and some researchers (Oelke et al., 2008) have argued that working as a team facilitated working to full scope of practice. Cohen and Bailey (1997, p. 241) offered a useful definition of a team as a "collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems and who manage their relationships across organizational borders". The Cohen and Bailey definition is useful to understand how ACNPs affect the health care team's perceptions of effectiveness because it incorporates the team within its context and highlights that team members must see themselves as part of the team and focus on a common objective or outcome.

Cohen and Bailey (1997) stated that teams differed in their structure, their purpose and the tasks they completed. No optimal design has been identified for

teams in health care (Clements et al., 2007).   In cardiology, teams included a range of health care providers such as physicians, surgeons, physician residents, nurses, NP, clinical nurse specialists (CNS), nurse managers, nutritionists, social workers, pharmacists, ECG technicians, hemodynamic technicians, pace-maker nurses, occupational therapists (OT), respiratory therapists (RT), physical therapists, and support staff (D'Amour et al., 2007; Lambrew et al., 2004).

In healthcare, teams can be divided according to their type and one can find project, work or management teams (Lemieux-Charles et al., 2002). Project teams were considered short term teams (Lemieux-Charles et al.). Nursing teams were considered work teams and referred to long term work groups who shared a common goal and were assembled to deliver nursing care to patients (Anthony et al., 2000; Cohen & Bailey, 1997). In addition, teams have varying levels of uncertainty or predictability in their work. Mechanistic-types of teams worked in conditions of low uncertainty where rules and procedures were generally adequate to coordinate work requirements (Cott, 1997). Organic-types of teams worked in conditions of high uncertainty and more complex structures where more improvisation and coordination were needed to complete work requirements (Cott). Acute care cardiology teams would be considered organic-type teams.

Mäkinen, Kivimäki, Elovainio, and Virtanen (2003) described different types of nursing teams. They included 1) functional or task-oriented teams where care delivery centered on the completion of tasks and maintaining the routines of the nursing unit, 2) team nursing where nurses were allocated to carry out a more comprehensive set of activities and a team leader coordinated the care provided by the team and was responsible for communicating with other health care providers

and other units in the organization, 3) a primary nursing team where patients were allocated to individual nurses who were responsible for the care of the patients from admission to discharge and, 4) modular nursing where the unit was organized around small geographically close groups of patients known as modules. Nursing team members were permanently assigned to the modules. The level of accountability in clinical decision-making and patient centeredness in care planning varied according to the type of team selected (Ahmed & Kitson, 1993; Mäkinen et al.).

In a comprehensive systematic review of the effects of nursing teamwork and collaborative practice, Pearson and colleagues (2006) reported that nursing teams needed to 1) exhibit accountability for their actions, commitment to the team and an enthusiastic motivating attitude, 2) establish specific outcomes to evaluate the impact of nursing teams while ensuring that high quality care was delivered, 3) integrate a collaborative structure within the team to improve services to patients and their communities and 4) establish clear processes for communication, involve staff in policy development, and incorporate continuity of care to facilitate team functioning. The authors recommended that a coordinated multi-disciplinary approach be incorporated into the functioning of the nursing unit to improve patient outcomes.

In the last decade health care organizations and health care teams have undergone restructuring and downsizing that have changed the workplace (Registered Nurses' Association of Ontario, 2006). In a systematic review of the effects of hospital restructuring on nurses, Cummings and Estabrooks (2003) identified decreases in professional efficacy, decreased ability to provide quality

care and disruptions in health care team relationships as some of the effects of downsizing. Restructuring and downsizing have led to a shortage of skilled staff and gaps in service delivery (de Witt & Ploeg, 2005). Aiken et al. (2001) in a large multi-national study of nurse staffing, organizations and outcomes found that nearly half of the nurses surveyed believed that the quality of patient care had deteriorated following widespread health care restructuring. Finally, the structural changes in health care teams have made working as a team more difficult and can influence how new roles have developed in teams (Reay et al., 2003, 2006).

Nurses interfaced with different types of teams in addition to nursing teams (Lessard, Morin, & Sylvain, 2008). According to Scholes and Vaughan (2002, p. 400) health care teams were defined as "inter-professional working where interactions are between team members" while multidisciplinary teams referred to "teams whose members share the same background but practice in different specialties". Disciplines were seen as juxtaposed in multi-disciplinary teams (Klein, 2008) and they worked parallel to one another. Temkin-Greener, Gross, Kunitz, and Mukamel (2004, p. 472) defined interdisciplinary teams as "teams composed of at least two disciplines that are characterized by all members participating in the team's activities, sharing leadership, and relying on each other to accomplish team goals" and interdisciplinary teams denoted greater collaboration and partnerships among professionals (Jansen, 2008). Some authors used the terms multidisciplinary and inter-professional interchangeably (Atwal & Caldwell, 2005). Finally, a transdisciplinary approach (Klein, 2008) was suggested when members of different groups have worked together for an

extended period of time and their collective view transcended individual disciplines. These definitions highlighted some of the confusion in the literature. The term 'inter-professional' may be more useful to define the processes that involve the nursing group and a professional group other than nursing when the level of integration and teamwork among team members are not known.

In their study of multidisciplinary teamwork in acute health care Atwal and Caldwell (2006, p. 362) found "remarkable scepticism" among nurses about working as a multidisciplinary team. These authors identified three important barriers that impeded teamwork including different perceptions of teamwork, different levels of skill acquisition among team members and the dominance of medical power that influenced interactions in the team. In their review of the literature on medical teamwork and patient safety Baker, Gustafson, Beaubien, Salas, and Barach (2003, 2005) highlighted the importance of training medical staff to work in teams. Sicotte, Pineault, and Lambert (1993) found that coordination among medical team members became more difficult as the number of physicians in teams increased and resource utilization varied according to the level of coordination among medical practitioners.

Kivimäki et al. (2001) found that physicians reported more difficulty with teamwork as compared with nurse managers and problems with teamwork explained long term absence in physicians more than any other work characteristic in their study. Wright et al. (2007) explored the perspectives of health care providers in a multi-disciplinary geriatric team in relation to the roles and responsibilities of the team's physicians. They found that physicians and other members of the geriatric team had learned about teamwork in the practice

setting. The team issues centered around autonomous or collaborative decision-making, the role of the physician as team leader or team member, the physician as an insider or outsider to the team and physician or team responsibility for patients. The authors (p. 1954) argued that "intra- and inter-professional tensions could affect team practice and impede the development of high-functioning teams".

The successful introduction of APN roles in teams may facilitate the effective utilization of resources and improve the delivery of health care services (Bryant-Lukosius, DiCenso, Browne, & Pinelli, 2004). Many factors were believed to influence the introduction of ACNP roles in health care teams including adequate resources, clear objectives, an appreciation of the role, communication and leadership (Bryant-Lukosius & DiCenso, 2004; Donaghy & Devlin, 2002). A number of studies have been conducted to describe and understand what needed to be considered when introducing APN roles in health care teams (Bryant-Lukosius & DiCenso; De Grasse & Nicklin, 2001). Several studies have identified barriers and facilitators of the introduction of APN roles (Griffin & Melby, 2006; Jones, 2005; van Soeren & Micevski, 2001; Woods, 1998). Other studies have focused on the organizational factors that influenced the introduction of APN roles (Cummings et al., 2003; Irvine et al., 2000). In particular, managerial roles helped shape the ACNP roles that were introduced in health care teams (Reay et al., 2003).

Role development and role implementation needed to be examined to understand how ACNP roles have been introduced in health care organizations. The term 'role development' referred to the acquisition of a new professional role, the development of clinical expertise, the socialization process and the change of

self identity to integrate the values and behaviours of the new role (Brykczynski, 2005). Collegial respect, encouragement and collaboration were believed to positively influence ACNP role development (Schober & Affara, 2006). The term 'role implementation' referred to the different phases the ACNP moves through in the work setting that led to the development of an ACNP role (Brykczynski). Kilpatrick (2008) provided a discussion of the issues related to ACNP role development and implementation and highlighted that ACNPs needed time to integrate different forms of knowledge and develop the components of an advanced practice nursing role.

Reay and colleagues (2003) explored the managers' roles or perspectives when introducing an ACNP role into the health care team and found that managers played a key role in the introduction of ACNP roles in health care teams. Reay et al. (2003) found that nurse managers faced three major challenges when introducing NP roles. They include task reallocation, the management of altered working relationships and on-going management of the team in an evolving situation. McKenna et al. (2006) interviewed managers following the introduction of new nursing roles in the United Kingdom (UK). They found that managers were concerned about the deskilling of the RN's role, role overlap and role confusion for unskilled workers, and role drift towards more medical roles. Managers also expressed unease with the medical substitution of some of the roles. Other researchers have identified the need for managers to have a clear vision for the ACNP role, facilitate communications with groups involved with the ACNP and garner support for the role within the organization (Clancy, Oyefeso, & Ghodse, 2007; Irvine et al., 2000; Marsden, Dolan, & Holt, 2003;

Reay et al., 2006). The following section defines effectiveness and highlights

what is known of the effectiveness of cardiology ACNP roles.

Effectiveness of Cardiology Acute Care Nurse Practitioner Roles

Using US economic data from 1991, Nichols (1992), an economist,

estimated that the underuse of APN nurses in the US costs anywhere from $6.4 to

$8.75 billion annually. Quinn and Rohrbauch (1983) argued that effectiveness is

of central importance in the organizational literature. These authors (p. 374)

defined effectiveness as a "socially constructed, abstract notion" that can be

viewed from four different approaches. These approaches included the rational

goal model, the internal process model, the open system model, and the human

relations model. Each approach had a specific set of values or criteria including

productivity, efficiency, resource acquisition, communication and cohesion

(Quinn & Rohrbauch). The judgements about effectiveness were made by

comparing performance to the selected goals or criteria (Quinn & Rohrbauch). In

addition, researchers have distinguished between efficiency, as a measure of

output for a given input, and effectiveness, as a measure of output and the

activities required to maintain a functioning system, to understand how

judgements about effectiveness were made (Quinn & Rohrbauch; Poulton &

West, 1993).

Some researchers have examined the effectiveness of APN roles in

cardiology (Brooten, Youngblut, Deatrick, Naylor, & York, 2003; Carroll,

Rankin, & Cooper, 2007; Holland et al., 2005; Meyer & Meirs, 2005; Naylor et

al., 2004). In a systematic review of multidisciplinary interventions in heart

failure Holland et al. asserted that multidisciplinary interventions reduced all-

cause admission and mortality rates and heart failure admissions. In other studies APN administered interventions were found to be effective in decreasing the total number of hospitalization days at 52 weeks, increasing the length between discharge and readmission or death, improving quality of life up to 12 weeks following discharge for patients with heart failure and increasing participation in cardiac rehabilitation (Brooten et al.; Carroll et al.; Naylor et al.). Meyer and Meirs estimated that a collaborative practice model with an ACNP and a cardiac surgeon decreased the length of stay by an average of 1.91 days and decreased costs per care episode per patient by over 5000$US.

Patient safety is also an important consideration when evaluating care delivered by ACNPs. The safety of the care provided by cardiology ACNPs has been examined in a number of studies (Boodhoo et al., 2004; Broers et al., 2006; Currie, Kawartowski, Perrera, & Langford, 2004; Shelton, Allinson, Johnson, Smales, & Kaye, 2006; Stables et al., 2004). Stables and colleagues, using a randomized control trial, found that NPs prepared patients for cardiac catheterization procedures as safely as physician residents, reduced the duration of the pre-admission clinic and increased patient satisfaction in the NP group. Broers et al. followed a cohort of patients following cardiac surgery and found that nurse-led follow-up for post coronary artery bypass grafting (CABG) patients was safe and effective. The total length of stay was decreased by 32% without an increase in complications. Broers et al. attributed the decreased length of stay to the personalized care provided by the NPs. In the UK nurse-administered cardioversion was found to be safe, effective, and well tolerated by patients and procedural wait times were reduced (Boodhoo et al.; Currie et al.; Shelton et al.).

Connolly, Conlon, and Deutsch (1980) asserted that the evaluation of effectiveness was a political as much as an empirical process and argued for the inclusion of a range of perspectives to judge effectiveness since different professional groups evaluated effectiveness using different criteria (Borrill et al., 2000; Lemieux-Charles et al., 2002; Temkin-Greener et al., 2004). Cohen and Bailey (1997) asserted that most researchers were trying to understand perceptions and beliefs of team effectiveness rather than effectiveness per se. The challenge was to understand health care teams in their environment (Cohen & Bailey), identify the criteria used to judge their effectiveness (Poulton & West, 1993) and understand how team processes exerted an effect on patient outcomes (Strasser et al., 2008). As such, teams can be seen as more or less effective depending on the criteria used to evaluate them and a range of perspectives needed to be taken into account to understand team perceptions of effectiveness (Connolly et al.). The following sections review processes and describe the processes used by teams to facilitate their functioning.

Processes

Pettigrew (1997, p. 338) defined a process as "a sequence of individual and collective events, actions, and activities unfolding over time in context". The definition highlighted the dynamic nature of processes and their link to time and context (Pettigrew 1992). Pettigrew shared Van de Ven's views (1992) that processes were purposeful and adaptive with a focus on outcomes. Van de Ven (p. 178) argued that one advanced towards desired goals or a given outcome and there were "several equally effective ways to achieve a given goal". Thus, when exploring the processes within the health care team, the end result or expected

outcome needed to be kept in mind to make sense of the multiple ways events

unfolded (Van de Ven).

Ring and Van de Ven (1994) identified a number of sense-making

activities to understand how different events unfold in a team. These activities

included the psychological contracts that were established between team members

using the unwritten rules, assumptions and expectations of those involved. Ring

and Van de Ven argued that there was a need for team members to determine

congruent expectations, and a common agreement on norms, work roles, the

nature of work, and social relationships. Expectations can be shaped by past

experiences, personal values, professional expectations and hierarchy (Ring &

Van de Ven). Such expectations and agreements can be affected by processes

such as scope of practice and the development of intra- and inter- professional

role boundaries. Little is known about the processes within the health care team

following the introduction of an ACNP role (Tye & Ross, 2000). A greater

understanding of these processes would increase our understanding of how events

unfold in health care teams and inform our understanding of the team's

perceptions of team effectiveness. The following sections describe scope of

practice and boundary work to understand how such processes influence the day-

to-day enactment of ACNP roles.

Scope of Practice

Generally, scope of practice refers to the activities that the members of a

profession are educated and authorized to perform (Davies & Fox-Young, 2002).

Oelke et al. (2008) specified that scope of practice also included role enactment.

Role enactment was synonymous with the enacted scope of practice and consisted

of the day-to-day activities that were performed by health care providers (Oelke et al.). The actual performance of activities was influenced by factors such as legislation, employer policies, interpretations of regulatory bodies, experience, the context of practice, respect of other health care providers, and competence (Oelke et al.). The ACNP scope of practice included the nursing and medical activities that were performed to meet the complex needs of patients and families using a holistic, health centered approach (Kleinpell, 2005). Within the nursing components of the ACNP role, the domains of APN competencies included clinical expertise, critical thinking, clinical judgement and decision-making, leadership and management, problem solving, education, research, program development, communication, and collaboration (Brown, 1998, 2005; Davies & Hughes, 1995/2002; Sidani & Irvine, 1999). In addition to the nursing component of the role, NPs in most jurisdictions performed medical functions such as: 1) diagnosing a disease, disorder or condition, 2) ordering and interpreting diagnostic and screening tests, and 3) prescribing medications (Canadian Institute for Health Information/Canadian Nurses Association, 2006). The level of autonomy to perform these functions varied across jurisdictions and depended on the laws regulating practice in each jurisdiction (Canadian Institute for Health Information (CIHI)/ Canadian Nurses Association (CNA), 2006; Kilpatrick et al., in press).

At present, most of the studies related to scope of practice in APN have been descriptive and focussed on the tasks that were performed by ACNPs (Becker et al., 2006; Considine, Martin, DeVilliers, Jenkins, & Winter, 2006; Driscoll, Worrall-Carter, O'Reilly, & Stewart, 2005). Scope of practice has been

examined to determine what activities have been included in the ACNP roles that have been introduced in the health care team (Considine et al.; Staples & Earle, 2004; White et al., 2008). Davies & Fox-Young (2002) argued the clear determination of the each team members' scope of practice ensured that health care consumers were protected and effective care was provided to patients and families. Furthermore, a well-defined scope of practice for ACNPs allowed for comparability of ACNP roles across jurisdictions and the development of complementary roles in the health care team (Considine et al.).

The number of years of experience in an ACNP role may affect how and to what extent the role components were enacted in the work setting (Bryckzinski, 2005). Three to five years were needed to implement the different components of an ACNP role (Bryckzinski). According to Kleinpell-Nowell (2001), ACNPs who have been in their role for two years reported ongoing role development and challenges in the role. The ACNPs in the study were involved in activities of care coordination, discussions of care priorities with patients and families, ordering and interpreting laboratory tests or X-rays, initiating discharge planning, interpreting 12-lead electrocardiograms and adjusting intravenous medication most frequently. ACNPs reported difficulties managing frequent on-call and off-shift work, and burnout in the role was also a concern for the ACNPs as their scope of practice increased (Kleinpell-Nowell).

At the five-year follow-up of the same group of ACNPs, Kleinpell (2005) reported an expanding scope of practice and that ACNPs were performing tasks of increasing complexity. The ACNPs cited autonomy, greater involvement with patients and families, and collaborative practice agreements with physicians as the

most satisfying elements of their expanding practice. The most frequent activities performed at the five-year follow-up included conducting physical examinations, gathering patients' medical histories, writing orders, conducting rounds, initiating transfers and consultations, and preparing patients for discharge (Kleinpell).

Other researchers have examined scope of practice as a process indicator to understand how nursing and APN roles were enacted in the work setting (Besner et al., 2005; Gardner & Gardner, 2005; McCauley, Bixby, & Naylor, 2006; Sidani et al., 2006a). General and advanced practice roles in nursing may share certain domains regarding scope of practice (Daly & Carnwell, 2003). A clear distinction between nursing roles in general and advanced practice and clear definitions of scope of practice were necessary to highlight each role's distinct contribution (Lyon, 2004), and prevent too much overlap in roles (Baranek, 2005). Besner and colleagues interviewed nurse managers, a variety of nursing care providers and other members of the health care team to understand the providers' perceptions of working to full scope of practice and identify barriers and facilitators to maximizing nursing scopes of practice. They found substantial role confusion within nursing and between nursing and other professional groups. It was difficult for study participants to clearly articulate the differences between various nursing roles "in spite of real differences in the education, knowledge or skill base of the nursing groups in the study" (Besner et al., p. 22).

In addition to the ACNP activities identified by Kleinpell (2005), nurse prescribing was another feature of the ACNP's scope of practice (Schober & Affara, 2006). Federal and provincial legislation regulate prescriptive authority and determine what therapies can be prescribed by different providers (Sketris,

Ingram, & Lummis, 2007). Some researchers have reported positive views of nurse prescribing where prescriptive privileges for nurses saved time and provided quicker treatment for patients (Banning, 2004; Latter & Courtenay, 2004). Others have described nurse prescribing as a "contentious issue that produces a good deal of conflict and anxiety" (Schober & Affara, p. 37). Nurses in APN roles have expressed concern for adequate preparation and training to prescribe and were uneasy with the added responsibility (Latter & Courtenay). ACNP prescriptive privileges have been assessed using questionnaires and interviews (Lewis-Evans & Jester, 2004; While & Biggs, 2004). Differences have been noted in prescriptive practices between NPs and physicians in urgent care settings (Running, Kipp, & Mercer, 2006). However, little is known about how ACNP prescriptive privileges are delegated to ACNPs or negotiated with other providers (Grumbach & Bodenheimer, 2004).

The studies described above have shown that the scopes of practice of health care providers within and outside of nursing were not always clearly defined. This may make it more difficult to distinguish the contributions of different care providers in the health care team. Although some researchers have explored the health care team's perceptions of specialist roles in breast cancer care (Amir, Scully, & Borrill, 2004; Koinberg, Fridlund, Engholm, & Holmberg, 2004), it is unclear if team experiences are similar following the introduction of an ACNP role. In addition, little is known about how changes in scopes of practice affect the health care team's perceptions of effectiveness even though effective inter-professional teamwork has been recognized as an essential component in the present health care environment (Health Canada, 2004; Health

Council of Canada, 2005). The boundaries between professions may move when new roles are introduced into the team and scopes of practice may change (Baranek, 2005;Tye & Ross, 2000). The following section discusses the activities related to boundary work between professions.

Boundary Work

The term boundary work was first used by Gieryn in 1983 to understand the demarcation of science and non-science, and was viewed as an ideological effort to construct a social boundary to distinguish science from non-science (Lamont & Molnar, 2002). The boundaries between health care professionals helped differentiate between the members of each profession (Abbott, 1995). Abbott (1995, p. 868) asserted that boundaries began as simple "locations of difference" that appeared before the development of social entities like professions. As these differences were connected together then one side became defined as inside the boundary while the other side was defined as outside the boundary (Abbott, 1995). As boundaries were formed then social entities, like professions, came into existence (Abbott, 1995). Abbott emphasized that the only way to change social entities was to delegitimize old differences or to emphasize new ones. Each professional group was believed to possess a stable core and the boundaries were most fluid along the edges (Abbott, 1995). Most of the transformations to professional practice jurisdictions occurred at the outer edges of the boundaries (Abbott, 1995).

Yan and Louis (1999) shared Abbott's view that boundaries served as a demarcation distinguishing between social entities. The demarcation can be

vertical between the levels of the organization or horizontal across entities (Yan &
Louis). They (p. 29) defined boundaries as:

> "a domain of interactions of a system with its environment in order to
> maintain the system as a system and provide for its long-term survival.
> Boundary work refers to the activities in which a system is engaged to deal
> with its environment, ranging from preserving resources in the face of
> competing demands to preventing environmental disruptions and
> collecting resources and support".

Boundary work can take on different functions (Yan & Louis, 1999). Yan
and Louis argued that if boundaries were viewed as perimeters and demarcations,
then an entity built and maintained well defined boundaries that protected it from
the environment. This was the buffering function of boundary work and it
required monitoring and regulation of the boundaries. If boundaries were viewed
as frontiers of transactions and interfaces between an entity and its environment,
then boundary spanning became an important function to help the entity maintain
contacts with the larger environment's resources and supports. Richter, West,
Van Dick, and Dawson (2006) have shown that boundary spanners with frequent
contacts with other groups influenced effective intergroup relationships.
Boundary spanning involved activities such as negotiation, alliance and coalition
building, and bargaining (Yan & Louis). The ACNP role may be an example of
boundary spanning with the dual medical and nursing components of the role that
allow the ACNP to function across professional groups and establish relationships
with other professional groups.

Finally, Yan and Louis (1999) described the bringing up boundaries function as the internal processes that were brought into play to create a supportive environment and a shared vision of the group. Gulliver, Peck, and Towell (2002) compared this function to creating commitment to a group. Therefore the buffering and spanning functions of boundary work were external processes that helped an entity deal with other entities and the larger environment, and gather needed resources from the external environment (Yan & Louis). The bringing up boundaries function was an internal process where valuable resources were kept within the entity which allowed it to effectively apply the resources to a required task (Yan & Louis). The level of rigidity or flexibility of the boundary varied with each function (Yan & Louis). The following section explores intra-professional boundaries to understand how they allow the nursing profession to expand or contract within its practice environment.

Intra-Professional Boundary Work. The limits of a profession can be defined by laws, regulations, policies, or procedures (Fisher, Steggall, & Cox, 2006). Intra-professional boundaries were those that defined the role distinctions made within one profession (Gulliver et al., 2002). The boundaries in nursing were the lines that were drawn to help define nursing's sphere of activity (Bonner & Walker, 2004). In nursing, the intra-professional team can include the nurse manager, assistant head nurse, RN, nursing assistant or license practical nurse (LPN), patient care attendant, unit clerk, CNS and ACNP. One of the purposes of expanding the boundaries of nursing roles was to provide holistic care to patients and families and prevent the fragmentation of care (Autar, 1996). Tasks could be shared among health care providers inasmuch as roles and skills were

complementary (Autar). Some have argued that such sharing resulted in more comprehensive care delivery (Autar; Gulliver et al.). However, D'Amour et al. (2007) interviewed RNs regarding the introduction of the ACNP role and found that RNs were concerned with the increasing hierarchy within nursing with the addition of an ACNP role. Other researchers (Chaboyer, Gillespie, Foster, & Kendall, 2005) have voiced concerns that the RN role would erode following the introduction of an APN role.

Keeling (2004) and Ryder (2005) argued that the boundaries of nurses' roles were expanded as nurses gained specialized knowledge in a clinical area, increased authority and autonomy in decision-making. The differences between general nursing and APN roles can be made according to the in-depth nursing knowledge and skill required to meet the health needs of patients and families (Brykczynski, 2005; Schober & Affara, 2006). In Australia, Duffield and colleagues (2005) examined the time spent by RNs and CNSs in 25 different care activities and found that it was difficult to differentiate between RN and CNS roles for direct, indirect and unit-related activities. RNs and CNSs shared activities related to clerical tasks, teaching, in-service rounds, team meetings, verbal reports, and handover. No activity related to the research component of an APN role was identified in the measurement tool.

Keeney, Hasson, McKenna, and Gillen (2005) asserted that the boundaries between different nursing roles have been difficult to define because members of the nursing group shared many activities. CNSs and ACNPs in the same specialty shared a number of similarities between their roles making it more difficult for team members to distinguish one role from the other (Kilpatrick et al., in press).

Intra-professional boundaries were also an issue between RNs and LPNs. RNs have expressed concerns over the lack of distinctions between different nursing roles, and that RNs could be replaced by less expensive LPNs or unlicensed personnel (Rhéaume, 2003). Thus, within the nursing profession, different groups have expressed concerns related to poorly defined intra-professional boundaries (Lyon, 2004; Tye & Ross, 2000). This information may provide insights into the development of complementary roles in the health care team. In the following section, inter-professional boundary work will be presented to understand how the introduction of an ACNP role affects inter-professional boundaries.

Inter-Professional Boundary Work. Gulliver et al. (2002) defined inter-professional boundaries as the distinctions between nursing and the other health care professions. Inter-professional role boundaries described the limits of practice of health care professions as determined by the law, the organizational structures that are in place, and the formal and informal agreements negotiated between health care providers (Keeling, 2004). The boundaries between professions can be rigid or fluid (Ryder, 2005). McPherson and colleagues (2006), in a systematic review extended roles for allied health professionals, identified similar difficulties in defining the scopes of practice of members of the inter-professional team as those identified within nursing.

Health care professionals depended on the expertise of other health care providers to answer complex clinical questions (Anthony et al., 2000). The boundary lines between professions were more difficult to define as health care professionals were placed in increasingly interdependent roles (Lamothe, 2007). The boundary lines may change when health care providers took on new roles

(McPherson et al., 2006), in response to changes in the practice setting (Baranek, 2005), or if health care organizations were merged across sites and boundary lines extended across organizational structures (Denis, Lamothe, & Langley, 2001; van den Berg, Landerweerd, Tummers, & van Merode, 2006). There has been relatively little research related to the development of inter-professional role boundaries in health care teams. The following sections review what is known of the effects of the ACNP role on other members of the health care team.

Some researchers have explored the effects of the ACNP role on physicians (Murchie, Campbell, Ritchie, & Thain, 2005; Marsden & Street, 2004). Murchie and colleagues explored nurse and physician perceptions of nurse-led secondary prevention clinics in coronary heart disease. The nurses in the study assumed many of the components of a NP role. The researchers found that many nurses and physicians in the study were supportive of the NP role. Yet, some physicians expressed unease with the new NP role and delegating activities to the NP. Marsden and Street highlighted the importance of communicating role boundaries and the characteristics of the NP role to physicians when the NP role was introduced. Finally, Griffin and Melby (2006) measured the attitudes of emergency room physicians, general practitioners (GP) and emergency room RNs following the introduction of an APN role in an emergency department. They also found that the provider attitudes towards the NP role were positive. However, the GPs had the least positive view of the NP role in this group. They were concerned about the level of preparation of NPs to assume the role responsibilities, the need to clarify role boundaries, and to implement prescribing protocols prior to the introduction of the NP role.

In addition, different providers may have different expectations of the ACNP role. Hicks and Hennessy (1998) triangulated the perceptions of physicians, RNs and managers in relation to the needs of RNs training towards NP status. The authors identified significant differences in the perceptions of physicians, RNs and managers regarding the importance of the research component and the level of autonomy of the RN in the NP role. Hoffman et al. (2004) also found differences in the perceptions of RNs, physicians and RTs using rank ordered descriptors of a collaborative practice model. These studies highlight that the priorities and perspectives of different health care providers needed to be taken into account when introducing an ACNP role because such differences were likely to affect boundary work.

The quality of the relationships with other health care providers has been identified in a meta-synthesis of the literature as an important consideration when introducing APN roles (Jones, 2005) and may facilitate inter-professional boundary work (Fisher et al., 2006). Various strategies have been used by APN nurses to be accepted into the health care team (Willard & Luker, 2007). Willard and Luker identified strategies such as building relationships with senior medical colleagues and, to a lesser extent, with other RNs to facilitate access to patients. The APN nurses used interpersonal skills such as diplomacy, discretion and courtesy, and established role boundaries to gain acceptance within the health care team. Some APN nurses in this study assumed many clerical tasks, including carrying charts and retrieving X-ray films, to facilitate the smooth functioning of the team and be accepted as a team member. These actions may impede the development of the APN role and perpetuate power differentials within the team.

Willard and Luker emphasized the importance of finding appropriate strategies to introduce APN roles and facilitate effective teamwork within the health care team. This section has reviewed the role of boundary work in the development of professional entities and the importance of cross-boundary work in the development of roles in health care teams. However, little is known of the processes that lead to the development of boundaries between members of the health care team following the introduction of ACNP roles. The following sections review the factors affecting perceptions of team effectiveness and the processes used by teams to facilitate team functioning.

Perceptions of Team Effectiveness

Team member perceptions of team effectiveness were defined as the beliefs and attitudes that the team can perform across a range of dimensions (Haward et al., 2003) and work together on an ongoing basis (Sundstrom et al., 1990). Similar definitions have been found in the management literature for the concepts of group efficacy and team potency (Gibson, 1999; Pearce, Gallagher, & Ensley, 2002). However, Lemieux-Charles and McGuire (2006) argued that the difference between efficacy as a measure of the team's beliefs in its ability and perceived team effectiveness as a subjective outcome needs to be clarified and these concepts may not be interchangeable. To be effective, teams adapt to the requirements of various tasks, the interdependence of team members and any changes in the team's environment (Cohen & Bailey, 1997; Choi, 2002). Teams also learn to coordinate and integrate their work in order to be effective (Borrill et al., 2000). The following sections describe team effectiveness and perceptions of team effectiveness in greater detail.

According to Lemieux-Charles and McGuire (2006) team effectiveness is a multidimensional construct which has been poorly conceptualized. In health services research, team effectiveness has been viewed as a process or an outcome variable and operationally defined by objective (e.g., efficiency, cost, adherence to treatment) or subjective measures (e.g., perception of one's team effectiveness, satisfaction) (Canadian Health Services Research Foundation (CHSRF), 2006; Haward et al., 2003). Objective measures of effectiveness, such as mortality or length of stay, have certain limitations as they "do not take into account the goals health care teams have set for themselves" (Lemieux-Charles & McGuire, p. 293) or the goals for specific patient populations (Shortell et al., 2004).

A number of researchers have identified various factors that positively affected perceived team effectiveness such as a shared leadership style within the team when making clinical decisions, the team's composition (e.g., professional diversity), and workload (Haward et al., 2003; Strasser et al., 2005). Shortell et al. (2004) examined the relationship between organizational factors, team characteristics, and perceived team effectiveness in quality improvement initiatives. These authors identified that perceived team effectiveness increased when teams focused on patient satisfaction and a team facilitator was present. Teams perceived themselves to be more effective when there was a balance between the team's perceptions of available resources, perceptions of autonomy in decision-making, the suitability of the reward system and the services to be provided to patients (Shortell et al.). Although the focus on patient satisfaction appeared important to understand perceptions of team effectiveness, the inclusion

of patients and families is a dimension of team effectiveness that has been overlooked in teamwork research (Opie, 1997).

In addition, Tata and Prasad (2004) surveyed team leaders in manufacturing organizations to examine the links between organizational structures, team self-management, and judgements of team effectiveness. These researchers found that contextual factors such as organizational formalization and centralization affected judgements of team effectiveness. The type of team, the role of the team leader, team input into the day-to-day decision-making, and authority over decisions about task performance also affected judgements about team effectiveness. Lemieux-Charles and McGuire (2006), in a review of the literature on health care team effectiveness, identified task design, team processes, organizational context, and the social and policy context as factors affecting team effectiveness.

The perceptions of a team's effectiveness may also depend on the person rating the team (Borrill et al., 2000; Lemieux-Charles et al., 2002). Team members tended to rate their effectiveness using internal processes while managers, who were outside the team, tended to focus on productivity and the team's communications with the external environment (Cohen & Bailey, 1997; Lemieux-Charles et al.). In addition, organizations were believed to have a teamwork orientation (Lemieux-Charles et al.) where resources and supports were allocated to teams in order for them to complete their work (Smith, Meyer, & Wylie, 2006). In team-centered organizations, managers and team members jointly defined goals and tasks, and reward systems were geared to support and encourage teamwork rather than individual activities (Smith et al.).

Lemieux-Charles and McGuire (2006) identified that a relationship exists between positive team processes and the perception of team effectiveness. The relationship between believing the team can perform the task and team effectiveness was complex and took into account task uncertainty as determined by what tasks needed to be accomplished by the group in order to be effective; task interdependence where the group's performance of a task depended on the integration of individual skills and how well they were matched; and sense of collectivism where the team was more valued than the individual (Gibson, 1999; Smith, Ferrera, & White, 2007). A number of authors found that teams who perceived themselves to be more effective took more actions to improve care (Shortell et al., 2004; Strasser et al., 2005; Temkin-Greener et al., 2004).

Team Processes

Lemieux-Charles et al. (2002) argued that process strategies needed to be included in a team effectiveness model. Team processes can account for some of the clinical decision-making made by teams to provide optimal patient care in a safe practice environment (Proenca, 2007). From the team perspective, the participation of team members in team processes and decisions was important because each team member contributed specific knowledge (McClelland & Sands, 1993). The team members' presence influenced the decisions that were made and what was negotiated within the team (McCloskey & Maas, 1998). Decision authority as the way authority or power was distributed among team members and the size of the team have been found to influence how decisions were made within the team (Lemieux-Charles & McGuire, 2006; Shortell et al., 2004). The interactions between team members and the flexibility of role boundaries within

the health care team may suggest if the team is working effectively (Atwal &
Caldwell, 2005). In addition, the distribution of decision authority within the
intra-professional team may be different from distribution of decision authority
within inter-professional teams (Tempkin-Greener, 1983). The following sections
describe team processes in greater detail.

Team processes included communication, cohesion, coordination, problem
solving, and participation in decision-making (Borrill et al., 2000; Brannick,
Prince, Prince, & Salas, 1995; Salas et al., 2000). Vazirani, Hays, Shapiro, and
Cohen (2005) surveyed RNs, physicians, physician residents and interns to
determine if there were changes in team communication and collaboration
following the introduction of a NP role. Physicians, in the group where a NP was
added to the team, reported better communication with RNs, residents and other
physicians and better collaboration with the NP than with RNs. RNs reported
similar levels of communication with physicians in the group with or without a
NP and better communication with a NP than with physicians. Other researchers
(Mitchell-DiCenso, Pinelli, & Southwell, 1996) have surveyed health care
providers and found difficult relationships between RTs and neonatal NPs.
Communication and the establishment of trusting relationships among team
members took time to develop and affected the health care providers' ability to
develop a well defined role and complementary scopes of practice (Considine et
al., 2006; Jensen & Scherr, 2004). Mitchell-DiCenso et al. recommended that the
roles of team members be clearly defined and the philosophies of care of different
providers be made explicit to facilitate team processes.

Communication has also been identified as an essential component of team functioning within the nursing team (Dreaschlin, Hunt, & Sprainer, 1999; Jones, 2005). In particular, the challenge for nursing was to ensure clear communication across the 24-hour period (Pearson et al., 2006). Dreaschlin et al. identified a wide range of abilities across team members related to effective communication where RNs were consistently identified by other nursing team members as the key ingredient to effective communication as well as the most frequent source of communication breakdown. The RNs who encouraged discussion, facilitated problem solving, and maintained a clear focus on the patient were perceived by nursing team members to be more effective communicators (Dreaschlin et al.). However, when RNs interacted outside of the nursing team, their communication behaviours appeared to change and RNs were described as silent or lacking in confidence and assertiveness within the inter-professional team (Atwal & Caldwell, 2006; Hancock & Easen, 2006; Hill, 2003; Leipzig et al., 2002).

Cohesion represented the "closeness, similarity and unity" within the group (Carless & De Paola, 2000, p. 73). Cohesion included the willingness of team members to continue working together, and their overall satisfaction with team performance (Sundstrom et al., 1990; Vinokur-Kaplan, 1995). Team cohesion was a characteristic of functioning teams (Carless & De Paola). Vinokur-Kaplan identified that cohesion explained 68% of the variance for team effectiveness and was strongly influenced by levels of collaboration. Members of cohesive teams cooperated and were supportive of one another, shared workload, and had group morale (Carless & De Paola; Grumbach & Bodenheimer, 2004). Buerhaus et al. (2005) examined the perceptions of RNs towards nursing team

members and determined that RNs perceived better relationships with other RNs than with LPNs and support staff. A majority of RNs (57 %) rated the quality of work relationships with support staff as poor to good (Buerhaus et al.). Changes in the environment of the team, the status of team members within the team, and a lack of stability of team membership may affect team cohesion and impede working as a team (Carless & De Paola; Opie, 1997).

Collaboration has been identified as an antecedent to cohesion in interdisciplinary mental health teams (Vinokur-Kaplan, 1995) and may help to distinguish teams from groups (Toofany, 2007). Collaboration included the mutual recognition of each professional group's contribution to the work of the team (Martin-Rodriguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005). Interdisciplinary health care team members jointly planned work, shared knowledge, and assumed responsibility of outcomes (Jansen, 2008). Stout, Salas, and Fowlkes (1997) asserted that teams needed to be interdependent and not simply cooperative to be considered a team. Collaboration included a non-hierarchical structure where power was distributed among members (Jansen; Wilson, Coulon, Hillege, & Swann, 2005). However, health care teams are believed to have hierarchical structures (Jansen; Thistlethwaite, Evans, Tie, & Heal, 2006). Salas et al. (2000) argued that team members must work interdependently with one another, coordinate their actions, be aware of the work of others, and adjust their actions in order to meet the team's objectives. In a review of the teamwork literature, Salas et al. (p. 342) identified several teamwork principles including the concept of coordination to represent the "processes by

which the team's resources, activities and responses are organized to ensure that tasks are integrated, synchronized and completed within a specified time frame".

Salas and colleagues (2000) have worked primarily with teams in aviation. Their definition appeared relevant to health care teams because it incorporated an awareness of the overall environment of the team, and did not specifically focus on the distribution of power to accomplish team goals. The dynamic moment to moment adjustments in behaviours (Salas et al.) of caregivers that may be necessary when caring for patients whose condition changed would be a form of coordination. The coordination of team performance was deemed essential for effective teamwork (Jansen, 2008; Toofany, 2007; Wilson et al., 2005). Finally coordination can be used to describe health care teams with different power structures such as mechanistic or organic teams.

Decision-making was another team process. Decision-making has been described as a complex and convoluted process (Hancock & Easen, 2006) that involved the selection of an action from one or more possible alternative actions (Eagle & de Vries, 2005). Decision-making was an essential part of the nurse's role (Bakalis, 2006; Burman, Stepans, Jansa, & Steiner, 2002) and influenced the quality and appropriateness of the care delivered to patients (Banning, 2008a; Offredy, 1998). Researchers have focussed on two types of decision-making approaches: the hypothetico-deductive or information processing model and the intuitive-humanist or pattern-matching model (Banning, 2008b). The hypothetico-deductive model involved the recognition of relevant cues, the generation of hypotheses, the interpretation of cues, the evaluation of hypotheses, and been equated with the medical model of decision-making (Banning, 2008b;

Thistlethwaite et al., 2006). The intuitive-humanist model involved pattern-recognition where salient signs and symptoms were recognized from memory and decisions to act were more intuitive and based on a wealth of experience (Banning, 2008b). O'Neill, Dluhy, and Chun (2005) argued APN nurses adopt a hybrid decision-making model that included the characteristics of both approaches.

Clinical decision-making was influenced by the type of knowledge used to make a decision (evidence- or practice-based), the use of clinical guidelines, protocols or care pathways, the level of psychological stress and the time available to make a decision (Bakalis, 2006; McCaughan, Thompson, Cullum, Sheldon, & Raynor, 2005).   Chummun (2006) argued that nurses in cardiac care needed to shift from a reductionist to a holistic approach to patient care and integrate illness as well as health promotion in their decision-making. For nurses in cardiac care, clinical decision-making involved integrating a highly technological environment, rapidly changing clinical situations, and highly specialized patho-physiological and pharmacological knowledge (Currey & Botti, 2005, 2006).

Researchers have examined the decision-making processes of NPs and CNSs (Beckstead & Stamp, 2007; Burman et al., 2002; Offredy, 1998; Thompson, Spilsbury, Dowding, Pattenden, & Brownlow, 2008), the decision-making of nurses (Hancock & Easen, 2006; Tanner, 2006), physicians (Farmer & Higginson, 2006) and patient participation in decision-making related to their care (Florin, Ehrenberg, & Ehnfors, 2006). The authors have highlighted the non-linear and iterative nature of decision-making (Burman et al.; Hancock & Easen),

the influence of personal, cultural and organizational factors in decision-making (Hancock & Easen; McCaughan et al., 2005), the relative weight given to cues (Beckstead & Stamp; Farmer & Higginson; Thompson et al.), and the different approaches used by novices and experts NPs (Offredy). Finally, Ryden et al. (2000) examined the role played by CNSs to support staff in nursing homes to increase the use of protocols and research findings in practice and found that CNS support improved patient outcomes and staff adherence to protocols. However, few researchers have explored the RNs' decision-making process following the introduction of an ACNP role (McCaughan et al.).

The delegation of health care decision-making to other providers was a complex process (Tourigny & Pulich, 2006). Delegation involved giving subordinates the necessary authority to make decisions without obtaining prior approval (Tourigny & Pulich). ACNPs were expected to make decisions related to the medical management of patient care and this type of decision authority needed to be delegated the ACNPs. A decentralized approach to decision-making can enhance patient care by bringing the decision-making authority closer the provider and improve the effectiveness of decision-making (Tourigny & Pulich). Joint statements have been published by the medical and nursing licensing boards to describe the medical activities to be delegated to ACNPs (Ordre des Infirmières et Infirmiers du Québec (OIIQ)/Collège des Médecins du Québec (CMQ), 2006a, 2006b). Health care organizations have invested considerable financial and human resources to develop local guidelines and directives to implement ACNP roles and delegate decision-making authority (Desrosiers, 2007; Ménard, 2006).

Finally, teams needed to undertake certain activities or processes to manage their internal and external environments (Choi, 2002). The way in which the team handled conflicts and solved problems was another important dimension to consider with teamwork (Salas et al., 2000). Decision authority within the team influenced the way conflicts were resolved (Gladstein, 1984). Conflicts occurred at many levels including beliefs, values, procedures, patient care decisions or standards to be met by the team (Choi, 2002; De Dreu, 2002). Within nursing, conflict between RNs and APN nurses was believed to be rooted in the different expectations and ambiguities of APN roles and gaps in communications between RNs and APN nurses (Brykczynski, 2005).

Hoogervorst, van den Flier, and Koopman (2004) argued that communication with employees was not neutral, and consistent implicit and explicit communications in organizations were necessary for success. Researchers examined team building strategies in dysfunctional teams and found that team meetings, clarification of team roles, clear written and verbal communication improved perceptions of teamwork (Bayley, Wallace, Spurgeon, Barwell, & Mazelan, 2007; Gillespie, Chaboyer, & Lizzio, 2008; Leonard, Graham, & Bonacum, 2004). However, the studies were conducted on a single unit, with small sample sizes, and limited long-term follow-up.

The team leader was particularly important in resolving conflicts, promoting dialogue, and listening to different opinions (Atwal & Caldwell, 2005; Dreaschlin et al., 1999; Palese, Pantali, & Saiani, 2006). Choi (2002) argued the leaders in newly formed teams facilitated team functioning by defining the team's boundaries according to membership, tasks, norms, and goals. Team leaders can

help manage the external information to maintain the team's boundaries (Choi).

Well-established teams appeared to need less direct leader intervention but more

autonomy in order to function (Choi). The establishment of strategies to solve

problems or conflicts can improve the satisfaction levels in the team and reduce

the anticipated turnover of staff (Pearson et al., 2006). This section has presented

the processes that teams engaged in to facilitate functioning and identified key

factors that affected the health care team's perceptions of its effectiveness such as

an opportunity to participate in decisions, communication, a willingness to

continue working together, coordination, problem solving, and a focus on the

goals of patients and families.

Finally, the concepts of teamwork, role enactment of ACNPs, boundary

work of team members, and perceptions of team effectiveness have been studied

disparately. An exploration of the links between these concepts may further our

understanding of the processes that affect the health care team's perceptions of

team effectiveness. A number of tools have been developed and validated to

measure different aspects of teamwork and team processes in health care

organizations (Bateman, Wilson, & Bingham, 2002; Carless & De Paola, 2000;

Chaney, 2004; Drach-Zahavy, 2004; Haig & LeBreck, 2000; Mäkinen et al.,

2003; Millward & Jeffries, 2001; Shortell et al., 2004; Temkin-Greener et al.,

2004; Vinokur-Kaplan, 1995) but they have not focused specifically on the

addition of new nursing roles in the team. Most of the scales developed to

measure perceived team effectiveness have focused on the work done by short-

term groups (Lemieux-Charles et al., 2002; Shortell et al.). Researchers have

examined perceptions of team effectiveness of inter-disciplinary rehabilitation

teams managing the care of patients following a stroke (Strasser et al., 2008) but not in long-term groups such as nursing teams. In addition, researchers have developed tools to measure different aspects of the introduction APN roles including the barriers, facilitators, scope of practice, practice patterns and satisfaction with the roles (Becker et al., 2006; Irvine et al., 2000; Jensen & Scherr, 2004; Mitchell-DiCenso et al., 1996; Sidani et al., 2000; van Soeren & Micevski, 2001). However, no researcher has examined how ACNP role enactment within the team and the boundary work of team members affected the health care team's perceptions of team effectiveness. This appears important since the health care team's perceptions of team effectiveness seem to be affected by a number of factors as outlined in the previous section.

Finally, teams (Boaden & Leaviss, 2000) and team effectiveness (Tata & Prasad, 2004) needed to be understood in the broader context in which they were situated. One major context to be considered was the health care jurisdiction in which the team functioned (Boaden & Leaviss). The following section presents some of the contextual factors that may affect the introduction of ACNP roles in the province including the recent changes in Quebec's health care system.

Context of Health Care

The context of health care included the laws, formal and informal authority, structures, norms and values that influenced the governance of health care organizations (Rodriguez, Langley, Béland, & Denis, 2007). The context of health care has been described as pluralistic and included the different professional groups that interacted in the system, their inter-dependent relationships, the distribution of power, and the divergent objectives the

professional groups had within the system (Denis et al., 2001; Gilbert, Brault, Breton, & Denis, 2007). For teams in health care the context has been defined as the setting in which the team functioned (Borrill et al., 2000), and included structural components of the immediate environment of the team, the organization, organizational culture, management systems, other teams in the organization (Borrill et al.), training, rewards, the physical environment, technology, task design, and mission clarity (Sundstrom et al., 1990). The following sections outline relevant contextual factors in Quebec.

Very few published papers were located describing the influence of Quebec's cultures on the governance of health care organizations (Gaumer & Fleury, 2007; Pineault, Lamarche, Champagne, Contandriopoulos, & Denis, 1993). Magnuson (1984) discussed some of the ideological differences between French and English sector schools following the establishment of provincial school boards in Quebec in 1964 and described two orientations. The first orientation described the influences of the French system where decisions were made centrally and tight controls were maintained. The second orientation describes the English system where decisions were made locally and the system was more decentralized.

Several legislative changes have restructured the health care environment in Quebec. Bill 25 legislated the restructuring of the health care system with a move towards a population health approach and a hierarchical provision of services (Projet de Loi no. 25, 2003). The regional boards were abolished and replaced by new regional bodies called Agencies (Levine, 2005). Primary health care services with service lines to secondary and tertiary care facilities were

developed and procedures to transfer or refer patients were streamlined (OIIQ, 2004). New partnerships between health care organizations and health care professionals needed to be developed and the roles of health care professionals needed to become more complementary in order to effectively use available resources (OIIQ, 2004). A pluralistic model may be more helpful to explain and understand the influence of the context and the perspectives of different stakeholders (Gerrish, 2001). Such a perspective can increase our understanding of how health care providers develop their roles and account for different professional interests within the health care system (Denis et al., 2001).

As another legislative change in Quebec, the *Loi modifiant le Code des professions et d'autres dispositions législatives dans le domaine de la santé* mandated changes to the scopes of practice of eleven different health care professions to better meet the health care needs of the population (Projet de Loi no 90, 2002). Greater collaboration was encouraged among health care providers with the passage of Bill 90 (Trudeau, de Grandmont, Lafrance, & Poitras, 2007). The section of the law regulating ACNP practice was enacted in 2005 (Gazette Officielle du Québec, 2005). Specifically, Bill 90 stipulated that activities such as the determination of the initial diagnosis of disease, decisions related to admission and discharge, and the completion of death certificates remained the exclusive domain of the physician and ACNPs contributed to these functions (OIIQ/ CMQ, 2006a). The exclusion of certain areas of practice contained in Bill 90 may affect the way in which ACNP roles are introduced in health care organizations in Quebec, and limit their scope of practice.

Health care organizations also play an active role in structuring the introduction of health care roles (Lamothe, 2007). Mantzoukas and Watkinson (2006) highlighted the importance of understanding organizational structures when introducing APN roles. Some organizational characteristics to consider include the level of complexity and predictability of the environment, and the centralized or decentralized administrative structures (van den Berg et al., 2006). The way work is structured in the organization can be identified using the division of tasks among team members and the amount of coordination and control mechanisms needed to ensure the completion of tasks (van Offenbeek & Knip, 2004). Work structures can be tightly organized with standardized procedures and formal communications or loosely organized with decentralized decision-making and an emphasis on informal coordination (van Offenbeek & Knip). The amount of coordination and control mechanisms may affect the ACNP role that is introduced, the autonomy of practitioners, and their clinical decision-making. Teamwork may be hindered or enhanced depending on the organizational structures that are put in place or the way decision authority is distributed in the health care team (Boaden & Leaviss, 2000).

In addition to organizational structures, organizational culture also influenced the introduction of ACNP roles and helped to determine what was valued and rewarded in the organization (Mantzoukas & Watkinson, 2006; Westrum, 2004). According to Pettigrew (1979, p. 574) organizational culture represented "the system of publicly and collectively accepted meanings operating for a given group at a given time". The definition provided by Pettigrew underscored the dynamic nature of organizational culture. The assumptions

shared by the group may influence an "individual's perceptions, thoughts, feelings and to some degree the behaviours that are seen" (Schein, 1996, p. 11). The following section describes ACNP role in Quebec and highlights some of the issues that have been identified so far in the province.

Acute care nurse practitioner roles in Quebec. ACNP roles in Quebec have been introduced in nephrology, cardiology, and neonatology (Allard & Durand, 2006). Only 41 of the 75 ACNP positions have been filled since 2005 (OIIQ, 2009a), and the recruitment and retention of ACNPs has been uneven across specialties (D'Amour et al., 2007). Cardiology ACNPs were authorized to practice in university affiliated teaching hospitals with a minimum of three full time staff cardiologists (OIIQ/CMQ, 2006a). They made up the largest group of ACNPs with 17 practitioners (OIIQ, 2009a).

The OIIQ (2003) recommended that 60% to 75% of the ACNP's time should be spent in direct care activities. The remaining 25% to 40% of the ACNP's time was to be used to support RNs and other health care providers, participate in training, teaching, and research activities (OIIQ, 2003). The OIIQ recommendations for time allotment of care activities contrasted with D'Amour and colleagues' (2007) findings that ACNP students and newly licensed ACNPs in Quebec spent the majority of their work time in direct patient care activities. This may limit the ACNPs' ability to develop all the components of an APN role (Kilpatrick et al., in press). In addition, new ACNP graduates have experienced difficulties establishing collaborative relationships with other members of the health care team (D'Amour et al.).

Professional web sites were searched to understand the preoccupations of other professional groups and the ACNP role (See Appendix B). Some professional groups had expressed reservations about the introduction of ACNP roles. Emergency room physicians were concerned about autonomous practice (Gosselin, 2001), physician residents in cardiology were concerned that the ACNP role would take away training opportunities for residents (Fédération des Médecins Résidents du Québec, 2003, 2004), and pharmacists in some regions of Quebec were reluctant to recognize the ACNP's prescriptive privileges (D'Amour et al., 2007). The differences in ACNP practice and the process by which these differences have occurred needs to be explored to understand how they affect the health care team's perception of effectiveness. The review of the literature identified elements that may affect the introduction of ACNP roles into health care teams. A number of team processes need to be understood to effectively introduce ACNP roles in the health care team, and enhance the team's perceptions of its effectiveness. The following section presents the conceptual framework for evaluating the ACNP (Sidani & Irvine, 1999) as the conceptual framework supporting the study. An overview of the literature supporting the framework is presented and adaptations to the framework are proposed.

<center>**Conceptual Framework**</center>

Conceptual Framework for Evaluating the Nurse Practitioner Role in Acute Care Settings

The Nursing Role Effectiveness Model (Irvine, Sidani, & McGillis Hall, 1998) is a conceptual framework that was developed to investigate and identify nursing-sensitive outcomes. The model was further refined to specifically

evaluate ACNP care and proposed that structure and process influence quality and cost outcomes (Sidani & Irvine, 1999) (See Appendix C). The Nursing Role Effectiveness Model is deductive in nature as it was developed from a review of nursing sensitive outcomes, and studies and meta-analyses related to the effectiveness of nursing interventions (Irvine et al.). Sidani and Irvine (p. 60) argued that the ACNP framework represented "the complex system of interrelated factors that are present in the ACNP practice situation and that affect role effectiveness". The following sections describe the framework.

The framework incorporated Donabedian's model of quality care and included structure, process and outcome variables. The structures were defined as the patient, ACNP and organizational variables (Sidani & Irvine). The patient variables included demographic characteristics such as age, ethnicity and gender. The illness/ health characteristics included illness severity, co-morbidities, health beliefs and health behaviours. The resources available to patients included the material support required to access care such as insurance coverage. The ACNP variable included psychological and professional characteristics such as the level of education, type of training for the ACNP role, specialty area and years of experience in the role. The psychological variable described the ACNP's perceived competence in the role, the amount of role strain, satisfaction with the role and interpersonal and communication skills (Sidani & Irvine). The organizational variable included the type of employment setting, in- or out-patient practice, extent of role formalization, practice model, caseload, use of protocols, hospital privileges, perceived receptivity of the role by other health care

providers, and perceived autonomy and independence in the role (Sidani & Irvine).

The process variable was related to the ACNP scope of practice and included the ACNP role components and the level of role enactment. The different ACNP role components included 1) the clinical role where ACNPs provided direct patient care, 2) the educator role where ACNPs participated in the education of nursing and medical students as well as developed staff education programs, 3) the researcher role where the ACNP disseminated and used research findings in practice, and participated in and/or initiates research projects, and 4) the administrator role where the ACNP participated in hospital and community committees, the development and revision of protocols, policies and procedures (Sidani & Irvine, 1999).

The role enactment component examined the type of ACNP roles that were developed in health care organizations (Sidani & Irvine, 1999). In essence, the way in which each role component of the ACNP's scope of practice was actualized in daily practice helped to determine the level of role enactment (Sidani & Irvine). The physician extender role consisted primarily of practice centered on the procedures and the highly specific specialty-related knowledge associated with the ACNP role while the expanded nursing role incorporated the elements of specialized knowledge and procedures and distinct elements of an APN role such as the use of in-depth nursing knowledge and applying a holistic health focused and patient-centered approach (Hamric, 2005; Sidani & Irvine).

Finally, the outcome variable included to the goals and expectations of the ACNP role related to the provision of high quality care and the reduction of health

care costs (Sidani & Irvine, 1999). Quality outcomes can be classified according to the patient's symptom management, freedom from complications, functional status, knowledge of the disease and its treatment, and satisfaction with care (Sidani & Irvine). The cost outcomes can be divided into the costs for the patient, the institution, and /or the health care system and can be related to salaries, the number of tests requested and their cost, length of stay, unscheduled visits to a health care provider, and decreased complication rates (Irvine et al., 1998; Sidani & Irvine, 1999).

At the time of its development, descriptive and correlational studies supported the theoretical links being proposed in the framework (Sidani & Irvine, 1999). For example, structures were believed to influence processes when patient characteristics affected decisions regarding the assignment of patients to ACNP care, organizational structures determined the role functions assumed by the ACNP or ACNP characteristics determined the level of engagement in different role components and functions (Sidani & Irvine, 1999). For the effects of structure on outcomes, the model identified the influence of illness severity on the achievement of specific outcomes (Sidani & Irvine, 1999).

A small number of studies have examined the link between processes and outcomes and their findings support the Sidani and Irvine framework (1999). Subsequent to the framework's development, Sidani and colleagues (2006a) compared the processes of care of ACNP and physician residents and identified differences where the ACNP engaged in more management and informal coordination of care activities, provided more patient education and encouraged more patient participation in care. Finally, in relating processes to outcomes, the

framework proposes that the ACNP improved outcomes by providing comprehensive care, ensuring the continuity of care, and providing care in a timely manner (Sidani & Irvine, 1999). Sidani and colleagues (2006b) explored outcomes achieved one week following discharge home. The patients who had received the care of ACNPs reported higher levels of satisfaction with care and higher levels of physical, psychological, and social functioning (Sidani et al., 2006b).

The Sidani and Irvine framework (1999) has been used in health services research in acute and tertiary settings across different specialties (e.g.: cardio-vascular disease, spinal surgery, cancer care) and with different patient populations (e.g.: ambulatory, neonatal, adult, pediatric) (Doran et al., 2006; Irvine et al., 2000; Sidani et al., 2006a; Sidani et al., 2006b; Sidani et al., 2000). The Nursing Role Effectiveness Model and the framework for ACNPs have been empirically tested for nurses and nurses assuming ACNP roles (Doran, Sidani, Keatings, & Doidge, 2002; Sidani & Irvine, 1999). The Sidani and Irvine (1999) framework linked the achievement of quality and cost outcomes to the conceptualization and enactment of the ACNP role. The selected role components were consistent with the theoretical definitions of the ACNP role (Hamric, 2005; Schober & Affara, 2006). The concepts were linked in the framework and operationally defined (Sidani & Irvine, 1999; Walker & Avant, 2005). The framework produced testable research questions and was supported by empirical data and could be generalized to acute care settings (Walker & Avant). Finally, the framework proposed that the ACNP improved outcomes by providing comprehensive care in a timely manner, and ensuring the continuity of

care (Sidani et al., 2006b). Processes were believed to influence outcomes and the framework identified activities such as the ACNP's engagement in management and care coordination, providing patient education, and encouraging patient participation in care (Sidani et al., 2006a).

Proposed Adaptations to the Framework

The Sidani and Irvine framework (1999) contributed to the evaluation of ACNP role effectiveness by linking the enactment of ACNP roles to patient outcomes, and captured much of the complexity of today's acute health care environment. However, the conceptual framework did not provide guidance to understand the processes within the health care team that affected perceptions of team effectiveness and patient outcomes following the introduction of an ACNP role. ACNPs have been introduced into the health care team to provide holistic care to patients and families but teams have undergone extensive restructuring in the last decade. Lamothe (2007) asserted that health care professionals were increasingly interdependent when providing care. Furthermore, Boaden and Leaviss (2000) argued that teamwork needed to be understood in the context where the team was situated. Thus, it appears important to understand ACNP roles in the context of the teams in which they were placed and no researcher has examined ACNP role introduction, team processes and perceptions of team effectiveness. Walker and Avant (2005) suggested synthesis as one approach to building theory where concepts that were theoretically unconnected were combined using existing literature. The following sections present the proposed changes to the Sidani and Irvine (1999) model and the empirical literature supporting the changes.

The Sidani and Irvine (1999) model was initially developed as a linear model yet an ecological approach (Sundstrom et al., 1990) may add another perspective to our understanding of how role enactment and boundary work affected the health care team's perceptions of team effectiveness. An ecology was defined as "a set of social interactions between multiple elements that are neither fully constrained nor fully independent" (Abbott, 2005, p. 248). With such an approach, it is necessary to take into account the influence of the context on the health care team and the influence of the team on its context. In a review of 13 interventional studies of team development, Sundstrom et al. highlighted the interactions between the organizational context, boundaries and team development in team effectiveness, and proposed reciprocal relationships between these concepts. For the purpose of this study, changes are proposed to the Sidani and Irvine framework to understand how the ACNP role enactment and boundary work of team members can affect the health care team's perception of team effectiveness. In order to adapt the framework to an ecological approach, bi-directional arrows are proposed to link structures, processes, and outcomes to account for their mutual influence on one another.

Changes in team structures, the type of work team, team size, and rewards (Stokols, Misra, Moser, Hall, & Taylor, 2008) were important considerations in teamwork and the effectiveness of teams. Researchers (Blythe, Baumann, & Giovanetti, 2001) found that restructuring in organizations disrupted relationships, decreased group performance, and influenced the nurses' abilities to deliver effective care by negatively affecting the nurses' role individually and as team members. Furthermore, Proenca (2007) identified significant effects between

team contextual factors, team dynamics, and job satisfaction. Finally, Bower, Campbell, Bojke, and Sibbald (2003) found that team structure predicted team process and that structure and process predicted outcomes in primary care. In order to understand how the introduction of ACNP roles affects role enactment and boundary work, concepts related to team structures have been added to the adapted framework and include the type of team, the size of the team and changes to team membership, and team rewards.

Processes have been identified as key factors in perceptions of team effectiveness and accounted for almost a quarter of team effectiveness (Poulton & West, 1999). Strasser and colleagues (2002) identified a significant effect between team processes and the level of formal structures in organizations in their study. Specific processes have been added to the adapted framework including the role enactment of members of the health care teams and perceptions of team effectiveness. Shortell, Rousseau, Gillies, Devers, and Simons (1991) found that team processes were consistently associated with perceived technical quality and the perceived ability to meet family member needs. According to these authors team processes explained 27% of the overall variance in their study. Improved communication has been shown to reduce errors in the operating room, reduce nurse turnover, and increase employee satisfaction and teamwork climate (Leonard et al., 2004). Finally, Grogan et al. (2004) worked with clinical teams to improve team processes such as communication and coordination by applying aviation-based training techniques and found that the clinical team's attitudes and beliefs about processes such as clear communication, coordination, and the need

for team members to "speak up if they see that something is wrong" improved after the training (Grogan et al., p. 847).

The role boundaries as the processes between ACNPs and members of the health care team were believed to influence the level of role enactment (Gulliver et al., 2002). The role enactment of the health care team component can inform our understanding of the development of roles within the health care team. Therefore, intra- and inter-professional role boundaries have been added to the framework.

Furthermore, Shortell et al. (2004), Haward et al. (2003) and Temkin-Greener et al. (2004) found that the health care team's perceptions of team effectiveness were important to consider when examining patient outcomes. Perception of team effectiveness is proposed as a process that influences the outcomes of patient care and the key factors identified from the review of the literature that are believed to influence perceptions of team effectiveness have been added to the adapted framework (See Figure 1). The literature supporting the additions to the framework is outlined in the next section.

Brannick et al. (1995) identified coordination as the essence of teamwork and found that assertiveness (e.g., a willingness to make decisions, act on them, defend them, admit ignorance and ask questions), communication, and decision-making were important dimensions of team effectiveness in their study and were significantly correlated with team performance.

In addition, Baldwin, Royer, and Edinberg (1978/2007, p. 40) argued that issues or problems were likely to occur in any team and be a "consequence of ambiguous goals, unclear role expectations, and dysfunctional decision-making

procedures". Effective problem-solving has been identified as a process that led to improved organizational performance (Guo, 2008), and improved patient (Taylor et al., 2003), provider, and system (King et al., 2007) outcomes. Doherty, Davies and Woodcock (2008) reported that a team approach facilitated trouble-shooting activities and action planning in specialized long-term care facilities in the UK. VanSuch, Naessens, Stroebel, Huddleston, and Williams (2006) found that a multidisciplinary team approach to discharge teaching for heart failure patients that focussed on lifestyle changes and the early detection of worsening heart failure symptoms reduced the probability of readmissions at 90 days by 41%. Hudson (2006) examined the integration of team members in primary care in the UK, and identified the willingness to work differently, the swiftness of team response to problems, and creativity in problem solving as important features of team problem-solving.

Finally, Shortell et al. (1991) found that effective teams believed they met family needs more adequately. However, the inclusion of patients and families as team members is an important dimension of team effectiveness that has been overlooked in teamwork research (Donaghy & Devlin, 2002; Opie, 1997). Thus, a team-level focus on patients and families as the recipients of care appears necessary. The previous section has provided the empirical support for the changes in the Sidani and Irvine (1999) model. The concepts of ACNP role enactment, boundary work in health care teams, and perceptions of team effectiveness have been studied separately. An integrated conceptual model may increase our understanding of the effects of such roles on team processes and, ultimately, on patient outcomes.

Study Purpose

Little is known of the processes within the health care team following the introduction of an ACNP role. ACNP roles can be introduced into health care teams as physician extender or an advanced practice nursing role. No researcher has examined how role enactment of cardiology ACNPs and the boundary work of members of health care team influenced the team's perceptions of its effectiveness. The introduction of cardiology ACNP roles in Quebec offers an opportunity to explore the processes within the health care team to understand how ACNP role enactment and boundary work of team members affect the health care team's perceptions of team effectiveness. The overall purpose of this study is to understand the health care team's perceptions of team effectiveness following the introduction of an ACNP role. The study aims to 1) describe the role components of cardiology ACNPs, 2) describe the role enactment of cardiology ACNPs, and 3) explore how role enactment of cardiology ACNPs and the boundary work of members of the health care team affect the health care team's perceptions of team effectiveness.

Structure ←→ **Process** ←→ **Outcome**

Patient-level   **ACNP Scope of Practice**

Demographics   **Role Components** ←→   **Role Enactment**   **Quality**
Illness/health
Resources   Research   Physician extender   Clinical
                      Educator   Expanded nursing role   Complications
ACNP-level   Administrator   Functional
                      Practitioner   Knowledge
Professional   Satisfaction
Psychological

                          Health Care Team
                           Scope of Practice

Organizational-level

Type of setting   **Role Enactment**   **Perceptions of**   **Cost**
Role formalization   **Team Effectiveness**
Practice model   Patient
Receptivity of role   Intra- and inter-   Decision-making   Institution
Role authority   professional   Communication   Health care
                      role boundaries   Cohesion   system
                                               Coordination
Team-level   Problem-solving
Type of team   Patient/family focus
Size
Rewards

Figure 1. *Conceptual Framework to Evaluate the Acute Care Nurse Practitioner Role and Perceptions of Team Effectiveness.* Adaptation of Sidani, S., & Irvine, D. (1999). A conceptual framework for evaluating the nurse practitioner role in acute care settings. *Journal of Advanced Nursing, 30*(1), 58-66.

Chapter 3-Methodology

Research Design

A descriptive multiple case study design (Yin, 2009) was selected for this

study. Yin (2003) argued that case study is the design of choice to understand

processes. Case study design was recommended because it allowed for a

complete description of an event by taking into account the perspectives of a wide

range of participants and the larger context in which an event occurred

(Gangeness & Yurkovich, 2006). A descriptive case study uses a "reference

theory or model that directs data collection and case description" (Scholz & Tieje,

2002, p. 12). In addition, Yin (2003) argued that a multiple case study design was

a more robust design because the use of a framework allowed the researcher to

compare and generalize the findings to other cases (i.e., analytic generalization).

This study was shaped by a pragmatic worldview (Cresswell, 2007). The

pragmatic paradigm allowed the researcher to view an event from many

perspectives (Cresswell & Plano Clark, 2007; Kloppenberg, 1996), and supported

the use of qualitative and quantitative methods (Cherryholmes, 1992;

Onwuegbuzie & Leech, 2005). This paradigm was useful because it allowed for

the generation of objective and subjective knowledge to examine research

questions that cannot be answered adequately within a single paradigm (Weaver

& Olson, 2006).

Breen (2007) argued that the role of the researcher in applied research lies

along a continuum between the insider and the outsider role. In the present study,

the researcher (i.e., the doctoral candidate) assumed an insider role with regards

to the knowledge of the day-to-day activities of a cardiology service based on several years of experience as a nurse in acute care cardiology. This knowledge allowed the researcher to identify specialty-specific practice and explore processes (Bonner & Tolhurst, 2002). The researcher assumed an outsider role with the cardiology ACNPs and the health care team which allowed the researcher to identify subtle differences in practice and remain sensitive to any verbal and non-verbal exchanges (Bonner & Tolhurst).

Case Selection

Many authors (Merriam, 1998; Miles & Huberman, 1994; Stake, 1995; Yin, 2003) argued that the greatest challenge was the actual definition of the case. Thus, each case was operationally defined as the cardiology service where the ACNP practiced (Zucker, 2001) and included the in- and out-patient units within the organization. Thus the cases were bounded by the limits of cardiology service as determined by the ACNP's practice model and reporting structure. The cases included the ACNPs, managers, physicians, RNs, clerical staff, CNS, physicians in training, pharmacists, OT, physiotherapists, RT, social workers (SW) and dietician.

Three university-affiliated teaching hospitals with experience introducing a cardiology ACNP role had been approached to participate in the study (one pilot site and two cases). Purposeful sampling (Teddlie & Yu, 2007) and maximum variation (Cresswell, 2007) was used to select cases and participants with a range of experiences working with cardiology ACNP roles in the province. The cases were identified because they possessed similarities and differences (Walshe,

Caress, Chew-Graham, & Todd, 2004), and organizational characteristics of interest (Bergen & While, 2000). The cases were selected from the "English" and "French" sectors, and considered the time since the introduction of the ACNP role, ACNP roles in surgery or medicine, different geographical regions in the province, and different health care professions. In order to be included in the study, nursing team members with permanent positions or long-term replacements must have been part of the team for at least 3 months and other health care team members must have interacted with the ACNP to provide services. Managers must have been or were currently involved in the decisions related to the introduction of ACNP roles or ACNP practice.

Patients and families were excluded from the data collection. Opie (1997), in a review of the teamwork in health care literature, argued that the experiences of patient and family members within the care team differed from the experiences of care of providers. This may affect the patient and family members' views of team effectiveness. The patient and family members beliefs of the team's effectiveness appeared to be related to their sense of empowerment and involvement in patient care decisions (Opie), and the ACNP's ability to provide patient-centered care (Sidani, 2008). The care providers focused on the relationships between members of the team and the processes within the team to determine their team's effectiveness (Warren, Houston, & Luquire, 1998).

Participants

Case 1. Thirty-two team members participated in different components of the study. Most of the participants, 87.5% (N=28), worked full time. The average

number of years in their professional role was 8 years with a range of one month

to 29 years. Participants had worked an average of 5.04 years in the team with a

range of one month to 20 years. Participants with less than three months

experience in the team were in the management or the inter-professional group.

Ninety-one percent (N=29) of the sample had completed baccalaureate-level

education. The intra-professional group represented 44% (N= 14) of participants.

The inter-professional group represented 34% (N= 11) of participants. The

management group represented 22% (N=7) of participants.

     Case 2. Twenty-seven team members participated in different

components of the study. Ninety-two percent (N= 24) of the participants worked

full time. The average number of years in their professional role was 11.2 years

with a range of one month to 28 years. The average number of years worked in

the team was 6.48 years with a range of one month to 20 years. Participants with

less than three months experience in the team were in the management or the

inter-professional group. Eighty-five percent (N= 23) of participants had

completed baccalaureate-level education. The intra-professional group

represented 52% (N= 14) of participants. The inter-professional group

represented 30% (N= 8) of participants. The management group represented 18%

(N= 5) of participants. A greater proportion of interviews were completed with

the intra-professional group in this case because the ACNPs in Case 2 had

extended their practice to out-patient areas that included a different nursing team.

Sources of Evidence

Data were collected from a variety of sources including a time and motion study, non-participant observations, interviews, field notes, documents and administrative data. All the data were collected by the researcher. The data collection period in Case 1 began in March 2009 and finished in mid-April 2009. The data collection in Case 2 lasted 4 weeks in May 2009. This was consistent with the recommendation of Yauch and Steudel (2003) that four to six weeks were needed in each case to complete the data collection.

Time and motion study. The activities of advanced practice nurses have been assessed using self-report measures and work sampling (Duffield et al., 2005; Jensen & Scherr, 2004; Sidani et al., 2000). The self-report methods imposed a response burden on participants and were subject to report bias (Burke et al., 2000). In addition, work sampling was not useful when studying individuals or for estimating the duration of activities (Pelletier & Duffield, 2003). The time and motion portion of the study documented the care given by ACNPs using an observation tool (See Appendix D) that was validated during the pilot study. The validated tool included 30 activities divided into direct care, indirect care, educational, administrative, and research activities. The ACNPs were observed (e.g., shadowed) (Fitzpatrick, While, & Roberts, 1996) for five complete work-days. One ACNP was followed each day. A sample of all ACNP work times was included in the data collection period (Tucker & Spear, 2006).

In Case 1, the time and motion portion of the study included a total of 43hr 32 min. Data collection was spread over 3 weeks to ensure a representation of

ACNP work activities while working with different physicians. The time and motion portion of the study included a representation of the portion of time spent in the step-down unit as well as the ward. In Case 2, a total of 65 hr 21 min of time and motion data were collected. Twenty seven hours and 21 min were spent in the step down unit and 38 hr on the ward. The ACNPs worked more often on the ward than in the step-down unit. One ACNP worked alone from 4 PM to 5 PM and covered the ward and the step-down unit. The data collection period was divided to sample work time for each ACNP and the time spent working on the ward or the step-down unit. Data collection also included the out-patient settings.

Non-participant observations. The interaction process analysis (Bales, 1950) was used during the non-participant observations to identify the processes of group interactions. This method was specifically developed to measure problem-solving behaviours and communications in group interactions (Bales). Bales' method categorized six social-emotional activities and six task activities or behaviours (Bales, Caldwell & Atwal, 2005). The non-participant observations included time spent in routine patient care activities such as patient rounds on the ward and the step-down unit, and inter-disciplinary team meetings. The observations included patient rounds with nurses and physicians, and ACNP visits with patients to assess their status. The non-participant observations covered entire activities. No individual patient data were collected and the researcher used mobile positioning to hear verbal exchanges or see non-verbal reactions. In addition, daily observation notes were developed in each case to document the researcher's understanding of how patient care decisions were made. The periods

of observation were divided to decrease observer fatigue (Bonner & Tolhurst, 2002; Casey, 2006; Fitzpatrick et al., 1996).

In Case 1, the non-participant observations lasted a total of 8hr 28 min and identified 4804 behaviours. The observations were divided into six observation periods that lasted between 33 minutes to 2hr 45 min. In Case 2, a total of 8hr 55 min of non-participant observations were completed and identified 7471 behaviours. The observations were divided into 8 observation periods that lasted between 35 minutes to two hours.

Interviews. The focus groups and individual interviews were conducted using a semi-structured interview guide (See Appendix E). The questions explored cardiology ACNP role enactment, boundary work, the context surrounding the team, and perceptions of team effectiveness. All participants were asked the same questions but the questions were tailored for each group. The groups were divided (e.g., segmented) according to specific characteristics to facilitate disclosure (Freeman, 2006).   Focus groups were conducted with members of the intra-, inter-professional and management teams as they represented the "main aspects identified within each case" (Vallis & Tierney, 1999/2000, p. 24). A minimum of five focus groups were conducted in each case to gather a range of ideas which was consistent with the recommendation of Kruger and Casey (2000) to conduct at least three to four focus groups to obtain a range of perspectives.

In Case 1, a total of 32 team members participated in the interviews. Five focus groups were conducted with two intra-professional, two inter-professional,

and one management focus groups. The number of participants in the focus groups ranged from three to seven. Ten individual interviews were completed. The interviews lasted between 25 to 75 minutes. Individual interviews were offered to participants who could not attend a focus group, preferred to be interviewed individually or had changed employers and were working at another site. Four participants were asked for follow-up interviews to elaborate on topics that had been discussed in the focus group interview.

In Case 2, a total of 27 participants were interviewed. Seven focus groups were held and included four intra-professional groups, two inter-professional groups and one management group. The number of participants in the focus groups ranged from three to five participants. Six individual interviews were completed in this case. The interviews lasted between 30 to 75 minutes. Similarly to Case 1, individual interviews were offered to those who could not attend a focus group or had changed employer. Five participants were asked for one individual follow-up interview to clarify topics discussed in the focus group.

Field notes. Field notes were written as soon as possible after the end of the interviews or observations. They were unstructured and documented impressions, key remarks, and reflections. Early theoretical ideas about the cases were noted in the field notes (Eisenhardt, 1989; Merriam, 1998).

Document review. The amount of documentation varied in each case. Case 1 provided 35 documents related to the introduction of the ACNP role, policies, drafts of the medical directives and prescriptive authority for medications, worksheets, and job descriptions of team members. Case 2 provided

over 500 documents to describe the process used to introduce the ACNP role in the organization. The documents included annual reports, minutes to meetings, letters to professional groups or organizations, hospital policies, and job descriptions.

Administrative data. A profile of the health care team was obtained from the nurse managers. The job descriptions of health care team members were obtained from the unit managers or the inter-professional team members' manager, as appropriate. The number of admissions and types of interventions were obtained from the unit managers or the Chief of surgical services according to the organization's policy.

No individual patient data were collected. No outcome data (e.g., patient length of stay, complications, readmission rate) were collected in the study because the ACNP role had been introduced three years earlier. Bryckzinski (2005) described the development of advanced practice nursing roles as a dynamic process requiring three to five years. Bryant-Lukosius et al. (2004) recommended that a systematic process be used to monitor the implementation and effectiveness of advanced practice nursing roles because a poorly-timed evaluation may not capture the effects of the advanced practice nursing role (Bryant-Lukosius & DiCenso, 2004).

Procedure

The Associate Director of Nursing (ADON) or the Director of Nursing (DON) involved in the introduction of the cardiology ACNP role of three organizations was contacted during the development of the research proposal and

had expressed an interest in participating in the study. The front-line managers and physicians of the cardiology service had been informed of the pilot or main study by the ADON. The researcher followed-up with the front-line manager by telephone contacts and face-to-face meetings to ensure they would facilitate the access to and recruitment of participants. In each case, participants from a minimum of 11 professional groups or roles were recruited to obtain a range of perspectives of the ACNP role enactment and boundary work. All necessary scientific and ethical approvals were obtained from three hospitals participating in the study prior to the recruitment of participants.

Following the manager's approval, the researcher informed the ACNPs and the nursing staff of the study at a planned staff meeting and invited them to participate in a focus group. An information leaflet was posted to inform team members of the study and the focus groups. The members of the health care team working outside of the nursing service were informed of the study by the front-line manager at a scheduled inter-disciplinary meeting. If they agreed to participate, the researcher provided them with information about the study, and invited them to attend a focus group. The appropriate time of the focus group was selected and scheduled in collaboration with the front-line manager (e.g., regular staff meeting). The researcher also met individually with the ACNPs to provide them with additional information about the study and invited them to participate in an individual interview, a time and motion study, and non-participant observations. Participants were informed that their name was entered in a draw

for a $25 gift certificate from a local bookstore. One draw was made in the pilot site and in each case.

All participants directly involved in data collection signed a consent form and completed a socio-demographic profile (See Appendix F) before the data collection. However, when using observational techniques, some of the potential participants were in the periphery of the observation field (Carnevale, Macdonald, Bluebond-Langner, & McKeever, 2008). Carnevale et al., Endacott (1994), and Moore and Savage (2002) argued that written consent may not be necessary for participants who are in the periphery of the observation field. Thus, only ACNPs were asked to sign a consent form for non-participant observations. Signs (Endacott; Moore & Savage) were posted on the unit in key locations such as the staff lounge and the nursing station. Leaflets informed participants of the identity of the researcher and the objectives of the study. In addition, "potential observees" were informed in the leaflet to indicate to the researcher if they wished to be excluded from data collection (Carnevale et al., p. 27). No "potential observee" in the field of observation in either case indicated they did not want to be included in the data collection. The role of the researcher in non-participant observations is to be as inconspicuous as possible during data collection (Pretzlik, 1994). Researchers (Casey, 2004; Fitzpatrick et al., 1996) have described situations where it was necessary for the researcher to intervene to protect patients from harm, falls, or prevent errors from occurring. No such events occurred in the present study.

Step 1: Pilot study. The purpose of the pilot phase was to test the tools and the interview guide that were developed for the main study, as well as determine the feasibility of collecting non-participant observation data in a group setting using Bales' interaction process analysis. The activities included in the time and motion tool were identified using relevant literature (Becker et al., 2006; Duffield et al., 2005; Sidani et al., 2000) and validated with a practicing cardiology ACNP. Thirty-two activities were included in the time and motion tool and divided into 7 categories.

A second observer was trained (see Appendix G) and completed 174 minutes of concurrent observation. The observation period was extended beyond the original 120 minutes to avoid disrupting the ACNP and patient encounter. Two ACNPs were present during the data collection period for the pilot site. The initial plan for the pilot study was to measure alternately the activities of each ACNP. The pilot study quickly brought to light the difficulties of separating the data collection periods as originally planned, and coordinating the change of measurement of one ACNP's activities with the other ACNP because of ongoing patient care activities. There was an increased risk of interrupting a patient encounter or being unable to measure ACNP activities adequately. A decision was made during the pilot study to complete the measurements with one ACNP to accurately measure ACNP activities and avoid disrupting patient care encounters. This facilitated the data collection process for all those involved and provided a better picture of a patient care encounter by decreasing the interruptions. Non-participant observation data were collected during a 90 minute inter-professional

meeting that included 5 participants. The interview guide was tested with one team member.

Step 2: Main study. In the main study, a representative week of activity was identified with the front-line manager and the ACNPs at the beginning of the study for each case. Four-hour observation periods were initially planned to decrease the burden on participants (Bonner & Tolhurst, 2002), and decrease observer fatigue (Pelletier & Duffield, 2003). This plan was changed in the main study since the pilot study brought to light the difficulties of switching the measurement of ACNP activities during the work day. Each ACNP's work activities were measured for complete workdays. Tucker and Spear (2006) have reported observation periods in excess of 13 hours without consequences for participants. In addition, the ACNPs in both cases agreed that the observer was unobtrusive and they no longer realized they were being observed after the first hour or so of data collection. One ACNP was present during a portion of the observation period in Case 1. The observation period with the ACNP in that case was extended to cover all workdays.

Purposeful sampling was used to identify participants working in a range of professional roles and who had different experience levels in the team. Participants with different perspectives were actively sought out during the data collection phase to understand their perspectives and help generate any rival explanations (Yin, 2009). They were invited to participate in the interviews. In addition, those being interviewed were asked to identify a team member they believed should be interviewed. Participants were also asked to identify a team

member who did not share their opinion of the ACNP role. These potential subjects were contacted for an interview through the nurse managers.

Analysis

Step 1: Pilot study. One of the goals of the pilot study was to test the feasibility of assessing the role components from the time and motion study. The activities identified in the time and motion study were measured in minutes and grouped into categories (Pelletier & Duffield, 2003) that included ACNP-specific direct and indirect care, education, administrative, and research activities. The time spent in the different categories helped to determine ACNP role enactment (Oelke et al., 2008). The observers were able to categorize all ACNP activities during the time and motion portion of the study. Following the pilot study, the activities related to prescribing tests and blood work were condensed into one item, and invasive procedures were regrouped under one item. Both observers identified difficulties categorizing empathic communication that was not related to teaching activities, or working through a specific health problem or issue with the patient or family. An item for supportive communication was added to the tool to capture supportive, empathic or coaching types of ACNP and patient communications. Definitions for each of the items were developed for the time and motion guide book based on the literature (See Appendix H). The pilot study identified activities specific to ACNP practice such as prescribing medications and tests as well as communication and administrative activities that represent an advanced practice nursing role. The tool used in the main study included 30 items divided into 7 categories.

To describe the role components, descriptive statistics (Creswell, 2003) were generated including the means, standard deviations, ranges, and percentages of the time spent in each category and role component. Inter-observer agreement was estimated using the activities identified at each minute during the data collection period yielding 174 data points. The kappa statistic was calculated to assess the proportion of inter-observer agreement that was achieved beyond chance (Sim & Wright, 2005) by comparing the inter-observer agreement for the 174 data points. The inter-observer agreement, kappa (κ), for the timing and the selection of activities included in the time and motion tool was 0.74. Landis and Koch (1977) and Stemler (2004) recommended a value for the kappa statistic greater than 0.60 to indicate substantial inter-observer agreement.

A total of 1098 behaviours were identified during the group interactions for the non-participant observation. Behaviours were identified in all the categories, and the numbers of behaviours that were identified per minute of observation were consistent with previous work (Bales, 1950; Conant, 1965, Atwal & Caldwell 2005, 2006). The predominant categories used by participants were asking for and receiving information. These categories were consistent with the purpose of the group meeting which was to discuss the status of patients being followed by the health care team.

The pilot interview lasted 60 minutes. The interview was independently coded by two members of the research team. Any disagreements in coding were discussed between the members of the team until agreement was reached for all the coded portions of the interview. The initial codes that were identified in the

adapted framework (p. 56) were useful and an additional 7 codes emerged from the data and were added to the code book. Thus, following the pilot phase, all the proposed data collection strategies were feasible. The pilot phase produced a valid and reliable tool for the main portion of the study. The pilot study data were not used in the analysis of the cases.

  Step 2: Main study. The aim of the analysis in the main study was to understand the health care team's perceptions of team effectiveness following the introduction of an ACNP role. A parallel mixed method analysis strategy was used where the quantitative and the qualitative data were analyzed separately (Teddlie & Tashakkori, 2009) and integrated throughout the analysis (O'Cathain, 2009). The quantitative data analysis strategy developed in the pilot phase was useful to analyze the data of the time and motion study. Common data collection forms were used across all sites to facilitate the analysis (McDonnell, Jones, & Read, 2000). Each site was identified using a specific code and documents were given a unique identifying code number to facilitate retrieval (Miles & Huberman, 1994). Interview lines were numbered sequentially (Rabiee, 2004). Consistent formatting (Hanley-Maxwell, Al Hano, & Skivington, 2007) was used so field notes and observations had a similar structure to facilitate the analysis.

  During the time and motion portion of the study a second period of observation with two observers was completed during Case 1 to assess inter-observer agreement. One hundred and twenty-one minutes of concurrent observations were completed with the second observer. The inter-observer agreement for the main study increased to $(\kappa) = 0.94$. Overall the two observers

disagreed on six of 121 observations. The differences were noted in the start and stop times of the activities which could be accounted for by a difference of a few seconds on the observers' watches. In addition, the communication activities that had been a challenge to identify in the pilot phase of the study were easier to classify using the revised time and motion grid and definitions.

The analysis of the qualitative data began as soon as possible following the start of data collection (Rabiee, 2004). All the interviews were transcribed and read several times "to obtain a sense of the whole" (Graneheim & Lundman, 2004, p. 108). The interviews provided data of the context surrounding the case, role enactment of the ACNP, boundary work of members of the team, and perceptions of team effectiveness. The analysis of the non-participant observations provided data of the processes related to the team's decision-making about patient care.

Multiple methods of data collection allowed for methodological triangulation and increased the likelihood that findings were credible (Williamson, 2005; Yauck & Steudel, 2003). Data triangulation was achieved by combining data from different sources (Briller, Meert, Schim, Thurston & Kabel, 2008). For example, the combination of the document review and interviews helped to identify time points or key decisions. The combination of focus groups and the individual interviews identified similar, different, and complementary views (Lambert & Loiselle, 2008) of ACNP role enactment, boundary work and perceptions of team effectiveness. The interview data helped to explain the ACNP activities measured in the time and motion study. Finally, the analysis of

the non-participant observations provided support for what was discussed in the interviews or identified differences between what was said and done in practice. The following sections describe the data analysis strategies used for the within-case analysis.

Phase One: Within-Case Analysis

      Quantitative data analysis. For the quantitative phase of the study, the time and motion portion of the study and the non-participant observations using Bales' method were analyzed using SPSS version 16 (Field, 2005). Descriptive statistics were generated, and the ACNP activities that had been grouped into categories (Mills & McSweeney, 2002; Rosenfeld, McEvoy, & Glassman, 2003) for the pilot study were used to identify cardiology ACNP role components and role enactment (Sidani et al. 2000). The balance of activities across the role components gave an indication if cardiology ACNP roles were being introduced as physician extender or advanced practice nursing roles and the ACNP's enacted scope of practice (Rosenfeld et al.; Sidani et al., 2000).

      The abbreviated notations from the non-participant observations were analyzed using the interaction process analysis developed by Bales (1950). Bales' method had been used in studies (Atwal & Caldwell, 2006; Caldwell & Atwal, 2005; Conant, 1965) to identify the processes of group interactions. Verbal and non-verbal behaviours were categorized using Bales' method where six categories were concerned with socio-emotional activities and six categories referred to task activities or behaviours (Caldwell & Atwal). The rates of initiator and receptor behaviours for each professional group were calculated to identify

the categories that were used most in each group and identify patterns in the processes of decision-making across professional groups (Atwal & Caldwell). The target person for each communication activity was identified as well as the most frequent behaviours used by ACNPs, nurses, physicians and patients. The focus of this method was the identification of patterns of interactions among group members and not the determination of the adequacy of the content of the discussions (Bales; Conant).

Qualitative data analysis. Content analysis was used to categorize the qualitative data (Bowling, 2002). The methods described by Miles and Huberman (1994) were used to analyze the interview data, field notes, documents, and administrative data and to integrate the memos. In order to analyze, organize, and synthesize the large amount of data that were collected, three concurrent activities including data reduction, data displays, and data drawing and verification (Miles & Huberman) were used. Data reduction transformed the raw data into more manageable parts. During data reduction the transcripts were reviewed line by line and relevant portions were coded using a "start list of codes" (Miles & Huberman, p. 65). A "start list of codes" was created with the concepts of the adapted framework. The definitions for the concepts in the adapted framework were developed from the review of the literature to facilitate the analysis. The definitions were supplemented using the interview data from the pilot phase. The adapted framework served as the tree node structure for the qualitative data analysis software, NVivo 7 (Bazeley, 2007; Woods & Roberts, 2000). New codes were created for data that did not fit into the concepts already

identified in the adapted framework (Miles & Huberman). Free nodes (Bazeley) were added to code data that did not fit into the pre-determined structure. Subsequently, the codes were grouped together to identify patterns, emergent themes or explanations (Miles & Huberman; Priest, Roberts & Woods, 2002). Memos were kept of ideas or decisions made during the analysis (Hanley-Maxwell et al., 2007; Miles & Huberman). The analysis occurred concurrently with the data collection (Rabiee, 2004).

As a second step, Miles and Huberman (1994) suggest creating data displays to describe the main concepts identified in the analysis and explain how the concepts were linked together. Langley (1999) also proposed the use of visual mapping strategies to make sense of large amounts of data. The displays included case-ordered matrices, charts and networks as forms of data display. Matrices were the row and column representations of the coded data that were developed for each case. Matrices of the key points in the introduction of ACNP roles, ACNP role enactment and perceptions of team effectiveness over time and across professional groups were developed. Networks included nodes and line figures used to display the concepts and identify the links between them (Miles & Huberman).

As the third activity, conclusion drawing and verification allowed the researcher to note "regularities, patterns, explanations and possible configurations" (Miles & Huberman, 1994, p. 11) in the data. The key concepts and time points identified and linked during the first two phases of the analysis were compared with the adapted framework to determine the fit with the proposed

framework (Figure 1). This stage helped determine the key concepts to be used in the cross case-analysis and identify "a typical story" (Miles & Huberman, p. 204) of the introduction of cardiology ACNP roles, ACNP role enactment, boundary work of team members and perceptions of team effectiveness.

In order to gain a greater understanding of team processes (Pettigrew, 1997; Van de Ven, 1992), the analysis identified descriptions of ACNP role enactment, boundary work of team members, and perceptions of team effectiveness, and included the interactions among group members (Duggleby, 2005). In addition to this step, the analysis of the qualitative data explored the time sequence of events in order to understand how processes unfolded (Pettigrew) and identify patterns of events within each case (Eisenhardt, 1989). The similarities and differences in processes were identified within and across all the groups (Besner et al., 2005) to understand the views of participants across the case as a whole.

Langley (1999, p. 692) argued it was essential to "document as completely as possible the sequence of events" to understand processes. Institutional documents and administrative data were analyzed using the strategies proposed by Langley and Rhéaume (2003). Institutional documents were divided for each institution and placed in chronological order to construct a sequence of events related to the introduction of ACNP roles. Once the documents had been ordered chronologically and by type, they were read again in this order to gain an understanding of the steps undertaken in the organization to enact the ACNP role. Documents were removed if they did not pertain to the enactment of the ACNP

role in the organization, were duplicates, meeting agendas, posters, flyers, or

calendars for different events. All the documents (N=35) that were submitted in

Case 1 were included and 135 documents were retained in Case 2. The documents

were reviewed to understand how ACNP roles were introduced, what were the

barriers and facilitators to ACNP role introduction, and the reporting structure in

each case. The analysis of administrative data provided information about the

team's context including the organizational structures, the type of team, and

changes in the team's composition.

Phase Two: Cross-Case Analysis

The analysis proceeded to the overall analysis across the two cases (Vallis

& Tierney, 1999/2000, Yin, 2003). At this stage variable-oriented strategies were

used to identify similarities and differences across the cases (Miles & Huberman,

1994, Teddlie & Tashakkori, 2009). Inductive and deductive approaches (Elo &

Kyngäs, 2008; Perry, 1998) helped identify and refine the concepts to be included

in the adapted framework of how the role enactment of ACNPs and boundary

work in the health care team affected the health care team's perception of

effectiveness. Similarities and differences in ACNP role components and role

enactment were identified across the cases by comparing the results of the time

and motion studies. The matrices of the themes and concepts identified in the

within-case analysis of each case were compared to identify patterns across the

cases (Averill, 2002; Miles & Huberman, 1994; Williamson & Long, 2005). In

order to identify a pattern or a "typical story" (Miles & Huberman, p. 204) of

ACNP role enactment, boundary work of team members, and perceptions of team

effectiveness, the key themes, events, time points or phases related to these concepts were identified from the data. These were then compared to the adapted framework (Farand, Champagne, Amyot, Denis, & Contandriopoulos, 1999). Pattern-matching was used to understand how the cases fit with the proposed conceptual framework (Miles & Huberman).

The conceptual framework was viewed as tentative and concepts were added or removed to find the best fit with the data (Eisenhardt, 1989). Eisendhard and Parkhe (1993) used the term dimension to identify the broader categories in the data and the term concept to identify finer conceptual elements. These terms will be used to identify the conceptual elements that emerged during data analysis. The same terminology will also be applied to the variables identified in the Sidani and Irvine (1999) framework. Thus, role formalization included in the organizational variable of the original framework (See Appendix C) will be identified as a concept in the organizational-level dimension in the framework.

Rigour

Yin (2009) suggested four criteria to determine the quality of case study research. They included construct validity, internal validity, external validity, and reliability. As the first criterion, construct validity was concerned with the correct operational definitions of the concepts being studied (Yin, 2009). In order to enhance construct validity, Yin (2009) advised to use multiple sources of evidence. The study called for data collection from different sources of information (e.g., time and motion, non-participant observations, etc.), different professional groups, different cardiology services and different geographical

regions. Thus, confirmation occurred when the data sources converged around the selected theory (Bergen & While, 2000; Yin, 2003).

Secondly, in descriptive case study research, the criterion of internal validity was concerned with the researcher's ability to make inferences about events. Yin (2009) suggested pattern matching and addressing rival explanations to increase internal validity. In the present study, the strategy of pattern matching was used most. The patterns were identified in the data by using the concepts of the adapted framework, and by comparing the findings across the cases to identify similarities and differences (Yin, 2009) in the role enactment, boundary work, and the health care team's perception of effectiveness. Yin (2009) also discussed the use of rival explanations to strengthen the case study findings. Purposive sampling of cases and participants helped to identify data to support alternative explanations (Yin, 1999) for the health care team's perceptions of effectiveness including organizational structures, context and team processes.

Thirdly, Yin (2009) suggested the criterion of external validity. In case study methodology, analytical generalization was used where findings were generalized to a broader theory (Yin, 2009). Yin (2009) argued that replication logic rather than a sampling logic applied to case study research (Yin, 1999, 2003). The identification and selection of multiple cases allowed for direct replication of the findings and the conclusions of the study were considered stronger (Luck, Jackson, & Usher, 2006).

Finally, as the fourth criterion, Yin (2009) described the reliability of the study as the steps that were taken to ensure that the operations of the study can be

repeated. Yin (2003) recommended that a research protocol be developed to ensure that all steps in the study can be reproduced. These steps were outlined in the previous sections. This was done to ensure the process of research was "logical, traceable and clearly documented" (Tobin & Begley, 2004, p. 392). A data collection schedule was developed and sufficient time was planned for site visits (Fisher & Ziviani, 2004; McDonnell et al., 2000). A case study data base for each case was developed using the computerized qualitative software to separate the case study data from the case study analysis and reports (Yin, 2009).

Several steps were planned to increase the trustworthiness of the study findings, and decrease the sources of bias. For the time and motion portion of the study, observer drift was defined as the change in recording over time (Fitzpatrick et al., 1996) and was a potential source of bias. Three strategies were included to enhance the reliability and validity of the time and motion study, and decrease observer drift. Comments were noted by the researcher in the comment box of the observation grid to describe the activities and ensure they were coded consistently during the course of the study. An observer was trained by the researcher to use and complete the tool (Fitzpatrick et al.), and the inter-observer agreement was estimated twice. In addition, the presence of the researcher over an extended period of time in the cardiology service helped to decrease ACNP and other team member reactions to being observed (Urden & Roode, 1997).

In the qualitative portion of the study, participants were recruited and selected for their knowledge of cardiology ACNP roles and their involvement in the health care team. The topics of the interviews were narrowly defined (Bender

& Ewbank, 1994). The focus groups were segmented and homogeneous (Freeman, 2006). The criteria to interpret the data were determined prior to data collection (Fisher & Ziviani, 2004). In addition, the interviews were transcribed by the researcher or a professional transcriptionist (Tuckett, 2005) and transcription quality was checked by the researcher to minimize transcription errors (Poland, 1995). The initial coding was done independently by the researcher. The coding of a portion of the transcripts was reviewed by the research team (Tuckett) during the pilot study and at the beginning of the main study. The research team included the doctoral candidate, thesis director, co-director, and members of the thesis committee. Peer debriefing was used to allow the research team to determine the adequacy and consistency of the coding by the researcher (Lietz, Langer, & Furman, 2006). Coding decisions were documented (Hanley-Maxwell et al., 2007). Member checking was used to clarify the meaning or intentions of participants during and after the interviews (Sandelowski, 1993). A follow-up interview was used to seek further clarification. These steps helped to create a 'chain of evidence' and clearly link the case study data to the analysis and the findings (Yin, 2003, p. 105). Finally, the time periods of the non-participant observations were long enough to document complete group interactions (e.g., patient rounds) and short enough to guard against observer fatigue (Bonner & Tolhurst, 2002). The following sections outline the ethical considerations and the steps taken to ensure confidentiality.

Ethical Considerations

Ethical considerations were of great importance and the need to protect the identity of participants was of particular concern (Öhman, 2005). The study received all the necessary scientific and ethical approvals from the three hospitals included in the study. Participants were informed that their participation in the study was voluntary, they could withdraw at any time and their refusal to participate in the study would not affect their present or future employment status. The consent form and demographic profile was reviewed at the first meeting with the researcher. Informed consent was obtained for all participants directly involved in data collection activities (Atwal & Caldwell, 2005). For participants who are on the periphery of the non-participant observation field procedures were outlined to inform them how to advise the researcher if they did not wish to participate in the data collection (Carnevale et al., 2008; Moore & Savage, 2002).

Various steps were taken to ensure confidentiality. All participants were asked not to discuss their participation in the study with others outside of the study (Gibson & Bamford, 2001). Data from institutional records, field notes, code lists were kept in the locked office at the School of Nursing of McGill University. Any identifying information was removed from the transcripts and data were collected and analyzed using professional titles or codes. Access to research files was limited to the research team. Data were kept strictly confidential, and were discussed only within the research team (Yauck & Steudel, 2003). Data will be kept for a period of five years and then be destroyed. The results of the study may be published; however, only the aggregated data and the

two case studies will be presented. Descriptors such as participant, health care

team member, intra-, inter-professional or management group were used to

discuss the study findings. Any feature that would permit the identification of the

participants was masked in reports and presentations which entailed presenting

data without using the specific professional titles of participants or linking

participants to organizations. The following section outlines the findings in each

case and the cross-case analysis.

Chapter 4-Findings

This chapter presents the results for Case 1, Case 2, and the cross-case analysis of both cases. The findings of each case and the cross-case analysis will be organized using the adapted conceptual framework (See Figure 1, p. 56). For each case, the findings will be presented in five sections: 1) case description, 2) structures; 3) ACNP scope of practice; 4) health care team scope of practice and boundary work; and 5) perceptions of team effectiveness. More specifically, the first section describes the characteristics of the case. The second section presents the structural dimensions and the concepts identified by the participants that affected the development of ACNP role components and role enactment, and the perceptions of team effectiveness of team members. These dimensions included health care system-, organizational-, team-, ACNP-, and patient-level concepts. The third section describes the ACNP role components and role enactment to understand the ACNP's scope of practice and the type of ACNP role that developed in the case. The fourth section outlines the health care team's role enactment and the process of boundary work among team members. The fifth section describes the team's perceptions of its effectiveness, and how the ACNP role affects the team's perceptions of its effectiveness. The next section presents the characteristics of Case 1.

<div align="center">

Case 1

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Case Description

Case 1 was part of a university-affiliated teaching hospital in a large urban area, and included a 29-bed cardiac surgery unit with six intermediary care step-

down unit beds. The service accepted primarily patients who had undergone cardiac or other surgical procedures. On average, two-thirds of the beds were allocated to cardiac surgery. Six hundred to 650 cardiac surgeries were performed annually by a team of three cardiac surgeons. The case also accepted off-service surgical services. The number of off-service patients varied daily and depended on the need for and availability of surgical beds elsewhere in the hospital. During data collection period, the ACNP followed 12 to 18 patients each day.

A front-line manager was responsible for the service and a nurse educator planned and completed in-service education with the nursing staff. Two ACNPs worked in the service and they were responsible for the care of the cardiac surgery patients only. One ACNP had been on a personal leave for a portion of the data collection period. For the most part, participants described their experiences working with both ACNPs and the plural form "ACNPs" will be used in the text.

There were 57 nurses assigned to the unit and one administrative agent. Thirty nine (68%) nurses had a college diploma, 16 (28%) had a baccalaureate degree, and the two (4%) ACNPs had a Master's degree and specialist certification. Thirty five nurses (61%) had less than 5 years of experience, 12 (21%) nurses had 5 to10 years of experience, and 10 (18%) nurses had more than 10 years of experience. The nurse to patient ratio was 1:5 on the unit and 1:2 in the step-down unit. The turnover rate for nurses in the last year was 26%.

Minimal physician coverage and the lack of a residency program were drivers for the introduction of an ACNP role in the service. The service had not scored very well in a previous patient satisfaction survey for questions related to

the availability of their physician to answer patients' questions. The ACNP role was introduced in the setting in September 2006 to provide greater continuity of care to hospitalized patients, and to ensure that any patient discharge issues were identified sooner during the hospitalization. A number of nurses in the team were new to the nursing profession and they lacked specialty-specific knowledge to identify complications early in the hospital stay. Participants reported the average length of stay ranged between seven to 10 days for patients with uncomplicated post-operative recovery.

A medical student was completing a four week rotation at the time of data collection. Medical students were present 9 months of the year. They assessed an average of 3 to 4 patients per day, charted progress notes, and removed temporary epicardial pacemaker wires for one patient per day. The ACNPs' work was reorganized when a medical student was present as some of the patients to be assessed were assigned to the medical student's care as a learning activity. The ACNPs also met with the medical student to discuss the division of work and patient care priorities. The following section describes the key structural dimensions that were identified during the interviews.

Structures

Participants identified several structural dimensions they believed affected ACNP role enactment within the health care team and perceptions of team effectiveness. The dimensions were identified at the health care system-, organizational-, team-, ACNP-, and patient-levels.

Health Care System-Level

The health care system-level dimension included legislation, the licensing board policies, funding considerations, and unionization. Participants believed these system-level concepts influenced the day-to-day enactment of the ACNP role and affected perceptions of team effectiveness. The following sections outline the participants' views of these concepts.

Legislation. Participants questioned the health care system's readiness to enact an ACNP role. They explained that the changes to the scopes of practice of different health care providers had not occurred as they had expected following the passage of Bill 90.[3] The review of organizational documents revealed that work had been undertaken to outline the status of professional practice activities across professional groups in the organization. The work group identified changes that needed to be made to the scope of practice of specific professional groups to be more closely aligned with Bill 90. Participants believed that a lack of targeted funding in certain areas and insufficient momentum to effect change influenced the slow process of change in the scopes of practice of different professional groups in the organization.

Bill 90 hasn't happened at all. That's just it, it hasn't happened in any other area [professional groups in other areas of the hospital] (1_P 32).

Participants pointed to the provisions of the law that stipulated that the establishment of the primary diagnosis remained the exclusive responsibility of

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[3] Bill 90 was passed in 2002. It mandated changes to the scopes of practice of 11 different health care professions, and encouraged greater collaboration among providers to better meet the healthcare needs of the population.

the physicians and highlighted how this complicated the delegation of prescriptive authority:

> *Oh, my God! They [*the Council of Physicians, Dentists and Pharmacists, (*CPDP)] told us: you're doing diagnosis. Then, we talked about differential diagnosis… This was another major irritant for the [CPDP] (…) The OIIQ didn't want to hear about diagnosis or differential diagnosis…. And the [CPDP] didn't want to hear about the possibility of fluid overload* (1_ P 4).

Licensing board policies. Participants discussed the negative effects of the divergent medical and nursing licensing boards' positions on ACNP role enactment within the health care team. Participants described how they had developed a number of documents to support ACNP practice and transfer prescriptive authority which were refused by the CMQ or the OIIQ. Participants believed they were caught between the licensing boards' positions. The following quote exemplified a number of comments made by participants:

> *The OIIQ says no, the Collège des médecins says yes. Internally we're told: go through the Collège des médecins. It's like we're caught between the OIIQ and the Collège des médecins, because for this to happen internally, it has to be in compliance with the Collège des médecins. But the OIIQ doesn't want compliance with the Collège des médecins* (1_P 31).

Participants believed the licensing boards needed to develop clear documentation to facilitate the introduction of the ACNP roles. A number of participants pointed to the lack of a template to guide the transfer of prescriptive

authority to ACNPs for those working to develop the medical directives. Participants described a difficult process in which documents were rejected at the level of the CPDP because of unclear licensing board guidelines.

> *I don't believe that the OIIQ did its job properly – far from it, in retrospect. The structure that should have been put in place … document structures should have been developed for the medical care rules, the drug administration rules. This should have been discussed in the hospitals* (1_P 29).

Funding considerations. Funding considerations for ACNP roles were identified as a barrier to ACNP role enactment in the organization. The ACNP positions were partially funded for a period of two years and then were totally subsidized by the Nursing service's operational budgets. In addition, participants believed the low earning potential for the roles in Quebec decreased interest in the ACNP role and limited the candidates who could be recruited into the roles. A number of participants believed the ACNPs were not paid according to their level of responsibility in patient care.

> *First and foremost, the primary concern was how the position was going to be funded which remains an issue to this day. We received funding for a two year period and then we would need to make a decision that we would carry on with the operational funding of the position after two years which could mean that we would have to cut a nurse from somewhere else in order to continue to fund these positions. That was a very big preoccupation that I had and continue to have* (1_P 28).

Unionization. Unionization was not seen as a facilitator in the development of the ACNP role. It was viewed by some participants as a barrier to ACNP role enactment for a number of reasons. Participants cited the need to negotiate local agreements with the union representatives if ACNPs practiced in units that were outside of their assigned service such as other in-patient units or out-patient settings. Some participants questioned if the union understood the ACNP role and represented the ACNP's interests adequately. They cited difficulties managing overtime hours and the need for greater flexibility for the ACNP role than the union agreement could provide. These participants linked the unionized status with the low earning potential of the ACNP roles, and difficulties with the recruitment of ACNP candidates. Some participants believed the ACNP role would not develop to its full potential because of its unionized status.

Organizational-Level

Participants believed the delegation of prescriptive authority, leadership, a common understanding, and role formalization affected ACNP role enactment, boundary work, and perceptions of team effectiveness. These concepts were included in the organizational-level dimension, and are described below.

Prescriptive authority. The delegation of prescriptive authority for medications and medical directives followed a recognized pathway within the organization's administrative structure. The lists of medical directives and medications that could be prescribed by the ACNPs were elaborated with specifications for prescription and follow-up. The documents were jointly developed by the medical and nursing executive and the practitioners using the

directives. The documents were then presented to the CPDP and the Board of Directors for approval.

A number of participants believed the acquisition of prescriptive authority was a political process. Participants described how a slow transition and small steps were needed for the CPDP to accept the ACNP role in the organization, share certain prescriptive functions, and decrease concerns about potential liabilities of the ACNP role. A number of participants discussed potential liability issues with the ACNP role but two participants talked about these concerns at greater length. They were unclear about who "owned" the patient care decisions that were made. They were unsure where the ACNPs fit in the organization's reporting structures. The following outlined the concerns:

> *Where is the nurse practitioner [in the reporting structure]? Is the NP under nursing or is the NP under medicine? Where are they? That's one of the other problems that I see exists because they are under nursing, I presume. Yet, the person responsible for them is a doctor. If a NP makes an error, the doctor will end in court* (1_P 32).

Limited prescriptive authority had been transferred to pharmacists under specific circumstances in the organization but no pharmacist worked with the ACNPs in the service. The ACNPs wrote all the medication orders as verbal orders following rounds with the physician because prescriptive authority had not been transferred to them. Some participants talked about the risk of creating the role of an "*executive secretary*". The verbal orders needed to be signed by the

physician within a day or two. Some of the issues surrounding the delegation of prescriptive privileges were described in the following quote:

Verbal orders are not a problem because all [registered] nurses can take verbal orders. That never really was a problem. It was primarily at the initiation of a therapy or changing of a therapy without an informed consent of the physician prior to that order being written and that is where the problem still is unclear. Can they actually go and change the dose? Can they add an antibiotic? Those are some of the things that we are still not foolproof. If it's a verbal order because they rounded and have agreed upon it together, it's not a problem (1_P 19).

The ACNP prescribed medications as a verbal order following extensive rounds to detail patient care priorities and come to an agreement with the physician on the plan of care. Such a strategy allowed the nursing staff to provide patient care while practicing within the hospital's policy. The ACNP's lack of prescriptive authority for medication was an important issue in this case and affected the team's perception of effectiveness:

We (nursing staff) are focused on this prescription because it's a huge obstacle that slows us down and we feel that. We are always on a high pace [of work]. When we get slowed down, when we hit this barrier, this obstacle, then it's because of this prescription. [Nursing staff is] more focused on that because once that's barrier is lifted off, I think things will go much better, and more smoothly (1_P 26).

In addition, the prescriptions for discharge medications could not be written by the ACNPs even though they had a valid prescriber number that was recognized by the Régie d'assurance maladie du Québec. The field notes and interviews identified this delayed patient discharges because the nursing staff had to wait for the physician to be available to sign the patient discharges for the day. The field notes indicated the discharge process could not be started before noon on some days because the physician was not available. The repercussions related to the delays in the time of patient discharges were felt in the service because it was difficult to move patients from the step-down unit to the ward. Other units that interacted with the service such as the intensive care unit also experienced greater delays to transfer their post-cardiac surgery patients to the step-down unit and they felt also the repercussions of the delays to discharge patients.

The prescriptive authority for the medical directives had been accepted in the hospital, and these activities had been transferred to the ACNPs. A review of hospital documents and interviews indicated that the ACNPs could obtain a blood sample from the radial artery, remove a central venous access device or a peripherally inserted central catheter, insert and remove a duodenal feeding tube, remove temporary epicardial pacemaker wires, prescribe and interpret diagnostic tests including an abdominal flat plate, chest X-Ray, blood tests, 12-lead electrocardiogram, and cardiac echography.

Leadership. The leadership necessary to introduce the ACNP role was discussed by a number of participants, and was believed to influence the day-to-day enactment of the ACNP role. Participants recognized leadership when a

member of the health care team was instrumental in shaping a portion of the ACNP role. The nursing manager and the physician introducing the ACNP role were considered key drivers of ACNP role implementation and the day-to-day enactment of the role. The identification of a key player or a champion within the organization to implement the role was viewed as a facilitator of ACNP role enactment within the team by participants.

The interviews and field notes revealed that the front-line manager consulted with the nursing managers and made suggestions to set the priorities for ACNP role enactment in the team. The decisions about ACNP role priorities remained the responsibility of the upper-level nursing managers. This added additional steps in the decision-making process for the nursing managers introducing the ACNP role within the team. Participants reported they needed to consult with one another more often before making a decision about nursing roles in the team because the front-line manager was responsible for the educator role in the team while the CNS and ACNP roles in the team were the responsibility of the upper-level nursing managers. Nursing managers believed they needed to have a broader view of the effects of the ACNP role within the team and the organization, and consider how the role would affect the team, other roles, and other services in the organization.

An inconsistent message from the nursing and medical leadership was perceived as a barrier to the enactment of the ACNP role. Nursing managers were concerned with enacting the nursing component of the ACNP role while most physicians wanted to enact a physician replacement role and maintain a high

percentage of the ACNP's time in direct patient care. The following quote exemplified the debate:

> *I think this role was created for the wrong reasons… The medical shortage was often the source or the origin of the interest in creating ACNP positions. However, once these roles are developed with advanced practice, this can be continued for the right reasons. But it's off to a clumsy start, because the medical-nursing alignment wasn't easy to achieve: on the medical side, they had a very specific idea of what they wanted, which was a mini-resident role – we must have no illusions about this* (1_P 27).

The efforts of nursing managers to facilitate the enactment of the ACNP role were not always well recognized by members of the health care team. A number of participants talked about the need for nursing to "*put its foot down*" in order to advance the implementation of all the components of the ACNP role. Conversely, the support of other physicians working with the ACNPs above and beyond the support of the physicians working directly with the ACNPs was seen as a key facilitator that led to greater ACNP role enactment and acceptance in the organization. In particular, the support of consulting specialists was very helpful:

> *The specialists (…) really helped to obtain some progress on ACNP roles in the hospital. … the [sector] head told the Director of Nursing for the [sector]: when you have a well-written consult, with a physical examination that makes sense and contains all the information, and then you look at the name, you find it's an ACNP* (1_P 2).

Common understanding. Participants believed that nurses and physicians did not share a common understanding of the ACNP role and patient care situations. The first difference in perspectives between the nursing and medical leaders was elaborated in the previous section. As a second difference, participants believed nurses and physicians used a different language when trying to communicate with one another about patient care situations. Similar terms meant something different to members of each professional group. Participants believed this complicated the process of developing medical directives, acquiring prescriptive authority, communicating with the CPDP, and affected the enactment of the ACNP role:

> *When they had talked about admission, just the nursing terminology versus the medical terminology, there were disagreements. So when we said: "we'll do admissions"... But for nurses, no matter where the patient comes from, you do your nursing admission, your data collection, etc. The [CPDP] didn't see it like that at all. For them, what an admission really meant was: you don't have an official diagnosis yet* (1_P 29).

Some members of health care team believed the ACNPs were not clear enough about their role and they needed to articulate the role components and responsibilities more clearly for others in the team and in the organization to understand what the role involved. The lack of role clarity was believed to be a barrier to the introduction of the role in the team. The following outlined participants' views:

There are a lot of uncertainties and if they are performing certain roles, I

think that it would be advantageous to better outline and inform more

people of their roles. But because it is limited to one unit, with one

subspecialty, I don't believe many people know about it (1_P 19).

Role formalization. Role formalization was related to the written

documentation and policies in the organization that described the activities and

responsibilities included in the ACNP role. Participants identified the use of

written material such as a job description or policies that clarified ACNP scope of

practice as a facilitator to the introduction of the ACNP role in the health care

team.

The preoccupation was that we wanted to have nursing interventions

complementing NP interventions for patients and families who were being

treated by our NPs. The job descriptions would include both to give scope

of practice to the NP one that would value both her NP interventions and

her nursing interventions with patients and families. The ACNP would

have some protected time to provide those nursing interventions (1_P 28).

Team-Level

The following sections describe the team-level dimension. Participants

identified coverage, co-location, a critical mass, and rewards in this dimension.

Coverage. The ACNP coverage followed an 8:00 AM to 4:00 PM and

Monday to Friday schedule. A number of participants expressed the hope that the

ACNPs would expand their coverage of the unit. Many participants agreed that

greater coverage was a way to improve patient care. They recognized that a

greater number of ACNPs was required to increase coverage. However, the nursing and medical leadership were divided on the coverage that would be required by the ACNPs. Physicians were hoping to implement 12-hour shifts and extended coverage until at least 8 PM with on-call, weekend and night shift coverage as soon as possible. However, the insufficient number of specialty-specific cardiology ACNPs trained in the province made it difficult for nursing managers to recruit ACNP candidates. Nursing managers were worried that expectations about coverage would overextend the ACNPs, increase their workload, and force the ACNPs to leave their position. In addition, participants disagreed on how they defined coverage. The following quote described the different views about coverage:

> *[The nursing manager and physicians] were talking about medical coverage and how [the physicians] define medical coverage is different than the way [the nursing manager] define medical coverage, especially on the off shifts (...). [The physicians] are accessible if there is an emergency case but nevertheless, they are not physically on the unit.* (1_P 26).

Co-location. The co-location of team members and the ACNPs involved working in close proximity or a close physical space. Co-location was believed to facilitate ACNP role enactment within the team. Participants reported that working in close proximity or in the same office facilitated communication and improve collaboration among team members. The following exemplified participants' views of co-location:

The closer people are, the more people talk to each other. The easier this is, the more easily communication is established (1_P 16).

Co-location was believed to enhance the ACNPs' availability and presence in the team. The greater availability and presence of the ACNPs in the team was a key contribution of the ACNP role to team functioning and perceptions of team effectiveness. A number of participants believed the ACNPs were more accessible to the team because the office was located on the unit. Participants believed the ACNPs' presence on the unit offered the team greater stability, made the ACNPs an important source of information, and facilitated the orientation and integration of new medical and nursing team members to the unit. These participants believed that greater availability of the ACNPs as compared with the availability provided by the physicians was a key element to improve the care for patients and families and solve patient care issues faster. The following illustrated many of the comments:

> *First of all, they are very approachable, they are available, and they are accessible. Their office is right there. If a nurse wants to speak to a surgeon in his office, she has to walk through a gazillion pavilions in order to get here and talk with him or talk to him over the phone. You know that the NP is going to be here from 8 in the morning until 4 so you get a lot of things done and I think that, the fact that it happened quite often that we had emergency situations on the floor and the NP was there but the doctor wasn't. So that was a good thing* (1_P 10).

Critical mass. Participants believed that a "critical mass" or minimum number of ACNPs was required to enact all the components of the ACNP role. Participants had experienced working with one or two ACNPs. They described how the ACNP working alone shouldered additional responsibility as compared to the time period where two ACNPs were working in the service. Participants described the ACNPs as "having a full plate" and how activities needed to be streamlined when only one ACNP was present. Certain activities were curtailed or their enactment was postponed when the ACNP was working alone. These activities included completing the pre-operative assessments on other units, wound care in the outpatient setting, post-operative follow-up telephone calls and research activities. Participants described how the ACNPs needed to deal with a much larger number of interruptions when one ACNP was working alone. They believed this could affect the effectiveness of the ACNPs role.

Rewards. Participants described a number of rewards related to working with the ACNPs. They felt the ACNP role freed up their time to complete other work activities. They felt the ACNPs were there to help them, support them, and act as a resource person. Some described feeling more comfortable and "less stressed" in the team when the ACNPs were present while others were more satisfied with the patient care they had provided because of the ACNPs' involvement in patient care. The following highlighted the views of a number of participants:

Regardless of who [the physician] is there that day, I find that when [the

ACNP] is there, this eliminates stress. We know that she's there to help us

in this role, and she helps us a lot (1_P 8).

Acute Care Nurse Practitioner-Level

Participants commented on the importance of the ACNPs being well

organized workers.   Assertiveness was also believed to be a helpful personal

characteristic since the ACNPs were enacting a new role in the team and they

needed to create their place in the team. According to some participants, the

ACNP-level dimension related to the level of education and the type of ACNP

training were also important considerations because they believed the ACNPs'

formal preparation to assume role functions increased their credibility with other

team members.

Patient-Level

A number of participants described the changing demographics of the

patient population and how an ACNP role had improved patient care in such a

context. In particular, participants reported that the patients undergoing

procedures were older, had more co-morbidity, and required more follow-up care.

The following quote typified what participants believed about the ACNPs'

contribution to patient care in such circumstances:

We also had elderly patients in the hospital, (…) so that we had to deal

with different chronicity problems, population aging, ethical dilemmas …

and this often isn't our medical strong point, and often a [nurse]

practitioner's advanced practice could be very beneficial as well

regarding such clienteles. We didn't have difficulty understanding what

could be seen as a role, and the increased value of the role of an ACNP in

cardiac surgery (1_ P 27).

This section identified structural dimensions that affected the enactment of the ACNP role in the health care team and perceptions of team effectiveness. Barriers to and facilitators of the introduction of the ACNP role were identified by participants. The delegation of prescriptive authority and a consistent message from the medical and nursing leadership appeared to exert an important influence on the enactment of the ACNP role and affected the team's perceptions of its effectiveness. The following section outlines the ACNPs' scope of practice.

Acute Care Nurse Practitioner Scope of Practice

Participants believed the ACNPs' scope of practice was determined by the laws that regulated practice and how the joint OIIQ/CMQ guidelines were implemented. Participants cited the joint OIIQ/CMQ position statement and the literature as guides to the development of the ACNP role in the team. They described difficulties to balance the suggested 70% clinical work and 30% non-clinical role of the ACNPs' scope of practice. They believed the differing views of the nursing and medical leaders in the organization restricted the ACNPs' scope of practice. The following quotes highlighted some of the debate around the ACNPs' scope of practice:

The concerns were that if they have a case load, and they act as if they

were mini-residents, then the risk is that they become mini-residents and

that there is no more added-value from nursing (…) So the question was:

how will we find the time to be able to consider this 30% nursing (1_P 27).

[The ACNPs aren't] seeing patients in clinic, neither for admission or

follow up. [The ACNPs] doing 8 to 4. One day is restricted to nursing

work. Very often during the day [the ACNPs] are in meetings dealing with

nursing work, including teaching or supervising a student or another

person which is supposed to be done by nursing educators (...) They

should be concentrating on patient care (1_P 22).

The ACNPs' scope of practice included four role components and the day-to-day enactment of the role as a physician extender or an advanced practice nursing role. Subsequent sections describe each role component and how the ACNP role was enacted.

Role Components

The ACNP role components included the research, educator, administrator, and practitioner roles (See Figure 1, p 56). Although personal time was not an actual ACNP role component, it occupied 8.2% of work time. This represented almost 39 minutes for mealtime and other personal activities during the work day which was below the allotted time period for mealtime in the collective agreement. The list of activities and the proportion of ACNP time spent in each role component were summarized in Table 1.

Table 1. Case 1 Acute Care Nurse Practitioner Activities / Category

Category	# - Activity	Time (min)	Percent (%)	Total % /category
Direct care	1- Physical exam/ assessment	118	4.7	
	4- Order/Inter. Labs, X-Ray, ECG	92	3.6	
	6- Drains, wounds, culture	34	1.3	
	7- Therap relationship patient	38	1.5	
	8- Therap relationship family	53	2.1	
	9- Supportive communication	28	1.1	
	10- Teaching-education	9	0.4	
	11- Meds (not IV)	119	4.7	
	12- Meds (IV)	10	0.4	
	13- Central venous catheter care	1	0.0	
	14- Diet/feeding	14	0.6	
	16- Chest tube/ suture/packing	4	0.2	
				20.5
Indirect care	17-Documentation	449	17.8	
	18- Discharge planning	101	4.0	
	19- Participate/lead rounds	525	20.8	
				42.6
Education	20- Coaching/teaching nursing	21	0.8	
	21- Coaching/teaching residents	91	3.6	
				4.4
Administration	22- Admin. meeting	106	4.2	
	24- Care coord./ other org.	73	2.9	
	25- Care coord/ within org.	176	7.0	
				14.1
Research	26- Participate research/ nsg	144	5.7	
	27- Use research in practice	8	0.3	
	28- Participate research/ other	106	4.2	
				10.2
Personal Time		207	8.2	
				8.2
Total		2527	100.0	100.0

Research. The primary activities included in the research component of the ACNP role included writing an article for publication, supervising the development of a graduate nursing student's research project, and assisting a research nurse with the development of a new data base for medical research. The field notes and observations identified time spent searching web-based

information systems to answer clinical questions from the nursing staff, and

ensure that clinical practice was consistent with current practice guidelines. Three

of the four research activities occurred during the time and motion and accounted

for a total of 10.2 % of work time. A number of participants agreed on the need

for a research component in the ACNP role but they were concerned that ACNPs

did not have sufficient time to enact a research component that included medical

and nursing research. Some participants believed it was a challenge to

consistently integrate a research component during work time and they reported

completing these activities outside of their work hours.

Educator. The educator role included teaching and coaching activities

with nursing staff and a medical student. The educator role made up 4.4% of

work time. Much of that time (3.6%) was spent in teaching activities with the

medical student to discuss technical tasks and establish priorities for patient care.

In the interviews, many participants believed the educator role component was a

highly valued part of the ACNP role, and helped to increase the nursing staff's

knowledge level. The increased knowledge of nursing staff was identified by

participants as a priority for the service given the number of nursing staff with

limited work experience in the clinical specialty. A number of participants

described how the ACNPs adapted the teaching activities to the experience level

of the nursing staff with whom they interacted. The field notes and observations

indicated the ACNPs had developed short teaching activities with the nurses

during patient rounds and took advantage of brief "teachable moments" to share

clinical information, X-Ray results, clinical assessment skills, and increase the

nurses' knowledge of pathologies, medications, surgeries, or common

complications. The following exemplified many of the quotes:

> *There is someone for advice, there is someone to help orient me* (1_P 25).

> *[When the ACNP looks at the X-rays, the ACNP says:] Look, that's what's happening. That's why the patient looks like this. I think this leads the nurses to develop a few more signs in observing their patients. It lets them have better knowledge, make more connections with the patient, and use their knowledge and the patient health history* (1_P 6).

A few participants strongly disagreed with the educator component of the

ACNP role. They believed that other team members, such as the nurse educators,

should fulfill this mandate. However, a number of participants described the

unique contribution of the ACNPs to staff education and identified the use of in-

depth assessment skills, advanced clinical knowledge, and complex decision-

making skills as a key ACNP contribution. In order to select the best teaching

resource, the nursing managers reported they needed to determine who was best

suited to complete educational activities with the nursing staff between the

educator, CNS and ACNP roles. A number of participants agreed there was

overlap between these roles with regards to education. Nursing managers

explained that they based their decisions on the specific knowledge required for

any given task. Participants believed that teaching about hospital policies and

procedures was of the realm of the educator and the ACNP roles while

organizational-level initiatives such as clinical pathways and greater

standardization of patient care for specific patient populations were under the

responsibility of the CNS role. Specialty-specific teaching related to patient care and cardiology was believed to be the ACNPs' responsibility. The following quote highlighted some of the ACNPs' contribution to staff education:

> *Evaluate things… like incisions in the legs, bruising. They [the ACNPs] showed me how, and [the ACNPs] teach the cardiac surgery course; they explain a lot of things to us. There's a teaching aspect to this that I find very important* (1_P 8).

Administrator. The administrator role component in the time and motion grid included four activities. Three of the four activities occurred during the time and motion portion of the study and made up 14.1% of the ACNP's work time. Administrative meetings made up 4.2% of work time and the care coordination activities totalled 9.9% of ACNP work time. The care coordination activities (activities # 24 and # 25 in time and motion grid) were completed on the behalf of specific patients but away from the patients' bedside. The interviews and field notes highlighted that care coordination activities may have increased during the data collection period because of a new outbreak of vancomycin resistant enteroccocus (VRE) on the unit. These were the first cases in over a year. This required more care coordination, discussions with team members, and patient transfers to relocate patients to a VRE cohort unit.

The ACNPs spent no time on the development of protocols during the time and motion portion of the study. Participants believed the small number of ACNPs and the changes that had occurred in the leadership of the physician group in the months prior to the data collection had influenced this occurrence, and

slowed the introduction of the ACNP role. In addition, the ACNP who had been working alone had been unable to update documentation related to prescriptive authority because of an increased workload and the large portion of time spent in direct patient care activities.

Practitioner. The practitioner role included direct and indirect care activities. Sixteen activities of direct care were included in the time and motion grid, and twelve activities occurred during the time and motion encompassing 20.5 % of work time. Three activities of indirect care made up 42.6% of work time for a total of 63.1% of time spent in the practitioner role. The most frequent activities in the direct care portion of the practitioner role included physical exams and assessment followed by the monitoring and prescription of medication and laboratory tests (excluding I.V.) (See Table 1). Participants described how the ACNPs followed-up test results more thoroughly, completed in-depth physical assessments, and monitored medications more closely than the physicians. Many felt the practitioner role component was a key contribution of the ACNP role to improve the quality of patient care and the team's effectiveness. A number of participants believed the team's effectiveness could be improved if the ACNPs were authorized to practice invasive technical activities included in the OIIQ/CMQ guidelines. They believed patients were subjected to longer delays in treatment because activities such as a thoracenthesis and the insertion of central lines could not be done by the ACNPs. The following illustrated participants' views of how the ACNPs improved the care of patients:

I see how she sees patients, how she examines them. She takes her time

and examines the patient. This helps a lot if we have questions (1_P 3).

[The ACNP] is the one who does it; [the ACNP] will really follow-up all

the tests. [The ACNP] really evaluates all the blood work (1_P 8).

Almost 43% of work time was spent in indirect care activities.

Participating or leading patient rounds with physicians or nursing personnel

accounted for approximately one fifth of the ACNPs' work time. Field notes and

comments in the time and motion grid indicated the time spent rounding involved

the ACNP reviewing patient care issues with each treating physician and/or the

nurse caring for the patient.

Documentation occupied almost 18% of the ACNP's work time.

Documentation included writing progress notes in the patients' chart as well as

reviewing patients' charts, and preparing discharge summaries. Participants

identified the crucial role of the ACNP's clear progress notes in improving

continuity of care and the follow-up of patient care issues. Most nurses in the

team worked on a rotation basis and they reported they had a clear review of the

patient's condition and plan of care by reading the ACNPs' progress notes when

they were working on the evening or the night shift.

The field notes indicated that the ACNPs completed a log or "workbook"

with a summary of each patient's health information. The ACNPs workbook was

detailed, and included patient demographic information, diagnosis, procedures,

complications, discharge plans, and a description of relevant patient and family

issues. The patient information contained in the workbook was used by the

ACNPs to dictate the medical summaries at the time of the patient's discharge. The summaries were sent to the physicians who treated the patients in the community. The interviews revealed that the dictations served a dual purpose where the physicians' list of dictations was taken over by the ACNPs, and physicians in the community received an update of the patient's procedure and post-operative care more quickly. The ACNPs could not dictate summaries for patients who were deceased.

Acute Care Nurse Practitioner Role Enactment

The ACNP role enactment took into account what the ACNPs did on a day-to-day basis and how the different role components were integrated. The interviews, field notes, and the time and motion portions of the study helped to identify daily work routines that had developed in the team. The ACNPs listened to the hand-off report between the day and night shift nurses for any changes in patient status and reviewed the patients' charts to complete the workbook. They answered the night nurses' questions about patient care issues at this time. The patients were assessed by the ACNPs in the morning and any issues were reviewed with the physician on service. Care priorities were established with the physician when rounds were completed. The timing and the length of rounds were highly variable and depended on the physician on service.

Overall, the ACNPs completed an average of 17.6 activities per day. The average time spent in an activity was five minutes with a range of one minute to 96 minutes. Fifty one percent (N=242/473) of activities lasted two minutes or less during the day. Further, the pace of work changed over the course of the day. It

was faster before noon than after noon as almost 70% (N= 329/473) of the changes in activities occurred before noon. Activities lasted for longer periods of time in the afternoon. The afternoon work time was used to follow-up on issues with patient and families, complete discharge planning, and attend to administrative activities.

Participants believed the APN component of the ACNP role was well-developed. The interviews and field notes provided a number of examples when the ACNPs integrated nursing interventions into their practice. The ACNPs assessed patients with difficult post-operative recoveries and difficult family situations. They included a complete health history, physical assessment, post-operative follow-up, and evaluation of poorly controlled pain symptoms or other issues. The field notes detailed the ACNP's advocacy for the patient and family needs, the use of supportive communication, and a flexible approach to care to facilitate the delivery of patient care.

The ACNP role appeared to be more of an expanded nursing role rather than an integrated ACNP role with a medical and a nursing component because the ACNPs assumed many of the APN components of the role but few of the NP activities. The interviews, non-participant observations, and field notes indicated the ACNPs needed to consult with physicians for patient care decisions that could be contained within their legislated scope of practice. The ACNPs had very little decision-making authority because of a lack of structures to formalize the ACNP role in the organization. Participants believed this created an opportunity for ACNP role enactment to change depending on the physician who was on service.

The field notes and interviews detailed how the ACNPs provided patient information to the physician who completed rounds, made patient care decisions, and charted patients' progress. At other times, the ACNPs actively participated in patient rounds, assessed patients and charted their progress when another physician was on service.

Participants recognized that the enacted scope of the ACNP role was restricted:

> *We still are in a position three years into the implementation of the role where the prescription of medications has not yet been approved by the [CPDP]. The NPs are actually not exercising their full scope of practice just yet* (1_P 28).

They believed the medical component of the ACNP role was underutilized because prescriptive authority for medications and certain diagnostic tests or procedures had not yet been granted. They described the ACNP role as a relief for the physicians' workload, doing what the physicians did not want to do, and "*scut work*" (1_P 25). Participants described how some team members wanted to retain control over patient care decisions, and limit the ACNPs' scope of practice. These team members attempted to structure and tightly monitor the ACNP role. Some participants believed this level of control over the ACNP role enactment negatively affected the team's effectiveness.

Health Care Team Scope of Practice

Participants in all of the professional groups described core activities that were unique to their role and peripheral activities they shared with the ACNPs.

Some groups such as the respiratory therapists and dieticians reported very little overlap with the activities they shared with the ACNPs. With the respiratory therapists, there was potential overlap with airway management activities. There was also a potential overlap between the ACNPs and the dieticians regarding nutritional support or assessment even though dieticians did not need a prescription to intervene with patients. The following sections described where the boundary work occurred around these shared activities.

Boundary Work

Boundary work occurred across professional groups. There was much agreement among participants on the activities involved in boundary work and where the boundary work occurred between each group. For the purpose of the study the intra-professional group had been defined as the professionals working within the nursing group while the inter-professional group included the members of the health care team outside of the nursing group. As boundary work occurred at the borders of each professional group, participants will be identified using their professional group and a number to make it easier to understand how and where boundary work occurred.

Participants believed the system-wide changes in health care that were proposed with the passage of Bill 90 made it more difficult for ACNPs to take on different aspects of their role and this complicated boundary work. Participants believed boundary work did not occur in isolation, and unclear structures such as a lack of prescriptive authority for medications and medical directives hindered

boundary work across professional groups and with other services in the organizations.

> *I think the other thing that is difficult for the ACNPs is they're at a time*
> *when other specialties are taking on new roles. Not only is the NP. So you*
> *are there and the pharmacist is now getting the right to prescribe things.*
> *The technologist is now able to actually set up IVs and give drugs* (1_Inter
> 7).

Boundary work between the ACNPs and members of the health care team appeared to be a process that evolved over time and moved through a series of steps in order to be successful. They talked about the need to "create space" for the ACNP, the loss of valued functions, the development of trust among the ACNPs and team members, the importance of interpersonal dynamics, and the passage of time as key concepts of boundary work. Each concept is described at length in the following sections.

Creating space. The need to create space for the ACNP role was particularly salient for the team that was already in place. Participants described how the ACNPs needed to integrate within the intra-professional group. They identified boundary work between the ACNPs and the CNSs around patient evaluations and follow-up, education for nurses, research, and academic activities. Boundary work around nursing staff education was also shared with the nurse educator. One participant who had successfully created new boundaries with the ACNPs noted that it was important to be comfortable with one's own limits and be able to communicate these limits to others for boundary work to occur.

The nurses recognized the need to make space for the ACNPs.

> *I know that for them at the beginning there was an adjustment. It was just*
>
> *an adjustment to that... to getting used to sharing the space more or less*
>
> (1_Intra 12).

The staff nurses believed little boundary work needed to occur with the ACNPs because there was little overlap in their roles and they shared few activities. The nurses described how the ACNPs were welcomed with "*open arms*" because they filled a gap in patient care left open by the limited physician presence. The nurses saw little overlap between their role as nurses and the ACNP role because they believed the ACNP role was a physician replacement role. Some participants described potential overlap between the nurses and the ACNPs regarding patient monitoring and assessment. The nurses believed the ACNPs had more in common with the physician's role than with the nurse's role.

> *There is more overlap with what the physicians do, it (the ACNP role)*
>
> *doesn't overlap very much with our tasks* (1_Intra 8).

Loss of valued functions. Participants described specific instances of lost role functions following the introduction of the ACNP role in the health care team. These losses were described in the context of the professional groups, and appeared to be group-specific. Within the intra-professional group, boundary work occurred most and was more difficult with RNs who had greater experience on the ward. Participants described how experienced RNs lost status within the team and with the physician group because the physicians now sought out the ACNPs for information. Following the introduction of the ACNP role, the

experienced RNs were no longer the only source of key patient information. A number of participants described how the practice of experienced RNs had evolved over time to compensate for the limited availability of the physicians. These RNs lost direct interactions with the physicians and made fewer patient care decisions that were outside of their recognized scope of practice.

Participants also described difficult boundary work related to the use of the term "super nurse". They believed the use of the term "super nurse" created a barrier to boundary work by portraying the staff nurse as inferior, and elevating the status of the ACNPs by saying they would "save the health care system". Participants believed it took away from the role of the experienced nurses in the team. In the early phases of the introduction of the role, participants reported the ACNPs countered this by remaining supportive of the nurses' needs, and listening to their concerns. Members of the management group reported greater difficulties marketing the ACNP role to nurses because of the use of the term "super nurse". This also made it more challenging for other members of the health care team to accept the ACNP role. The following quote summarizes many of the difficulties:

> *They are there not only to save the health care system, but it could be said that what everyone understood is that they're going to prescribe medication. It's as if prescribing were the height of competence. This will raise another dynamic for the role of nurses: Why would I take those prescriptions?... We're trying to sell the nurse's value-added role in advanced practice, the value added of teaching on the floor, of having*

resources, a background, continuing education. That's how we sold it. We

worked a lot on that. (1_Manag 4).

Participants believed the introduction of the ACNP role within the intra-professional team was easier because the role was "*phased in*".   According to participants a step-by-step process may have facilitated the boundary work with the nurses. Activities such as prescribing tests or writing verbal orders were authorized after the ACNP role was first introduced in the team. Participants believed this gave the nurses an opportunity to see how the ACNP role was enacted, and how the role could help them provide patient care rather than simply adding a team member with additional prescriptive authority.

Within the inter-professional team, participants described some overlap in the activities performed by different providers and the ACNPs. The physiotherapists shared activities related to lung auscultation and chest assessment with the ACNPs. Other professionals talked about the shared work related to discharge planning and family meetings. Participants described potential overlap between the physicians and pharmacists over prescriptive privileges.

The physician group identified the most pressing issues with boundary work regarding their functions. Participants agreed that the patient assessment and history taking, and prescriptive privileges were the areas where most of the boundary work occurred between ACNPs and physicians. Some physicians believed the ACNPs were caught in the middle between a medical and a nursing role. Other physicians believed the ACNP role was equivalent to the role of a junior resident, and they disagreed that the ACNP role should combine a medical

and nursing component. Participants believed this complicated working across boundaries.

[The ACNP] is not a nurse, they have bedside nurses (...). The role is as an R2 [physician resident] (1_ Inter 8).

By far, the most pressing issue centered on the prescriptive privileges of the ACNPs and the priorities for the ACNP role. One physician noted how "prescription was the big one". In essence, a key issue seemed to be the role of prescribing as a part of the physician's identity.

It's the ability to prescribe is probably one of the only things that differentiates a physician from anybody else. Remember the pharmacist was never allowed to prescribe…So this is probably giving one of their most sacred rights (1_ Manag 7).

Trust. Participants described the central role played by trust to work through boundaries and they identified two key points. As the first key point participants believed trust was built up incrementally over time, and was facilitated if team members followed through with their professional responsibilities or care activities. The following exemplified many of the comments:

If you want something to happen, you have to start and build up a trust relationship. Even though you might think you're wasting your time, you're not. It's a new role. It's a role that leaves physicians feeling uncomfortable...It really is that little piece at a time. (1_Manag 7).

As a second key point participants described how distrust among team members complicated boundary work. Distrust could be felt between any members of the team.

I think they [nurses] don't understand that distrust, which is not a bad distrust, it's just they want to care for their patient and it is the same distrust that physicians have about giving over prescriptions to nurses ... They have to understand the way a doctor would act is what do I need to do, and then they would say OK how do I make the [CPDP] feel comfortable with this? (1_Manag 7).

Participants believed physicians needed to develop trust amongst members of the physician group to accept that medical activities were going to be shared with the ACNPs. Some members of the physician group did not agree with other physicians about the scope of practice and enactment of the ACNP role. A number of participants described how some physicians feared that activities would be passed on to the ACNPs without sufficient supervision from other physicians. The lack of trust within the physician group led to expressions of distrust among the physician group, and some team members wanting to circumscribe and control the ACNPs' scope of practice as much as possible.

A big concern was that [the CPDP] was giving a big responsibility to these non-physicians as how they [the CPDP] saw them. There was concern that the responsibility would be shifted and that the physicians would give off these tasks to the nurse practitioners. There was some

concern there as to what point the physician would be involved, would

intervene, would approve (1_ Inter 5).

Inter-personal dynamics. Participants described a number of ACNP

behaviours that facilitated boundary work and improved team dynamics including

taking the time to listen to others, making themselves available to staff, promoting

the work of other providers, and being sufficiently assertive to set appropriate

limits. Participants believed respect for one another or the lack thereof affected

boundary work among members of the team. They believed the ACNPs played a

central role in the team because they respected and considered the opinion of all

providers. The following exemplified many of the comments:

I think [the ACNPs] have a level of respect for other health care

professionals (...) [The ACNPs] take the time to listen (1_Inter 3).

They [ACNPs] are open to our suggestions. They listen more to what we

have to say. Let's say the physio is saying the patient is not able or he is

still too weak, I am feeling that they [the ACNPs] listen more to us and

they will take it more into consideration than in the past (1_Intra 6).

Time. The passage of time was identified by a number of participants.

They differentiated between the initial reactions to the ACNP role and their

present-day reality. They initially felt tension or challenged by changing

boundaries related to the integration of a new team member. They now described

the ACNPs as an integral part of the team and a pivotal team member.

Participants described an awareness of boundary work in the team that lasted

between three to six months. However, some elements of boundary work, such as

the transfer of some prescriptive authority to ACNPs, remained unresolved three years after the introduction of the ACNP role.

Participants believed the passage of time complicated boundary work when relationships became more complex and team members became entrenched in their positions. The elements of boundary work were easier to complete if the ACNPs took the time to understand what other team members were doing in their respective roles. Participants believed that unresolved boundary issues could be improved if team members focused on ways to increase the quality of patient care, and engaged in small steps to familiarize themselves with the ACNP role. The following exemplified participants' comments:

> *The first thing you need to do is to train the doctors and the [CPDP] to understand it's going to be safe. You need to train them to understand that this is actually increasing quality. You need to train them to understand what your role [ACNP] is. You need to train them to understand what training you've had and you need to piece by piece make them understand that you're not trying to take over their job* (1_Manag 7).

In summary, boundary work occurred most with members of the physician group and some of the more experienced nurses. The intensity of boundary work was related to the perceived loss of a valued function. The losses included the loss of interactions with the physicians, a loss of status within the team for the experienced nurses, loss of control over patient care decisions, and a loss of exclusivity to prescribe for physicians. Boundary work was facilitated by the development of a trusting relationship among team members, respect, and

listening to the concerns of others. Boundary work was hindered by an inability

to establish trust among members of the health care team. Finally, the passage of

time was an ally as people moved through the different elements of boundary

work. However time was an enemy for those who could not establish trust

because they risked becoming entrenched in their respective positions. The

following sections present the findings related to the team's perceptions of its

effectiveness.

Perceptions of Team Effectiveness

Participants firmly believed the ACNP role improved the team's

effectiveness. All those interviewed described positive effects of the introduction

of an ACNP role on the team's ability to meet the needs of patients and families.

In particular, participants believed the ACNPs became central members of the

team because they had a global view of patient care and the contribution of each

professional as well as an understanding of the functioning of the unit.

Participants believed the ACNP role supported the practice of nurses and

physicians. Their presence was believed to positively contribute to the level of

medical care and patient safety because they identified any risk factors earlier in

the hospitalization, and used research-based guidelines to care for patients. The

following highlighted how many participants' viewed the ACNPs' contribution to

the team's perceptions of its effectiveness:

> *The ACNP has the big picture and each professional has his or her*
>
> *specialty. So [the ACNPs] support the practice of the nurse*

clinician/physician in the overall treatment; [the ACNPs] support the

overall plan (1_P 16).

[Having the NP in the team] makes it easier to make a plan, to work as a

team for the benefit of the patient. I think it works well (1_P 17).

Participants believed the addition of the ACNPs affected how the team functioned overall. Some participants highlighted the interactions between the team and its surroundings and believed the ACNPs played a pivotal role within the team.

There's not just the implementation of the role of the NP. There is how the

team was functioning before that comes into play. In our [site] program,

we have had ups and downs with respect to teamwork. Teamwork

interfacing with the OR [operating room], teamwork interfacing with the

[site] unit... I would say that the introduction of the NPs has actually

stabilized and provided opportunities for improvement in teamwork where

it was required (1_P 28).

The following sections outline the processes identified by participants that affected perceptions of team effectiveness. They included decision-making, communication, cohesion, care coordination, problem-solving, and a patient and family focus.

Decision-making. Decision-making was related to the ACNPs' expanded scope of practice that included decision-making related to medical and psychosocial issues. Participants described how decision-making remained a difficult task for the ACNPs to manage on a day-to-day basis because they lacked

autonomy to finalize their decisions. They described how having the ACNP role in the team gave them an opportunity to discuss medical issues with a provider who possessed medical training. Team members felt more involved in patient care decisions whereas they believed patient care decisions belonged exclusively to the physicians prior to the ACNPs' introduction in the team.

The field notes and interviews described discussions among the ACNPs and team members on a number of topics. They included the need for further treatment, patients experiencing shortness of breath or showing signs of peripheral edema, ordering X-Rays, assessing wounds for infections and the need for antibiotics. Participants believed the ACNP role was particularly helpful because the ACNP's decision-making was more deliberate than other team members and inclusive of all sources of information.

> *We can ask her: do you want to come with us to see the incision, to reevaluate it? I find it's more swollen than yesterday. Then she'll come see it. I find that for the patients, treatments are reevaluated and updated more quickly, more accurately, and because she's evaluating, she takes the time* (1_P 3).
>
> *The difference between her role in decision making regarding patient care and when she is not present, it's in the details really of what information has been gathered on this patient. When the decision is made it is the right decision. It's a safe decision* (1_P 26).

Communication. Communication took on many forms and included written documentation such as the workbook and progress notes in the patient's

chart, informal communication among team members, and weekly

interdisciplinary team meetings. These meetings were initiated by the ACNPs.

Participants believed communication in the team was facilitated because the

ACNPs were available to answer questions from patients, families and staff. In

addition to the strategies described in the inter-personal dynamics, participants

identified the ACNPs' use of informal and interactive communications with

nursing staff about patient care issues as helpful. The more inexperienced nurses

appreciated the informal communication to talk about patient care issues in a non-

threatening environment and believed the ACNPs challenged them to think about

their care.

Participants described the ACNP role as "*the missing link*" in

communication in the team (1_P 23). Participants believed the team functioned

more effectively because communication among team members was improved

with the ACNPs' institution of weekly inter-professional team meetings.

Communication could flow from the team to the physicians through the ACNPs

and back again from the physicians to the team.

> *I think that it [communication] has probably increased and improved.*
> *Probably there's more communication and we feel we're being listened to*
> *a little more, and when we feel we're being listened to more, we're more*
> *inclined to communicate our questions, our needs* (1_P 6).

Many participants identified communication issues with the physician

group in different patient care situations. Participants described a history of

difficult interactions with the physician group, and feeling fearful of calling

physicians to discuss patient care issues. Participants believed difficult communication affected the delivery of timely patient care, and made the team less effective in such circumstances. Participants believed a key contribution of the ACNP role was to keep the lines of communication open with all providers in order for the team to function more effectively.

The non-participant observation data of routine clinical activities indicated that communication appeared to be divided among all members of the team. The percentage of initiator and receptor behaviours was fairly equal for each participant (See Appendix I). The non-participant observation revealed the ACNPs spoke most often with the physicians followed by the nurses, the physiotherapists, and the patients while conducting routine clinical activities (See Appendix J). The non-participant observation data brought to light that the ACNPs most frequent communication behaviours included giving orientation (e.g., information), giving an opinion, and agreeing with what was said (See Appendix K).

Fewer interactions were noted between the ACNPs, social worker, dietician, and front-line manager. This was consistent with the social worker and dietician's limited presence on the unit, and the front-line manager's limited involvement in direct care activities. The field notes indicated that interactions with the front-line manager centered primarily on bed coordination issues. With respect to the educator role, the field notes and interview data described the primary responsibilities of the nurse educator in formal education of the nursing

staff on the unit which may have limited the interactions with the ACNPs whose role focussed primarily on the practitioner role component.

The non-participant observation data indicated interactions occurred among the physicians, ACNPs, team members, and patients and families (See Appendix J). The physicians initiated most of the interactions with the ACNPs and the physicians were the most frequent "target" of communication of the ACNPs as well. The physician involvement in patient care decisions was documented in the field notes, non-participant observations, and notes in the comment box of the time and motion grid. The field notes and non-participant observations outlined that few patient care decisions were made by the ACNPs because of their limited decision-making authority. This was supported by the interviews as described in the previous section.

Cohesion. Participants talked about the central role of the ACNPs in the development of greater team cohesion. They believed they were more of a team since the ACNP role had been introduced in the team. Many participants spontaneously expressed positive feelings towards the ACNPs during the interviews. The field notes and interviews provided numerous examples of the use of humour between team members. Some participants believed that having a sense of humour facilitated working as a team and provided relief from work tensions. Participants across professional groups described how the ACNPs' use of listening and their availability to members of the health care team facilitated the development of a greater sense of team cohesion and assisted team members to gravitate towards the ACNPs.

This has allowed greater cohesion within the team. It has brought

everyone a little closer together. Probably the approach is different for the

whole multidisciplinary team, with the physiotherapists, the dietitian, the

social workers. I have the impression that they seem to be a little more

involved. Even the physicians are starting to listen a little more to what the

physiotherapist will say, listen a little more to what the dietician will say...

I have the impression that this has brought about more cohesion, and more

real teamwork (1_P 6).

Care coordination. The care coordination function of the ACNP role was

identified by participants as a key contribution of the ACNP role to the team, and

made up 9.9% of the ACNP's work time during the time and motion portion of

the study (See Table 1). Participants provided a number of examples of care

coordination by the ACNPs. The field notes indicated that members of the intra-

and inter-professional teams, administrative agents, physicians, and other services

interacted with the ACNPs to coordinate patient care activities. Team members

believed the team was more effective because of the ACNPs support with care

coordination. Members of the intra-professional team believed that better

coordination resulted in the time saving benefits following the introduction of the

ACNP role. The members of the inter-professional team felt they now had an

attentive ear to listen to their concerns about patient care and a provider who

would act on their concerns as a result of better patient care coordination with the

ACNP role.

You really have an integration of the different professionals. A better integration when she is here because during that time we weren't doing interdisciplinary rounds ... because to do it was just about sharing information but there was not really anyone to relate it to. Nobody was going to take action based on everybody's individual assessments that were already in the chart. But having her there you get a sense that there is a better link between everybody's input on the patient (1_P 15).

Participants believed care coordination was improved because the ACNPs were available to address staff concerns or patient care issues. The follow-up of patient care issues, adjustments of medications, and patient evaluations were timelier and more comprehensive because the ACNPs' integrated the perspectives of different health care providers with their own expertise. A number of participants believed that patient discharges were safer because the decisions related to patient discharges were more comprehensive. In addition, any issues related to the patient's discharge or family issues related to a safe discharge were identified earlier in the hospital stay and care was adjusted to account for any changes in the patient's status.

I think that [the ACNP] really plays a pivotal role, as coordinator of all the health care providers in the patients' files, in the consultations. I don't know how much this is a question of the role of the ACNP or simply a question of personality or establishing roles or tasks governed by our hospital's structure, but [the ACNPs] really play a pivotal role with all the health care providers (1_P 5).

Problem-solving. Problem-solving related to issues within the team as well as unresolved patient care issues. Participants described different incidents where there were disagreements among team members, in particular with physicians. According to participants, they lacked a voice in patient care decisions, and this was the most salient feature of the difficult exchanges with physicians. They believed the ACNPs provided them a greater say in patient care decisions, and this made the team more effective.

An important issue identified by participants was related to the prescription or adjustment of medication and medical directives in evolving patient care situations. Participants described emergent patient situations where the ACNPs needed to write verbal orders in order for the medication to be given or tests to be done quickly. The interviews, time and motion study, and field notes indicated that ACNPs rounded extensively with physicians to anticipate possible complications and come to an agreement with the physicians on a treatment plan. This allowed the team to function more effectively and provide care in a timely manner while remaining within the scope of the organization's policies. Interviews and observations uncovered that any concerns that went beyond the scope of the organizational guidelines were discussed with the physicians before intervening. A number of participants described patient care situations, such as cardiac or respiratory emergencies, where they believed they could have intervened more quickly on the patient's behalf if the ACNPs' had been authorized prescriptive privileges for medications and medical directives.

Patient and family focus. Participants highlighted the contribution of the ACNP role to the care of patients and families. The focus on the patient and the family permeated almost all the interviews, and was a primary concern of health care providers with the exception a few participants who disagreed with the ACNPs' involvement in family issues saying that this was a *"nursing issue"*. Participants described how the ACNPs became a familiar face to patients and families. Participants reported many conversations with patients who told them they knew when they should call the hospital and they could speak to the ACNPs if necessary. The field notes outlined that patients who had been discharged after cardiac surgery visited the ACNPs during the data collection period to discuss their health concerns with them.

> *That is extremely [emphasis] helpful and that 10 minutes invested with*
>
> *that patient and family saves us hours later* (1_P 20).

Examples were elaborated in the field notes and the interviews when the ACNPs intervened with families to discuss complex care issues or reassure family members. The discussions included medical and nursing issues and requests for information. The ACNPs set aside time in the afternoon to meet with family members and answer their questions. The patient's status was often discussed with family members during these meetings. Participants believed the ACNPs helped them to deal with families with more complex needs and were role models for the less experienced nursing and medical staff.

> *When it comes to families it is a big priority for me, and a big advantage*
>
> *of having the practitioner. The follow-ups, when you enter the health care*

system there is a lot of waiting that is involved. It's a slow process. It's a

huge [emphasis] advantage to have the practitioner because [the ACNP]

does communicate closely with the physicians. [The ACNP] knows what

the plan is in more detail. Not to say that the educator or the nurses don't

know but [the ACNP] just knows in more detail, the plan and the

diagnostic results (1_P 26).

In summary, the ACNP role positively affected the team's perceptions of

its effectiveness because the ACNPs filled a gap in patient care, improved patient

follow-up, and the delivery of timelier care. The ACNPs' greater availability to

team members was a key contribution of the role and made it easier for the team

to solve patient care issues. Participants believed the ACNPs were pivotal

members of the team, and they had become more of a team since the ACNP role

was introduced in the team. They felt they had a greater voice in patient care

because the ACNPs integrated each team member's contribution. Participants

believed patient discharges were safer and any patient or family issues were

identified sooner during the patient's hospitalization. Participants believed the

limited authority of ACNPs to make patient care decisions that were within their

scope of practice lowered the effectiveness of the ACNP role within the team.

Case 2

Case Description

Case 2 was part of a cardiac surgery unit in a university-affiliated teaching hospital in a large urban area, and included the in- and out-patient units within the organization. The hospital was a referral center for a large geographical region. Case 2 included 31 ward beds divided into three sections, nine step-down unit beds for intermediary care and seven cardiac surgery beds located on another floor (Floor B). The Floor B beds were allocated to the cardiac surgery service to facilitate the transfer of patients with longer hospital stays, a slow post-operative recovery, or who were awaiting a bed in a rehabilitation or convalescence facility. During the data collection period, the number of patients seen by each ACNP varied and depended on the portion of the unit they covered for the week, and if they were working from 16:00 to 17:00 and were responsible for the whole unit. For the most part, the ACNPs followed 12 to 17 patients each day.

There were approximately 1900 surgeries performed annually with an average of 44 cases per week, and a team of nine physicians. No physician residents or medical students worked in the setting. Cardiology fellows in training were working in critical care and would be integrated in the team in the near future. No fellow worked in the service at the time of data collection. Participants described the setting and its history as a "cardiac surgery factory". They believed this was an important consideration that influenced ACNP role development and expectations.

Four ACNPs worked in this setting with three working full time during the data collection period. The ACNPs were introduced in January 2006 to improve the patient flow and keep patients moving through the system. The focus of the ACNP role was on productivity, and rapid admissions and discharges of patients. The nursing and medical staff described an average length of stay of four to six days for patients with no complications. Participants described a heightened sense of pressure to discharge patients as soon as possible for the service to function efficiently and meet the physicians' expectations.

There were 75 nurses on the ward with one administrative agent in the step-down unit and one agent on the ward every day during the period of data collection. There had been a turnover of 15% of the staff because of changes in the allocation of diploma and baccalaureate positions in the last year. The positions were allocated to a fixed shift system with no rotation to off-shifts. On the day shift six RNs (20%) had less than five years experience, eight RNs (27%) had between five to 10 years experience and 16 RNs (53%) had more than 10 years experience. One CNS was on personal leave during the data collection period.

The ACNPs worked more closely with one physician in the team than the other physicians in the group. They met every morning with this physician to discuss patient care, identify potential issues, and discuss plans for potential patient discharges or admissions. In addition, one physician coordinator was named for the week to cover patient rounds from Monday to Thursday and another physician was named on the Friday until Sunday. The Friday

coordinating physician was on-call for emergencies over the weekend. The ACNPs were responsible for the care of patients in one of three sections of the service and they allocated the patient follow-up for the ward, step-down unit, and Floor B amongst themselves.

There was some re-organization of work assignments during the data collection period in which the ACNPs followed their assigned patients who were transferred to Floor B instead of handing over the patient's care to the ACNP covering Floor B for the week. Participants identified a number of management and staffing changes on Floor B in the months preceding data collection. They experienced ongoing difficulties following patients who had been transferred to Floor B. Very few interactions were noted between the ACNPs and the staff of Floor B during the data collection period.

Structures

Participants identified a number of structural dimensions that affected the ACNP role enactment and the team's perceptions of its effectiveness. These structural dimensions were at the level of the health care system, organization, team, ACNP, and patient.

Health Care System-Level

The health care system-level dimension included legislation, licensing board policies, funding considerations, and unionization. An in-depth description of each concept is provided below.

Legislation. Some participants described difficulties working with the current legislation, and identified issues around patient discharges and

unionization. Unionization will be discussed at greater length in a subsequent section. Because ACNPs cannot sign patient discharges under the current legislation, participants believed this slowed the discharge process significantly. Some providers, such as pharmacists and liaison nurses, needed to have a confirmed date of discharge in order to complete the discharge process. They were unable to finish teaching activities, and link patients with other services within the community or ambulatory care services in the hospital. The interviews, observations, and the review of organizational documents described ongoing work to facilitate and coordinate efficient discharges for patients.

Licensing board policies. Participants described how the ACNP role had evolved over many meetings with the medical licensing board and representatives of the Ministry of Health in the province. Participants believed the divergent positions of the medical and nursing licensing boards regarding prescriptive authority for medication and the development of the medical directives were problematic issues because of the restrictive position of the CMQ. They described the onerous procedure of developing and updating the directives. The process was viewed as time-consuming by participants.   The document review revealed the directives were updated annually. The time and motion study indicated that 2.2% of time was spent updating the directives (See Table 2, p. 152). The document review and interviews also revealed the organization had opted to follow the OIIQ recommendations for a flexible approach to prescriptive authority for the ACNPs. Participants believed the CPDP had authorized shared prescriptive authority with ACNPs and physicians that was aligned with the

hospital's mission, best practice guidelines, and the provision of safe and effective care to patients.

Funding considerations. Some participants believed the funding of the ACNP roles remained a difficult issue to resolve. Nursing managers reported ongoing difficulties with insufficient funding for the development of new ACNP roles in cardiology. Participants believed there needed to be a balance between salary considerations, and the autonomy and level of responsibility given to ACNPs. In addition, medical and nursing managers were exploring the possibility of setting up a fund to support academic activities for the ACNPs such as presentations and attendance to cardiology conferences, and the promotion of research activities.

Unionization. Some participants expressed a negative view of unionization. They believed the collective agreement dictated the working hours too strictly which affected the flexibility in the ACNPs' working hours, and whether they worked weekends and on-call. Participants wondered if the lack of flexibility hindered ACNP role enactment. The document review highlighted that ACNPs submitted a proposal outlining their working conditions to the local union in early 2007. Working conditions, schedules, and the reimbursement of overtime hours was a topic of discussion in a number of administrative meetings in 2007 and 2008. There was also some uncertainty among participants as to how the decision was made at the provincial level to unionize the ACNP positions. Many believed they were faced with a "fait accompli" and had little choice in the matter.

Participants described how some physicians withdrew support for the ACNP project following their unionization.

> *I know that when the physicians learned that the ACNPs were unionized, that they wouldn't be on call, that they wouldn't work weekends, that shook them up, and even shocked them. I even heard some of them say: if we'd known that it would be like that, we wouldn't have gotten involved in this. Some surgeons, maybe half or even more, looked at them a little suspiciously at that time, when they saw they wouldn't work on call, etc., and that this wouldn't relieve their working conditions as much as they thought* (2_ P 23).

Organizational-Level

Participants believed the organizational-level dimension affected how the ACNP role was enacted, boundary work and perceptions of effectiveness. The concepts in this dimension included prescriptive authority, leadership, a common understanding, and role formalization.

Prescriptive authority. The prescriptive authority that allowed the ACNPs to write medication orders and procedures had been accepted by the CPDP and the Board of Directors. Prescriptive authority for medication and medical directives followed a recognized pathway in the organization. The directives were collaboratively developed by the ACNPs, pharmacists, physicians, and nursing managers. Participants described a smooth passage through the administrative pathway with the CPDP because of strong physician support to get the paperwork through the regulatory process. Once this step was completed the

activities were passed on to the ACNPs. The inclusion of pharmacists in the

elaboration of the prescriptive authority for medications was seen as a facilitator

by participants. At the time of data collection, the ACNPs were working to

update and upgrade the documents related to prescriptive authority for

medications in order to reflect current practice. They were branching out to other

services and needed to update their prescriptive privileges to areas such as out-

patient settings.

The review of institutional documents revealed that 27 prescriptive

privileges for medications and four medical directives had been authorized in the

organization. The prescriptive privileges for medication were developed for

broad categories as well as specific medications. Two major iterations of the

prescriptive authority for medications were identified by participants and in the

document review. A change in the prescriptive authority for medications was

required to reflect accurately the pharmacist's role in initiating, resuming or

adjusting medications and to identify clearly the role of the ACNP as the

prescriber. The ACNPs were also developing collective orders for the service that

included the pharmacists. The collective orders made use of the pharmacists'

ability to initiate, reintroduce or adjust medications. The prescriptive authority for

medications applied specifically to the ACNPs' primary practice area in cardiac

surgery. Thus, they needed to be changed or updated as the ACNPs practice

changed (e.g., antibiotic therapies) or their practice expanded into other clinical

areas (e.g., out-patient settings, cardiac transplant). The document review

revealed the prescriptive privileges covered the most prevalent medications the

ACNPs would prescribe in cardiac surgery, and they were developed using the guidelines developed by the medical, nursing and pharmacists' licensing boards.

The four broad categories of medical directives outlined in the legislation and the OIIQ/CMQ guidelines had been accepted in the hospital. A number of specific medical directives had been developed and accepted by the CPDP and the Board of Directors. The ACNPs were authorized to interpret, monitor, and adapt their treatment plans according to test results. The document review and interviews indicated that the ACNPs could prescribe and interpret a wide range of tests. Some tests could be ordered following consultation with the physician. The ACNPs could also perform six invasive medical treatments and order 10 medical treatments. The tests included 63 tests in five different specialties. The exams included various cardiac and vascular ultrasounds, X-Rays and scans, ambulatory monitoring for hypertension and arrhythmias, and pulmonary function testing.

The increased access to a provider with prescriptive privileges was seen as an important contribution of the ACNP role. Many participants described how they needed to wait for the physicians for prescriptions before the ACNP role was introduced. Some team members needed to have particular prescriptions in order to be able to move forward with their work. These team members highlighted the usefulness of the ACNP role in such circumstances.

Leadership. Nursing and medical leadership had undergone a number of changes in the months prior to data collection, and new leaders had been named into the positions. The organization was moving from a line-management reporting structure to the Director of Nursing to a program management structure

where the Director of Nursing exercised more of a supportive role for front-line

managers. Participants described a new structure where the ACNPs would

continue to report to the nursing manager for administrative issues but would

report to the physician for their clinical activities.

Many participants described the organization as physician-centered where

many decisions were physician-controlled and based primarily on medical needs.

Participants believed nursing's leadership and influence in the organization had

been minimal over an extended period of time. They believed this had led to the

development of an ACNP role centered on medical functions. The following

exemplified their views:

> *What the doctors want, the doctors get. I think that's part of the hospital*
>
> *culture (…). The former administrations here were very pro-medical: what*
>
> *the doctors wanted, the doctors got, and the others just had to follow suit.*
>
> *They were really the clinical leaders, so that's normal, it's part of their*
>
> *vocation. Except that… It's really on that basis that most of the decisions*
>
> *in the hospitals are made … I didn't notice any great leadership at the*
>
> *nursing level* (2_P 23).

All participants firmly believed that physicians wanted to concentrate their

work time in the operating room. They reported that a number of physicians had

greatly decreased their involvement in patient care rounds and were present for a

short period of time during patient rounds to validate the ACNPs patient care

decisions. The field notes and interviews revealed that patient rounds were

conducted with the ACNPs, AHNs, and physicians in a small room off of the

nursing station with no patient contact. A number of participants described that many patients did not meet with their physician during their hospitalization. This appeared to be supported by non-participant observation data (See Appendix L) which indicated very few interactions between physicians and patients. The following illustrated some of the participants' concerns:

> *They [the physicians] want to have them everywhere. They appreciate the [ACNPs] but this is what they appreciate… I think their time on the ward has decreased 70%.... They're really present briefly now on medical rounds, as needed, or else it's really the ACNPs who have taken the lead (2_P 8).*

A number of participants agreed that the support of the medical and nursing leaders was necessary to introduce the ACNP role in the team. They believed the leadership from both groups was required to develop the nursing and medical components of the ACNP role. Nursing and medical leaders needed to agree on activities for them to develop in the team and this promoted clarity about the expectations for the ACNP role. Participants described where medical and nursing leaders disagreed if the ACNPs should dictate the patient discharge summaries. On the one hand the medical leaders believed the ACNPs were the most knowledgeable of the patient's care episode and were best suited to dictate the summaries. On the other hand, the nursing leadership was concerned about the extra workload incurred with the summaries. The ACNPs did not dictate the discharge summaries in their daily work.

Some participants believed a role implementation committee was a very helpful strategy to introduce the ACNP role in the team. Participants believed such a committee allowed those involved in the introduction of the ACNP role to discuss their expectations, express their concerns, and maintain a system-wide view of the ACNP role that went beyond the physicians' focus on completing patient rounds. Some believed the committee gave voice to the need for a stronger nursing role for the ACNPs in the organization.

The ACNPs reported to upper-level nursing managers in the present structure. Many participants believed the leadership from nursing managers was an important contributor to ACNP role enactment in the team. Some participants believed the role of the front-line managers was more limited in the present arrangement where the ACNPs did not report to them directly. Some participants believed this may have decreased the front-line managers' input into ACNP role enactment and how they functioned within the team. The interviews and field notes provided examples where the front-line managers contributed actively to the integration of the ACNP into the team, helped settle specific issues with nursing staff, and the day-to-day functioning of the ACNPs. Participants believed the front-line managers had little input into the broader decisions about the scope of the ACNP role.

> As for really exercising influence over their role here, I can't say that [the front-line manager] has exercised much influence to date, apart from the way they [the ACNPs] work every day, during rounds or starting the round with the [patient] discharges (2_P 23).

Common understanding. A number of participants believed there was a shared view in the organization that the ACNP role was a physician replacement role. Participants believed the primary purpose of the role was to ease the physicians' workload, allow physicians to concentrate their work time in the operating room, and ensure patient follow-up post-operatively. A number of participants believed that a common understanding of the ACNP role had led to greater role clarity among team members and in the organization, and facilitated the introduction of the ACNP role. This was believed to be a key facilitator when enacting the ACNP role in the health care team.

> *The clarity of the role is super important. The clearer it is, the easier it is for everyone* (2_P 1).

Role formalization. The document review revealed a very structured process to introduce the ACNP role and formalize the role in the organization. Meetings occurred approximately every month over a two year period and then decreased in frequency in 2008. The minutes to meetings documented problem-solving activities around the day-to-day enactment of the ACNP role. These activities included collaborative functioning with the physicians, pharmacists and other team members, and the harmonization and standardization of clinical practices within the physician group. Different working groups were set up and focused their work on issues related to ACNP role development, working conditions, workload, prescriptive authority, format of progress notes, inter-professional collaboration, and work organization. An advisory committee was set up in 2009 and plans to meet two to three times per year to develop a

manpower plan, consolidate the ACNP role integration and ensure the follow-up

of the recommendations from the 2008 hospital accreditation for ACNP training.

Team-Level

The team-level dimension included coverage, co-location, a critical mass,

and rewards as the team concepts to consider. Each concept is described below.

Coverage. ACNP coverage of the service followed a Monday to Friday

schedule. They were present in the service from 8:00 until 17:00. The ACNPs'

individual schedule was adapted on a weekly basis to work 36.25 hours, and no

overtime hours were paid. A number of participants expressed a hope that

coverage would be expanded to weekends and on-call coverage to improve patient

care. Weekend coverage was discussed by a number of participants. However,

there were difficulties reconciling the issue of coverage with the need to have

some patient care decisions, like discharges, finalized by the physicians.

Participants questioned how patient rounds would be conducted on the weekend

since the availability of the physician coordinator was uncertain. This physician

also covered emergency surgeries over the weekend.

The issue of coverage appeared to be contentious for some team members.

Participants agreed that more ACNPs needed to be employed in the setting before

coverage could be expanded. Six or seven ACNPs were believed to be necessary

to ensure adequate coverage of the service. Participants wondered if minimal but

daily ACNP coverage over the weekend would be sufficient to ensure patient

care. They also wondered if the organization of work on weekends needed to be

examined more closely to determine the actual needs for patient follow-up at that time.

All participants believed the ACNPs presence in the service for a predictable period of time increased their availability to team members, improved the coverage of the unit, and was an important contributor to the team's perceptions of its effectiveness. Participants described how patient care issues were addressed more rapidly because they had access to a health care provider with additional knowledge and expertise. Team members felt they had greater access to the patient's plan of care and relevant patient information through the ACNPs because they were available. Some participants believed there was a risk of de-skilling experienced staff nurses because the ACNPs were so readily available.

Some participants provided examples where the nurses initially relied heavily on the ACNPs to solve patient care issues because they were readily available. They described how the ACNPs were called as soon as a patient care issue arose. The interviews and the document review revealed that team members and nursing managers met to discuss and clarify each others' roles and expertise. Some participants believed that nurses needed to reclaim their clinical expertise, and value their contribution to patient care more highly especially as new roles were being introduced in the team.

Co-location. Participants believed that co-location facilitated working together. Participants provided examples during patient rounds where being in close physical proximity allowed team members to see the ACNPs and interact

with them more easily. Team members in different professional groups believed the ACNPs became a recognizable figure in the team and they could go to them more easily. The field notes revealed that some team members were located in other pavilions of the hospital and they needed to walk many minutes to get from their offices to the service. Participants believed this hindered communication with the rest of the team. Some participants described feeling like an outsider to the team in such circumstances. Inter-professional team members used co-location in their practice and they described their experiences in the following excerpt:

> *We're together, we're in the same office, we discuss our common patients a lot. We do joint interventions, such as evaluations, as well. This happens frequently. We work together a lot… we work separately, but we also work together and we communicate with each other fairly often* (2_P 16).

Critical mass. Participants believed they needed to have sufficient numbers of ACNPs in the setting to fully enact the ACNP role components. They believed the number of ACNPs was insufficient to keep up with different demands and patient care workload. If the numbers of ACNPs were increased, participants believed this would free up time to complete research and education activities, and develop a stronger nursing component to the role. The document review and interviews identified that work had been re-organized and a number of strategies had been tried to allow the ACNPs to function more effectively. Participants viewed the ACNPs' efforts to re-organize work activities as helpful

but they believed they had not met the goal of greater integration of non-medical activities.

> *I think that there is a critical number of ACNPs who must be present, so that they are not just submerged in clinical tasks, time must be protected for their activities, other than just medical rounds* (2_P 27).

Rewards. Participants views about rewards were somewhat mixed. Team members working on the off-shifts reported feeling less emotional stress following the introduction of the ACNP role. They believed there was greater security in the care they provided to patients because the ACNPs were available to team members at the change of shift and responsive to their questions. However, other participants questioned whether the ACNP role, as it was presently enacted, supported the nurses at the point of care adequately. The following exemplified their views:

> *Given what I know of their training, I think that something more concrete could develop at that level to support the nurses in everyday care delivery* (2_P 22).

Some participants believed the ACNPs linked their rewards and satisfaction to the recognition they received from physicians. They believed this recognition was more important to them than the support they received from other team members.

Acute Care Nurse Practitioner-Level

Participants noted how the ACNPs' attitude was an important consideration. Many participants shared positive perceptions of the ACNPs' personal characteristics. They agreed that the ACNPs' ability to work closely

with others, their awareness of their responsibility in patient care, and their self-confidence as ACNPs aided their integration into the team. Participants believed the level of education and the type of ACNP training were also important considerations because they prepared the ACNPs to assume role functions, and increased their credibility with other team members. They also believed the ACNPs needed to be resistant to a high level of stress on the job. They highlighted the importance of remaining open to the nursing and medical components of the ACNP role and how the ACNPs' personal preferences for role development may affect whether one component was developed and privileged over the other. Some participants believed it was necessary for ACNPs to remain sensitive and accessible to team members for issues brought to them that were not medically driven. The following illustrated some of the comments related to personal characteristics:

> *The introduction… integration was very good. We had good people, and we still have excellent people, people who want to do good work, people who are pleasant to work with, competent people, and I think they love their work* (2_P 27).

Patient-Level

Participants agreed that patient characteristics had changed over the last few years and the patients who were being considered for surgery were older. The document review and interviews highlighted that a quarter of the patients undergoing surgery were older than 75 years of age and 9% were older than 80 years of age. Participants believed the surgeries were more complex, and the

number of combined coronary and valvular surgeries had increased markedly over the last decade. Participants believed these patients needed more post-operative follow-up and the ACNP's ability to do this was an added-value of having an ACNP role in the team. The document review indicated the 42% of surgeries were either multiple valve repair/replacement or combined valvular and coronary artery bypass surgery. Patients undergoing surgery also experienced co-morbidity, issues of substance abuse, and chronic illnesses such as diabetes and renal insufficiency.

Acute Care Nurse Practitioner Scope of Practice

The ACNP scope of practice included the research, educator, administrator and practitioner role components, and ACNP role enactment. Participants believed the laws regulating ACNP practice, the joint OIIQ/CMQ guidelines, and the literature were the basis for the ACNPs' scope of practice. Many talked about the strong medical orientation of the ACNP role. In addition, participants believed the suggested time to be spent in non-clinical role component was difficult to achieve given the number of demands and workload associated with patient rounds. The balance of 70% clinical and 30% non-clinical role components that was suggested in the joint OIIQ/CMQ guidelines was difficult to implement, and almost all those interviewed believed the ACNP role had developed primarily as a medical role with limited inclusion of other activities, or the development of an APN role component.

> *The role is very [emphasis] medical, and is very [emphasis] demanding.*
> *They [the ACNPs] cannot fulfill the medical demands of the role* (2_P 8).

So their most fundamental role is to assume a professional presence with

patients, paramedical competence with patients, to ensure the quality of

care and perform diagnostic and therapeutic acts with the physician… this

is done every day. They play an absolutely fundamental role, given the

shortage of physicians currently available (2_P 26).

Participants noted that the ACNPs did not utilize many of the invasive

procedures that were authorized within their legal scope of practice. Some

participants believed the inclusion of invasive techniques in the ACNPs' practice

could decrease the delays in treatment for some patients.

Role Components

Four role components are described in the following sections. The list of

activities and the proportion of ACNP time spent in each role component were

outlined in Table 2. All the ACNP activities could be categorized using the time

and motion grid. Although not a specific role component, personal time

comprised 9.3% of work time which represented 52 minutes for mealtime and

other personal activities. The field notes and comments in the time and motion

grid indicated that mealtime was interrupted when the ACNPs were paged

because of a deterioration in a patient's condition, patients in the out-patient

setting needed to be seen, or test results needed to be reviewed.

Table 2. Case 2 Acute Care Nurse Practitioner Activities / Category

Category	# - Activity	Time (min)	Percent (%)	Total %/ category
Direct care	1-Phys. assessment	222	5.7	
	2-Admission history	46	1.2	
	3-Family assessment	1	0.0	
	4-Order/Inter labs/X-Ray/ECG	252	6.4	
	6-Drains/wound/cultures	49	1.2	
	7-Therap relat.-pt	20	0.5	
	8-Therap relat.-family	16	0.4	
	9-Support communication	83	2.1	
	10-Teaching-educ	15	0.4	
	11-Meds (not IV)	221	5.6	
	12-Meds (IV)	32	0.8	
	14-Diet-feeding	5	0.1	
				24.5
Indirect care	17-Documentation	467	11.9	
	18-Discharge planning	54	1.4	
	19-Rounds	331	8.4	
				21.7
Education	20-Coaching-nsg	481	12.3	
				12.3
Administration	22-Admin meeting	540	13.8	
	23- Develop protocols	87	2.2	
	24- Coord. Other org.	28	0.7	
	25- Coord within org	571	14.6	
				31.3
Research	26- Part. research- nsg	4	0.1	
	27- Use research practice	31	0.8	
				0.9
Personal time	30- Personal time	365	9.3	
				9.3
Total		3921	100.0	100.0

Research. The research component totalled 0.9 % of time and included primarily the use of research in practice and searching web-based clinical guidelines. Overall, participants agreed that ACNPs had developed a small research component to the role. They believed the ACNPs had too many direct care responsibilities which prevented them from engaging in more research

activities. Participants expressed divergent opinions about the ACNPs' ability to participate in nursing and medical research. Some believed it was necessary to "cultivate" greater ACNP interest in research especially since facilitating structures such as a database for cardiac surgery were already in place. Some participants believed the ACNPs' interest in research was more medically oriented which limited the opportunity to explore issues for nursing research and expand nursing knowledge.

Educator. The educator role with the nursing staff made up 12.3% of time, and included primarily the supervision of a cardiology ACNP student, and planning and participation in in-service education sessions for ACNPs. A portion of one afternoon was spent finalizing the all-day training session for other ACNPs working in different organizations. This accounted for 3.4% of time spent in the education role component. Only a few teaching opportunities with the staff nurses were identified in the interviews, field notes, and the time and motion comment box. The ACNPs completed brief teaching sessions with the nurses about complex surgical procedures, signs and symptoms to monitor, medication, and complications during these sessions.

Some reported they had expected a larger contribution of the ACNP role to nursing staff education. Participants thought the ACNPs were too pressed for time to complete education activities while they attempted to complete patient rounds in a timely manner. The document review and interviews identified the ACNPs had completed some in-service education with nurses to review auscultation but no other teaching sessions were planned.

A percentage of nurses don't question themselves. I think that the ACNPs

will provide this expertise, because there is a nursing education

component that I hope they will communicate to the nurses. I hope. It

hasn't happened yet (2_P 5).

Administrator. The administrative activities included four activities and

made up 31.3% of the ACNPs' work time. Care coordination within and outside

the organization made up 15.3% of work time. These activities were included here

because they were completed away from the patient's bedside even though they

were done for specific patients. Notes made on the time and motion grid

indicated that care coordination activities outside the organization (Activity # 25

in the time and motion grid) included telephone discussions with consultants in

different specialties, rehabilitation services, and health care organizations in

different regions. Within the organization, coordination activities (Activity # 24)

were completed with members of the inter-professional team, medical specialists,

and other services including out-patient clinics and Floor B. Most of the

administrative activities were planned or took place in the afternoon.

Practitioner. The practitioner role included 16 activities of direct care

activities and three activities of indirect care. Twelve activities of direct care

occurred during the time and motion portion of the study and encompassed

24.5 % of work time (See Table 2). The ACNPs ordered and interpreted

laboratory tests or X-Rays most often. This was followed by the completion of

physical exams/ assessments and the prescription and monitoring of medications

(excluding I.V.). Three activities of indirect care activities were measured and

made up 21.7% of work time. The most frequent activity of indirect care was documentation, and it occupied 11.9% of work time. The direct and indirect care activities totalled 46.2% of work time for the practitioner role. The document review and the field notes indicated the temporary epicardial pacemaker wires were removed by the staff nurses in this setting. The nurses consulted with the ACNPs if the pacemaker wires were difficult to remove or there was a problem with the pacemaker wires. The ACNPs provided the necessary assistance in such circumstances.

Participants described the positive effect of the ACNPs hands-on involvement in patient care. They believed the ACNPs made an important difference in patient care because they knew the patients' history and evolution, they examined each patient and spoke with the patients to understand how they were feeling. They believed the ACNPs became a familiar face for patients. Participants reported how patients were happy to see the ACNPs if they visited the out-patient setting for follow-up. The patients appreciated that the ACNPs recognized them after they were discharged. The following provided an example of the participants' descriptions of ACNP hands-on involvement in care:

> *Recently I had a patient who really wanted to leave. He was confused, and the ACNP who was there talked with him for a long time, did a lot to develop a therapeutic relationship with him. [The ACNP] went to get help from the psychiatrist and then she was involved a lot; she didn't withdraw from the case. She built on the bond of trust she already had with the patient* (2_P 6).

The completion of documentation took up almost 12% of the ACNPs'

work time and included completing progress notes, reviewing and documenting

X-Ray and test results, and developing chart summaries for complex patients.

The ACNPs' workbook was succinct and included a one-line summary for each

patient. The ACNPs wrote summary notes in the patient's chart to remain up-to-

date with the care of complex or long-stay patients. Interviews and field notes

indicated that physicians relied on the summaries when they dictated the patient

discharge summaries.

Acute Care Nurse Practitioner Role Enactment

The ACNPs role enactment included what the ACNPs did on a day-to-day

basis and how they integrated the different role components to develop their roles.

Participants believed the ACNPs had enacted a strong medical component but the

expanded nursing role component was not well developed. The interviews, field

notes and the time and motion portions of the study helped to identify work

routines that had developed in the team. The ACNPs met with the physician who

worked most closely with them to discuss any issues before they started rounds.

They assessed each patient, reviewed the chart, updated medications, obtained

clinical information from the nurse, charted relevant progress, and prescribed

necessary tests. The ACNPs performed activities that were beyond the scope of a

nurse's role. These activities included initiating consultations with other

professionals, establishing end of life care priorities with a patient and members

of the health care team, considering ethical issues to establish care priorities, and

dealing with complex patient care issues. The field notes provided examples

where the ACNPs managed emergent patient care situations with patients who

exhibited sudden onset agitation, post-operative psychosis, fast atrial fibrillation,

and acute hypotension. The field notes detailed how the ACNPs used of

communication, technical, and advanced assessment skills during these care

episodes.   In the interviews, the participants who recalled these events described

primarily the ACNPs use of technical skills.

The time and motion portion of the study, field notes, and interviews

indicated that patient rounds were completed by approximately 11:00. This was

an important marker for all team members of how care activities unfolded on the

ward. The ACNPs then met with the physician coordinator and the assistant head

nurse. The ACNPs presented each patient's condition, elaborated the treatment

plan in collaboration with the physicians, reviewed X-Ray films, and made

suggestions about potential patient discharges. The paperwork related to the

patients' discharge was signed by the physician at that time. The early afternoon

was spent seeing patients in the wound clinic if necessary. The ACNPs followed

up with various tests results, and completed pre-operative assessments for the

patients undergoing surgery the following day. The patients who had been

transferred to Floor B were generally seen in the afternoon unless a specific

patient care issue needed to be taken care of earlier in the day. One ACNP

worked alone from 16:00 to 17:00, and responded to patient care concerns for all

clinical areas and Floor B.

Overall, the ACNPs completed 17.7 activities per day. The average time

spent in an activity was four minutes with a range of one minute to 92 minutes.

Almost 65% (N=604/933) of activities lasted two minutes or less during the day.

Further, the pace of work changed over the course of the day and was faster in the

morning with 71.3% (N=665/933) of the changes in activities occurring before

noon. Activities lasted for longer periods of time in the afternoon. The afternoon

work time was used to follow-up on patient care issues, review test results,

complete discharge planning and chart summaries, and attend administrative

meetings. Participants believed the fast pace of work was a barrier to the ACNPs'

ability to develop relationships with other team members.

The ACNPs believed their role had evolved over time and they had

developed a larger medical component in their role since the medical directives

and the prescriptive privileges for medication had been accepted by the CPDP and

the Board of Directors. They noted greater autonomy in their role and they

believed they wasted less time searching for physicians to sign orders. Some

participants reported that nurses did not use verbal orders in the early phases of

ACNP role enactment. Participants described how nurses needed to wait for a

signed prescription to execute care activities prior to the transfer of prescriptive

authority to the ACNPs.

Almost all the participants believed the ACNP role was a physician

extender role. They noted how the ACNPs participated very sparingly in nursing

activities such as the implementation of the therapeutic nursing plan and the use

of clinical care pathways during patient rounds. The following represented the

views of a number of participants:

When making rounds, why wouldn't she tell the nurse: it would be

important for you to produce a TNP [therapeutic nursing plan] on this? I

find this is unfortunate (2_P 5).

Currently, I ask the nurses: what do the ACNPs ask you when you get to a

patient and you're accompanying them… because the nurses always

follow their patients' ACNP? Do the ACNPs ask you whether the patient

has achieved the objectives according to the clinical pathway? Never.

Never. I have already asked the ACNPs: do you rely on the objectives of

the clinical pathway to find out if the patient is ready to leave? Never.

(2_P 23).

Participants believed it was a challenge for the ACNPs to work with a

large physician group. They described how the physician group needed to work

together and handle patient care issues consistently amongst themselves in order

for the ACNPs to function effectively in their role. The document review and

interviews revealed that practices differed among physicians. This made work

organization more complex for the ACNPs and the team. For example, the

ACNPs did not complete the pre-operative assessments for specific physicians.

The field notes and interviews indicated that this was a frequent end-of-day

stressor for the nursing staff and the ACNPs especially if the operating room

schedule was changed at the last minute. The ACNPs needed to check the

operating room schedule frequently to see if there were changes or if patients had

arrived for the ACNPs to complete the pre-operative assessment. The field notes

revealed that the evening staff needed to locate the ACNP who was working until 17:00 to obtain last minute prescriptions for tests or medications.

Health Care Team Scope of Practice

Members of the healthcare team described different aspects of their respective roles during the interviews. Some of the activities or responsibilities were shared with the ACNPs and others were within their own professional role. For example, physicians described the responsibilities they shared with the ACNPs regarding diagnostic activities, prescribing, and patient rounds. The intra-professional group described shared responsibilities between CNSs and ACNPs, shared coordination and leadership functions between the ACNPs and the assistant head nurse's role, wound care in the out-patient department, and patient rounds with staff nurses. Members of the inter-professional groups described overlap with the ACNPs when exploring family issues, prescribing or adjusting medications, and managing surgical admissions. A number of participants believed their role had undergone changes following the introduction of the ACNP role. The next sections describe how participants in different professional groups worked through such overlap and change. As in Case 1, participants will be identified by their professional group and a number in this section.

Boundary Work

Boundary work activities occurred across professional groups. In the early phases of role enactment, the ACNPs described a dichotomy between the nursing and medical components of their role. Since the introduction of the ACNP role three years earlier, the ACNPs reported that the boundaries between the medical

and nursing role components had become increasingly blurred over time. They no longer tried to identify if they were completing a nursing or a medical portion of their role, and reported moving away from rigidly trying to separate out each portion of the role. Participants across groups described boundary work as a series of steps that evolved over time. Boundary work was reported to be more or less intense depending on the amount of change and potential loss of valued functions felt by members of the health care team. Participants pointed out clearly in the interviews that boundary work was not on a personal level with the ACNPs but rather on a professional level where roles needed to be clarified after a new member had joined the team.

> *We get along well with the ACNPs, it is a pleasure to work with them* (2_P Inter 4).

> *The goal isn't to hinder anyone, but to ensure that there is good follow-up of a patient, that we know where we're going, and why we're going there* (2_Intra 1).

In order for boundary work to be successful all participants needed to see how the change in boundaries between professional groups would help to create more complementary roles, improve patient care, and assist the team in meeting its objectives of quality care. Participants believed that a consistent message about the ACNP role from the physician group facilitated boundary work. The document review and interviews revealed that physicians consistently portrayed the ACNPs as the first respondent for patient rounds and in evolving clinical situations. This exemplified many of the comments:

It must be said that the surgeons discussed this. They reached a consensus that the ACNPs are the first responder. At a given time, everyone wants to make a decision. Who decides on the treatment plan, or who establishes it? At a given time, people are referred increasingly to the ACNPs (2_Intra 2).

The following sections outline the processes identified by participants that facilitated boundary work. Participants described four steps that evolved over time. The steps included creating space, loss of valued functions, trust, inter-personal dynamics, and time.

Creating space. Many participants talked about the need to make adjustments in their activities in order to accommodate or "make space" for the ACNP role. The need to create space for the ACNP role was described in a number of situations. Participants talked about integrating the ACNPs in to their day-to-day activities. For example, nurses talked about doing patient rounds differently and learning to work with the ACNPs for eight hours a day. Some participants described "creating space" as a gradual transition or change in their role since the ACNPs were introduced in the team. Others described creating space as a give-and-take where some team members believed they were slowly letting go of elements of their role as the ACNPs were taking on a larger role. Some participants felt the ACNPs had more and more space in the team as time went on. A few team members believed the ACNP role took up too much space in the team. They believed this may have limited the ongoing involvement of physicians within the team.

Some participants also talked about creating a psychological space or a mindset where the physicians could accept that nurses in ACNP roles could assume some of their functions. They believed that nurses needed to accept that the ACNPs could collaborate more with their physician colleagues. The following illustrated some of the comments:

So there are dogmas or taboos to overcome, in order to accept that there is a portion of the physician's medical role that will be replaced by a nurse; that was a dogma. Another dogma, on the part of the nurses, is to accept that there are nurses who may collaborate more with the physicians than with us. (2_P Inter 8).

There was some disagreement among participants of how far the boundaries between the ACNP and physician roles should shift. Participants wondered if the boundaries should move towards the ACNP role becoming a physician role or incorporating a nursing role as well. Some members of the management and intra-professional team voiced concerns about developing a physician replacement role. They believed it was more important to develop complementary roles within the team, particularly among the CNSs and the ACNPs. The following illustrates the different viewpoints:

The ACNPs increasingly should act like physicians… they increasingly have to become closer to what physicians are taught to do in a university hospital: be a clinician, do research, engage in continuing medical education, read, stay constantly on the cutting edge and advance their knowledge (2_P Inter 7).

If the clinical pathway is developed, and there is a committee, I would

expect that there will be an ACNP on this committee, who will provide a

point of view very different from that of the nurse and the physician

(2_Intra 7).

Loss of valued functions. All participants identified losses that were

specific to certain professional groups in the team. The intensity of boundary

work was proportional to the team members' perceived loss of a valued function.

For example, all participants identified the intense boundary work and the overlap

between two groups in particular. The document review and interviews indicated

that some team members had previously developed an expanded role over an

extended period of time to support the physicians who were in the operating room

and unavailable to address patient care issues on the ward. Participants believed

the expanded scope of practice of those providers had become necessary because

physicians' workload and presence in the operating room had greatly increased

following the province-wide restructuring of health care more than a decade ago.

They described how these team members rounded with physicians and were

available to write und update prescriptions throughout the day as necessary.

As an early reaction to loss, the groups who had experienced the most

losses described a sense of mourning, a feeling of being abandoned and being

pushed aside. They had hoped they would have been consulted more during the

early phases of the introduction of the ACNP role and involved more actively in

the process. A few participants described the loss as "a bitter pill to swallow".

They talked about how their role in the team became less important, and they had

less contact with physicians. Their knowledge of the hospitalized patients decreased because they were no longer involved in patient rounds. Some participants described a sense of disorganization with work and a need to re-organize their activities and adjust work priorities to adapt to new expectations and changes in their roles.

> *Even though we've been there for a very long time, we're not the people who round on the patients, we're not the people who will make it possible for the surgeon not to be there, so… We've been put off to one side to some extent* (2_Inter 3).

Trust. A sense of trust was an important consideration for all those interviewed with the introduction of the ACNP role in the health care team. Trust was believed to be the key to the successful completion of boundary work among team members. Trust was enhanced between the ACNPs and team members as the ACNPs gained experience and followed through on care activities.

> *When the ACNPs arrived, what was hardest to achieve was confidence, the surgeons' confidence in the ACNPs. I remember that on the first rounds there were the ACNPs, the surgeon and then the assistant head nurse did the rounds: it was a herd of people on the move, along with the pharmacist* (2_P Intra 4).

Participants reported that trust among team members developed slowly as they showed one another their respective abilities, specific knowledge, and contributions to the team. Participants believed an unclear role definition made it more difficult for team members to establish trust. The trust between physicians

and ACNPs was believed to develop because the ACNPs proved their knowledge, abilities, and decision making skills. The following exemplified how trust was built up among team members:

Relationships based on trust have been developed. (…) I would say that I can feel part of the trust I am given. The ACNPs come to me to ask questions, because I think they realize that they aren't as competent in each of our specialties, so it comes naturally (2_P Inter 2).

Inter-personal dynamics. Participants described their initial belief and awareness that the ACNP role would change team dynamics. They believed the role needed to be integrated slowly into the team. Participants believed that since the team members did not know the ACNPs before their arrival in the service then team members needed extra time to develop a relationship with the ACNPs. Participants described a reciprocal relationship where team members and the ACNPs consulted each other within their area of expertise. In particular, participants valued the inter-professional team meetings as an opportunity to get to know one another and to discuss any issues. The following described many of the participants' comments about inter-personal dynamics:

Indications, contraindications… We really discuss them … Sometimes we can even make suggestions, and they listen: oh yes, that's a good idea. There are really more interactions than when we do rounds with a surgeon (2_P Intra 11).

Participants described the importance of feeling they were respected for their unique contribution. They believed inter-personal dynamics were improved

when they were able to discuss any differences of opinion openly with other team members. A few participants wondered if the number of ACNPs hindered their ability to integrate the health care team. Some participants believed the ACNPs did not need to integrate the intra- and inter-professional groups since they were already a tight-knit group amongst themselves.

Time. Time was believed to be an ally to integrate the ACNP role into the team and facilitate boundary work. Participants described that their awareness of the work associated with changing boundaries lasted from a "few months" to six months. They expected the ACNP role to continue to evolve in the coming years as the ACNPs acquired more knowledge and confidence in their abilities. They believed boundaries may change again as the ACNP role continued to evolve over time. Participants described how the heavy workload associated with direct patient care and the fast pace of patient rounds limited the time the ACNPs could spend with individual patients. They believed the fast pace of work limited their ability to develop more relationships with members of the team. The following exemplified participants' views:

> *The more patients an ACNP has, the more turnover there is, and the less time the ACNP has to stay at the patient's bedside to talk. The ACNP really goes to whatever is most urgent* (2_P Intra 1).

In summary, boundary work occurred with some members of the intra- and inter-professional teams. The intensity of boundary work was related to the loss of valued functions within the team. Participants' awareness of boundary work lasted approximately six months. The staff nurses perceived little boundary

work with the ACNPs but they believed they needed to do patient rounds differently. Trust among team members was enhanced as team members got to know each other better, respected each other's contribution, and the ACNPs gained experience and followed through with care responsibilities. Time was believed to be an ally to work across boundaries but the effects of unresolved boundary work continued to be felt by some team members three years after the implementation of the role. However, the fast pace of work was believed to hinder boundary work.

Perceptions of Team Effectiveness

Most participants described positive perceptions of team effectiveness following the introduction of the ACNP role in the health care team. They based their opinion of their team's effectiveness on better patient follow-up, improved access to prescriptions, and timelier care delivery. Participants believed the team functioned more effectively for a number of reasons. They believed communication between different team members had improved. The ACNPs had more autonomy in patient care decisions, and care delivery was timelier since the ACNPs were readily available to the team. Some team members described greater synergy between the services in the organization because the ACNPs coordinated the care required for each patient. They believed patient flow had improved because the ACNPs facilitated patient transfers to other resources, such as convalescence, or returned patients to their referring hospital in a timelier manner.

Some participants believed their team effectiveness was lower in certain circumstances. They identified difficulties coordinating patient discharges and the required discharge teaching. A few participants wondered if staff nurses would lose their critical thinking skills over time if the ACNPs remained too readily available to them to solve patient care issues. Participants identified decision-making, communication, cohesion, care coordination, problem-solving, and a patient and family focus as the processes they believed influenced perceptions of team effectiveness. The following sections describe each process in greater depth.

Decision-making. A number of participants noted that patient care decision-making was centralized through the ACNPs. The ACNPs contributed to or made decisions about the patient's current medication including anti-arrhythmic and other cardiac medications, analgesics, and wound care. Decisions related to patient transfers between the step-down unit and the ward or to Floor B were also coordinated through the ACNPs. Some team members reported they no longer made those decisions independently. They consulted with the ACNPs. Participants believed the ACNPs took in more information before making a decision. They believed team members provided greater input of information before a decision was made by the ACNPs and this contributed to the quality of the decisions. They believed that team members were involved earlier in the course of hospitalization once a patient need was identified. Participants thought that patient discharges were safer since team members had a chance to discuss any issues and initiate a therapeutic plan ahead of the expected discharge date.

Participants highlighted the difficulties with the existing legislation that stipulated the ACNPs could not sign patient discharges and needed to have the physicians' approval of the discharge decision. Some believed this was a formality that reduced the team's effectiveness and added unnecessary delays in the discharge process. Participants described examples where the ACNPs' decisions were changed at the last minute by the coordinating physician. Some discharges were hastened while others were delayed, and this made the team's work more chaotic and less effective. The following exemplified some of the comments:

> *Well, because the decisions are all reviewed by the surgeon, who can overturn the ACNP's decision as he sees fit, either keep the patient or let him go, or request a test or not request a test, this leads to disorganization... the patient was supposed to have such and such an examination: no, it will be done at the outpatient clinic, there's no need for this... The nurse who had called and who had scheduled the examination is obliged to start over and say no. This results in lost time and efficiency.* (2_P 19).

Communication. Participants described the ACNPs as recognizable figures in the team with whom they could interact. Communication among team members was facilitated by using a number of strategies. They included inter-disciplinary team meetings, regular face to face meetings with the physician who worked more closely with the ACNPs, discussions between the ACNPs about patient care, telephone consultations with other specialists, and informal

discussions with the nurses about their concerns, to review test results or

complications. Team members believed someone was listening to their concerns

about patient care since the inter-professional team meetings were started by the

ACNPs. The document review and interviews revealed the inter-professional

team meetings were initiated in 2007 and held on a weekly basis. Team members

believed that weekly inter-disciplinary patient rounds was a key contributor to the

team's effectiveness and placed the ACNPs in a pivotal position within the team.

Participants described that team members often met briefly and informally with

the ACNPs during patient rounds to discuss patient care issues, a plan of care, and

settle any issues more quickly. Participants identified the ACNPs' clear progress

notes in each patient's chart, and the development of a chart summary for

complex patients as very helpful communication strategies. The following

outlined participants' views about communication:

> *There was really a lack of communication between the health care*
>
> *providers. That's what was a little difficult. I find that there has been a big*
>
> *change at that level* (2_P 16).
>
> *The more we communicate, better is the management of the patients and*
>
> *the beds. In other words, the more we communicate, the more our*
>
> *decisions are made as a team, and the more this benefits the patients* (2_P
>
> 5).

The document review identified a template for the ACNP notes that

combined medical and nursing information.   However, many participants

believed the ACNP notes were more medically oriented with little nursing input.

Participants had hoped to see greater use of mapping techniques that described

family relations in the ACNPs' charting. Participants also hoped for greater use

and integration of the therapeutic nursing plan and clinical pathways by the

ACNPs during patient rounds. They believed discharge planning by the staff

nurses would improve if these tools were integrated into rounds by ACNPs.

Participants believed this would increase the interest of staff nurses who were

participating in patient rounds. The interviews and document review highlighted

that nurses were ambivalent about rounds. Some believed the patient rounds

lasted too long and others believed they were too focused on providing the

ACNPs with the patient's physiological information. The following exemplified

participants' comments related to the medical focus of the progress notes:

> *I looked at a lot of the notes they made. It's all medical – you don't see any*
> *difference between the doctor and them. Their notes are very [emphasis]*
> *medical* (2_P 8).

The non-participant observations (See Appendix M) described the patterns

of communication between the ACNPs and team members during routine

activities. They indicated a fairly equal proportion of initiator and receptor

behaviours for all participants. All team members participated in some verbal or

non-verbal exchange with the ACNPs during routine activities. The ACNPs were

the focus of the observations and had the largest number of observed behaviours.

They initiated more than half of the interactions and they spoke primarily to

nurses, patients, physicians, followed by the physiotherapists and the dietician

(See Appendix L). According to the non-participant observations, the ACNPs

gave orientation (e.g., information), asked for orientation (e.g., information), and gave an opinion as their most frequent behaviours (See Appendix N).

The non-participant observations and the field notes indicated that many of the interactions with nurses occurred during patient rounds. This appeared to support the nurses' views that patient rounds were used primarily by the ACNPs to gather patient information from them. The ACNPs collected a large amount of patient information during patient rounds which represented 45% (See Appendix N, activity label "give orientation") of the nurses' interactions with the ACNPs. Physicians asked for information most frequently during the morning meeting for patient rounds. Patients provided information to ACNPs (43%) as their most frequent behaviour.

Cohesion. Participants expressed mixed views of cohesion. Some believed there was greater team cohesion following the introduction of the ACNP role while others thought the introduction of the ACNP role had decreased team cohesion to some extent. For those who believed the ACNP role had increased team cohesion, they described being able to work together as a team, collaborate with the ACNPs on patient care issues, and share the workload. The field notes indicated that team members voiced positive thoughts of team members and used humour most frequently with members of their own professional group. Some participants described feeling more at ease to discuss patient care issues with the ACNPs than with the physicians. Participants who described less team cohesion believed there was less collaboration with other team members on clinical projects, and less involvement from the physicians in the team since the ACNP

role was introduced. The following quotes represent the different perspectives of cohesion:

> *I find that there's has been a big change at that level. There is better consideration, and the health care providers know each other better than before. It used to be really more individual, with each person working on his or her own little case, but when you wanted to talk to the other person, it wasn't always easy* (2_P 16).

> *The barrier is to empower each person in his or her role as mentor or superior, since each person must make his or her contribution to the department's activity, including the ACNPs. Of course, there will always be some who have more to contribute than others, but this nonetheless requires interest or participation by everyone. It isn't just a matter of seeing the ACNPs as people who are there to do rounds and give a report* (2_P 25).

Care coordination. The care coordination function was believed to be an important contribution of the ACNP role that affected perceptions of team effectiveness. The case had the additional challenge of being the referral center for a large geographical region and requiring additional coordination of patient transportation. The care coordination activities within and outside of the organization comprised 15.3% of the ACNPs' work time. Participants described improved patient follow-ups, better planning and safer patient discharges with improved coordination of care by the ACNPs. They believed patient needs were

identified earlier, and team members and medical consultants were involved sooner once issues were identified.

The field notes highlighted that team members including the unit agents, nurses, physicians, and inter-professional team members consulted with the ACNPs about test results, coordination and further need of diagnostic tests, and the patients' plan of care. They believed this enhanced their ability to perform in their role and made them more effective. Participants believed the coordination function of the ACNP role was particularly helpful to specialists and consultants. These providers were often located in other organizations and needed patient information or test results to finalize their consultative work. Participants described a more rapid turnover for consultations because less time was wasted waiting for specialists outside the organization to see patients.

Some participants mentioned ongoing difficulties with the coordination of wound care for out-patients. This was caused by a lack of treatment rooms and the limited availability of ACNPs earlier in the day. Participants agreed that the ACNPs were less available because patient rounds needed to be completed before noon as much as possible. Participants believed this had a negative effect on the team's effectiveness in the out-patient setting because some patients had to wait for extended periods of time, or they had difficulties coordinating multiple follow-up appointments (e.g., wound clinic and the pace-maker clinic). The following was typical of participants' views:

> *I really see them as real orchestra conductors. Just in terms of notes in the*
> *file, when you used to read how the patient was doing well: doing well.*

Good, and it was signed. But to have a whole systems review, a real

breakdown of the situation, that's greatly appreciated. Communication

certainly is facilitated, of course (2_P 15).

Problem-solving. Some participants described tensions among team members in the early stages of the introduction of the ACNP role. They described a tug of war between team members as roles were being re-organized. Some tensions dissolved over time as described in the section related to boundary work. However, some participants still believed the introduction of the ACNP role in the team was a difficult process, and they continued to experience discomfort and unease three years after the ACNP role was introduced and roles began to change. These participants had preferred to "let go" of the more problematic situations and "move on".

Some participants described some underlying tensions within the team. Participants thought this hindered team dynamics and made the team less effective. They believed it was important for team members to treat each other fairly and equitably when differences of opinion arose among team members. The document review and interviews revealed that team meetings had been held to discuss issues among team members. Some participants reported that a small number of team members had preferred to leave the service and work elsewhere. The following statement exemplified some of the tensions among team members:

During the everyday rounds, we saw that there was a tug of war over who

was right. The ACNPs wanted to make a place for themselves and the

others didn't want to give them any room (2_P 2).

Patient and family focus. Participants focused almost exclusively on the patient's experience of their hospitalization and the effects the ACNP role had on patients. Very few participants discussed the family's experience during the interviews. Those who discussed the family's involvement believed the ACNPs contributed positively to the family's experience of a family member undergoing cardiac surgery. Some described the ACNP's contribution as providing information, and helping to solve issues with "problematic" families. Most agreed that the ACNPs had very little time to focus on family issues given their workload related to patient care activities. Some participants believed that a stronger focus on the care of the family could be an opportunity to develop complementary roles of advanced practice nurses in the setting and improve the team's effectiveness.

In summary, most participants believed the ACNPs positively affected the team's perceptions of its effectiveness. The ACNPs filled a gap in patient care, provided greater access to medical prescriptions, improved patient follow-up, and facilitated the timelier delivery of care. Participants believed the ACNPs were like the "orchestra leader" of the team. Team members believed they were more effective delivering patient care because of better communication among team members, improved coordination of care, and earlier identification of patient care issues. They believed further improvements in their effectiveness could be made around patient discharges and team cohesion. Certain patient care activities could not be finalized unless the patient discharge was authorized by the physician. Participants believed that team cohesion could be improved if physicians

increased their presence in the team. Participants believed the ACNPs could develop a stronger nursing component for their role if the workload related to medical activities was lower. They thought a stronger nursing component for the ACNPs would balance the development of complementary roles with other team members.

Cross-Case Analysis

The cross-case analysis will compare structural and process dimensions in each of the cases, and highlight the similarities and differences across the cases. The key concepts in each case will be compared to identify patterns across the cases.

Health Care System-Level

Participants in Case 1 and Case 2 identified similar health care system-level concepts that had influenced the introduction and enactment of the ACNP role, and included insufficient funding, unionization, and salaries that did not recognize the patient care responsibilities of the ACNPs (See Appendix O). Both cases described difficulties with the legislation and enacting some of the provisions of the law and the joint OIIQ/CMQ guidelines. In particular, the divergent licensing board policies were problematic. Both cases had adopted strategies in an attempt to conform to the licensing board's policies. Case 1 described a slow process of change, and many iterations of the documentation were required to delegate partial prescriptive authority to ACNPs. Case 2 described two major iterations of the documentation to clarify the role of the ACNPs as the prescriber. Organizational-level concepts including nursing and medical leadership affected how the cases dealt with the system-level dimension. These are discussed in greater depth in the following section.

Organizational-Level

The ACNP roles were introduced in each case for different reasons. In Case 1 the roles were introduced to provide greater continuity of care and ensure

that patient discharges were better prepared. Case 2 introduced the ACNP roles to

improve patient flow, productivity, and ensure timely discharges for patients. In

each case the expectations for the ACNP roles were key drivers of the ACNP

roles that were enacted in the team. The ACNP roles were believed to be

necessary in each case because there was limited physician coverage and no

physician residents on service in either case. Both cases were looking to extend

coverage to week-end, night, and on-call but more ACNPs were needed in each

case to be able to do so. In addition, the patients undergoing surgery were

believed to be older, had co-morbidity and the surgeries were increasingly

complex. Participants believed this increased the demands for medical and

nursing care. The following sections compare the organizational concepts in each

case.

Prescriptive authority. The delegation of prescriptive authority to

ACNPs was an important step in the introduction of the ACNP roles in the teams

in each case. The delegation of prescriptive authority was easier if the

expectations for the ACNP role of the medical and nursing leaders were

consistent between the leaders. Greater prescriptive authority affected ACNP role

enactment and perceptions about the team's effectiveness in both cases. The

delegation of prescriptive authority to ACNPs followed similar pathways in both

cases. The specifics to prescribe medications and medical directives needed to be

accepted by the CPDP and the Board of Directors in both cases. Some challenges

were experienced in both cases to obtain prescriptive authority. The challenges

were greater in Case 1. In Case 1 few advances had been made regarding

medications for a number of reasons. They included a lack of role clarity among members of the physician group, different perceptions of the ACNP role between the nursing and medical leadership, and misunderstandings about the ACNPs' scope of practice by the CPDP. In Case 2, advances in prescriptive authority were made because members of the medical leadership group had acted to deliver a consistent message to the CPDP about the ACNP role and their scope of practice. The CPDP in Case 2 had adopted a more flexible approach to ACNP prescribing and delegated prescriptive authority for broad categories as well as specific medications.

The key elements for prescriptive authority to evolve were the CPDP's understanding of the ACNP role, and the delivery of a consistent message about the ACNP role by the medical and nursing leadership. The key element to move the approval process forward appeared to focus on what could be gained in the organization by giving the ACNPs' some prescriptive authority, and how such a change in practice could improve the care of patients.

Leadership. In both cases, the nursing and medical leadership group had undergone changes in recent months. The medical and nursing leadership affected the activities the ACNPs could perform in each of the cases. In each case the leader who championed the ACNP role and offered a clear message of what the role entailed aided the development of specific role components and promoted a common understanding of the ACNP role by others in the organization. In Case 1, the nursing managers championed a nursing component and nursing interventions for the ACNP role, and these activities were integrated into the role.

The medical leaders in Case 1 offered an unclear message of the ACNP role to the CPDP. They did not agree on what the ACNPs could do which led to less shared medical authority and fewer medical activities being practiced by the ACNPs.

The expectations of the leaders involved with the introduction of the ACNP role affected how the role played out in the team. In both cases the actions that were prioritized by the leadership group were taken up in the activities undertaken by the ACNPs. The leaders in Case 1 provided a consistent message for the nursing component of the ACNP role and a mixed message for the medical component of the role. The medical component of the role included the activities that required legislative changes to be included in the ACNPs' scope of practice. The time and motion portion of the study indicated that the ACNPs in Case 1 devoted 25.4% of their work time to medical activities (addition of activities # 1, #2, #4, #6, #11 to #16, #24, #25 in Table 3) and the communication activities of advanced practice nursing activities (addition of activities # 3, #7 to #10 in Table 3) accounted for 5.1% of ACNP time in Case 1.

Similarly in Case 2, the medical leadership offered a clear and consistent message of the ACNP role as a physician extender role which favoured the development of more medical activities. Participants believed there was no clear message for the nursing component of the ACNP role. Medical activities in Case 2 accounted for 36.3% of work time and 3.4% of the ACNPs' work time was devoted to advanced practice nursing activities such as communication activities (See Table 3). The medical and leadership group did not agree on the completion

of discharge summaries by the ACNPs and this activity was not taken up by the

ACNPs.

Table 3. Comparison of Acute Care Nurse Practitioner Activities in Case 1 and Case 2

Category	# - Activity	Case 1 (%)	Case 2 (%)
Direct care	1- Physical exam/ assessment	4.7	5.7
	2-Admission history	-	1.2
	3- Family assessment	-	0.0
	4- Order/Inter. Labs, X-Ray, ECG	3.6	6.4
	6- Drains, wounds, culture	1.3	1.2
	7- Therapeutic relationship patient	1.5	0.5
	8- Therapeutic relationship family	2.1	0.4
	9- Supportive communication	1.1	2.1
	10- Teaching-education Pt-Family	0.4	0.4
	11- Monitor/prescribe meds (not IV)	4.7	5.6
	12- Monitor/prescribe IV meds	0.4	0.8
	13- Central venous catheter care	0.0	-
	14- Nutritional feeding/diet	0.6	0.1
	16- Chest tube/ suture/packing	0.2	-
Indirect care	17-Documentation	17.8	11.9
	18- Discharge planning	4.0	1.4
	19- Participate/lead rounds	20.8	8.4
Education	20- Coaching/teaching nursing	0.8	12.3
	21- Coaching/teaching resident	3.6	-
Administration	22- Admin. Meeting	4.2	13.8
	23-Develop protocols	-	2.2
	24- Care coord./ other org.	2.9	0.7
	25- Care coord/ within org.	7.0	14.6
Research	26- Participate research/ nsg	5.7	0.1
	27- Use research in practice	0.3	0.8
	28- Participate research/ other	4.2	-
Personal Time		8.2	9.3
Total		100.0	100.0

(-): Indicates activity did not occur during the time and motion study

The ACNPs reported to the upper-level managers in the organization. Examples were found in both cases where the front-line managers were directly involved in ACNP role enactment and facilitated their integration into the team. The front-line managers were well positioned to identify team concerns or priorities. However, the front-line managers had limited influence on the development of the ACNP role or the establishment of role priorities under the current reporting structure for both cases. The leadership structures in Case 1 were different from the leadership structures in Case 2. Case 1 had retained a line-management structure where ACNPs reported to the upper-level nursing manager for administrative and clinical issues. Case 2 was in the process of transitioning to program management where upper-level nursing leaders assumed a consultative role. The ACNPs in Case 2 would report to them for administrative issues and report to the physicians for clinical issues. It was unclear to participants how this change would affect ACNP role enactment.

Common understanding. Participants in Case 1 and Case 2 differed in their understanding of the ACNP role and its components. This limited the development of the medical component in Case 1 and the expanded nursing role component in Case 2. Case 1 experienced difficulties communicating about the ACNP role and patient care situations, and this complicated the development of medical directives and the transfer of prescriptive authority to ACNPs. An important element appeared to be the communication with the CPDP and how it understood the ACNP role to then feel comfortable transferring prescriptive authority to ACNPs. Case 2 offered a shared view of the ACNP role as a

physician replacement role which promoted role clarity among team members and the CPDP. This made it easier for the CPDP to transfer prescriptive authority to the ACNPs and facilitated the development of the medical activities of the ACNP role.

Role formalization. Each case was at a different level of formalization of ACNP related documentation. In Case 1 many documents had not gone through the approval process with the CPDP and the Board of Directors. There was a lack of role clarity and no common understanding of the ACNP role among members of the CPDP in Case 1 which slowed the formalization of the role. Conversely, in Case 2 a number of documents had completed the approval process, and had been accepted by the CPDP and the Board of Directors. There was greater role clarity in Case 2 and a shared understanding of the ACNP role to be enacted in the team. The documentation of the role formalization process was different in each case and may be a reflection of the amount of documentation produced in the cases when decisions were made.

Team-Level

The participants in both cases identified similar team-level concepts. Both cases were looking to increase coverage.   Participants in both cases believed they needed a critical mass of ACNPs in the setting to extend work hours and facilitate the ACNP role to develop all four role components. The cases differed on the way they used co-location and the rewards they had identified.

Co-location. Participants in both cases described how co-location of team members facilitated the enactment of ACNP role components, increased the

team's understanding of the ACNP role, and promoted the development of complementary roles in the team. Co-location also enhanced a sense of trust among team members and facilitated the development of relationships among them. In particular, the practitioner role was easier to enact in both cases because the ACNPs were located in close geographical proximity to other team members. The ACNPs were more readily available to the team and could answer their questions or respond to their concerns in a timely manner. The CNS and ACNPs in Case 1 were co-located in the same office and that gave them an opportunity to develop complementary APN roles. Similarly, participants in Case 2 described their experiences with members of the inter-professional team who were co-located and they believed that this had facilitated their working together and developing complementary inter-professional roles. The ACNPs in Case 2 were not co-located with other advanced practice nurses. Participants believed the development of complementary roles for advanced practice nurses was more difficult in this case because they had few opportunities to interact with one another, and didn't work on common projects. The development of complementary roles in the team was an important consideration and is described in greater depth in the section related to the health care team's scope of practice.

Rewards. In both cases the intra-professional team reported feeling a greater sense of security and less psychological stress when the ACNPs were working in the team. They felt they could rely on the ACNPs for support. This was particularly salient in Case 1 where the level of experience was markedly lower (63% < 5 years experience) and the turnover rate was higher. The nurses in

Case 2 had more experience in the specialty and had developed a level of clinical expertise. Some participants questioned whether the addition of the ACNP role in Case 2 would de-skill these providers over time. In both cases, members of the inter-professional team believed the addition of an ACNP role made their job easier because they had someone with whom they could discuss patient care issues. The inter-professional team members felt validated that their clinical input was important in the overall plan of patient care. Routine medical care activities were assumed by the ACNPs in each case and this was seen as a relief of the physicians' workload by participants.

Acute Care Nurse Practitioner-Level

Participants in both cases identified a number of facilitating personal characteristics. They included assertiveness, an ability to work closely with others, to work in stressful environments, being responsible, self-confident, and well organized. Being fair was important if conflicts arose among members of the team. Participants in both cases believed the formal training and education of the ACNPs had prepared them to assume their professional role.

Patient-Level

Similar changes in patient demographics and health and illness characteristics were identified by participants in both cases. They believed the patients were undergoing surgical procedures at a more advanced age. Patient had more co-morbidity and chronic illnesses such as diabetes and renal insufficiency. Procedures were also becoming increasingly complex and including more combined coronary artery bypass grafting and valvular repair or replacement. The

changes in patient demographics and characteristics and related surgical

procedures were believed to be important to the team's effectiveness because such

patients required more medical and nursing care.

Acute Care Nurse Practitioner Scope of Practice

The scope of practice of the ACNPs was limited in each case and the

medical or expanded nursing role component of the role was not fully enacted.

The priorities and expectations for the ACNP role affected the day-to-day

activities that were undertaken by the ACNPs. The ACNPs completed almost 18

activities per day. Some activities were enacted in only one case (See Table 3).

The primary reasons for not enacting certain activities were the limited number of

ACNPs to complete the task, or the lack of authority to do so. Participants in both

cases believed that greater use of invasive techniques or procedures would

enhance the team's effectiveness and provide timelier care to patients awaiting

certain procedures such as thoracentheses. Almost no time was measured for

invasive technical activities (e.g., activities # 11 and #15) in either of the cases

even though such activities were included in the ACNPs' legislated scope of

practice.

Role Components

The role components were enacted differently in each case. The ACNPs

in both cases did not use all the time allotted by the collective agreement for their

personal time. In both cases the ACNP mealtimes were interrupted to address

changes in patients' conditions, update or adjust prescriptions, and review test

results. The comparison of the time spent in each role component is presented in

Table 4.

Table 4 Comparison of Acute Care Nurse Practitioner Role Components in Case 1
and Case 2

	Case 1	Case 2
Total Time	43h 32 min	65h 21 min
Practitioner	73.0%	61.5%
(Items 1 to 19, 24, 25)	(Items 24 + 25 = 9.9%)	(Items 24 + 25 =15.3%)
Education (Items 20-21)	4.4%	12.3%
Administration (Items 22, 23)	4.2%	16.0%
Research (Items 26 to 28)	10.2%	0.9%
Personal Time (Item 30)	8.2%	9.3%

Research. In both cases the ACNPs used research in practice and

searched clinical databases to inform their patient care decisions. In Case 1, the

nursing and medical leadership believed the ACNPs needed to develop a research

component for the ACNP role. The time and motion portion of the study

indicated the ACNPs spent time in medical as well as nursing research activities.

However, in Case 2, there was no consistent message from the medical and

nursing leadership regarding the research component of the ACNP role. In Case 2

very little time was devoted to this role component. This was due primarily to the

need to balance the workload associated with patient care and the other role

components even though some funding was available to ACNPs to attend research

related activities.

Educator. The development of the educator role component differed in

each case. In Case 1, the ACNPs spent a larger portion of their time in teaching

activities with the medical student. Yet the use of brief teachable moments was identified as a key contribution of the ACNP role to nursing staff development. Even though the time involved was short, these brief teachable moments were believed to be particularly beneficial. The time and motion portion of the study indicated that over 61% of the education activities in Case 1 lasted one minute and appeared to support the team's description of the ACNPs use of brief teachable moments. Nursing staff education was deemed to be a priority for the team by team members and nursing managers because Case 1 had less experienced nursing staff. The ACNP role was seen as a precious clinical resource for the less experienced medical and nursing staff. In Case 2, the educator role component was primarily devoted to teaching a cardiology ACNP student. The turnover rate for nursing staff was lower in this team and the number of years of experience of the nursing staff was higher. The need to develop the educator role was not as salient in this case. Participants believed there was no clear priority of nursing staff education from nursing leadership in this case. These findings appear to indicate that characteristics of the team such as the level of experience or the turnover rate in the team play a role in guiding the development of ACNP role components.

Administrator. The involvement of the ACNPs in the administrative component of their role was a difficult balance to achieve. In both cases some pressure was exerted by physicians to limit the ACNPs' involvement in administrative activities in order for the ACNPs to remain as much as possible in patient care activities. The nursing leaders in Case 1 had chosen to limit the

ACNPs involvement in administrative activities to allow the ACNP to focus on the development of other role components and avoid the "politics" involved in the enactment of the ACNP role. They had involved the ACNPs in the later stages of the role introduction process. The ACNPs in Case 2 were involved earlier in the process of role introduction and in a larger number of administrative activities.

The actual number of ACNPs in the setting facilitated the enactment of this role component. A larger number of ACNPs increased the time flexibility of ACNPs to fill the administrative role component and divide role responsibilities. Case 1 had worked with very limited ACNP resources for an extended period of time, and the time and motion indicated that no time was spent in protocol development. Conversely, Case 2 functioned with a larger contingent of ACNPs, and the administrator role component was more developed. The ACNPs in Case 2 divided up their participation in different committees and selected tasks that fit with their preferences when that was possible.

In both cases the ACNP involvement in administrative activities may have served more than one purpose. The ACNPs involvement in some of the administrative activities in the organization was believed to facilitate acceptance of the ACNP role by members of the CPDP. It allowed the ACNPs to familiarize themselves with the acceptance process for prescriptive authority for medications, and promoted greater understanding of physician concerns in relation to sharing prescriptive authority. The ACNP involvement in administrative activities made it easier for ACNPs and managers to market the ACNP role to others in the team.

Ultimately, some participants believed it made it easier for the CPDP to delegate prescriptive authority to providers they knew.

Practitioner. The practitioner role was the largest ACNP role component in both cases. The activities included in the practitioner role for Case 1 and Case 2 were similar and these were presented in Table 3 (p. 183). The mean time and the standard deviation in each category varied between the cases, and the activities occurred more quickly in Case 2 than in Case 1 (See Table 5). The percentage of activities that lasted one or two minutes was 14% higher in Case 2 than in Case 1. The pace of work was believed to be a factor that limited the ACNPs' ability to develop relationships among other team members, and appeared to support the team's description of working in a fast-paced "factory" in Case 2.

The indirect care activities were enacted very differently in each of the cases. Participants in both cases believed the clear progress notes developed by the ACNPs improved communication and were key contributors to the team's effectiveness. The overall percentage of time spent completing the indirect care activities in Case 1 was almost double that of Case 2. This was primarily due to the time required to complete a detailed workbook used by the ACNPs to dictate the patients' discharge summaries and patient rounds with physicians.

The patient rounds in Case 1 were different from the rounds in Case 2 because the ACNPs' decision-making authority had not been fully delegated by the CPDP in Case 1. The ACNPs in Case 1 supplied patient information, and made suggestions to the physicians. They made few patient care decisions autonomously that were within the scope of their role. In Case 2, the patient care

issues that were within the scope of practice of the ACNPs could be resolved

without the intervention of the physicians since decision-making authority had

been transferred to the ACNPs.

Table 5 Comparison of mean time and standard deviation of role categories in Case 1 and Case 2.

Site	Category	Mean (hour:min)	(SD)* (hour:min)	Freq.
Case 1	Direct	00 h 03	(00 h 03)	166
	Indirect	00 h 05	(00 h 08)	203
	Education	00 h 04	(00 h 13)	26
	Admin	00 h 08	(00 h 11)	43
	Research	00 h 18	(00 h 21)	14
	Other	00 h 09	(00 h 16)	21
	Total	00 h 05	(00 h 09)	473
Case 2	Direct	00 h 02	(00 h 02)	423
	Indirect	00 h 02	(00 h 04)	302
	Education	00 h 13	(00 h 22)	36
	Admin	00 h 08	(00 h 12)	150
	Research	00 h 05	(00 h 04)	6
	Other	00 h 22	(00 h 27)	16
	Total	00 h 04	(00 h 08)	933
Total	Direct	00 h 02	(00 h 02)	589
	Indirect	00 h 03	(00 h 06)	505
	Education	00 h 09	(00 h 19)	62
	Admin	00 h 08	(00 h 12)	193
	Research	00 h 14	(00 h 18)	20
	Other	00 h 15	(00 h 22)	37
	Total	00 h 04	(00 h 09)	1406

*SD: standard deviation

Acute Care Nurse Practitioner Role Enactment

Participants in both cases described a number of challenges to enact the joint OIIQ/CMQ guidelines and the non-clinical components of the ACNP role. In both cases, a number of structural dimensions were believed to affect how the ACNP role evolved in the setting, and whether the ACNP role was enacted as a physician extender or a nursing role. In particular, the role of the medical and nursing leadership and the identification of a champion for the ACNP role were key factors that influenced ACNP role enactment. The medical or nursing role champion that had been identified in each of the cases helped to push that portion of the role's development in the organization. The medical or nursing role champion promoted a common understanding of the role among team members, the CPDP or the Board of Directors.

The ACNPs' role enactment changed in both cases depending on the physicians with whom they interacted. The changes noted in Case 1 were more substantial than the changes noted in Case 2. This appeared to be related to the amount of structures that were in place in each case. Fewer structures were in place to formalize the ACNP role in Case 1. The ACNP role enactment in Case 1 changed on a weekly basis depending on the physician who was on service. In Case 2, more structures had been put into place and the ACNP role was more formalized in the organization. The ACNP role enactment in Case 2 changed primarily for a small group of surgeons who preferred to complete their own pre-operative assessments.

Health Care Team Scope of Practice

The professional groups in each case identified activities that were unique to their professional group and their scope of practice. They identified other activities that were shared with the ACNPs. The changes in scope of practice following the passage of Bill 90 in 2002 had not happened at the same pace in each case. Case 1 had experienced a slower pace of change than Case 2.

Participants in both cases believed there was little overlap between the roles of different team members. Participants believed complementary roles improved the team's effectiveness. This was particularly salient for the development of different nursing roles. The CNS, nurse educator and ACNP roles shared certain functions and nursing managers needed to develop complementary nursing roles in the team. In Case 1, participants highlighted that co-location of team members, particularly the advanced practice nurses (i.e., CNS and ACNPs), had provided team members with an opportunity to understand how each role worked and their distinct contributions to patient care. Conversely, in Case 2, the advanced practice nurses were not located in close proximity, and the CNSs had very few opportunities to interact or work with ACNPs on common projects.   Some members of the inter-professional team were co-located and they believed this improved the care they provided to patients and enhanced their team's effectiveness.

In addition, the CNSs in each case had different patient care responsibilities. The CNSs in Case 2 did not have direct patient care responsibilities. This limited their opportunity to interact with the ACNPs

because the latter spent the majority of their work time in patient care activities. Some participants believed the limited involvement of advanced practice nurses in common projects hindered the development of complementary roles in the team.

Boundary Work

Participants in both cases identified four steps in addition to the passage of time to accomplish boundary work. In both cases, the awareness of boundary work lasted approximately six months. Team members in both cases described core professional activities that were unchanged. The boundary work occurred along the edges of each professional role and the ACNP role for the activities that were shared between team members. Participants in both cases believed they needed to make space for the new role. The intensity of boundary work increased with the loss of valued functions and professional groups identified losses as they related to their distinct group. Boundary work among team members was facilitated by the use of specific inter-personal dynamics such as respect and listening. Time was an ally in boundary work but could complicate situations when team members became entrenched in their positions (See Appendix P).

A key variable in boundary work was the development of trust among team members. In both cases, trust was built up incrementally over time and was enhanced when providers followed through with their stated actions. Being respectful of others, listening and getting to know one another were all facilitating behaviours that led to greater trust. In both cases, difficulties establishing a trusting relationship hindered boundary work irrespective of the professional group.

In Case 1, the establishment of a trusting relationship was more challenging between members of the physician group and between the ACNPs and some members of the intra-professional group. In Case 2, the establishment of a trusting relationship was more difficult with some members of the intra- and inter-professional groups. In both cases the early involvement of team members was a facilitator of boundary work. This was particularly important for team members who were expected to lose a valued role function. Those who had lost valued functions described feelings of mourning, being pushed aside and being abandoned as indicators of loss.

Perceptions of Team Effectiveness

The ACNP roles were introduced in Case 1 and Case 2 for different reasons. Each case believed the ACNP role improved the team's ability to meet patients' care needs. Positive perceptions of team effectiveness were expressed in both cases whether the ACNP role was enacted as a physician extender or an expanded nursing role. This was primarily due to the need to fill a gap in patient follow-up that had been identified in both cases. Similar team processes were identified in both cases and they were believed to affect perceptions of team effectiveness. The key processes identified in Case 1 and Case 2 related to perceptions of team effectiveness are summarized in Appendix Q.

In both cases the ACNP role was believed to positively influence the team's perceptions of its effectiveness because patient follow-ups were more complete and done in a timelier manner. In addition, medical issues were addressed sooner because the team had easier access to a knowledgeable provider

and medical prescriptions, and patient discharges were better prepared. The ACNPs improved communication among team members, provided a global view of patient care, and supported the practice of nurses and physicians in the team.

Decision-making. The ACNPs' expanded decision-making related to medical and psycho-social issues contributed to the team's perceptions of its effectiveness in both cases. The decision-making authority in Case 1 was primarily related to nursing issues and very little medical decision-making authority had been transferred to the ACNPs. Team members in Case 1 had developed strategies to work within the organizational policies and exploit some of the ACNP's expanded scope of practice and decision-making. In Case 2, medical decision-making authority within the ACNPs' legal scope of practice had been transferred to them. This was believed to improve the team's effectiveness.

Communication. Communication among team members was facilitated following the introduction of an ACNP role in the team in both cases. Team members believed clear progress notes written in each patient's chart gave them greater access to detailed patient information and a plan of care. The ACNP-instituted inter-professional team meetings provided a forum to discuss any patient care issues and believed positively affected the team's effectiveness. Team members in both cases believed they had a greater voice in patient care since the ACNP role was introduced into the team. Team members also believed that the ACNPs' use of listening, their availability to others, their interactive discussions and overall awareness of each team member validated their distinct contribution to care and facilitated team communication.

The structures that were in place affected the patterns of communication in the team and changed the way patient rounds where conducted in each case. Differences in communication patterns were noted between the ACNPs in Case 1 and Case 2 (See Table 6). The lack of facilitating structures made it necessary for ACNPs in Case 1 to validate all their decisions with the physicians more frequently to provide patient care that was within their scope of practice. They needed to speak with physicians more frequently (See Appendix R). The ACNPs in Case 2 needed to validate the overall plan or direction for patient care with the coordinating physician because decision-making authority had been transferred to them. They gathered information from the nurses and patients in order to develop plan of care, and the nurses became the primary targets of communication of the ACNPs in Case 2. The ACNPs in Case 2 initiated almost twice as many interactions as compared to ACNPs in Case 1.

Table 6. Comparison of the Most Frequent Targets of Communication in Case 1 and Case 2

	Initiator	Person as target			
		More often		$\longrightarrow$	Less often
Case 1	ACNP	Physician	Nurse	Physio	Patient
Case 2	ACNP	Nurse	Patient	Physician	Physio

Cohesion. Cohesion was identified in both cases and improved perceptions of team effectiveness. In both cases, participants believed the ACNP role allowed them to collaborate with other providers, work together to solve patient care issues, and share their workload. They also believed the introduction

of the ACNP role made them "more of a team" and brought people of the intra-
and inter-professional group together to work together instead of working as
individuals. In Case 1, the ACNPs' use of listening and greater availability
helped to create a greater sense of cohesion among team members, and made
them feel more involved in patient care decisions. In Case 2, cohesion had
increased for most members of the inter-professional group. It was believed to
have decreased to some extent because the physicians were less involved in the
team. Participants believed this was consistent with physicians' wishes to
concentrate their work time in the operating room following the introduction of
the ACNP role. In addition, cohesion was lower in Case 2 because some team
members were hoping to see greater collaboration between members of the intra-
professional group and the ACNPs on common projects.

Care coordination. Care coordination was believed to be a key
contribution of the ACNP role to the team's effectiveness in both cases. The care
coordination concept included the coordination of the input of different health
care providers, timelier care delivery and patient evaluations, and safer patient
discharges because patient issues were identified earlier during the
hospitalization. Other providers were involved in patient care sooner or as
required.

The portion of time spent in coordination activities differed in Case 1 and
Case 2. The proportion of care coordination activities was greater for the ACNPs
in Case 2 and seemed to be closely linked to the key role of ACNPs in patient care
decision-making in that setting. The ACNPs in Case 2 were more involved with

consultants, telephone consultations with other specialists, and referrals to other centers. The autonomy of ACNPs to make decisions about patient care appeared to be more important in care coordination activities than the case's position as a referral center for a large geographical area, and the need to coordinate long distance travel and transfers to other health care organizations.

Problem-solving. Participants in both cases believed they had a greater voice in problem-solving of team issues and patient care issues following the introduction of the ACNP role. This was believed to enhance the team's effectiveness. Team tensions and issues were believed to have decreased over time but some unease remained with certain groups. In Case 1, tensions in the team remained with some team members because of the limited scope of practice of ACNPs and their limited prescriptive authority. In Case 2, some tensions continued to be felt in the team because of some unresolved boundary work among certain team members.

Patient and family focus. The focus on patients and families was different in each case. In Case 1 the focus on patient and families permeated the interviews. Some of the emphasis on patient and families may be related to the ACNPs' personal preference and training or the organization's emphasis on family-centered care. In addition, nursing leadership emphasized a strong nursing component for the ACNP role in Case 1. Conversely, in Case 2, the focus was on the care delivered to patients. The ACNPs had received similar training as the ACNPs' in Case 1 and they expressed an interest in involving families in patient care. However, the workload and time constraints associated with patient rounds

coupled with the higher number of interactions already noted in Case 2 may help to explain the limited involvement of ACNPs with families.

In summary, the analysis of the different data sources provided insights into the reciprocal relationship between structures, processes and outcomes (See Figure 2, p. 205). The different data sources converged on similar findings. The cross-case analysis revealed a number of similarities and some differences between the cases. Similar structural dimensions affected the introduction of the ACNP role and how the ACNP role developed in the team. The cross-case analysis identified that ACNP role enactment appeared to be particularly sensitive to health care system-, organizational- and team-level dimensions. A number of concepts were identified within these dimensions and needed to be added to the conceptual framework.

The dimension of boundary work was useful to understand how roles changed following the introduction of a new ACNP role and how the new role affected team members and their perceptions of team effectiveness. The cross-case analysis allowed for greater refinement of our understanding of the boundary work dimension. The study found that team members engaged in four essential boundary work activities over time as they worked through or across boundaries with other professional groups. An existing relationship of trust among team members was a key facilitator of boundary work and affected the delegation of prescriptive authority and decision-making autonomy which in turn affected the timely follow-up of patients, discharge planning and safety.

The concepts related to perceptions of team effectiveness that were identified in the review of the literature were helpful to understand how the team viewed its own effectiveness. Each concept had a specific definition to distinguish it from the other concepts that were included in the framework. For example, the participants' descriptions of the inter-personal dynamics were different from the descriptions of communication within perceptions of team effectiveness. The cross-case analysis supported the inclusion of these concepts.

A number of concepts in the structural and process dimensions worked synergistically. For example, a sense of trust between members of the medical group, and a common understanding of role expectations affected the transfer of prescriptive authority to ACNPs. It was easier for the medical advisory board to transfer prescriptive authority to ACNPs if a trusting relationship had developed with the ACNPs and between members of the medical group. A greater sense of trust was developed if the medical advisory board received a consistent message from members of the medical and nursing leadership group about the ACNP role. Prescriptive authority in turn affected the ACNPs' level of autonomy to make patient care decisions, and changed the communication patterns in the team.

To take another example, the ACNPs' ability to coordinate patient care affected the team's ability to deliver timely care to patients and families. The coordination of patient care depended on the transfer of decision-making authority to ACNPs and the ACNPs' understanding of each team members' role. Greater understanding of each team members' role was facilitated by the use of co-location, and working together on common projects or sharing common goals.

The analysis of the cases and the cross-case analysis brought to light that many of the concepts were interrelated and affected each other. Structural and process concepts related to boundary work affected ACNP role enactment and perceptions of team effectiveness. Some of the concepts within these dimensions had not been identified in the adapted framework, and need to be added to the framework to better illustrate the dynamics at play. Finally, some of the more dynamic relationships between the concepts were more challenging to represent using a linear model.

Structure ←→	Process ←→	Outcome
Health Care System-Level	**ACNP Scope of Practice**	

Structure	**Process**	**Outcome**
Health Care System-Level	**ACNP Scope of Practice**	
Legislation	**Role Components** ←→ **Role Enactment**	**Quality**
Licensing board policies		
Funding considerations	Research Physician extender role	Satisfaction
Unionization	Educator Expanded nursing role	Staff knowledge
	Administrator	Patient follow-up
Organizational-Level	Practitioner	Timely care
Prescriptive authority		Discharge
Leadership		planning
Common understanding		
Role formalization	**Health Care Team**	**Safety**
	Scope of Practice	
Team-Level	**Role Enactment** ←→ **Perceptions of**	**Cost**
Coverage	**Team Effectiveness**	System
Co-location		Provider
Critical mass	Boundary work	Patient
Rewards	Creating space Decision-making	
Characteristics	Loss Communication	
	Trust Cohesion	
ACNP-Level	Inter-personal Care coordination	
Personal characteristics	dynamics Problem-solving	
Education	Time Patient/family focus	
Patient-Level		
Demographics		
Health and illness characteristics		

Figure 2. Conceptual framework of acute care nurse practitioner role enactment, boundary work and perceptions of team effectiveness (linear model).

Chapter 5-Discussion & Conclusion

This section of the thesis will review the key study findings related to the introduction of ACNP roles and perceptions of team effectiveness. A new conceptual framework is proposed to better illustrate the study findings. In order to represent the dynamic nature of the relationships between the concepts, each section will outline a portion of the conceptual framework, and include a presentation of the major findings and the key inter-relationships with other concepts. The conceptual framework includes three central process dimensions, structural dimensions, and outcomes of care. Subsequently, the study's contributions, limitations, implications, and a brief conclusion are presented.

Key Study Findings

Team members in each case believed the team was more effective in providing patient care after the ACNP role was introduced. Their perceptions were not affected whether the ACNP role was introduced as a physician extender or an expanded nursing role. They considered the ACNP role filled a gap in patient care, and improved key team processes. The time spent in each ACNP role component differed in the two cases, and was closely aligned with the context-specific role expectations and messages from the medical and nursing leadership group, power dynamics within that group, and how the leadership group dealt with the divergent licensing board policies. The transfer of prescriptive authority and decision-making autonomy differed in each case, and determined if the medical component of ACNP role was enacted in the team. Medical and nursing leadership, a common understanding of the ACNP role, and

trust affected the transfer of prescriptive authority and role enactment of ACNPs the most.

This study brought to light the effects of divergent licensing board policies on ACNP role components and role enactment, patterns of communication and decision-making in the day-to-day working of the teams. The lack of guidelines to clarify the development of the medical directives and the transfer of prescriptive authority for ACNPs was a barrier to the introduction of these roles in both teams. This was offset, to some extent, by the medical and nursing leadership group but led to portions of the ACNP role to be underdeveloped and underutilized among ACNPs participating in this study. The lack of clear policies allowed the medical advisory board to enact the ACNPs' scope of practice as a physician extender or expanded nursing role, and preserved, for the most part, the existing boundaries and power dynamics between the professional groups.

Conceptual Framework

The study identified key structural and process dimensions that affected how the ACNP roles were introduced in the teams as well as the indicators used by team members to judge their team's effectiveness. The adaptations that had been proposed in the conceptual framework (Figure 2, p. 205) were useful to analyse the data but painted an incomplete picture of the introduction of ACNP roles in health care teams, boundary work, and perceptions of team effectiveness. The findings of this study demonstrated that the enactment of ACNP roles in health care teams can be seen as a complex set of interactions and activities embedded into one another like the Matryoshka Nesting Dolls (Herod, Rainnie, &

McGrath-Champ, 2007). Herod et al. argued the dolls fit snugly into one another and symbolized the nested hierarchy where the outer layer (health care system) constrained the inner layer (organization) which then acted on the next inner layer (team) until the center was reached.

A new conceptual framework was proposed to describe the multi-level influences that were identified between the dimensions. The purpose of the new conceptual framework in Figure 3 was to identify the key concepts that affected ACNP role enactment, boundary work, perceptions of team effectiveness. In addition, the framework identifies the structural dimensions that constrained or expanded around the three central process dimensions, and outcomes of care. Further, the framework represented the close relationships between the three central process dimensions.

Structural and process dimensions and their related concepts worked synergistically to affect ACNP role enactment, boundary work, and perceptions of team effectiveness. Such inter-relationships were not adequately represented with a linear model. A more dynamic representation that indicated the team's position in the organization and included the broader context of health care better illustrated the study findings.

The dimensions of the conceptual framework included the three central process dimensions of ACNP role enactment, boundary work, and perceptions of team effectiveness, structural dimensions from the patient- to the health care system-level, and outcomes of care. Within each dimension the key concepts that
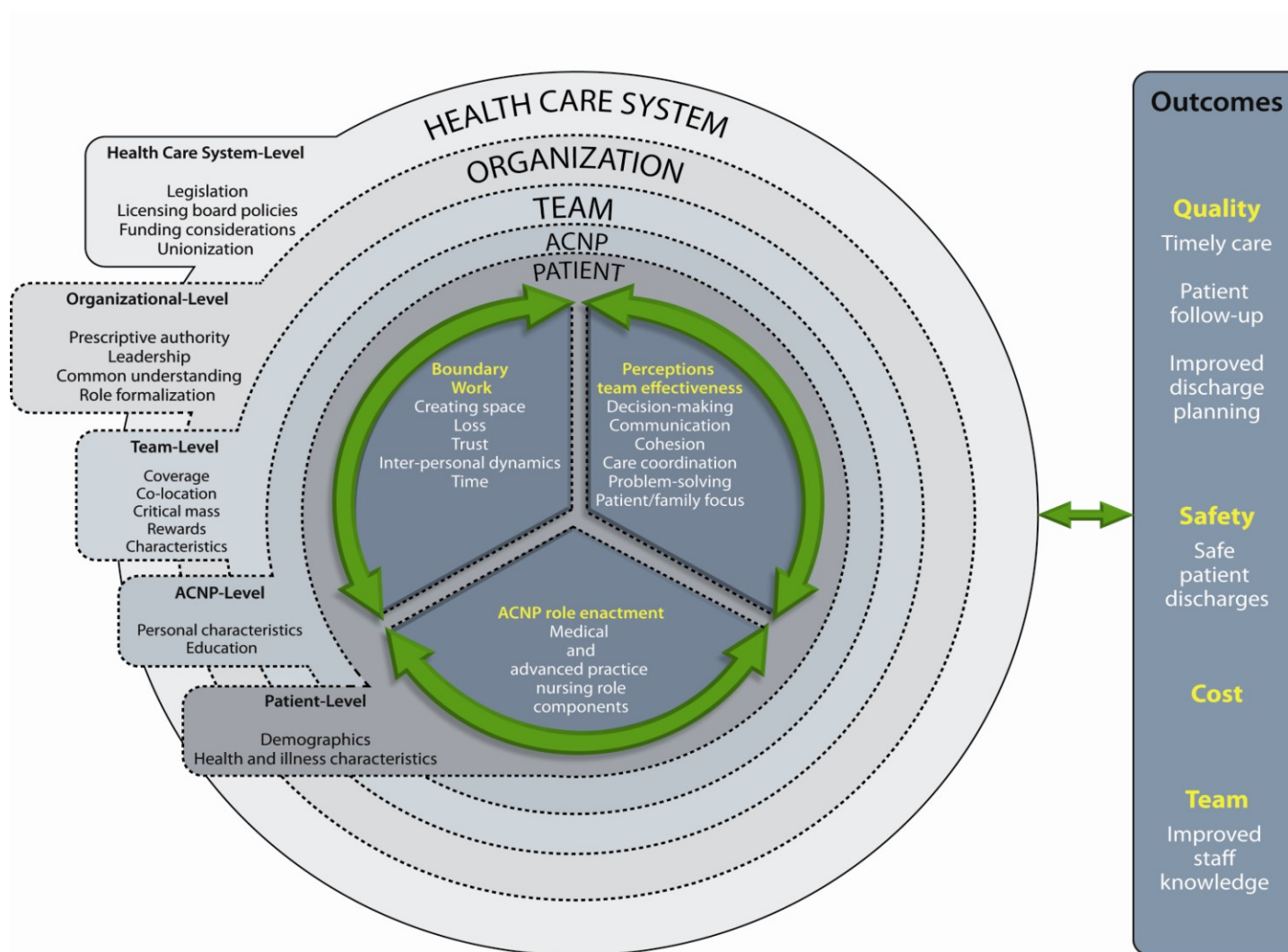
Figure 3. Conceptual framework of acute care nurse practitioner role enactment, boundary work and perceptions of team effectiveness.

different stakeholder groups needed to consider when introducing an ACNP role in health care teams were identified. These concepts facilitated boundary work, maximized perceptions of team effectiveness, and affected outcomes of care. The three process dimensions were at the heart of the new conceptual framework presented in Figure 3. Each of these three central process dimensions was closely related to and affected by the two other process dimensions. Their relationships were symbolized by the bi-directional arrows surrounding the three central process dimensions and the dotted lines between them.

Further, these central process dimensions were affected by the layers of structural dimensions. These structural dimensions were represented by the outer circles that circumscribed the three central process dimensions, and moved from the patient- to the health care system-level. The circles that were positioned closer to the team exerted a more direct effect on the three central process dimensions. For example, the concepts that were in the organization or health care system dimension were further away from the team but continued to exert an influence on the central process dimensions. The three central process dimensions affected the structural dimensions at all levels. These bi-directional relationships were represented by the dotted lines between the three central process dimensions and the structural dimensions. Each of these dimensions affected the outcomes of care. A reciprocal relationship existed between the outcomes of care and the other dimensions of the conceptual framework. This relationship was represented by a bi-directional arrow between the dimensions. The following sections present the three central process dimensions and the key inter-relationships with other concepts that were identified.

Acute care nurse practitioner role enactment. The ACNP role enactment as a physician extender or an expanded nursing role depended on how the four ACNP role components were integrated in their practice. The ACNPs in the study had difficulty to enact all the components of an ACNP role. A large portion of their work time was spent in the practitioner role. Other researchers have found that ACNPs spent anywhere from 25% to 100% of their work time in patient care activities (Hurlock-Chorostecki, van Soeren, & Goodwin, 2008; Roschkov et al. 2007; Sidani et al., 2000; Turris et al. 2005). Some of the differences may be attributed to the methods used to collect the data (Hurlock-Chorostecki et al.; Roschkov et al.; Sidani et al., 2000). The present study documented care activities as they unfolded over the course of the day, and was not dependent on the participants' recall. In addition, the differences can reflect the fluid nature of APN roles (Bryant-Lukosius et al., 2004) enacted in response to the needs of patients, teams, and the organization.

The number of ACNP activities performed in response to the needs of patients and families in the present study was lower than the number of activities identified by Sidani and colleagues (2000) who found that ACNPs performed an average of 24 activities per day. The differences found in the present study can be attributed to the definitions of the care activities, and the limited scope of practice of the ACNPs participating in this study. In the present study similar types of activities were regrouped in the time and motion tool to reduce the number of items. In addition, the ACNPs used invasive procedures that were within their legal scope of practice very infrequently. Some care activities were not practiced because the ACNPs lacked prescriptive authority to do so. Finally, some

activities such as the removal of temporary pace-maker wires were allocated to different providers in each case.

The time spent in the non-clinical role components (i.e., educator, administrator and research role components) was consistent with the messages the ACNPs received from the medical and nursing leadership in the organization, and in response to the specific needs of the team and patients and families. In addition, the pace of work also interfered with the ACNPs ability to develop all the components of an ACNP role. The case that inherited a history of being a "cardiac surgery factory" also had the fastest pace of work for the ACNPs. A higher workload related to higher patient care demands or insufficient numbers of ACNPs to complete work activities has been found to limit the ACNPs' ability to develop all the components of an ACNP role (D'Amour et al., 2007; Kilpatrick et al., in press). Researchers (Irvine et al., 2000; Roschkov et al., 2007; van Soeren & Micevski, 2001; Williams & Sidani, 2001) have found the inclusion of the non-clinical role components in ACNP practice to be limited. The ongoing challenge to enact these role components reinforces the need for a clear vision for ACNP roles and an agreement by stakeholders on ACNP role expectations.

The educator role component was a particularly salient feature of the ACNP role in the case where the nursing staff had limited clinical or specialty-specific experience or knowledge. The use of brief teachable moments was particularly helpful to the staff, and made effective use of the high value that nurses placed on experiential learning (Estabrooks, Chong, Brigidear, & Profetto-McGrath, 2005). The ACNPs delivered information that was timely and tailored

to the needs of the nurses with whom they had built up a trusting relationship over time.

Boundary work. Participants in this study described boundary work between the ACNPs and members of the health care team as a process that evolved over time and moved through a series of four steps in order to be successful . Boundary work activities needed to occur across professional groups, and at different levels to enact the ACNP role in the team. The boundary work at the levels of the organization and the team exerted an important effect on ACNP role enactment. Boundary work at the level of the organization was primarily around the transfer of prescriptive privileges. Such boundary work activities were sensitive to the needs of the groups in positions of power. Some physicians wanted to retain decision-making authority, and viewed prescribing as a part of their identity. The loss of exclusivity of prescriptive authority for physicians can be seen as a threat to their unique contribution in the team and a narrowing of the *"competence gap"* that set the medical profession apart from other groups in health care (Friedson, 1983, p. 282). The loss of prescriber exclusivity, calls to share admissions and discharge privileges, and shared responsibility in treatment plans and patient care decision-making may be construed as a threat to medicine's jurisdictional boundary (Allen, 1997; Friedson, 1985). Shared prescriptive authority with other non-physician providers has raised issues of professional liability and the increased risk of litigation for physicians (Canadian Medical Protective Association & Canadian Nurses Protective Society, 2005) even though liability risks were low and malpractice claims related to NP practice were "exceptionally rare" (DiCenso et al., 2009, p. 13).

The way in which boundary work was managed at the level of the team affected how the teams functioned in this study. A shift in the boundaries between professional groups needed to occur at the level of the team for the ACNP roles to be integrated in the team. This was consistent with the work of Denis, Lamothe, Langley, and Valette (1999, p. 108) who argued that it is at the level of the team that initiatives needed to take root if they were to be successful. These authors also argued that fundamental boundaries were defined at that level of the organization (i.e., operational). This brings to the forefront the key role played by medical and nursing leaders in establishing and controlling boundaries and expectations in health care teams (Schneider, 1987).

The ACNPs' ability to integrate in the team depended most on the development of trusting relationships with team members. A sense of being able to predict the behaviours of others in the group, and feeling safe in taking risks facilitated the development of a sense of trust among team members. Trust and trustworthiness of individuals and the organization were built, maintained, and enhanced when team members acted consistently, followed through with care activities, and considered the needs of other team members. A sense of distrust existed among some team members prior to the introduction of the ACNP roles in one case and continued to hinder boundary work in the present study. Organizational trust by team members carries over from past experiences (Oliver & Montgomery, 2001). Ferlie, Fitzgerald, Wood, and Hawkins (2005) argued that differences between groups were rarely overcome if there was a history of distrust. The sense of distrust among team members needs to be addressed by leaders and team members prior to the introduction of new roles in the team.

In one case, team members attempted to find ways to work around the existing boundaries related to prescriptions while remaining within the organization's policies. Such risk-taking activities by team members were possible if team members had an understanding of the expectations of other team members (Côté, Demers, & Séguin, 2008). Team members blurred the boundaries of their roles when there was a sense of trust. This was exemplified when team members accepted verbal orders from the ACNPs to execute care. This "de facto blurring" (Allen, 1997, p. 511) of boundaries was to benefit the patients, to provide quality care, and helped to change the boundaries at the level of the team.

The CNSs and ACNPs in this study described boundary maintenance activities. These boundary work activities appeared to be necessary because both providers shared a number of roles and responsibilities. The overlap of roles may be greater between these providers than with other providers within a specialty (DiCenso et al., 2009, Kilpatrick et al., in press). The CNS and ACNP roles shared similar levels of education at the graduate level (CNA, 2009). They were both involved with complex patient care situations, care coordination, and the promotion of evidence-based practice (Schreiber et al., 2005). This reinforced the need for each group to highlight the distinct characteristics of each of their roles. Norris (2001) found that identifying with the uniqueness of one's professional role helped to create a sense of professional identity for each provider.

Boundary work activities and a greater understanding of the professional roles of team members' were facilitated by the use of co-location in this study. Co-location was defined as bringing professionals together in a physical location

(Kahn & McDonough, 1997). Team members had greater success in developing complementary roles with others in the team if they were located in close geographical proximity, and worked on common projects. Co-location facilitated the development of a common understanding (Reddy, Dourrish, & Pratt, 2001), improved coordination of work (Hudson, Hardy, Henwood, & Wistow, 1997), and facilitated the transfer of prescriber functions to pharmacists in primary care (Farrell et al., 2010).

Different professionals also needed to work together on common projects to facilitate the development of complementary roles in the teams. Team members need opportunities to discuss their role before they could articulate role differences to other members of the team (Wall, 2006). Ferlie et al. (2005) argued that such interactions helped to overcome differences between professional groups by increasing social interactions and trust.

The intensity of boundary work activities was related to the potential or actual loss of a valued role function by team members. It would appear to be particularly important for leaders to use co-location for team members who risk losing a valued role function once an ACNP role is introduced, and develop opportunities for them to work on common clinical or organizational projects with ACNPs. This could enhance discussions about role development and role changes to come to a common understanding of each role and the contribution of different team members (Wall, 2006).

This study highlighted how decisions about co-location affected boundary work, the development of complementary roles, and communication in the teams and extended our knowledge of the effects of co-location on team members.

D'Amour and colleagues (2005, p. 120) identified "a common space" as a facilitator of collaboration within inter-disciplinary teams and argued that "it is unrealistic to think that simply bringing professionals together in teams will lead to collaboration" (p. 126).   Some team members experienced tensions related to unresolved boundary work which highlighted that teams also needed to deal with conflicts and solve problems in order to be effective. The present study supported the assertion that trust, communication, problem-solving, and working to achieve common team goals were necessary for team members to continue working together.

Perceptions of team effectiveness. The present study identified that team members believed the team more was effective to deliver patient care following the introduction of an ACNP role because the ACNP role positively affected team processes. Studies of other groups in health care have found links between team structures, team process, and team performance (Wang, Hsu, Chen, & Lin, 2008). In particular, the ACNPs played an important role in communication and care coordination in the team. The ACNPs were recognizable figures for all team members and an anchoring point for the team. DiCenso et al. (2009) found no study that had focused primarily on the inter-professional relationships between ACNPs and team members. This study fills a gap identified in the current literature (DiCenso et al., 2009).

Researchers (Bamford & Griffin, 2008) have found that team members valued teamwork but differences between professional groups may complicate working as a team. Team members were found to have a limited understanding of the contributions of other team members in different professional groups (Atwal,

2002; Farrell et al., 2010; Nolan & Hewison, 2008; Weller, Jansen, Merry, & Robinson, 2008; Xyrichis & Lowton, 2008). Chang, Ma, Chiu, Lin, and Lee (2009) found that perceptions of care quality and collaborative relationships among providers affected the nurses' views of teamwork in their study. The present study furthers our understanding of how ACNPs contribute to the team's functioning and improve perceptions of team effectiveness.

Team members believed they were effective whether the role was introduced as a physician extender or an expanded nursing role. Other researchers have found that ACNP provided care that was equal or superior to usual care (DiCenso et al., 2009), or the care provided by physician residents (Sidani et al., 2006a). As described in the review of the literature, the inclusion of advanced practice nursing role competencies has been shown to improve care quality and patient satisfaction, and reduce cost in heart failure and post cardiac surgery patients (Brooten et al., 2003; Khunti et al., 2007; McCauley et al., 2006; Naylor et al., 2004; Tranmer & Parry, 2004). An ACNP role that included both a medical and an advanced practice nursing component led to improved patient, provider and system outcomes (DiCenso et al., 2009; Kleinpell, Ely, & Grabenkort, 2008; Lee, Campoy, Smits, Tran, & Chonchol, 2007; Sidani et al., 2000), and constituted an added-value of ACNP roles as compared with physician roles (Kilpatrick et al., in press). Thus, team members and, more specifically, members of the nursing and medical leadership group must strive to develop an ACNP role that balances the medical and nursing components.

The ACNPs facilitated communication among team members. They were a source of patient information and consistency in patient care. In addition,

weekly interdisciplinary rounds were valued highly. Communication was seen as an essential strategy to facilitate working as a team by Bamford and Griffin (2008). Other researchers have found that team meetings offered a forum to discuss patient care issues, share relevant information, make decisions that incorporated the perspectives of different providers, and was a mechanism to provide support to team members (Gibbon et al., 2002; Holleman, Poot, Mintjes-de Groot, & van Achterberg, 2009). This study provided a detailed description of communication patterns within the team and how they changed in response to changes at different levels of the structural dimension.

Care coordination activities were identified as a pivotal contribution of the ACNP role to perceptions of team effectiveness. The need to coordinate discharges with the physicians was identified as a process that could be improved, and led to perceptions of the team being less effective. The risk of fragmentation of care may increase as health care becomes more complex and professional groups become segmented into more sub-groups (Allen, 1997). In this study, the time spent by ACNPs in care coordination activities was different in each case. The transfer of prescriptive authority and decision-making autonomy to the ACNPs facilitated the enactment of care coordination activities by the ACNPs. Researchers have reported different proportions of time spent in care coordination activities with a range of 8.3% to 45% (Hoffman, Tasota, Scharfenberg, Zullo, & Donahoe, 2003; Knaus, Felten, Burton, Fobes, & Davis, 1997; Sidani et al., 2000). These differences were due primarily to the method of data collection using an observer rather than self-report, and the way the care coordination item was defined in each study.

The ACNP role provided an anchoring point and facilitated the team's commitment to working together towards a common goal of delivering high quality patient care. Holleman et al. (2009) examined team characteristics in the context of a nursing innovation and found that a shared purpose was a characteristic of teams who had successfully implemented a change. The sense of working as or belonging to a team may further help to differentiate team cohesion from collaboration among team members (CHSRF, 2009, 2006).

Structural dimensions. The structural dimensions surrounding the three central process dimensions of the new framework (p. 208) depicted the different layers that constrained or expanded the day-to-day working of the ACNPs and the team. The ACNP roles that were enacted in the teams were sensitive to the context in which they were situated. Farand et al. (1999) defined the context of implementation as the characteristics of the environment that influence an implementation. An understanding of the environment surrounding the teams helped to make sense of the unexpected finding that team members believed they were more effective regardless of whether the ACNP role was enacted as a physician extender or an expanded nursing role. The delegation of prescriptive authority to ACNPs, leadership and a common understanding of the ACNP role had important implications when introducing the ACNP role in the health care team.

The introduction of an ACNP role in health care teams in Quebec meant that important changes needed to occur at different levels of the health care system, the organization, and the team for the roles to take shape. The ACNP roles that were developed were responsive to the specific organizations and the

individuals involved. The integration of cardiology ACNP roles in health care has varied across Canada (Thompson & Dykeman, 2007). Dopson, Fitzgerald and Ferlie (2008) have argued for the active role played by context and the need to include the interrelationship between the context and individuals when examining change in health care.

The context of ACNP role implementation in Quebec shared a number of similarities and some differences with ACNP role implementation elsewhere in Canada (DiCenso, Paech, & IBM Corporation, 2003; Goss Gilroy, 2001; Kilpatrick et al., in press). The findings of this study were consistent with those of these researchers who identified stakeholder involvement, clarification at the policy level of issues pertaining to collaboration, liability and scope of practice, the development of long-term human resource plans, and fair remuneration approaches as facilitators of the introduction of ACNP roles. In addition, the shortage of medical resources has been identified as the impetus for the development of ACNP roles across a range of specialties in Quebec as in other jurisdictions (DiCenso et al., 2009; Kleinpell et al., 2008; Schober & Affara, 2006).

The legislation in Quebec limited the scope of practice of ACNPs as compared with other jurisdictions (Kilpatrick et al., in press). Their scope of practice was further affected by the medical directives that were in place in each case. The ACNPs could work autonomously within the parameters delimited by those medical directives. The lack of facilitating structures, templates or agreements about prescribing privileges was a barrier to the introduction of ACNP roles in the teams in this study. However, the development of medical directives

was described as a complex and labour-intensive task in this study. This mirrored the experiences of providers in other settings (D'Amour, Tremblay, & Proulx, 2009; DiCenso, et al., 2009; Hurlock-Chorostecki et al., 2008; Ordre des Pharmaciens, 2007). Further, the collaboration between licensing boards to produce working documents has alternated between collaboration and legal challenges in Quebec (OIIQ, 2007, 2009b). Agreements among licensing boards and templates reduced duplication of efforts, and improved the continuity of services for patients when they were implemented (Kilpatrick et al., in press; Sketris et al., 2007).

The lack of prescriptive authority of ACNPs had repercussions on the way the team communicated between its members, the organization of work, and financial implications. The patterns of communication of the ACNPs and the team were affected by the ACNPs' need to validate their decisions with the physicians. The lack of prescriptive authority and decision-making autonomy contributed to more than twice as much time spent in patient rounds by ACNPs, physicians and nurses in one case to validate decisions. The difference in the time spent in patient rounds represented 65 minutes of work time per day where the ACNPs' hourly rate ranged from $25.17 to $44.87 (MSSS, 2008). Thus, decisions not to delegate prescriptive authority made at the organizational level affected more than one hour of ACNP work time per day.

Medical and nursing leadership at the organizational and clinical levels facilitated the enactment of ACNP roles. Leadership and the distribution of power between professional groups in the organization affected the enactment of ACNP roles in the teams. The need for support from organizational, medical and

nursing leaders has been widely recognized in the literature (DiCenso et al.,

2009). Leadership at the local, regional, and national levels (DiCenso, 1998;

CNA, 2006, 2008; OIIQ, 2003, 2009a) has been found to enhance role clarity and

facilitate collaboration amongst team members in a number of studies (Bamford

& Griffin, 2008; Irvine et al., 2000; Jones & Way, 2004; Roschkov et al., 2007;

Sarkissian & Wennberg, 1999; van Soeren & Micevski, 2001).

Communication about ACNP roles has been identified as a way of

ensuring role clarity among team members and stakeholders (Thrasher & Purc-

Stephenson, 2007; van Soeren & Micevski, 2001). Thrasher and Purc-Stephenson

found there was a need for NPs to clearly articulate the role requirements to

managers and clinical team members. The development of a detailed written job

description was identified as one helpful strategy to communicate the expectations

of the ACNP role (Cummings et al., 2003), and enhanced NP job satisfaction if

the NPs participated in the development of their job description (Nhan &

Zuidema, 2007).

Nursing and medical leaders needed to manage expectations for the ACNP

role to promote role clarity, and come to a common understanding of the ACNP

role with members of the health care team and the medical advisory board in each

case for the roles to develop in the team. Role expectations were important to

understand because they have been found to guide expectations about the role

development process (Murray, Reidy, & Carnevale, 2010). In this study, a

common understanding of ACNP roles by members of the medical advisory board

and members of the medical and nursing leadership group was an important

influence on ACNP role enactment because the medical advisory board delimited

the medical activities to be included in the ACNPs' scope of practice. The expectations of the groups in positions of power appeared to be particularly important to consider when introducing ACNP roles. Cummings et al. (2003) found clear role definition, support from key players and organizational change to be important themes when introducing an ACNP role. Furthermore, Cummings and McClennan (2005) stressed the importance of tailoring the message about ACNP roles to each stakeholder group to link the NP role to something meaningful for each group.

When medical and nursing leaders had a different understanding or different expectations of the time ACNPs spent in clinical activities, they delivered different messages to the medical advisory boards which affected the enactment of the ACNP role in this study. Other researchers have identified that physicians and managers had different expectations of ACNP roles (D'Amour et al., 2007; DiCenso et al., 2009; van Soeren and Micevski, 2001). This study illustrated how different expectations affected specific ACNP role components and care activities on a day-to-day basis, and added to our understanding of the role of stakeholder expectations in ACNP role enactment. The role played by medical and nursing leaders at different levels of the organization was an important consideration since strong leaders affected team performance in health care and other types of organizations (Jung & Sosik, 2002; Tjosvold, Andrews, & Struthers, 1991). Further, Millward and Bryan (2005) found that leadership at the level of the organization and the team had the greatest effect on team performance, and leaders potentiated health care team performance by their actions (Gil, Rico, Alcover, & Barrrasa, 2005).

The distribution of power among nursing and medical leaders and within the team affected ACNP role enactment. In this study, a strong hierarchical relationship influenced ACNP role enactment if the ACNP role was aligned with the views of the dominant group. This facilitated the transfer of medical activities to ACNPs in one case. Branyon (2004) argued that leadership and power go hand in hand. Nursing has been described as an intermediary profession (Bowker, Starr, & Spasser, 2001; Gibbon et al., 2002) that is attempting to achieve professional status with greater autonomy and control over its activities (Salhani & Coulter, 2009). A number of authors have described the dominance of the medical profession over other professional groups in health care (Abbott, 1988; D'Amour et al., 2009; Denis et al., 1999; DiPalma, 2004; Friedson, 1985; Plochg, Klazinga, & Starfield, 2009; Weiss & Sutton, 2009). Friedson (1985) argued that power over others confirmed the dominant role of physicians in organizations. This placed the physicians in a unique position of team member for ACNP role enactment and organizational leader with control over ACNP activities in this study. Ongoing efforts by the medical, nursing and pharmacy licensing boards are required to harmonize policies, remove regulatory barriers to prescribing, and facilitate the transfer of prescriptive authority to ACNPs so they can work to their full scope of practice.

Nursing managers at different levels facilitated the introduction of ACNP roles in health care teams. The middle managers in the present study needed to deal with health care system-, organizational-, and team-level issues to introduce ACNP roles in health care teams. These findings were consistent with those of other researchers (Huy, 2002; Reay et al., 2003, 2006) who identified the

significant role of the middle managers when introducing a change in the team.

As described in the literature review, Reay et al. highlighted that middle managers

used different processes to introduce NP roles in health care teams. The present

study found that front-line managers also facilitated the introduction of ACNP

roles in the teams, and assisted team members to develop complementary roles.

The role of the front-line manager in the introduction of ACNP should be

optimized because they were closest to the daily working of the ACNPs and the

teams, and had intimate knowledge of the needs of the teams and patients and

families.

To enact their roles in the teams, the ACNPs assumed the clinical

leadership of the team left open by the limited presence of physicians in the teams

in both cases. This was a key facilitator to introduce the ACNP role in the health

care team, and led to greater acceptance by team members. The ACNPs in the

present study undertook a series of actions to facilitate their integration within the

health care team and assume the clinical leadership of the team. They were

successful because they were sensitive to and responded to patient care needs, and

the concerns of team members within the intra- and the inter-professional groups.

Hagan and Côté (1974) were among the few authors to describe their experiences

introducing APN role in an out-patient setting in Quebec. They noted that the role

of advanced practice nurses needed to evolve at the same pace as the rest of the

team in order to be successful. In this study, the ACNPs' ability to effect change

within the team and integrate their role was related to their ability to follow

through on issues and create a sense of trust among team members. Millward and

Bryan (2005) found that clinical leaders focused on gaining trust, were goal-

oriented and able to influence others, and closely aligned with team processes. Greenfield (2007) further argued that clinical team leadership has long been overlooked and may be critical to re-organizing team functioning.

Finally, managing the introduction of ACNP roles in teams mirrored many of the steps needed to effectively manage change (Erwin, 2009; Garvin & Roberto, 2005; Kotter, 1995; North, 2008). Those responsible for the introduction of ACNP roles needed to clearly communicate their expectations for the ACNP role, facilitate the development of trust among team members, and remove barriers to activities such as prescribing. The ACNPs needed to be the clinical leaders within the teams to demonstrate to team members the value of adding an ACNP role, and facilitate the change process. Team members needed time to complete the changes in their professional role as boundary work evolved over time. From the perspective of change management, the next challenge in the introduction of ACNP roles in health care teams would appear to be the maintenance of the role changes that have been initiated in the teams (Kotter).

Outcomes. The participants in our study identified a number of outcome indicators that helped the teams evaluate their effectiveness. These indicators included improved staff knowledge, improved patient follow-up, timely care, safer patient discharges, and better discharge planning. They can be considered proximal effects of the introduction of ACNP roles in teams. Farand et al. (1999, p. 95) defined "proximal effects" as the effects resulting directly from an implementation and "distal effects" as the desired effects that were not as closely linked to or more distant from an implementation. These indicators represented the short term indications the teams considered when evaluating their own

effectiveness. However, decision-makers may consider quality, safety, cost, and team outcomes to provide clearer indications of team effectiveness outcomes. A particular issue with outcome measurement and performance remains the identification and measurement of outcomes sensitive to nursing and nurse practitioner care (Doran et al, 2006; Hannah, White, Nagle, & Pringle, 2009; Needleman, Kurtzman, & Kizer, 2007; Sangster-Gormley, 2007) in addition to specialty-specific, medical and different provider outcomes (Given & Sherwood, 2005) in the context of team performance and ACNP roles.

Suter, Oelke, Adair, and Armitage (2009), using a systematic review of the literature on health systems integration, found that performance monitoring indicators needed to be included to measure outcomes at different levels of the health care system to ensure the quality of patient care. As described previously in the literature review, most of the studies so far have focused on the contribution of the ACNP role to patient, provider or system outcomes. However, team-level performance indicators would appear important to include in the context of team performance goals of improved quality of care. Such team outcomes represent team activities that lead to improved effectiveness (Poulton & West, 1993) including ratings of care coordination, team communication, the quality of technical activities (Gil et al., 2005), and patient-centered care (Poulton & West, 1999; Sidani, 2008). The new conceptual framework provides the theoretical links of structural, process and outcome dimensions to the quality of care provided by health care teams.

In addition, performance incentives that recognized the contributions of all team members would be more conducive to team performance. The Nurse

Practitioner Association of Ontario (2008) has called for performance incentives that recognize NP contributions to teams in primary health care. Such incentives may be easier to allocate in acute episodic care because of the time-limited nature of the acute event and the level of consensus on outcome measures for some conditions such as myocardial infarction (Luft, 2009).

In summary, the study identified structural and process dimensions that affected ACNP role enactment in health care teams. It was a challenge for ACNPs to include medical and expanded nursing components in their role. The study provided detailed descriptions of key team processes that affected perceptions of team effectiveness. The participants indicated that the ACNP roles contributed to their perceptions of team effectiveness by providing timely patient care, comprehensive patient discharges, improved follow-up of issues and coordination of care, and improved the knowledge base of less experienced team members. These proximal outcomes constituted the added-value of an ACNP role in the health care team. Teams identified proximal outcomes of team effectiveness but additional research is needed to identify team-level outcomes that reflect the contributions of ACNPs and other providers to quality patient care.

Study Contributions

This appears to be the first study to describe how health care system-level dimensions reached health care teams, and affected ACNP role enactment, boundary work, and perceptions of team effectiveness. This study explored micro-level processes between the ACNPs and members of the health care team to understand their perceptions of team effectiveness. The study detailed ACNP

work activities and how ACNP role enactment was sensitive to context-specific dimensions at different levels.

A conceptual framework was developed following an extensive review of the literature and the analysis of two cases. It included structures, processes and outcomes that were inter-related, and highlighted the important concepts for different stakeholders to consider when introducing an ACNP role in health care teams. The framework identified macro-, meso-, micro-level concepts that affected ACNP role enactment, boundary work, and the team's perceptions of its effectiveness. The study furthered our understanding of how system-level imperatives filtered down to the local level and affected the day-to-day work of ACNPs and health care teams.

The study produced a valid and reliable time and motion tool to measure the activities of cardiology ACNPs. The inter-observer agreement (κ) was 0.94 following the pilot study. A guide and training schedule were produced to support the use of the time and motion tool, and each activity was defined to facilitate the coding of ACNP activities. In addition, the study used Bales' interaction process analysis to understand ACNP decision-making about patient care and identified differences in communication patterns among team members that were related to the structural dimensions surrounding the team. This was the first study to use Bales' method to identify patterns in ACNP decision-making during routine care activities.

Study Limitations

The limitations of this study included issues related to case selection, the exclusion of patients and families, the identification of ACNP work activities, and

the methods of data collection. The study was conducted in one jurisdiction in Canada. ACNP role enactment may be different in other jurisdictions. Yin (2009) argued that the use of a theory in case study design allowed the researcher to compare and generalize the findings of other cases to the theory (i.e., analytic generalization). The conceptual framework developed in this study can be generalized to teams that share similar characteristics such as the introduction of ACNP roles, acute care settings, and university-affiliated teaching hospitals (i.e., literal replication). The conceptual framework may assist decision-makers, ACNPs and team members as well as other stakeholders in other specialties or jurisdictions to identify key points to focus on when introducing ACNP roles in health care teams.

The perceptions of patients and families were not included in the present study. These views are important to understand, and can be used to facilitate the integration of patients and family members in the health care team (Opie, 1997). Future research needs to be undertaken to explore the patient's and family members' perceptions of team effectiveness following the introduction of an ACNP role.

In addition, the study may not have identified all the activities included in the ACNPs' practice. The managers and ACNPs helped to select a representative time period for the time and motion portion of the study prior to the start of data collection. They confirmed during the interviews that the time and motion portion of the study had measured a representative work week. However, some ACNP activities may have been missed. If this was the case, it would appear that such activities would have been infrequent.

The use of direct observation techniques may have induced a source of bias known as the Hawthorne effect (Bowling, 2002). A number of steps were taken to decrease this potential limitation. They included the researcher remaining as inconspicuous as possible during data collection, data were collected over an extended period of time, and a second observer was rigorously trained to complete time and motion observations during the pilot phase and the main study. Participants reported they no longer realized they were being observed after the first hour of direct observation.

Implications

The following section will outline the implications for theory and research, policy, and practice.

Implications for theory and research. The study has produced a conceptual framework that linked ACNP role enactment, boundary work, perceptions of team effectiveness, structural dimensions, and outcomes of care. A number of inter-relationships were noted among the dimensions. Subsequent phases of theory development should include further refinement of the conceptual framework. The concepts included in the framework should be tested in different specialties within and outside of cardiology, and in other jurisdictions to determine the scope or the range of the new conceptual framework (Jaccard & Jacoby, 2010).

Proximal and distal outcome measures that are sensitive to ACNP and other provider care need to be identified in order to evaluate team effectiveness. Research so far has identified a number of patient-, provider-, and system-level outcomes that are sensitive to nursing care or nurse practitioner care (Doran et al.,

2006; Hannah et al., 2009; Idemoto & Kresevic, 2007; Ingersoll, McKintosh, & Williams, 2000; Kleinpell & Gawlinski, 2005; Sangster-Gormley, 2007; Sidani, 2008; Sidani et al., 2006b; Whitman, 2004). This study has contributed to the identification of proximal outcome indicators of team-level functioning. Such indicators need to be validated and monitored in future studies to assess team effectiveness following the introduction of an ACNP role. Distal team-level outcomes have yet to be identified in the context of ACNP roles and different specialties.

The pace of work activities and the associated workload affected boundary work, the ACNPs' ability to develop relationships with other team members, and to enact all the components of an ACNP role. It is unclear if or how the pace of work affected patient care, patient safety or perceptions of team effectiveness. Research needs to be undertaken in this area to further our understanding of the pace of work activities, perceptions of team effectiveness, and the provision of safe patient care. In addition, the role of physicians in the team following the introduction of an ACNP role needs to be further clarified given that some physicians decreased their availability to the team and some team members believed this affected team cohesion and may decrease the team's effectiveness.

Implications for policy. This study highlighted how divergent licensing board policies impeded the enactment of the ACNP role, boundary work, and perceptions of team effectiveness. Licensing board policies need to be clarified and harmonized as soon as possible given the repercussions of divergent licensing board positions on the day-to-day organization of work within the teams, the enactment of ACNP roles, and the sub-optimal use of ACNP, physician, and other

team members work time. Greater harmonization of licensing board policies and consistency across jurisdictions have important implications for the movement of providers across jurisdictions (Wearing, Black, & Kline, 2010). Shared agreements between licensing boards could facilitate the development of ACNP scope of practice, and help to determine more consistent educational requirements for ACNPs across jurisdictions. The educational requirements of a Master's degree and specialist certification for ACNPs in Quebec are the highest in Canada (Kilpatrick et al., in press). This may limit the recruitment of ACNP candidates within clinical specialties and impede the development of a critical mass of ACNPs.

Greater harmonization of policies between the licensing boards could reduce the duplication of effort in organizations, and facilitate sharing experiences of ACNP role introduction among organizations. This could also decrease the boundary work related to prescriptive authority, and reduce delays to obtain prescriptive authority for ACNPs. Few organizations in Quebec have completed this important step (McNamara, Giguère, St-Louis, & Boileau, 2009), and greater prescriptive authority would allow ACNPs to practice to their full scope of practice as defined in Quebec. A scope of practice with medical and nursing functions and enhanced decision-making authority would align the scope of practice of ACNPs in Quebec with those in other jurisdictions (Kilpatrick et al., in press) and improve perceptions of team effectiveness. The nursing leadership group must clearly state their priorities and expectations for the ACNP role at the level of the health care system and with the medical advisory board and team members in the organization. These priorities are taken up by the ACNPs in their

day-to-day practice, and strong leadership has been identified as a key facilitator to working to full scope of practice (DiCenso, et al., 2009).

Decision-making power rests primarily with the physicians in the current structure in Quebec. Team-level performance incentives may be a way to redistribute power among other members of the health care team who are involved in the production of patient care services. Such a change at the level of the health care system would serve to reallocate financial resources to team performance, and may change the power structures in the teams and the health care system. Two key challenges to such an endeavour would need to be addressed. They include the selection of team-level outcomes that reflect the input of different providers, and information systems that collect such data and account for significant outcomes from different provider groups, and the integration clinical and financial information (Suter et al., 2009).

Implications for practice. The introduction of ACNP roles in health care teams were sensitive to the context in which they were situated. The use of a framework to guide the introduction and the decisions related to ACNP roles may facilitate their introduction in teams. Managers need to identify team members who risk losing a valued role function when an ACNP role is introduced in the team. The losses can include a loss of status in the team, loss of access to the physicians, and loss of exclusivity to prescribe. The team members who risk losing a valued role function need to be included as early as possible in the process of ACNP role introduction.

Managers can anticipate ongoing boundary work with physician and non-physician prescribers, such as pharmacists and ACNPs, especially in the context

of ongoing disagreements between the licensing boards. The co-location of team members and working on common projects facilitated boundary work and the development of complementary roles in the team. The use of co-location of team members and working on common projects should be prioritized for these team members. Sufficient time was needed for the changes to take hold and team members needed support during the role change. A forum for team members to discuss expectations, the introduction of the ACNP role, and identify challenges and successes can be beneficial. Finally, the role of the front-line managers in the introduction of ACNPs in health care teams can be optimized since they are closest to the ACNPs and the team, and have detailed knowledge of the needs of the patients and the organization.

Conclusion

ACNPs are most likely to play a central role in the re-design in the acute care sector because their scope of practice is responsive to increasing specialization and complexity in patient care (Duffield, Gardner, & Catling-Paull, 2008). Working as a team can facilitate working to full scope of practice (CHSRF, 2006; Oelke et al., 2008). Researchers (DiCenso et al., 2009) have found that team members described "turf wars" as roles and scopes of practice were being renegotiated. The present study found that team members believed they were more effective following the introduction of an ACNP role because the role filled a gap in patient care, and improved team processes. This study adds to our understanding of ACNP role enactment, boundary work, and perceptions of team effectiveness. The study identified proximal indicators used by team members to assess their team's performance. Future research needs to be conducted with

other health care teams, and patients and families to determine the scope of the

new conceptual framework; identify outcomes of care that are sensitive to ACNP

and team care; and understand if or how the pace of work affects perceptions of

team effectiveness and outcomes of care.

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Appendix A

Search Strategy

The purpose of the literature review is to describe the context of health

care in Quebec and explore the literature related to advanced practice nursing

(APN), teamwork, and team effectiveness in health care organizations. The

following search strategies were used to identify relevant literature. CINAHL

(Ebsco), PsycInfo, MedLine, PubMed, the British Nursing Index, the Cochrane

Library, JSTOR Archive, Web of Science databases, Google, Google Scholar, and

evidence-based resources were searched in addition to reviewing policy reports

and position papers from the Canadian Nurses Association (CNA), the Canadian

Nurse Practitioner Initiative (CNPI), the Ordre des Infirmières et Infirmiers du

Québec (OIIQ), the Canadian Health Services Research Foundation (CHSRF),

the Ministère de la santé et des services sociaux du Québec (MSSS), and the Web

pages of professional groups in health care in Quebec. The keywords identified

below were searched individually and then combined two keywords at a time.

The reference lists of relevant articles were hand-searched to identify additional

articles. Texts were retained if they were published in the French or English

language.

The keywords used in the search included advanced practice nursing, APN,

advanced practice nurse, acute care nurse practitioner, ACNP, nurse practitioner,

NP, advanced nursing practice, ANP, acute care, role development, role

implementation, prescriptive authority, scope of practice, outcomes, adult,

cardiology, theoretical framework, literature review, randomized controlled trial,

RCT, unionization, boundary, boundary work, health care, interdisciplinary, interprofessional, nursing, organization, organizational context, organizational culture, team, teamwork, team effectiveness, governance, Quebec, Bill 25, Bill 90.

Appendix B

Reviewed Web Pages of Professional Groups in Health Care in Quebec

1) Ordre des Infirmières et Infirmiers du Québec à : http://www.oiiq.org/

2) Association des Infirmières Praticiennes Spécialisées du Québec à :

http://www.aipsq.com/infos/accueil.php

3) Association des Médecins d'Urgence du Québec à :

http://www.amuq.qc.ca/accueil.aspx

4) Collège des Médecins du Québec à : http://www.cmq.org/

5) Fédération des Médecins Omnipraticiens du Québec à :

http://www.fmoq.org/Accueil/Accueil/Index.aspx

6) Fédération des Médecins Résidents du Québec à :

http://www.fmrq.qc.ca/formation-medicale/index.cfm

7) Fédération des Médecins Spécialistes du Québec à :

http://www.fmsq.org/f/index.html

8) Ordre Professionnel des Inhalo-thérapeutes du Québec à :

http://www.opiq.qc.ca/main/publications/liensexternes.htm

9) Réseau québécois de cardiologie tertiaire à :

http://www.rqct.qc.ca/index.php?accueil

10) Ordre Professionnel des Diététistes du Québec à : http://www.opdq.org

11) Ordre des Pharmaciens du Québec à http://www.opq.org

12) Conseil Inter-Professionnels du Québec à : http://www.professions-

quebec.org/index.php/en/element/listeOrdres

13) Ordre des Travailleurs Sociaux et Thérapeutes Conjuguaux et Familiaux du

Québec

http://www.optsq.org/fr/index.cfm?month=10-05-2006&suiv=10-16-2006

14) Ordre des Sages-Femmes du Québec à: http://www.osfq.org/

15) Ordre des Infirmières et infirmiers auxiliaires du Québec à:

http://www.oiiaq.org/accueil.fr.html

Appendix C

From Sidani, S., & Irvine, D. (1999). A conceptual framework for evaluating the nurse practitioner role in acute care settings. *Journal of Advanced Nursing, 30*(1), 58-66. Reproduced with permission of John Wiley and Sons.

Structure   **Process**   **Outcome**

Patient Variables

                                                        ACNP Scope of Practice

Demographics   **Quality**
Illness/health
Resources   **Role Components**
                                                                                                                      Clinical
                                                                Research   Complications
                                                                Educator   Functional
ACNP Variables   Administrator   Knowledge
                                                                Practitioner   Satisfaction
Professional
Psychological

Organizational Variables   **Cost**

Type of setting   **Role Enactment**
Role formalization   Patient
Practice model   Physician extender   Institution
Receptivity of role   Expanded nursing role   Health care system
Role authority

Appendix D
Time and Motion Observation Tool

Institution: _____   Date:_____

ACNP Code Number: _____   Day: 1 2 3 4 5 (circle)   AM or PM

Start Time	Activity	Stop	Comments

List of Activities	
Direct Care Activities	
1- Physical exam/ Assessment	2- Admission history
3- Family assessment	4- Order/Inter: labs, X-Ray, ECG
5- Physical comfort measures	6- Drains/ Wounds/ Culture
7- Therapeutic relation-patient	8- Therapeutic relation-family
9- Supportive communication	10- Teaching-Education
11-Monitor/ prescribe meds (Not IV)	12- Monitor/ prescribe IV meds
13- Central venous catheter	14- Nutritional feeding or diet
15- Cardio-version/ defib / CPR	16- Chest Tube/ Suture/ Packing
Indirect Care Activities	
17- Documentation	18- Discharge planning
19- Participate/ lead rounds	
Educational Activities	
20- Coaching/teaching nursing	21- Coaching/ teaching residents
Administrative Activities	
22- Administrative meeting	23- Develop protocols
24-Care coordination/ other org.	25- Care coordination within org.
Research Activities	
26- Participate research /nursing	27-Use of research in practice
28- Participate research /others	
29- Other _____ (specify)	30- Personal time

Appendix E

Semi-Structured Interview Guides for Focus Groups
Pre-Interview Steps

1) Welcome and introduction

Hello, my name is Kelley Kilpatrick. Thank you for participating in this research

project.

2) Brief review of the focus group:

In today's discussion I will be asking you about your work team and the care that

your team provides since the acute care nurse practitioner joined the team. There

are no right or wrong answers. I am interested in hearing everyone's ideas and

perspectives. Please share your point of view even if it differs from what others

have said.

It is important that everyone respects the opinions of others. I will ask you not to

discuss your participation or share the group discussions or opinions once we are

finished in order to protect other participants' privacy.

The discussion will take approximately 60 minutes. The discussion will be

audiotaped to help me remember accurately what is said. I may also take notes

during our discussion and will check the tape recorder. Please feel free to speak

up during the meeting. Thank you again for your participation.

3) Review and sign consent form for study
Please review the consent form for the study. I will ask you to sign the consent

form if you have no questions. I have also given you a signed copy for your files
Please complete the demographic profile that is included before we start.

4) Questions before beginning the focus group
Do you have any questions before we start?

Semi-Structured Interview Guide for the Intra- and Inter-Professional Focus Groups

Provide this definition to begin the interview:

Cardiology ACNPs take on medical and nursing responsibilities when caring for patients. Some activities are shared among health care providers. Role enactment includes the day to day activities that are performed by health care providers.

Theme 1: **Cardiology ACNP Role Enactment**

Q 1. How has the cardiology ACNP role developed in your service?

What did you notice about the work of the ACNP once she was introduced into the team?

Theme 2: **Boundary Work**

Q 2. Can you describe how roles and responsibilities (or activities) developed among members of the team (MD, residents, Physio, OT, nursing, etc.) after the ACNP role was introduced in the team?

What helped the development of new roles and responsibilities?
Are there situations that were difficult? Please describe.
How were difficulties resolved?

Q 3. The ACNP shares certain activities with other members of the health care team.

What happens when roles, responsibilities or activities overlap among members of the health care team? Please describe.

Q 4. Are there situations where difficulties occurred? If yes, please describe how they were

resolved?

Probe: Can you describe a situation where it was easy to work with an overlap in roles, responsibilities or activities?

Can you describe a situation where there are ongoing difficulties?

Theme 3: **Context**

Q 5. What has influenced the way the ACNP role has developed in your team?

Probe: What has helped (facilitated) the development of the ACNP role into the team?

What has hindered (been a barrier to) the development of the ACNP role into the team?

Theme 4: **Perceptions of team effectiveness**

Provide this definition: Perceptions of team effectiveness are related to the person's beliefs in their team's ability to provide the care required to meet the patient's and family's needs.

Q 6. Based on what you have said about the ACNP role and the way the roles and responsibilities have developed in the team since they were introduced:

How would you describe your team's effectiveness when caring for patients and families?

Walk me through a time where you felt your team was effective?

Probe: patient care, involvement of patient and families in decision-making

team communication

rewards/benefits of working effectively as a team?

Q 7. Based on what you have said about the ACNP role and the way the roles and responsibilities have developed in the team since they were introduced:

How are decisions about patient care made in the team?

Probe: Can you walk me through a recent patient care decision that was made by the team?

How does the team handle different opinions?

Who makes decisions about patient care?

Additional question if needed:

What needs to be done next to help teams become more effective when ACNP roles are introduced into the health care team?

Is there anything else that you would like to add or discuss that I may not have asked you about?

Thank you for participating in this research project. Your responses have been most helpful. (Summarize the steps that are left in the research project)

Semi-Structured Interview Guide for Managers

Provide these definitions to begin the interview: Cardiology ACNPs take on medical and nursing responsibilities when caring for patients. Some activities are shared among professional groups. Role enactment includes the day to day activities that are performed by health care providers.

Theme 1: **ACNP role enactment**

Q 1. How has the cardiology ACNP role developed in the cardiology service?
Probe: Scope of practice, activities

Theme 2: **Boundary work**

Q 2. Can you describe how roles and responsibilities (or activities) developed among members of the team (MD, residents, Physio, OT, nursing, etc.) after the ACNP role was introduced in the team?

What helped the development of new roles and responsibilities?

Are there situations that were difficult? Please describe.

How were difficulties resolved?

Q 3. The ACNP shares certain activities with other professional groups.

What happens when roles, responsibilities or activities overlap among

members of the health care team? Please describe.

Probe: Are there situations where difficulties occurred? If yes, please describe how they were

resolved?

Can you describe a situation where it was easy to work with an overlap in roles, responsibilities or activities?

Can you describe a situation where there are ongoing difficulties?

Q 4. What has guided your decisions about the role enactment of the different health care providers on the team?

Theme 3: **Context**

Q 5. What has influenced the way the ACNP role has developed in your team?

Probe: What has helped (facilitated) the development of the ACNP role?

   What has hindered (been a barrier to) the development of the ACNP role?

Theme 4: **Perceptions of Effectiveness**

Provide this definition: Perceptions of team effectiveness are related to the person's beliefs in their team's ability to provide the care required to meet the patient's and family's needs.

Q 6. Based on what you have said about the ACNP role and the way the roles and responsibilities have developed in the team since they were introduced:

   How would you describe your team's effectiveness when caring for patients and families?

   Walk me through a time where you felt your team was effective?

Probe: patient care, involvement of patient and families in decisions

   team communication

   rewards/benefits of working effectively as a team?

Q 7. Based on what you have said about the ACNP role and the way the roles and responsibilities have developed in the team since they were introduced:

   How are decisions about patient care made in the team?

Probe: What does the team think is important when making decisions about patient care?

   How does the team handle different opinions?

   Who makes decisions about patient care?

Additional questions, if needed:

If you had a chance to start over and introduce a new role, what would you do differently?

What needs to be done next to help team's become more effective when ACNP roles are introduced into the team?

Is there anything else that you would like to add or discuss that I may not have asked you about?

Thank you for participating in this research project. Your responses have been most helpful.

(Summarize the steps that are left in the research project).

Semi-Structured Individual Interview Guide for ACNPs

Pre-Interview Steps

1) Welcome and Introduction

Hello. My name is Kelley Kilpatrick. Thank you for taking the time to participate in this study.

2) Brief overview of the interview

In today's discussion, I will be asking about your ideas of the acute care practitioner role. I am hoping to understand how different roles develop in the team. There are no right or wrong answers.

I will ask you not to discuss your participation in the study with others or share the discussions or opinions with others once we are finished the interview.

The discussion will take approximately 60 minutes and will be audiotaped to help me to accurately remember the discussion. I may also take notes during our discussion and check the tape recorder to make sure it is functioning.
 Thank you again for your participation.

3) Review and signing of consent forms

Please review the consent form for the study.

I will ask you to sign the consent form if you have no questions. I have also given you a signed copy for your files.

I will also ask you to complete the demographic profile before we start.

4) Questions before interview starts

Do you have any questions before we start?

Semi-Structured Individual Interview Guide for ACNPs

Provide a definition to begin the interview: Cardiology ACNPs take on medical and nursing responsibilities when caring for patients. Some activities are shared among professional groups. Role enactment includes the day to day activities that are performed by health care providers.

Theme 1: **ACNP role enactment**

Q 1. How do you see your day to day role as an ACNP in the health care team?

Probe: How did your role as an ACNP develop in the team?

Theme 2: **Boundary Work**

Q 2. The ACNP shares certain activities with other professional groups. What happens when roles, responsibilities or activities overlap among members of the health care team? Please describe.

Q 3. Are there situations where difficulties occurred? If yes, please describe how they were
    resolved?

Probe: Can you describe a situation where it was easy to work with an overlap in
    roles, responsibilities or activities?
    Can you describe a situation where there are ongoing difficulties?

Theme 3: **Context**

Q 4. What factors have made a difference in the way the ACNP role has developed in your
    organization?

Probe: What has helped the development of the ACNP role?
    What has hindered the development of the ACNP role?

Theme 4: **Perceptions of Effectiveness**

Provide this definition: Perceptions of team effectiveness are related to the person's beliefs in their team's ability to provide the care required to meet the patient's and family's needs.

Q 5. Based on what you have said about your role as an ACNP and the way roles and responsibilities have developed in the team since your role was introduced:

How would you describe your team's effectiveness when caring for patients and families?

Walk me through a time where you felt your team was effective?

Probe: patient care, involvement of patients and families

team communication

rewards/benefits of working effectively as a team?

Q 6. Based on what you have said about your role as an ACNP and the way roles and responsibilities have developed in the team since your role was introduced:

How are decisions about patient care made in the team?

Probe: Can you walk me through a recent patient care decision that was made by the team that

you were involved in?

How does the team handle different opinions among members?

Who makes decisions about patient care?

Additional questions if needed:

What needs to be done next to help teams become more effective when ACNP roles are introduced into the team?

If you had a chance to start over and introduce a new role, what would you do differently?

Is there anything else that you would like to add or discuss that I may not have asked you about?

Thank you for participating in this research project. Your responses have been most helpful. (Summarize the steps that are left in the research project).

Additional Questions for Pilot Interviewees:

Q 1. What were your impressions of the interview?

Q 2. Did the order and flow of the questions seem effective?

Q 3. Did you think the interview was too long?

Q 4. Were there any key questions that you expected to be asked, but weren't?

Q 5. Were the questions clear to you?

Appendix F

Demographic Profile

Date: _____ (month/day/year)   Institution: _____

Please answer the questions by marking the appropriate box

1) Please select the title that best describes your professional group or position:

Acute Care Nurse Practitioner ☐	Assistant Head Nurse ☐
Cardiac Surgeon ☐	Cardiologist ☐
Clinical Nurse Specialist ☐	Dietician ☐
Nurse Manager ☐	Inhalation Therapist ☐
Manager ☐ _____ Please specify	Nursing Assistant or LPN ☐
Nurse ☐	Nurse Clinician ☐
Nurse Educator ☐	Occupational Therapist ☐
Pharmacist ☐	Physiotherapist ☐
Physician Resident ☐	Physician ☐
Social Worker ☐	Surgeon ☐
Unit Agent / Clerk ☐	

2) Please indicate your highest completed education?

High school (DEP) ☐	Baccalaureate ☐_____ specify
Diploma ☐	Master's ☐_____ specify
CEGEP (DEC) ☐	PhD ☐_____ specify
MD ☐ _____ specify	Other: ☐ _____ specify

3) What type of position do you presently occupy?

☐ Full time or

☐ Part time: _____Please specify the number of days per week

(8 hours/shift)

☐ Long term replacement: _____Please specify the number of days per

week

Please circle your answer

4) Do you have previous experience working with a cardiology acute care nurse practitioner?

Yes   No

5) Do you have experience working with an acute care nurse practitioner in another specialty?

Yes   No

Please indicate your answer in months or years

6) For how long have you been working in your current professional role in this organization?

Number of years _____   or

If less than a year: _____number of months

7) How long have you been working with this team?

Number of _____ years   or

If less than a year: _____ number of months

Profil démographique

Date _____ (jour/mois/année)   Établissement _____

Veuillez cocher les cases appropriées

1) Veuillez choisir le titre qui décrit le mieux votre groupe professionnel ou poste.

Infirmière praticienne spécialisée ☐   Assistante infirmière-chef ☐

Chirurgien cardiaque ☐   Cardiologue ☐

Infirmière clinicienne spécialisée ☐   Diététiste ☐

Infirmière gestionnaire ☐   Inhalothérapeute ☐

Gestionnaire ☐ _____ Préciser   Infirmière auxiliaire autorisée ☐

Infirmière ☐   Infirmière clinicienne ☐

Infirmière enseignante ☐   Ergothérapeute ☐

Pharmacien ☐   Physiothérapeute ☐

Médecin résident ☐   Médecin ☐

Travailleuse sociale ☐   Chirurgien ☐

Réceptionniste / Commis ☐

2) Niveau de scolarité

Études secondaires (DES) ☐   Baccalauréat ☐_____Préciser

Diplôme ☐   Maîtrise ☐ _____ Préciser

Cégep (DEC) ☐   Ph. D. ☐ _____ Préciser

M.D. ☐ _____ Préciser   Autre ☐_____ Préciser

3) Quel poste occupez-vous à l'heure actuelle?

☐ Temps plein

☐ Temps partiel _____ Veuillez indiquer le nombre de jours par semaine
(quarts de 8 h)

☐ Remplacement _____ Veuillez indiquer le nombre de jours par semaine

Veuillez encercler votre réponse

4) Avez-vous déjà travaillé avec une infirmière praticienne spécialisée en cardiologie?

        Oui   Non

5) Avez-vous déjà travaillé avec une infirmière praticienne spécialisée dans une autre spécialité?

        Oui   Non

Veuillez indiquer votre réponse en mois ou années

6) Depuis combien de temps exercez-vous votre profession actuelle au sein de cet établissement?

Nombre d'années _____

Si moins d'un an, nombre de mois _____

7) Depuis combien de temps travaillez-vous au sein de cette équipe?

Nombre d'années _____

Si moins d'un an, nombre de mois _____

Appendix G

Training Schedule and Instructions to Complete

Time and Motion Observation Tool

A first 60 minutes training session is planned the week before the pilot study to

review the definitions (Urden et al., 2006) of each item included in the

observation tool and the scoring rules. A second 30 minute review is planned the

day of the pilot study and during Case 1 of the study to review the tool and answer

any questions. A 15 minute practice run is planned before data collection begins

for the pilot study and Case 1.

Scoring Instructions

Fill in top portion of time and motion grid as indicated.

Observer remains in the background. Observer is close enough to ACNP to hear

conversation or see activities.

Observer does not participate in activities. May ask the ACNP for clarifications

to identify an activity

Observer may move around to follow the ACNP as discretely as possible.

Indicate start time of each activity and select appropriate code number.

Indicate stop time of each activity.

If an activity is not identified in the code list, select code # 30 and use a keyword

to describe the activity.

Observer completes observation grid for 120 consecutive minutes.

Appendix H

Time and Motion Study: Definitions of Activities

Becker et al. (2006) and Urden, Stacy and Lough (2006) were used to identify ACNP activities. The definitions of ACNP work activities were adapted from the work of Urden and Roode (1997), Sidani and colleagues (1999, 2000), and Duffield et al. (2005), and Duffield (Personal communication, September 3rd 2008). Thelan's Critical Care Nursing: Diagnosis and Management (5th Ed) (Urden, Stacy, Lough, 2006) has been used to define direct care activities. References:

Tucker, A.L., & Spear, S.J. (2006). Operational failures and interruptions in hospital nursing. *HSR: Health Services Research, 41*, 643-662.

Urden, L.D., Stacy, K.M., & Lough, M.E. (2006). *Thelan's Critical care nursing: diagnosis and management* (5th ed.). Philadelphia, PA: Mosby/Elsevier.

Definitions

Direct Care

All care activities performed in the presence of the patient or the family. The time of the activity includes the time needed to execute the actual task and other related tasks such as hand washing, identifying the patient, providing explanations to the patient or family for the care activity, getting necessary supplies for the activity and disposing of supplies according the organizational policy.

Definitions of Direct Care Activities

1. Physical exam / Assessment

Includes the evaluation and/or measurement of functioning or a health pattern.

Includes objective and subjective findings and the equipment that is attached to

the patient. Includes measurement of blood pressure, heart rate, temp., pulse

oximetry, neurological assessment, heart sounds, auscultation, peripheral edema,

abdominal girth, performance of activities of daily living, Glasgow Coma scale,

pressure ulcer or skin assessment, pain level, lifestyle habits, etc..

2. Admission history

Includes the medical and nursing history of the patient. Includes all the questions

that are required to collect admission history. Patient or family may provide

admission history.

3. Family assessment

Includes the assessment of family functioning and the strategies used by the

family to deal with a health or an illness condition. Includes the development of a

genogram and a map of the family relationships

4. Order and interpret lab test(s), X-Ray(s), or 12-lead ECG

 Includes ordering or interpreting different blood tests, X-Rays or cardiogram.

Includes completing the documentation related to the test or signing a requisition.

5: Physical comfort measures

Includes measures to ensure the patient's comfort that are not related to

positioning the patient in order to perform a test or a procedure. Includes

positioning patient while in bed or in a chair, supervision of ambulation and use of

assistive devices, exercise program, deep breathing and coughing exercises.

6. Drains, wounds, culture

Includes the collection of body fluids from any site. Includes the identification of the specimen or container according to protocol and completing the documentation related to the test.

7. Therapeutic relation-patient

Verbal interactions with the patient only to discuss a specific issue including a treatment plan, plan of care, discharge plan, end of life care, adapting to health or illness condition. Includes initiating, reviewing, summarizing, and evaluating the verbal interaction. This type of communication is distinct from the supportive communication because the interaction has a specific focus.

8. Therapeutic relation-family

Verbal interaction with family where patient may or may not be present to discuss a specific issue including a treatment plan, plan of care, discharge plan, end of life care, adapting to health or illness condition, etc. Includes initiating, reviewing, summarizing, and evaluating the verbal interaction. This type of communication is distinct from the supportive communication because the interaction has a specific focus.

9. Supportive communication

Verbal or non-verbal communication with the patient that conveys support and/ or empathy to the patient or family. This type of communication goes beyond the social interaction related to the establishment of a conversation. Supportive communication may not be related to a specific health or illness condition.

10. Teaching/ Education

Includes activities that are completed for the specific purpose of increasing the knowledge level, skill, or ability of the patient and/or family. Can be related to a health condition, medication, test, activities of daily living, technology.

11. Monitor / prescribe medication (Not IV)

Includes monitoring or prescribing of medication and the evaluation of the desired effects, side effects or interactions. Medication can be topical, oral, intra-rectal, or drops. Includes consulting necessary references (e.g., Compendium). Includes identifying patient, medication, dosage, prescription and documentation. The retrieval and preparation of medication is included.

12. Monitor / prescribe IV medication

Includes the monitoring or prescribing of medication for desired effects, side effects or interactions. Medication must be administered intravenously. Includes consulting necessary references (e.g., Compendium). Includes identifying the patient, medication, dosage, prescription and documentation. The retrieval and preparation of IV medication and the insertion of a peripheral intravenous access is included in the item.

13. Central venous catheter

Includes gathering the necessary supplies to insert central venous catheter, use of sterile procedure, inserting central venous catheter, suturing, and disposing of supplies according to organizational policy. Includes identifying the patient and explaining the procedure to the patient. Includes the removal of central venous catheter or arterial sheaths according to organizational policy. If an arterial sheath is removed, please specify in the comment box.

14. Nutritional feeding or diet

Includes the assessment of caloric intake, eating habits, changes in eating patterns, salt intake, fluid intake or fluid restrictions. Includes assessment of the tolerance of enteral feeding and changes to the type, rate or quantity of enteral feeding.

15: Cardio-version/ defib./ CPR

Includes gathering necessary equipment, explaining procedure to the patient where applicable, performing the procedure, or managing CPR according to

organizational policy. The administration of IV meds by the ACNP is included in Item 11.

16. Chest tube/ Suture/ Packing

Includes gathering the necessary supplies, explaining the procedure to the patient, performing the procedure, and disposing of supplies according to organizational policies. Includes all types of suturing, wound packing or complex dressings. Includes care related to chest tubes according to the organizations policies.

Indirect Care Activities

All the nursing activities done away from the patient but on a specific patient's behalf, including giving report, communication with other health care providers, patient care rounds, discharge planning, documentation.

Definitions of Indirect Care Activities

17. Documentation

Includes the activities that are completed on a specific patient's behalf. Activities include writing information in a patient's chart, filling out consultation forms, documenting progress notes, completing discharge summaries. The documentation can be computer-, or paper-based. Includes faxing requisitions

18. Discharge planning

Includes discharge activities that are completed on a specific patient's behalf. Activities include discussions with other health care providers of a patient's discharge plan. The discussions can take place in person, or over the phone. Includes report, transfer or hand-off to another health care provider.

19. Participate / lead rounds

Includes discussions with other health care providers about a patient's plan of care. The patient is not usually included in the discussion, if patient is included

consider using item # 7 for therapeutic relation-patient or Item #8 if family is included. Discussions can take place at patient care rounds or during an individual meeting with other health care providers. Decisions about patient care are made or discussed at these rounds.

Educational Activities

Includes formal and informal teaching and learning activities that are completed with members of the health care team. Activities may be related to patient care, learning opportunities in complex clinical situations, new technology, technical skills, the development of staff education programs, etc.

Definitions of Educational Activities

20. Coaching/ teaching nursing

Includes the development, planning and execution of teaching activities for nursing personnel. Includes activities that facilitate the acquisition of new skills and promote the professional development of nursing personnel. The ACNP acts as a role model to promote professional practice. Includes activities where ACNPs participate in teaching and learning activities. If another discipline is included, please specify in the comment box.

21. Coaching and teaching residents

Includes the development, planning and execution of teaching activities for physician residents. Includes activities that facilitate the acquisition of new skills and promote the development of professional practice. The ACNP acts as a role model for professional practice.

Administrative Activities

All the activities related to the participation in administrative meetings, hospital committee meetings, quality improvement initiatives, development and revision of policies, protocols and procedures.

Definitions of Administrative Activities

22. Administrative meeting

Includes the attendance or participation in committee meetings or performance appraisals. The purpose of these meetings is to improve the quality of care or service delivery.

23. Develop protocols

Includes the development of clinical guidelines, care pathways, care plans for specific clinical issues within the organization (Règles de soins, Règles d'utilisation de medicaments). Includes the review of relevant literature. Includes participation in meetings related to the development and adoption of specific protocols, policies or procedures.

24. Care coordination/ other organization

Includes the discussions with health care providers in other organizations to coordinate care activities or transfer the patient to another organization. Includes activities related to planning, reviewing, or evaluating of the care required for a patient. Discussions can be over the telephone or in person. Includes faxing relevant documentation.

25. Care coordination/ within organization

Includes discussions of how to assign tasks to members of the interdisciplinary team in order to provide patient services. Includes activities related to planning, reviewing, or evaluating the care required for a patient. Includes discussions with other services (e.g., X-Ray, Nursing, Physio, OT, etc.) to prioritize care activities.

Research Activities

All activities related to the initiation and/or participation in research activities in nursing or other disciplines.

Definitions of Research Activities

26. Participate research/ nursing

Includes different phases of nursing research such as identifying an issue, developing a research question, review of relevant literature or a research proposal, recruitment, data analysis and study findings or the development of recommendations.

27. Use of research in practice

Includes the use of the best evidence in practice and promoting evidence-informed practice. Activities include searching for relevant research articles, reading and critiquing research related to the ACNP's practice, disseminating relevant research to colleagues.

28. Participate research/others

Includes participation in different phases of research with disciplines that are outside of nursing.

Activities include identifying an issue, developing a research question, review of relevant literature or a research proposal, recruitment, data analysis and study findings or the development of recommendations.

Miscellaneous

29. Other: _____(specify)

Category to be used if an activity cannot be categorized in the pre-defined list of activities of the observation tool. Briefly describe activity in the comment box.

30. Personal time:

Personal activities not related to patient care including meals, breaks, and personal phone calls.

Appendix I

Table I1. Case 1 Frequency of Initiator and Receptor Behaviours During Non-

Participant Observations

	Case 1			
Observation time	8h 28 min			
	Initiator	%	Receptor	%
ACNPs	994	40.5	943	40.1
Physicians*	510	20.8	504	21.4
Nurses	315	12.8	306	13.0
Patients	196	8.0	175	7.4
Physios	183	7.5	185	7.9
AHNs	129	5.5	122	5.2
Front-line manag.	67	2.7	56	2.4
Social work.	37	1.5	39	1.7
Dieticians	23	0.9	20	0.9
Total	2454	100.0	2350	100.0

*Including the medical student

Appendix J

Table J1. Case 1 Initiators and Targets of Communication During Non-Participant Observations

Initiator	Person as target of communication									
	ACNP	MD	RN	Physio	PT	AHN	FLM	SW	Diet	N Educ
ACNP		207	196	120	110	55	29	21	12	3
MD	227		33	7	52	39	0	4	0	0
RN	191	46		12	9	10	5	0	0	0
PT	117	47	11	0		2	0	0	0	0
Physio	108	12	9		4	3	17	1	4	1
AHN	49	39	11	5	2		6	2	0	1
FLM	37	0	4	10	0	4		1	4	1
SW	21	5	2	2	0	1	0		2	0
Diet	12	0	1	1	0	0	4	4		0
N Educ	3	0	0	1	0	1	1	0	0	

Appendix K

Table K1. Case 1 Most Frequent Behaviours During Non-Participant

Observations

Provider	Initiator behaviour	Frequency	Total	Percent %
ACNPs	Give orientation	306	994	31%
	Give opinion	208	994	21%
	Agree	173	994	17%
Physicians	Ask orientation	99	472*	21%
	Give opinion	87	472*	18%
	Give orientation	81	472*	17%
Nurses	Give orientation	105	315	33%
	Ask orientation	74	315	23%
	Give opinion	52	315	17%
Patients	Give orientation	60	196	31%
	Ask orientation	53	196	27%
	Agree	37	196	19%

*Excluding the medical student

Appendix L

Table L1. Case 2 Initiators and Targets of Communication During Non-Participant Observations

Initiator	Person as target									
	ACNP	RN	PT	MD	Physio	Diet	SW	Pharm	AHN	Liaison
ACNP		403	379	283	66	59	47	44	44	31
RN	402		0	11	30	0	7	20	0	0
PT	369	32		8	0	0	0	0	0	0
MD	285	4	8		0	0	0	10	27	1
Physio	68	1	0	0		9	12	0	0	7
Diet	60	0	0	0	11		4	0	0	8
AHN	50	0	0	19	0	0	0	4		0
Pharm	49	1	0	10	0	0	0		3	0
SW	38	0	0	0	16	9		0	0	6
Liaison	38	1	0	0	4	4	5	0	0	

Appendix M

Table M1 Case 2 Frequency of Initiator and Receptor Behaviours During Non-

Participant Observations

	Case 2			
Time	8h 55 min			
	Initiator	%	Receptor	%
ACNPs	1877	49.9	1857	50.0
Nurses	569	15.1	556	15.0
Patients	470	12.5	473	12.7
Physicians	368	9.8	360	9.7
Physios	112	3.0	113	3.0
Dieticians	89	2.4	80	2.2
AHNs	73	1.9	73	2.0
Social work.	73	1.9	74	2.0
Pharmacists	70	1.9	69	1.9
Liaison nurs.	58	1.5	57	1.5
Total	3759	99.9*	3712	100

*Total $\neq$ 100 due to rounding

Appendix N

Table N1. Case 2 Most Frequent Behaviours During Non-Participant

Observations

Provider	Initiator behaviour	Nb of behaviours	Total nb. behaviours	Percent %
ACNPs	Give orientation	602	1877	32
	Ask orientation	407	1877	22
	Give opinion	382	1877	20
Nurses	Give orientation	256	569	45
	Give opinion	96	569	17
	Agree	74	569	13
Patients	Give orientation	202	470	43
	Give opinion	91	470	19
	Ask orientation	56	470	12
Physicians	Ask orientation	112	368	30
	Agree	81	368	22
	Give opinion	60	368	16

Appendix O

Table O1. Comparison of Structural Variables and Role Enactment for Case 1 and Case 2

	Case 1	Case 2
Role enactment	Advanced practice nursing role	Physician extender role
HC system variables	Identified legislation licensing Board policies funding considerations unionization	Identified same variables
Prescriptive authority	Limited to prescribing some labs and tests	Prescriptive authority for medication and medical directives
Leadership: medical	Disagreement about ACNP role among physicians	Physician-controlled decisions Consistent message about ACNP role
Leadership: nursing	Consistent message for a nursing role component Role of front-line manager could be enhanced	Minimal influence of nursing leadership Role of front-line manager could be enhanced
Common understanding	No, some want resident role while others want an APN role	Yes, as a physician replacement role
Role formalization	CPDP review incomplete	Documentation in place
Coverage	Hope to extend to night, week-end, on-call	Same hopes
Co-location	Yes with team and advanced practice nurses	No with other advanced practice nurses Team co-located
Critical mass	Not reached for an extended period of time	Presently 4 but hope for 6-7 if funding available
Rewards	Felt less stressed and more supported more satisfied with care time better used	Felt less stressed know patients better may value physician opinion more than team
Turnover Experience	26% 63% less than 5 years	15% 53% more than 10 years
ACNP variables	Need to be assertive Well organized	Work with others resistant to stress self-confidence
Patient variables	Older, more co-morbidity, more medical and nursing follow-up because more complex surgeries	Older, more co-morbidity, more complex surgical procedures, valves + CABG

Appendix P

Table P1. Comparison of Steps in Boundary Work for Case 1 and Case 2

	Case 1	Case 2
Boundary work	Describe core activities for each professional group and shared activities with ACNPs	Similar descriptions
1-Creating space	Welcome with open arms Filled a gap in patient care left by physician's limited presence	Nurses need to learn to work with ACNPs for 8 hours a day Transition Give and take Need to let go Psychological space
2-Loss of valued functions	Experienced nurses challenged by term "super nurse" Term "super nurse" makes other nurses feel inferior Prescribing as a part of physician identity	More intense with higher perceived losses Sense of mourning Pushed aside, abandoned Bitter pill to swallow Felt disorganized
3-Trust	Built up over time Distrust among physician group	Most important variable for successful boundary work, Develops slowly Easier if roles are clear.
4-Inter-personal dynamics	Respect Listening to others Making self available Assertive enough to set limits	Respect Go slow Get to know one another Residual tension Need to be fair and equitable.
Time	4 to 6 months for boundary work to decrease Boundary work harder over time if positions become entrenched.	3 to 6 months for boundary work to decrease ACNP role expected to change over time.

Appendix Q

Table Q1. Comparison of Processes Related to Perceptions of Team Effectiveness in Case 1 and Case 2.

	Case 1	Case 2
Perceptions of team effectiveness	Positive ACNP role improved medical care and follow-up Discharges better prepared Use of best evidence	Positive ACNP role improved medical care and follow-up Discharges better prepared Increased access to prescriptions.
Decision-making	Very limited authority within scope Few decisions made by ACNP	Complete authority within scope Decisions centralized through ACNP
Communication	Documentation Clear progress notes Inter-disciplinary team meetings Non-participant observations Initiat./Recept. equal Informal communication Missing link in communication ACNPs speak most with MD and nurses	Documentation Clear progress notes Inter-disciplinary team meetings Non-participant observations Initiat./Recept. equal ACNPs speak most to nurses and patients Communication between ACNPs to discuss care Telephone consultations
Cohesion	Central role in team Team gravitates to the ACNPs Inter-professional group believes they are now a team	Improved for inter-professional group because they believe they are now a team Physicians less involved in team and withdrew Intra-professional group want ACNPs to work on organizational projects
Care coordination	Pivotal contribution ACNPs address issues Integrate different perspectives	Pivotal contribution Similar description about discharge, consultants, timelier care
Problem-solving	Have no voice if a disagreement with physicians	Tensions among team members persisted where boundary work more intense Need to let go
Patient and family focus	Patient and family focus permeated interviews Priority in organization	Patient experiences mostly or "problematic" families

Appendix R

Table R1. Comparison of Non-Participant Observations Across Professional
Groups for Case 1 and Case 2

	Case 1				Case 2			
Time	8h 28 min				8h 55 min			
	Initiator	%	Receptor	%	Initiator	%	Receptor	%
ACNPs	994	40.5	943	40.1	1877	49.9	1857	50.0
Physicians	510	20.8	504	21.4	368	9.8	360	9.7
Nurses	315	12.8	306	13.0	569	15.1	556	15.0
Patients	196	8.0	175	7.4	470	12.5	473	12.7
Physios	183	7.5	185	7.9	112	3.0	113	3.0
Other	256	10.4	237	10.2	363	9.6	353	9.6
Total	2454	100	2350	100	3759	99.9*	3712	100
Case Total			4804				7471	
Grand Total								12275

Other: Includes AHN, SW, dietician, pharmacist, liaison nurse and front-line
manager
*: ≠ 100 due to rounding