

Project Management Practices in Small Projects: 5 cases in a Canadian Hospital Setting

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List of Abbreviations

BOTSR	Benzodiazepine and Other Targeted Substances Regulation
CDC	Centers for Disease Control
CIHI	Canadian Institute for Health Information
EMR	Electronic Medical Record
HCAHPS	Hospital Consumer Assessment of Healthcare Providers and Systems
HR	Human Resources
IS	Information Systems
IT	Information Technology
LHIN	Local Health Integration Networks
LMS	Learning Management System
MIS	Management of Information Systems
OCP	Ontario College of Pharmacists
PFCC	Patient and Family-Centred Care
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
P. M. P.	Project Management Practice
PRINCE2	PRojects IN Controlled Environments
S	Successful family (case B or E)
SMART	Specific, Measurable, Achievable, Realistic, Timely
SPCS	Supportive and Palliative Care Services
U	Unsuccessful family (case A, C, or D)

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Abstract

Healthcare is continuously changing through means of project work. Small projects in healthcare settings are of particular interest since they are usually not adequately supported by the health institution, and present many challenges of their own. However, collective successful completion of small projects has the potential to significantly impact and improve health service delivery. This thesis examined the common and successful project management practices in small projects in Canadian hospital settings to acquire new knowledge on this understudied kind of project and propose basic project management practice guidelines for future small projects conducted within these settings. Data collection was conducted in two hospitals in the form of 23 semi-structured interviews with five interprofessional project teams composed of 4-10 healthcare professionals. Each project was considered as the unit of analysis. Qualitative within-case and cross-case inferential processes were applied and a consolidated list of 43 project management practices deemed important by the majority of participants from all cases was revealed and could serve as basic project management practice guidelines for future small projects conducted in hospitals. Findings also shed light on the beneficial value of adapting principles of project management to small projects in hospital settings. Given the bottom-up nature of small projects, results suggest it is of significant importance to clearly define and understand the small project, as well as perform a thorough stakeholder analysis to be able to gain the right approvals. Insufficient time dedicated to small project management governed these shortcomings, thus team members need to regularly allot time to managing their small project. Lastly, the presence of a team leader was a significant factor influencing continuous project execution. Future studies should take into consideration allied disciplines' contributions such as organizational behaviour to help explain the interplay between group dynamics and small project outcome.

Chapter 1. Introduction

This chapter will present a brief overview of this study's context, motivation and objectives. The ensuing pages will first describe the background context and the problem this study proposes to tackle. An explanation of the incentives to investigate this problem will follow. Finally, the objectives and the key concepts of this research project will be explained.

1.1. Research Context and Problem

Healthcare is perpetually changing; new concepts, policies, ideas, services, processes, and products are continuously being introduced, allowing for endless innovation (Omachonu & Einspruch, 2010; Buttigieg & Gauci, 2015). When it comes to organizations, change is usually sought through the means of projects (Ives, 2005). Every project is temporary, undergoes progressive elaboration, and results in a unique product or service (PMI, 2013). Projects are extremely complex and are influenced by factors such as system boundaries, nonlinearity of the outcomes and uncertainty (Pundir, Ganapathy & Sambandam, 2007). Thus, every project is realized in a unique setting and is delimited by different environmental, task, temporal, financial, material, and human constraints (Chiocchio & Essiembre, 2009).

Although the implementation of cutting-edge advances remains a slow process across health systems in their entirety (Buttigieg & Gauci, 2015), change in singular organizations continues to occur through project work, which the Project Management Institute (PMI) defines as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI, 2013b, p. 6). Undertaking project work is dependent on the extent to which practitioners engage in project management practices, and should be studied from a project management perspective.

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Interestingly, to our knowledge, no specific project management guidelines exist for small projects conducted in hospital settings by healthcare professionals (Chiocchio et al., 2012). This problem is the result of multiple shortcomings pertaining to the discipline of project management. More specifically, six main limitations are of particular interest for this prospective study. 1) The discipline of project management has not yet recognized different project category definitions (Archibald, 2004). 2) There is an absence of consistent project management approaches in healthcare (Mohamadi, Hariri, Mousavi & Sabzikaran, 2015). 3) No formal project management techniques in healthcare have been identified (Morris, 2013; Schwalbe, 2013). 4) Project success is not universally defined (Attarzadeh & Ow, 2008; Schwalbe, 2013). 5) Healthcare professionals involved in project management lack appropriate project management knowledge and skills (Hills, 2010; Shirley, 2011; Chiocchio, Rabbat & Lebel, 2015). 6) Small projects conducted in healthcare contexts are understudied (Chiocchio, Rabbat & Lebel, 2015).

Meanwhile, the number and complexity of projects in healthcare continues to increase (Bredillet, 2008; Schwalbe, 2013), as healthcare systems are struggling to deliver high quality, effective, efficient and accessible services amidst ever-rising costs and financial constraints (Buttigieg & Gauci, 2015; Reinhardt & Oliver, 2015). Additionally, although impressive advancements are being made in modern medicine, healthcare management remains a priority issue (CHFI, 2014; Boyd, Chambers, French, Shaw, King, & Whitehead, 2014). The global population is aging, and chronic illnesses and disability are becoming unavoidable realities (Donovan, 2013) that hospitals and other health institutions need to take into consideration. Consequently, since more and more people will be making use of healthcare systems, it is important to find ways to increase efficiency in the delivery of care, without sacrificing the quality and accessibility of health care services.

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Thus, all of these abovementioned challenges warrant an interest to further study the discipline of project management within the context of healthcare systems, with the hope of improving the quality and delivery of healthcare services. Accordingly, this research attempts to answer the question: “What common and successful project management practices are used by healthcare providers during the management of small projects in Canadian hospital settings?”

1.2. Motivation

Answering this research question would contribute to our knowledge of project management practices in healthcare settings. A close investigation of the dynamics of these projects could allow us to identify what could be improved upon in order to reduce inefficiencies. It would also be a great opportunity to make use of project management theories to study these small-scale undertakings. The project management approach would be a particularly beneficial framework for this kind of study since it offers many advantages. It emphasizes improved control of financial, physical and human resources, increased quality and reliability, enhanced productivity, better internal integration, increased worker morale (resulting in reduced stress) (Chiocchio et al., 2010) and many more aspects that are not always addressed in other domains (Schwalbe, 2013). Of course, following a project management methodology would not necessarily guarantee a comprehensive approach, since the field of healthcare seems to present obstacles not encountered in other contexts. However, it would shed light on the specific issues that need to be consolidated in order to improve the delivery of health care services.

Lastly, studying small projects and the project management practices used in healthcare would allow to fill-in blanks in the academic literature. Since there are no known managerial

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guidelines for these kinds of projects, this study could be an important stepping stone to at least depict the current standing of these local ventures. In turn, knowledge of the situation of small managerial projects within the healthcare framework could help improve services provided by health institutions, by eliminating unnecessary practices, improving the allocation of money, staff and various resources and increasing the satisfaction of patients and providers alike. The benefits of proper project management are numerous – a thorough understanding of good managerial practices within the healthcare system would be helpful to us all.

1.3. Research Goal

The proposed study aims to better understand the dynamics of small project management within the healthcare framework. More specifically, it will examine the common and successful project management practices in small projects in Canadian hospital settings, in order to acquire new knowledge about the performance and operations of these understudied mechanisms. Since this sort of study has never been done before, it will allow a better cognizance of how these projects impact the implementation of health practices. Through retrospective analysis, this study also identifies the strengths and weaknesses of small projects in healthcare, and clarifies which aspects need to be improved upon and which practices should be adhered to. Additionally, knowledge gained from this study will be beneficial for other managerial disciplines. Through a thorough analysis of the leadership and organization dynamics within small management groups, this study helps elucidate how these projects differ from other managerial contexts. In brief, the scientific goal of this proposed study is to acquire new knowledge on small projects conducted within hospital settings in order to propose basic project management practice guidelines.

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1.4. Concepts

The main concepts of this study are defined in Table 1.

Table 1. *The main concepts defined (and referenced) for a prospective study on managerial practices used during the completion of small projects in a Canadian healthcare setting.*

Concept	Definition	Reference
Goal	The object toward which an endeavor is directed; an end.	Canadian Oxford Dictionary, 2004
Healthcare	The maintenance and improvement of physical and mental health, especially through the provision of medical services.	Canadian Oxford Dictionary, 2004
Interprofessional collaboration	A set of positive relationships and interactions that allow professionals to share their knowledge, expertise, experience for the better good of those in need of care.	D'Amour, Sicotte, & Lévy, 1999
Management	The responsibility for and control of a company or similar organization.	Canadian Oxford Dictionary, 2004
Practice	A way of working or a way in which work must be done. Practices can include activities, processes, functions, standards and guidelines.	Axelos, 2012
Project	A rather long yet temporary process whose objective is to create something unique and where the process, the deliverable or both, are progressively elaborated.	Hobbs, 2015
Project management	Applying knowledge, skills, tools, and techniques to project activities to meet project requirements.	PMI, 2013b
Small projects in healthcare	Projects that emerge from healthcare professionals themselves, only use part-time resources, and focus on service reengineering and changes in the way interprofessional collaboration is done.	Chiocchio, Rabbat & Lebel, 2015
Success	The accomplishment of an aim or purpose.	Canadian Oxford Dictionary, 2004
Team	Complex open systems forming entities characterized by two or more individuals who exist to perform organizationally relevant tasks, who interact socially, dynamically, recursively, adaptively, and often virtually; who have shared or common valued goals; who hold meaningful and high levels of task, feedback, and goal interdependencies; who are often hierarchically structured; whose group has a limited life span; whose expertise, roles, and responsibilities are distributed and who are bounded by and embedded within an organizational / environmental context that sets top-down constraints and that influences and is influenced by bottom-up phenomena occurring over time and enacted by competencies and processes, emergent cognitive and affective states, performance outcomes, exchanges with other teams, and stakeholder judgments of team member and team effectiveness.	Chiocchio, 2015, p.42

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Chapter 2. Literature Review

The following literature review will focus on project work, project management approaches, project management practices, project success, and individuals completing project work in healthcare contexts. This literature review will critically appraise these topics and will identify what is and is not known in the current literature in regards to management practices in small healthcare projects.

2.1. Innovating via Different Project Work

Innovations in healthcare are ordinarily related to new products, structures or processes (Varkey, Horne & Bennet, 2008). More specifically, process innovations correspond to the implementation of improved production or delivery methods (Omachonu & Einspruch, 2010; Varkey, Horne & Bennet, 2008), such as improvements in service delivery. Interestingly, process innovations have been highlighted as the top opportunities to improve the quality of services rendered (Chin, Hamermesh, Huckman, McNeil & Newhouse, 2013) all while controlling their cost (Chin, Hamermesh, Huckman, McNeil & Newhouse, 2013; Reinhardt & Oliver, 2015). Improving quality in healthcare service delivery remains a key priority (IOM, 2001; Schwalbe, 2013), therefore new process innovations are continually sought after to stimulate change within this field.

Although the implementation of cutting-edge advances remains a slow process across health systems in their entirety (Buttigieg & Gauci, 2015), change in singular organizations continues to occur through projects (Ives, 2005). Every project is temporary, undergoes progressive elaboration, and results in a unique product or service (PMI, 2013b). Projects are extremely complex and are subject to factors such as system boundaries, nonlinearity of the

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outcomes and uncertainty (Pundir, Ganapathy & Sambandam, 2007). Thus, every project is realized in a unique setting and is delimited by different environmental, task, temporal, financial, material, and human constraints (Chiocchio & Essiembre, 2009). Moreover, projects vary in goals, budget, duration, life cycles, and stakeholders (PMI, 2013b).

Unfortunately, the discipline of project management has not fully recognized that different types of projects require different handling; yet, most organizations recognize that different project categories do exist (Archibald, 2004). For example, the Watermark Learning corporation defines small projects as projects that require less than \$100,000 and 1000 hours, that have “low-moderate” or no risks, are often indistinguishable from ongoing work and have 1 or 2 stakeholders (Larson & Larson, n.d.), whereas the Raytheon Network Centric Systems engineering centers define small projects as projects that require eight or fewer engineers, are completed in less than one year and have a budget between US\$500,000 and US\$4 million (Jost, 2008). Depending on the organization, definitions regarding the type of project initiative vary considerably. After extensive research and a vigorous scan of multiple databases (i.e., PubMed, Scopus, Cochrane and Medline), it is possible to state that the lack of homogenous definitions for different types of projects applies to the health industry.

This lack of project categorization in healthcare is troublesome. Defining the size and type of new project would aid in: selecting the best project management methodologies, structuring project management systems and developing systematic methodologies for their creation, adapting education and training curricula, materials, and case studies, certifying project managers and specialists, developing specialized project management software applications, etc. (Archibald, 2013). In other words, an overall benefit of having an agreed project categorization system is increasing specificity of the project management discipline.

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2.2. Management Approaches and Healthcare

The lack of project category definitions in the health field is not the only challenge pertaining to project work. Another challenge related to project work in the healthcare environment is that there is an absence of consistent management approaches (Archibald, 2013; Mohamadi, Hariri, Mousavi & Sabzikaran, 2015). Although countless ventures and programs have arisen within hospitals and health-related settings (Morris, 2013), no single theory of project management exists (Koskela & Howell, 2002; Morris, 2013), nor should it. Indeed, the “one-size-fits-all” definition of project management put forth by the Project Management Institute (PMI) is not effective (Shenhar, 2001). In fact, this approach is often the root cause for many project failures as wrong project management methods are often applied to projects (Archibald, 2013).

Currently, the two most recognized and disseminated project management compendiums are: PMI’s Project Management Body of Knowledge (PMBOK®) and AXELOS’ PROjects IN Controlled Environments, version 2 (PRINCE2) (Morris, 2013). The PRINCE2 method is particularly popular in the United Kingdom, whereas the PMBOK guide dominates the philosophy of project management worldwide (Morris, 2013). It has been demonstrated that organizations should act in accordance with basic principles of project management in order to reach project goals within desired deadlines and budget limitations (Wright, 1997; Schwalbe, 2007; Mignerat & Rivard, 2012). Healthcare projects often rely on the two main project management approaches mentioned. However, the healthcare environment, when compared to other industries, presents unique challenges and specific limitations unknown to other fields (Shirley, 2011; Schwalbe, 2013). For instance, Lipsitz suggests that health care systems can be best understood under the label of complex systems. “In contrast to mechanical systems in which

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component parts interact linearly to produce a predictable output, the components of complex systems interact nonlinearly over multiple scales and produce unexpected results.” (Lipsitz, 2012, p. 243). Health systems involve multiple experts, health care professionals and stakeholders with varied interests; all who need to partake in various forms of self-organized teamwork (Clements & al., 2007; Lipsitz, 2012). Furthermore, implementing evidence-based research findings within the field is difficult due to organizational barriers, poor guidelines, complexity, and novelty of the research and lack of specific direction (Haynes & Haines, 1998). An amalgamation of healthcare project characteristics (summarized in table 2) contributes to the complexity and unique challenges of healthcare project management.

Table 2. *Main characteristics of healthcare projects (information in table taken from Schwalbe, 2013).*

Characteristic	Description
Care quality, cost containment, and external review	Three hallmarks of healthcare projects.
Quality of care for the patient is crucial	Quality often considered more important than time, cost and other constraints.
Big role played by government and regulatory agencies	The government is often the sponsor or reason for a healthcare project or it creates laws or standards that must be followed in healthcare projects.
Complex finances	Difficult to easily predict the financial value of projects or calculate the projected return on investment.
Healthcare is very personal	Generally preserving patient confidentiality, privacy, and security can introduce particularly challenging constraints and this creates a high degree of risk for any project that will access, use, or transfer patient information.
History of healthcare mistakes	Any mistakes made by caregivers in the past, through oversight, inexperience, or lack of knowledge, resulted in the patient returning for follow up treatment and generating additional revenue, thus not everyone will agree that a project is a good idea, even though it may seem reasonable to anyone not delivering care.
Collaboration across entities is required	Projects in the modern healthcare context are requiring increasing degrees of intra (within the organization) and inter (across organization) collaboration. In other words, nurses, physicians, technology staff, therapists, administration staff, compliance staff, and training staff are all engaged in significant healthcare projects.

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The use of project management methods has many advantages. They include: improved control of financial, physical and human resources, increased quality and reliability, enhanced productivity, better internal integration, increased worker morale (resulting in reduced stress) and many more (Schwalbe, 2007; Schwalbe, 2013). Of course, following a project management methodology does not guarantee success, since healthcare seems to present different obstacles not encountered in different contexts and requires control mechanisms to be applied with competence. Consequently, there is a need for more research in order to better understand the specifics of project management within the health domain.

2.3. Management Practices in Healthcare

Healthcare organizations “learn from other industries and use proven practices to identify and manage the many projects they face today and in the future” (Schwalbe, 2013, p.19). The dominant PMBOK guide identifies five project management processes and ten knowledge areas (PMI, 2013b). In reality, planning practices dominate the guide whereas project execution practices are sparse (Koskela & Howell, 2002). Although there are some tools and reports designed to facilitate carrying out projects in healthcare systems, (CDC, 2007; Shirley, 2011; Hills, 2010) they are often ignored or bypassed in order to satisfy or conform to the demands and needs of external bodies (Mignerat & Rivard, 2010). For instance, government can hinder creative and efficient projects due to its specific role. Indeed, it is a key player in the development and implementation of healthcare programs. It controls laws, creates policies, regulates standards and is the principal funder of health-related initiatives (Schwalbe, 2013). Therefore, health organizations affiliated with the government such as the Department of Health and Human Services Centers for Disease Control and Prevention (CDC), develop project delivery frameworks that comply with U.S.A. federal regulations (CDC, 2007). However, their

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role makes consistency of project management across health systems almost impossible, due to the different allocations and varying goals that are predetermined by these institutions.

Some project management practices have been institutionalized in the Management of Information Systems (MIS) domain (Mignerat & Rivard, 2012). Mignerat and Rivard (2012) identified four broad project MIS practice categories: formal control, internal integration, external integration and risk management. Table 3 demonstrates project management practices respective to each of these categories.

Table 3. *Information Systems (IS) practices respective to their type of project management practice (taken from Table 4 provided on page 135 of Mignerat & Rivard (2012)).*

Formal control	Internal integration	External integration	Risk assessment
1. Activity list	7. Project H/R management	11. Get top management support	17. Risk management
2. Responsibility assignment matrix	8. Team building	12. Identification of a sponsor	18. Contingency plans and reserve
3. Milestone schedule	9. Self-directed work teams	13. Identification of a champion	19. Decision tree analysis
4. Project management methodology	10. Get the best people, full time	14. User participation/involvement	20. Portfolio management
5. Cost control		15. Stakeholder management	
6. Lessons learned		16. Communication plan	

Although the domain of healthcare attempts to introduce and borrow project management delivery frameworks from other fields, it still does not follow formal project management techniques because it is a service based industry (Morris, 2013; Schwalbe, 2013). Indeed, we can study health care via various lenses, but it is key to remember that the system's primary role is to provide health services to patients. As new technologies, tools, and improved project management techniques emerge within the healthcare context, an increased need for studying specific healthcare project management tools is created (Schwalbe, 2013).

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2.4. Defining Project Success

Defining project success is yet another challenge pertaining to project management (Atkinson, 1999; Howe & Flanagan, 2004; Attarzadeh & Ow, 2008; Schwalbe, 2013). In spite of the low consensus on what constitutes project success, there is widespread recognition that failed projects lead to lots of mishaps. Some studies have shown that poor performance of organizations results in up to US\$109 million wasted for every US\$1 billion invested in projects (Watt, 2012; PMI, 2013a). Common project failure causes are usually a result of inefficient planning, various miscalculations, problems with implementation, and human errors (Attarzadeh & Ow, 2008; PMI, 2013b).

One way to determine whether a project is successful is to look at its level of completion. Project completion (or the lack of it) can be analyzed by looking at three different aspects (Wright, 1997; Attarzadeh & Ow, 2008; Serrador & Turner, 2015): 1) project success, when a project's output fulfills all purposes and is completed on-time and within-budget, 2) project challenged, when the project's output is operational but it does not fulfill all purposes and/or is not completed on-time and/or within-budget, and 3) project impaired, when the project's output does not get completed (Attarzadeh & Ow, 2008). Overall, the iron triangle, comprised of three constraints (time, cost and quality), is known to serve as a basic framework (i.e., necessary but not sufficient) to judge project success (Atkinson, 1999; Ives, 2005).

Another way of determining whether a project is successful is to evaluate the process and output of a project (Nelson, 2005). In other words, a distinction needs to be made between a project's management success and a project's success (Cooke-Davies, 2002; Serrador & Turner, 2015). The process of a project is related to three criteria: time, cost and product (Nelson, 2005) and project managers are imperative in defining the success of a project's management (Cooke-

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Davies, 2002; Serrador & Turner, 2015). Whereas, the output of a project is related to the criteria of use, learning and value (Nelson, 2005) and stakeholders are key in defining the success of a project (Cooke-Davies, 2002; Schwalbe, 2007; PMI, 2013a; Serrador & Turner, 2015). Table 4 further elaborates on project success evaluation related to process and output criteria. Thus, a project completed on time and within budget may demonstrate process success, however if the output of a project does not satisfy stakeholders or does not seem to provide enhanced effectiveness or efficiency for the organisation it may lack output success (Atkinson, 1999).

Nevertheless, project managers are almost always dependent on stakeholders, and the former's decisions can affect the outcome of the whole project (Wright, 1997). In fact, hospitals in Ontario, Canada, have multiple stakeholders. These stakeholders include patients, local community, staff, volunteers, the Local Health Integration Networks (LHINs), the Ministry of Health and Long-Term Care, the Canadian Institute for Health Information (CIHI), donors, academic partners, contracting parties, alternate health providers, and more (OAH, n.d.).

Table 4. *Project success evaluation related to process and output criteria (table created based on page 364 of Nelson, 2005).*

Process criteria	Description
Time	The project came in on schedule
Cost	The project came in on budget.
Product	The project produced a product of acceptable quality and met other product-related specifications, including requirements, usability, ease of use, modifiability, and maintainability.
Output criteria	Description
Use	The project's resulting product/service is being used by its target constituencies.
Learning	The project increased stakeholder knowledge and helped prepare the organization for future challenges.
Value	The project will directly result in improved efficiency and/or effectiveness for the client organization(s).

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Accordingly, when completing a project in the hospital context, “it is the role of the hospital’s board of directors and all of its leaders to act in the interests of the hospital corporation, and therefore, hospital leaders are not solely accountable to any stakeholder in particular” (OAH, n.d., p. 3). Although patients’ needs and interests should be prioritized (Shirley, 2011; Schwalbe, 2013; OAH, n.d.), it is not always possible to balance all of the stakeholders’ expectations. As a result, there is room for a lot of misinterpretation and confusion, which leads to ambiguity in what needs to be addressed most urgently. Additionally, these multiple demands make it difficult to assess whether a project has been successful, due to differing preferences of the many actors involved in such projects.

2.5. Healthcare Professionals and Projects

Healthcare professionals are trained to provide ongoing services in the form of the best possible care to their patients by helping individuals prevent, improve or treat health concerns (Schwalbe, 2013; Chiocchio & Richer, 2015). Although healthcare providers typically have good people skills (Shirley, 2011) – which are essential to good project management – they often lack the knowledge and technical skills related to project management (Hills, 2010; Shirley, 2011; Chiocchio, Rabbat & Lebel, 2015). Therefore, due to consistent inefficiencies within their work setting, healthcare professionals, administrators and support personnel are continuously trying to do more with less, working harder and longer (Fine, Golden, Hannam & Morra, 2009). Healthcare staff is increasingly involved with project work, in addition to their everyday responsibilities (Chiocchio & al., 2010; Hills, 2010; Schwalbe, 2013). Consequently, their chance of developing chronic fatigue or mental health problems is on the rise (Chiocchio & al., 2010). The literature has demonstrated that employee well-being has a significant impact on the performance of organizations (Grant, Christianson & Price, 2007). Thus, ensuring that the

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working conditions of hospital staff remain manageable should remain a priority when developing new strategies and projects within the health context.

Furthermore, there are difficulties associated with interprofessional collaboration, from which conflict often surfaces (Chiocchio, Kelloway & Hobbs, 2015; Schwalbe, 2013). Indeed, project work is dependent on the amalgamation of interprofessional team members in ways that differ from when they deliver healthcare services (Chiocchio & Richer, 2015). The difficulties present within a team may significantly hinder the completion of a project. Differences in each team member's background and relative knowledge about project management may either benefit or impede the potential they have to accomplish the goals of the project. Additionally, each member's role ambiguity is a frequent barrier to the proper operation of a project (Mathieu & al., 2015). Mathieu & al. recognized that a team typically consists of six main roles: organizer, doer, challenger, innovator, team builder and connector. Any problem with one of these roles may impede the project's accomplishment. Therefore, collaborating with others remains an on-going challenge (Chiocchio, Rabbat, & Lebel, 2015; Hobbs, 2015). Meanwhile, without collaboration, there is a very slim chance of any progress to be made within a project.

2.6. Literature and Knowledge Gap Overview

The literature review concluded that small projects in healthcare are understudied and lack managerial practice guidelines. This problem results from the absence of; recognition of different project categories by the discipline of project management, consistent and formal project management approaches in healthcare, appropriate project management knowledge by the healthcare professionals engaging in small projects, and universal definition of project success. Consequently, when deployed small projects in healthcare contexts do not fulfill their intentions, then the healthcare system is negatively affected (i.e., there is a waste of time and

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resources and a decrease in efficiency, quality and satisfaction). Thus, it is important to investigate small projects in healthcare settings to identify what could be improved upon. A need to acquire information about the managerial practices used in these understudied endeavours is presented. Therefore, in attempt of eliminating unnecessary processes and proposing managerial practice guidelines for future small projects conducted in these settings it is important to answer the question: “What common and successful project management practices are used by healthcare providers during the management of small projects in Canadian hospital settings?”.

The following chapter will explain the methodology which was applied to answer this central research question.

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Chapter 3. Methodology

This research focuses on acquiring new knowledge about an understudied type of project applied to a particular context: the small project in Canadian hospital contexts. Given that there are no specific project management guidelines for small projects conducted in hospital settings, it is hypothesized that it would be possible to propose basic project management practice guidelines for these contexts by investigating the current common and successful managerial practices applied by healthcare providers during the management of small projects and finding commonalities between the practices applied and project completion. This chapter outlines the methodology used to collect data for this study.

3.1. Multiple-Case Study

In regards to the investigation of the common and successful managerial practices used in small projects conducted in hospital settings, a cross-sectional, multiple-case study approach was adopted. As the case study method helps define managerial themes broadly, cover contextual conditions, and rely on multiple sources of evidence (Yin, 2009), this design was perceived suitable to consider every small project assessed as both the case and the unit of analysis.

As hospitals are sites subject to unique circumstances and regulations (Shirley, 2011) and they undergo continuous change and adaptation through the means of projects (Schwalbe, 2013), this environment was recognized as rich and relevant to this study. The qualitative multiple-case study approach ensures that the problem of interest be explored through a variety of lenses which allows multiple aspects of the phenomenon to be revealed and understood (Baxter & Jack, 2008). Additionally, cases that predict similar results have been selected in order to facilitate the multiple-case analysis (Yin, 2009). Thus, case selection criteria comprised of small projects

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which met Chiocchio, Rabbat & Lebel's (2015) small project definition, were initiated and near completion, were executed in a Canadian hospital setting, whose project team was comprised of at least 3 disciplines or professions, and whose majority of the project team participated in a basic project management training (Appendix A demonstrates the outline of the basic project management training program taught by Chiocchio & Richer (2014)). Table 5 provides supporting quotes from every project (case) part of this study to demonstrate that each small project met the different elements of Chiocchio, Rabbat & Lebel's (2015) small project definition.

Table 5. *Demonstration with direct quotes from participants that the cases in this study meet the different elements stated in Chiocchio, Rabbat & Lebel's (2015) small project definition.*

Case	Element	Quote
A	EHC	Quote 1. <i>It became complicated for us because we [the project team] presented our [project] idea. (A2)</i>
	PTR	Quote 2. <i>We've got work, we're very busy. So we did not have the time. (A3)</i>
	SR	Quote 3. <i>It [notice of post modification] was a form that was long to fill, and that we are obliged to fill out each time. We wanted to improve it. And at the same time, it led to doing something that improved the [staffing] process. (A3)</i>
	CIC	Quote 4. <i>[The project was] for clinical services. So it's all units of care, medicine, surgery, emergency - everywhere. (A1)</i>
B	EHC	Quote 5. <i>It [the project] was really something we talked about together. [...] Then it was unanimous. We [the project team] were like, wow, it's a great idea, it's something that needs to be done anyway. (B3)</i>
	PTR	Quote 6. <i>We [the project team] do not have the time, you know. I do not mind working outside my working hours, but I see why people do not want to. (B2)</i>
	SR	Quote 7. <i>So basically it's the process – our benzodiazepines at this time are treated as regular prescriptions, but we should treat them as narcotics under the Ontario College of Pharmacists. (B3)</i>
	CIC	Quote 8. <i>We [the project team] have to talk to the managers, talk to the educators, talk to the nurses and tell them exactly what we're going to do, how it's going to happen. (B1)</i>
C	EHC	Quote 9. <i>It took us a long time to figure out what we were going to work on. Then we [the project team] decided to work on the Learning Management System software. (C1)</i>
	PTR	Quote 10. <i>We [the project team] just did it [the project] part time, once a month.</i>

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		<i>[...] We have a project but we know very well that we do not have the time or the resources to do it. (C2)</i>
	SR	Quote 11. <i>So the purpose of this project was really to optimize the Learning Management System. (C3)</i>
	CIC	Quote 12. <i>There were problems with the Learning Management System because people [hospital staff] were not aware of the courses that were offered. So we [the project team] wanted to help promote it [the system] to be easier for users to use, and so on. (C1)</i>
D	EHC	Quote 13. <i>I remember when the idea was first introduced; it was at a leadership meeting. I can't remember exactly who was in the room, but I remember Dr. X talking about the EMR [program] and the benefits of it and how amazing it would be if we could do this. (D6)</i>
	PTR	Quote 14. <i>We're in a hospital; we didn't receive a budget from whoever gives it to hire an extra person for the project. [And] everybody has another job. This was an extra. And okay, they [managers] might tell us, "Okay, we're going to give you a little bit less work for you to do that [the project]", but it's not true. The reality is that in the end, you end up doing your 40 to 60-hour a week job – seeing patients, doing stuff – and then that comes on top. (D3)</i>
	SR	Quote 15. <i>The goal was to integrate all of our systems into one electronic medical record. (D8)</i>
	CIC	Quote 16. <i>The goal of the project was to make sure that there was good communication between clinicians so that people [hospital staff] would be able to see all of the relevant information they were looking for about the patients. (D6)</i>
E	EHC	Quote 17. <i>So it started with an idea that three physicians had about three or four years ago where we all had stories – some were good, some were bad – about different situations. We all wanted to help improve safety but we thought that to improve safety people need to be able to have conversations and to work together, and that that needed to be known to be important. So we said step one of our 40-year career will be to see if we could raise awareness. (E1)</i>
	PTR	Quote 18. <i>We used to have meetings every two weeks. Very, very frequently. So, at the beginning we had them once a month I'd say, and then it went to every two weeks. (E2)</i>
	SR	Quote 19. <i>We were kind of hoping to see an increase in satisfaction for patients and really an increase in patient reporting and how to report [...] So it's just an improvement of a process. (E3)</i>
	CIC	Quote 20. <i>The project was to create an awareness campaign that targeted communication between staff, and so hospital staff and physicians and parents/families, as well as between hospital staff, physicians together so to create awareness about proper communication to reduce patient safety errors.[...] We [the project team] were working with new players, other employees for the first time. (E2)</i>

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Note. Chiocchio, Rabbat and Lebel (2015) define small projects in healthcare as “Projects that emerge from healthcare professionals themselves, only use part-time resources, and focus on service reengineering and changes in the way interprofessional collaboration is done.” In Table 5, **Element** corresponds to elements from this small project definition and they have been abbreviated to the following; **EHC**: Projects that emerge from healthcare professionals themselves, **PTR**: Projects that only use part-time resources, **SR**: Projects that focus on service reengineering, and **CIC**: Projects that focus on changes in the way interprofessional collaboration is done.

Validity was ensured by the researcher through several measures. First, multiple cases were studied in order to help generalize the study’s results. Second, the literature review conducted demonstrated the motives for this research and helps illustrate some of the study’s results’ potential limitations. Furthermore, the literature review demonstrated currently known knowledge about project management of small projects in hospital settings in order to ensure that further investigation of this topic was based on the most up-to-date knowledge. Third, the researcher documented all of the data collection methods and data analysis processes adopted in this study. Fourth, prolonged engagement of the researcher with the study, providing rich and exhaustive descriptions about the setting and context of the study, clarifying researcher bias, and peer debriefing were all employed in this study as methods to increase trustworthiness (Lincoln & Guba, 1985). Overall, the researcher maintained transparency in this study in order to allow the readers to infer their own judgment of the rigor of the methodological and analytical process applied.

3.2. Study Sample

As a means of studying the accessible population, a convenience sample of 5 small projects conducted in two different Canadian hospitals was recruited for this study. More specifically, 3 project teams (cases A, B and C) from Hospital 1 (a Francophone hospital located in Ontario) and 2 project teams (cases D and E) from Hospital 2 (an Anglophone hospital located in Québec) were recruited for this study. Each project team was comprised of 4-10 healthcare professionals of at least 3 disciplines or professions. A total of 23 individual semi-structured

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interviews (65.7% participation) were conducted and each interview was identified with an alphabetical letter and a number (i.e. A1) to identify the project and participant respectively (see Figure 1).

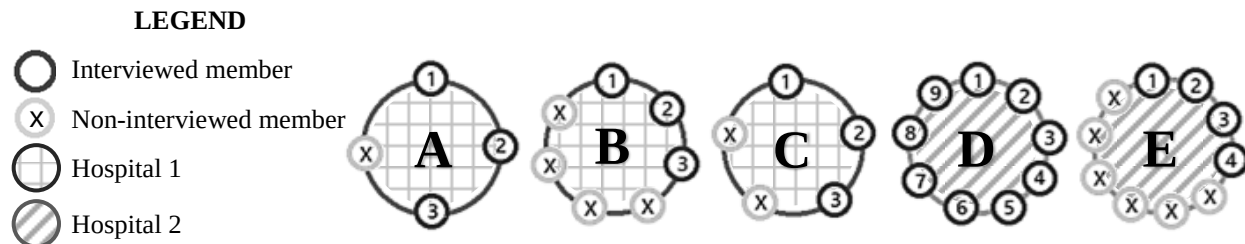


Figure 1. *Total number of team members in each project team and a representation of the interviewed participants from each project team.*

3.3. Data Collection

Ethical approval was obtained from the University of Ottawa's Social Sciences and Humanities Research Ethics Board as well as from the Research Ethics Boards of both Hospital 1 and 2. Study participants signed a consent form which described the nature of the study prior to engaging in the study (Appendix B – Participant Consent Form). Additionally, permission for recording and note-taking during the interview was obtained. As interviews are a lot more flexible when they do not take on a rigid structure, and participants usually deliver more versatile responses (Huberman & Miles, 2002), semi-structured interviews were conducted in order to collect information about the chosen cases. Interviews were scheduled in advance between July and October 2016 and took place in a quiet room at participants' workplaces in order to accommodate their busy schedules. Data was collected during or after the completion of a small project in the participant's preferred language (English or French). Every interview was recorded and transcribed verbatim into the NVivo™ version 10 qualitative data analysis software (QSR International, 2012). All interviews were anonymized to preserve participant's confidentiality.

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Due to the fact that no managerial practice guidelines exist for small projects, the researcher incorporated an exploratory component in this study by asking the participants to describe their projects and the management of their projects in as much detail possible instead of seeking the responses from a deductive approach. This method allowed the researcher to obtain richer data about the management processes employed in small projects and avoided limiting the participant's responses to a pre-established list of project management practices. More precisely, the interviews began by asking each participant a few background questions related to their job title, their responsibilities and their time working at the organisation. Next, the participants provided a brief description of their small project, and proceeded by answering questions related to the project management practices which they applied, followed by comments on the success of their project. Table 6 demonstrates the interview guide the researcher followed. The average interview lasted approximately 43 minutes.

Table 6. *The interview guide.*

Theme	Questions
1. Description of Project	a. What was the project you worked on? b. What was the goal of the project? c. Is the project over or is it still in progress? d. Would you qualify the project as a success (so far)? Why?
2. Managing the Project	a. What project management practices were applied? b. What impact did these practices have on the success of the project? c. Which applied project management practices did you perceive as unnecessary to the successful completion of the small project? d. Which unapplied project management practices did you perceived as necessary to the successful completion of the small project? e. What managerial practices do you perceive as essential in managing small projects in hospitals?

Post-interview notes similar to a contact summary sheet, as suggested by Miles & Huberman (1994), were noted in order to highlight the main concepts, themes, and impressions observed during the interview. In order to enrich the post-interview notes and to be more familiar

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with the data, the researcher re-read data and re-listened to specific excerpts of the recorded interviews as pitch and intonation could provide more information (Miles & Huberman, 2002). These notes elaborated on the notes taken during and after the interview and included additional comments, observations and descriptions about the interview. A total of 25 pages of post-interview notes were compiled and also uploaded into the NVivo 10™ software.

Table 7 represents a summary of the research methods. It shows the broad and narrowed research questions, research goal, type of research design, sampling method, sampling population, data collection method, and level of analysis of this study.

Table 7. *Summary of research methods.*

Broad Research Question	What common and successful project management practices are used by healthcare providers during the management of small projects in Canadian hospital settings?
Narrow Research Questions	Which applied project management practices are perceived as unnecessary to the successful completion of the small project? Which unapplied project management practices are perceived as necessary to the successful completion of the small project? What managerial practices are perceived as essential in managing small projects in hospital settings?
Research goal	Advance knowledge on small projects in healthcare in order to propose basic project management practice guidelines to healthcare professionals
Type of research	Qualitative multiple-case study
Sampling method	Convenience
Sample	5 projects; 3 from Hospital 1 (located in Ontario) and 2 from Hospital 2 (located in Québec)
Data collection method	Individual semi-structured interviews conducted during or near completion of a small project in a Canadian hospital setting (average interview length of approximately 43 minutes)
Level of analysis	Project (i.e., each case documents a specific project)

3.4. Data Analysis

The analytical process of this study was inferential in nature. In order to explore the study's potential outcomes, within-case and cross-case analysis was applied. The following sub-

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sections further describe the analytical methods employed. An overview of the analytical steps applied is also provided.

3.4.1. Within-Case Analysis

Within-case analysis consisted of making a detailed description of each project and its setting (Huberman & Miles, 2002). Thus, prior to analysis, a summary of each project was documented (view Chapter 4). These summaries included a description of the project team, the project context, the problem motivating the small project, and the project goal. The researcher pursued the exploration of each case by employing content and thematic analysis.

Content Analysis

Once all the transcriptions and notes were uploaded into NVivo 10™, the raw data of every interview underwent content analysis. This was first done by focusing on one project at a time, analyzing every team member's interview, coding the response to every interview question as a different category, and then applying categorical aggregation to every category. Thus, data was aggregated into broad categories (step 1), and then grouped into more specific collections (step 2). Table 8 describes these categories and collections. Subsequently, although interviews revealed many interesting topics, attention was devoted to the project management practices category as this is the main topic of interest in this research. Therefore, the researcher adopted an inductive approach by reading through the raw data pertaining to the narrowed questions asked (questions 2. a. c. d. e. in table 6) and highlighting the project management practices mentioned for each question. The researcher repeated this step two times to assure that all practices were detected. This allowed the creation of a list of project management practices corresponding to each narrowed research question. Figure 2 exemplifies this coding process.

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Table 8. *Description of categories and collections applied in NVivo 10TM during the aggregation of the raw data from interviews.*

Step 1		Step 2	
Category	Description	Collection	Description
Introduction	Elements describing the participant and their role in the project	General information	General information about the participant
		Role	Participant's role in the project
Description of the project	Descriptions related to the context of the project	Team	Number of team members
		Timeline	Project start and end
		Problem	Details about the problem motivating the project
		Goal	The goal(s) of the project
		Context	Details about the circumstances in which the project was conducted
Project status	Details about project completion	Completed	Details stating that a project is completed
		In progress	Details about the project's progress
Project success	Comments related to project success	Project success	Participant's opinions on the overall success of the project
		Project failure	Participant's opinions mentioning project failure
		Positive P.M.P. impact	Positive impacts and comments caused by P.M.P.
		Negative P.M.P. impact	Negative impacts and comments caused by P.M.P.
P.M.P.*	Details about the project management practices mentioned in the interview	Applied	Applied P.M.P. mentioned
		Unnecessary	P.M.P. considered unnecessary/nonessential
		Unapplied	P.M.P. considered unapplied in the context of their project
		Essential	P.M.P. considered essential in managing projects
Other	Other topics mentioned in the interview which do not fall into the abovementioned categories	Examples	Events, situations, obstacles mentioned
		Learning	Comments related to lessons learned from project
		Training	Comments concerning the project management training course received

*P.M.P. (Project Management Practice)

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Category: P.M.P.* | **Collection:** Applied

D2 response extract: “First we identified the mission¹ and vision² and the next step was really to create a timeline³. So we tried to figure out our mission, vision, scope⁴, the big milestones⁵. For each milestone, [we figured out] what were the steps that needed to be done⁶ to achieve that milestone? And for each step, the timeline and who would be doing it⁷, what they would need to do and how much time⁸ they will have to do with the milestones.”

Corresponding project management practices coded: Define mandate/mission¹ Define vision² Create timeline (develop logical schedule of activities)³ Define scope⁴ Develop milestones (key dates/deadlines)⁵ Define phases/activities⁶ Define roles and responsibilities for each team member⁷ Estimate timescale for phases/activities⁸

*P.M.P. (Project Management Practice)

Figure 2. Content analysis coding example.

These lists were then rearranged according to PMBOK’s ten knowledge areas and process groups (view figure 3) to help identify both the broader management subjects mentioned and those failed to be mentioned (PMI, 2013b). For example, the description of developing a project charter (which is part of the project management integration knowledge area) stated that a charter must: determine the project purpose or justification, project objectives, product characteristics, project assumptions, constraints, high-level descriptions, boundaries, success criteria, summary schedule, budget, project approval requirements and approval authority (PMI, 2013b). Therefore, the project management practices mentioned by participants which fit into this description (i.e., define project problem (background), define mandate/mission, create preliminary schedule) were reorganized such that they were included in a particular knowledge area; in this case, integration management. This process was reiterated for all the project management practices extracted until each practice was placed into the corresponding knowledge area.

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Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work	4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Time Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule		6.7 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

Table 3-1. Project Management Process Group and Knowledge Area Mapping

A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Fifth Edition. ©2013 Project Management Institute, Inc. All rights reserved.

Figure 3. *PMBOK Knowledge Areas and Process Groups (PMI, 2013b)*

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After this reorganization process was completed, a summary table for each case was created in order to facilitate analysis. The summary table was achieved by indicating an “X” to every managerial practice mentioned in every interview with regard to the narrowed research questions. The use of tables helps refine the extensive list of managerial practices and facilitate the comparison and perception of trends across-cases. Furthermore, a refined list of practices deemed important by the majority ($\geq 50\%$) of interviewed team members was created for each case. This was created by including the applied practices not perceived as unnecessary by the majority of the group, adding the unapplied but perceived as necessary project management practices and the practices considered as essential into a consolidated list titled ‘Important Project Management Practices’. These lists directly pertained to this study’s goal as they revealed the common and perceived successful project management practices used by healthcare providers in the management of small projects in Canadian hospital settings.

Thematic Analysis

Next, data underwent thematic analysis by coding the most important themes within each question. This allowed the establishment of frequent themes and patterns and helped contextualize the content. Thematic analysis was done for each collection from the project success and P.M.P. categories demonstrated in table 8. This permitted themes to be established in every case for five groupings: project success, project management practices considered unapplied but necessary, project management practices applied but considered nonessential, project management practices considered essential for every small project, and the impact of project management practices on project completion. The frequency and connections between topics and themes were also analysed, which allowed the representation of relative meaning of

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the approaches and themes mentioned by participants. Figure 4 exemplifies how a theme was established in case E.

Category: Project success Collections: Positive P.M.P.* impact & Negative P.M.P. impact Coded in case E: focused helped give us focus standardized structured the language of project management clear outline learning experience steering us in that direction structure structured the most important part of the project Defining what it is focus reminder of what needed to be done by when clearly identified gave a certain formality to the process helped structure our goals more concrete allowed me to kind of understand where we are headed collectively better frame the project for all of us clarified our roles very clearly clarity formalized the project in my mind gave a sense of direction how our roles were going to support that It really delineated where we are going, by what time, who is going to be responsible made it more authentic Most frequent words (descending order): structure, clear, focus, direction, formal Encompassing theme: Important impact *P.M.P. (Project Management Practice)

Figure 4. *Thematic analysis example.*

After the data was thematically coded, quotes for every theme were extracted as direct quotes allow readers to examine the data collected and analyzed, understand the findings, and evaluate credibility (Cohen & Crabtree, 2006). The quotes judged most relevant and representative by the researcher have been added into the results chapter (view Chapter 4) to help support the interpretation of the findings. It is important to note that the quotes presented from interviews conducted in French were translated to English.

3.4.2. *Cross-Case Analysis*

Lastly, the ensuing goal to examine managerial practice similarities and differences among the projects was achieved through cross-case analysis. This was accomplished through the creation of a master table. The master table demonstrates the managerial practices mentioned in response to the narrowed research questions for each individual project and the sum total of all

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projects. This table was also reorganized based on the PMBOK's knowledge areas (PMI, 2013b) and the practices deemed important by the majority of interviewed team members. A table titled 'Important Project Management Practices' was also created to refine the data and represent a potential future guideline for small projects conducted in hospital settings. The master and important project management practices tables facilitated the interpretation and representation of trends across the cases.

Furthermore, as undertaking multiple case studies can generate explanations as well as improve validity by using a wide range of data and making multiple group comparisons (Miles & Huberman, 1994), the researcher grouped the cases according to similar outcomes. More specifically, the researcher analyzed two different links across the cases: 1) project management practices and perceived project success, and 2) presence of a team leader and project execution. Thus, to address the first comparison, the researcher created a case-ordered descriptive matrix according to the perceived success variable and grouped the cases into families according to similar outcomes. Next, the main causal data specified in the within-case analyses was reviewed and displayed with its link to project outcome. Based on a comparison of the project management practices present in both families, the diverse effects stemming from a single major variable were consolidated into an effects display. The groups were then compared and the trends perceived were stated. To address the second comparison, the researcher examined the presence and changes of core team members and leaders across the cases. The cases were grouped according to the presence or absence of change in the team leader, and then these groups were compared and contrasted to support the importance of a team leader in project execution. The main findings were compared to elements in the literature and new discoveries were revealed.

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Before the researcher proceeded to developing broad inferences from the data analysis process, an insight from peers about this process was obtained to enrich the research outcomes. Hence, a peer debriefing session was a complementary part of the analytical process. The impartial peers received the interview transcriptions, general methodology and analysis report prior to the session. During this process, peers discussed the granted biases, perspectives and assumptions made by the researcher (Lincoln & Guba, 1985) and provided constructive feedback. After the session, the researcher reviewed the results with a new set of eyes and applied the necessary changes.

3.4.3. Analytical Steps Overview

Table 9 presents a summary of the analytical steps executed with respect to the raw data collected for this study on project management practices in small projects in Canadian hospital settings. These processes allowed the researcher to proceed to the final interpretive phase: interpreting the meaning of the data.

Table 9. *Summary of analytical steps executed.*

Step	Description
1	Analysis began during data collection (during the interviews), as the interviewer jotted down main concepts, general comments, opinions, thoughts, questions and perceptions
2	The interviewer wrote post-interview notes similar to a contact summary sheet as suggested by Miles & Huberman (1994)
3	In order to enrich the post-interview notes, the researcher re-read data in order to be familiar with it and re-listened to specific excerpts of the recorded interviews as pitch and intonation can provide more information
4	A summary of each case which included a description of the project team, the project context, the problem motivating the small project and the project goal was documented
5	All the transcriptions and notes were uploaded into NVivo 10 TM and anonymized
6	The raw data of every interview underwent content analysis by coding the response to every question as a different category and then aggregating data into main categories and collections (view table 8)
7	Through an inductive approach, the researcher coded the project management practices mentioned for each narrow question asked (questions 2. a. c. d. e. in table 6) in every case (<i>note.</i> coding was achieved by indicating an x mark every time a managerial practice was

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	mentioned in every interview)
8	The researcher repeated step 7 two times to assure that all practices were detected and then summarized the extracted project management practices mentioned for every question and into a case summary table
9	A master table demonstrating the managerial practices mentioned in response to the three narrow research questions for the sum of all projects was created
10	The summary table and master table were reorganized based on the PMBOKs ten knowledge areas (PMI, 2013b)
11	The rearranged summary and master table were refined by eliminating practices mentioned by less than half of the participants in each case
12	Based on step 11, an refined list of practices deemed important by the majority of team members was consolidated for each case and for a summary of all the cases into a list titled 'important Project Management Practices' (<i>note</i> . this list included the applied practices not perceived as unnecessary, the unapplied but perceived as necessary project management practices, and the practices considered essential)
13	Data underwent thematic analysis by coding the most important themes related to the content aggregated in the project success and project management practice categories
14	The frequency and connections between topics and themes was analysed, which allowed the representation of relative meaning of the approaches and themes mentioned
15	Quotes from every theme were extracted to help readers examine the data collected and analyzed, understand the findings, and evaluate credibility (Cohen & Crabtree, 2006)
16	Within-case analysis for every project was applied by interpreting the case summary table and the recognized themes
17	Cross-case analysis was applied by interpreting the master table and creating an 'Important Project Management Practices' list which could serve as a future guideline
18	The researcher analyzed the link between project management practices and perceived project success across the cases by ordering the cases according to the success variable, and then grouping them into families
19	The families were compared and contrasted and a causal display as well as an effects display were created to help understand the data and recognize the main themes and patterns
20	The researcher analyzed the link between the presence of a team leader and project execution by examining the presence and changes of core team members and leaders across the cases and grouping the cases according to the presence of change in team leader
21	The families were compared and contrasted to support the importance of a team leader in project execution
22	A peer debriefing session was held to apply a new set of eyes on the analytical process and perceived trends
23	With the help of comments from step 22, the results were reviewed and the necessary changes were applied
24	The data was interpreted and findings were compared to the literature

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Chapter 4. Data Analysis and Results

The within-case analysis of the five projects explored in this study is presented in this chapter. Firstly, every project is summarized through a descriptive approach describing the project problem, goal, team, and completion at the time of data collection. Secondly, the project team members' perceptions of project success are revealed through thematic analysis. Thirdly, all the project management practices mentioned in response to the narrowed research questions (question 2. a., c., d., and e. in table 6) were extracted via content analysis and are presented in a summary table respective to the case, as well as to the existing ten knowledge areas from PMBOK®. Fourthly, additionally to the content analyzed for questions 2. c., d., and e., the dominant themes demonstrating team member's thoughts regarding project management practices are exposed. Fifthly, the thematic analysis results of question 2. b. from table 6 regarding the impact of project management practices on project completion are demonstrated for each case. An overall overview is provided at the very end of each within-case analysis to help the reader summon up the important take-home messages.

Lastly, a cross-case analysis is presented in this chapter which reviews the commonalities and differences between the five projects. This cross-case analysis refines the important project management practices and analyzes the link between project management practices and perceived project success as well as the presence of a team leader and project execution. The dominant and successful trends regarding project execution are identified. Moreover, the limitations of managing small projects in hospitals are stated and the value of usefulness of project management practices is explored. This analysis helped deepen the understanding and explanation of the observations made by emphasizing the chief project management practices and identifying new discoveries.

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4.1. Within-Case Analysis – Case A

4.1.1. Case A Summary

In March 2014 a team from the staffing department in Hospital 1 began their project titled “*The Notice of Position Modification project*” with the desire to solve a frequent process inefficiency related to filling out the notice of post modification form. More specifically, these members of the staffing department claimed that filling out the form was long and inefficient as one form only accommodated one person, and feedback was rarely received once the form was transmitted to the department of human resources (HR). Thus, the team decided to undertake a project which aimed to create a new electronic notice of position modification form that communicates bi-directionally with HR and the staffing team to improve this critical process.

Just over one year after the team started working on the project, the project was absorbed by a larger information technology (IT) project executed by the department of HR. This resulted in cessation of the project by the staffing team in May 2015.

In the summer of 2016, this team was interviewed about their small project. Originally, this team consisted of four people; however, one of the members left the team during the project due to a change of employment. The remaining three people consisted of the project coordinator for the direction of clinical services and two staffing officers. The timeline below helps illustrate the sequence of events mentioned.

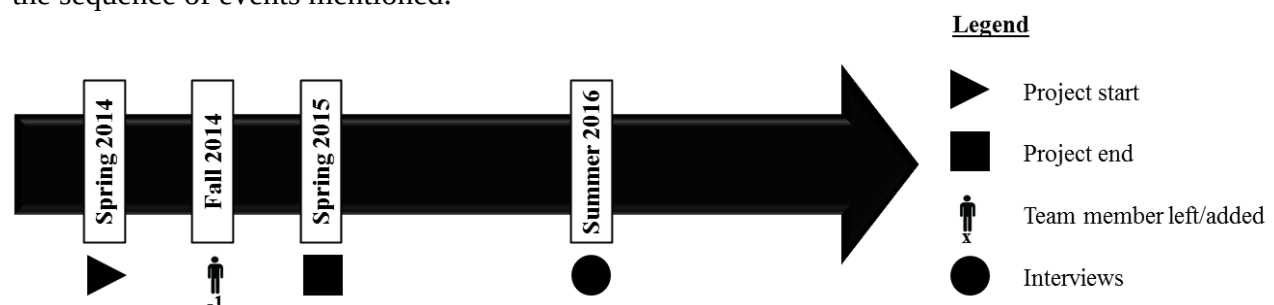


Figure 5. Case A project timeline.

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4.1.2. Project Success Perception

Participants were asked if they perceived their project to be a success. The responses to this question were analyzed thematically. Two main themes were extracted for case A.

Firstly, most team members stated that their project was not a success as their project goal was not achieved. For example, a project team member stated:

Quote 21. *If we look at our [project's] original purpose, no, we did not realize it, we did not change the AMP process, not yet. (A1)*

As underlined by the words “not yet”, this project was not perceived fully completed as the small project got absorbed by a larger project.

Quote 22. *Our project got carried away by other [IT and HR] departments because there was something else [a project happening] in parallel that was larger and of more priority. (A1)*

Therefore, team members of project A remained hopeful that their original project goal would eventually be achieved by other parties.

The aforementioned theme was the basis of the second theme: presence of elements of success. All three team members did not perceive the project to be a complete failure:

Quote 23. *Well, no, it's not a failure. It brought something. (A3)*

In fact, participants stated the primary successful element to be that the project problem was now revealed and being worked on. This revelation allowed an increase in communication between their department and other departments. The following quote helps illustrate the second theme:

Quote 24. *[I think it was a success] in terms of how it shook things up a bit, that we opened the communication channel between the departments, and that we communicated that there was something that irritated us as a group. In any case, I am more than satisfied that even though the project was not realized, it is not shut. I am quite satisfied that at*

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least there are changes coming in the form of bigger scale projects. [Teams in different departments] worked in parallel [on small projects] without really talking to each other. Now we ended up being better understood between teams. (A1)

Overall, project A's output was perceived as unsuccessful as the goal was not achieved, however the project process revealed elements having a positive impact on the project problem and team.

4.1.3. Case A Project Management Practices

Project Management Practices – Case A

Summary Table

In total, 35 unique project management practices were identified via content analysis by project A's team members. After reorganizing the project management practices based on PMBOK's ten knowledge areas, it was possible to classify these practices into only seven knowledge areas (KA) which were; integration, scope, time, human resource, communication, risk, and stakeholder management. Case A's summary table is demonstrated in table 10.

Table 10. Case Summary table organized according to PMBOK®'s ten knowledge areas (KA) for case A which demonstrates the percentage of the interviewed team members that stated a project management practice in response to the interview questions 2a, c, d, and e.

KA	Project Management Practice	Q2a	Q2c	Q2d	Q2e
		%	%	%	%
1	Brainstorm (start-up project)	33	0	0	0
	Create project charter	33	0	0	0
	Define problem (background)	67	0	0	33
	Define SMART objectives	67	0	0	0
	Define deliverables	33	0	0	0
	Define mandate/mission	67	0	0	67
	Define vision	33	0	0	33
	Define future state	0	33	0	0
	Define project benefits	33	0	0	0
	Define project title	33	0	0	0

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	Define roles and responsibilities for each team member	67	0	0	0
	Create preliminary schedule	33	0	0	67
	Execute activities	33	33	0	67
	Perform formal project closure	0	67	0	0
	Create project report (document for future reference)	0	33	0	33
	Consider constraints	33	0	0	0
	Define scope	33	0	0	0
2	Develop work breakdown structure	0	0	0	67
	Document project	100	33	33	33
	Refine scope	0	0	0	33
	Define phases/activities	33	0	0	0
	Estimate required resources	33	0	0	0
	Estimate timescale for phases/activities	0	0	0	33
3	Develop milestones (key dates/deadlines)	33	0	0	0
	Schedule appropriate time to manage project	0	33	0	33
	Create timeline (develop logical schedule of activities)	67	0	0	67
	Monitor project progress	0	33	0	33
	Communicate performance feedback	0	33	0	0
6	Create core project team	0	33	0	33
	Organize synchronous communication (meetings)	33	0	0	0
7	Hold synchronous communication (meetings)	67	0	0	0
	Communicate with external stakeholders	100	0	0	0
9	Identify risks	67	0	33	0
	Analyze risks (probability, impact, priority)	67	0	100	33
10	Identify stakeholders	33	0	0	0
Total Project Management Practices		25	9	3	15

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. Interview question 2a = what project management practices were applied? Interview question 2c = which applied project management practices did you perceive as unnecessary to the successful completion of the small project? Interview question 2d = which unapplied project management practices did you perceived as necessary to the successful completion of the small project? Interview question 2e = what managerial practices do you perceive as essential in managing small projects in hospitals?

Note3. SMART = Specific, Measurable, Achievable, Realistic, Timely

Applied Project Management Practices

The content extracted from case A's data identified 25 unique project management practices from six knowledge areas (integration, scope, time, communication risk, and stakeholder management). Only ten common practices were stated by more than half the project

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team which are part of five KAs: integration, scope, time, communication, and risk management.

This team identified the least applied project management practices.

Unapplied Project Management Practices Considered Necessary

In total, 9 project management practices stated as unapplied but necessary to the completion of project A's small project were identified from four knowledge areas (integration, scope, time, and human resource management). 'Performing a formal project closure' – a practice from the integration knowledge area – was the only unapplied practice stated by the majority of the team.

Thematic analysis of this topic revealed one main theme: lack of project control. This theme encompassed participant's comments and statements regarding lacking authority in their organization, lacking communication with external stakeholders, and lacking time. More explicitly, one team member expressed:

Quote 25. *One thing that we did not really do, or well that we did not do enough, is the control phase. (A1)*

Firstly, team members explained that they did not possess a lot of decisional power in their hospital. The team found that after their project got taken over by the HR and IT departments, they lost almost all authority over the small project and they regret not having continued to provide their input in the project. In other words, members did not think that they concluded their project properly after handing over their work to the new leaders.

As expected, team members stated that they did not communicate enough with their stakeholders. In small project A, the external stakeholders were comprised of the other departments which were planning on using the project's improved product. However, the key stakeholders consisted of the human resource and information technology departments as they

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were identified as having the most vested interests in this project. Indeed, the content analysis revealed that in the communication knowledge area, two practices were mentioned by the majority of the project team: performing synchronous communication by holding meetings and communicating with external stakeholders. Although this occurred, the team perceived that they did not receive sufficient feedback from their main stakeholders, and in turn did not provide their feedback, which is demonstrated by the following quote:

Quote 26. *[We did not do enough] follow-ups of where we are with this [project] because eventually we handed over the 'keys' to HR and IT. [...] Throughout the organization there is this hierarchy where we were the [project] leaders, but according to the hospital hierarchy, we no longer had anything to do with the decision-making process for this project. (A1)*

The lack of project control was also associated with employee turnover. This turnover occurred in both the project team and in the hospital and further challenged maintaining control over the project:

Quote 27. *If there had been no employee or staff changes, perhaps it would have resulted in a different outcome. But that was out of our control. (A3)*

Lastly, all team members mentioned that they were deficient in dedicating sufficient time to their small project. This governed their unapplied actions:

Quote 28. *We did not have time to get 100% involved. Our manager freed us when she could, but typically the four of us met during our lunchtime. (A2)*

Applied Project Management Practices Considered Nonessential

There were three project management practices from two knowledge areas (scope and risk management) identified to be applied and perceived as nonessential to the completion of small project A. One project management practice from the risk management knowledge area

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was agreed to be considered nonessential by all members interviewed in project A: analyzing risks and their probability, impact, and priority.

Thematic analysis allowed further explanation of why risk analysis was perceived as nonessential. In fact, after analyzing the responses pertaining to nonessential practices, only one dominant theme arose in group A: inconsequential risks. All interviewed team members agreed that analyzing the risks, their priority and probability were not imperative to the completion of the project because they perceived the small project's risks to be minor:

Quote 29. *It's like it was too much [work]. You know, like [analyzing the] risks and all that. It's because it was not really a big project. (A2)*

In spite of the fact that the original paper-form process was problematic, the team had the impression that the only risk of not completing the project was that they would simply adhere to their current paper-based notice of position modification form. This perception is surprising as the project goal presented itself to be relevant enough to be absorbed by a larger project.

Nevertheless, the team still acknowledged the importance of this practice and its relevance in project management. For example, participant A1 stated:

Quote 30. *Analyzing the risks, I understand the importance [of doing it] for maybe some bigger projects or that involve more real risks, but it [risk analysis] was not really super relevant for our particular project, but it is for something else that I'm working on right now. (A1)*

In general, team A mentioned they might have exaggerated the work put into the management of their small project:

Quote 31. *It took it too much [work] just to change a small form. (A3)*

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Project Management Practices Considered Essential

Altogether, there were 15 project management practices from five knowledge areas (integration, scope, time, human resource, and risk management) documented as essential practices for small projects in hospital settings. From these 15 practices, five were stated by more than half of the group, most of which were from the integration knowledge area. Three project management practices (defining the mandate/mission, creating the preliminary project schedule, and executing activities) were a part of the integration knowledge area, one project management practice (developing the work breakdown structure) was from the scope management knowledge area, and one project management practice (creating the project timeline by developing the logical schedule of activities) was from the time management knowledge area.

Interviewed individuals expressed many elements as essential to the management of a small project. However, defining the project was the main theme which arose from the data. In fact, the beginning stages of the project were identified to be of most importance, particularly understanding the project's purpose and vision. Additionally, members explained that it is important to document the established mission and project characteristics such that the project can be properly monitored by the team, and understood by any external party. The following quotes illustrate this:

Quote 32. *Planning, even if it's a small project [is essential]. Having the plan [made] from where you're starting and towards where you want to go, perhaps with the regard of time, establishing your priorities [is essential]. (A3)*

Quote 33. *All the steps are crucial [...] the beginning [is especially essential], like doing good planning, involving the right people, and defining the purpose of the project. [...] you have to document the project well to be able to demonstrate what you did, so that if someone else wants to learn what*

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was done or wants to implement something similar in their department, we have as a model to show them. (A1)

Team A explained that an improperly defined project, such as their own, could cause the team to deviate from the project vision, and allow scope creep to occur. Establishing the project's groundwork is further supported by a team member as being of critical importance:

Quote 34. *What is essential is having a guideline, and following it. You must not deviate from that because at any given time if you deviate too much from your line, you [your project] will come to nothing. (A2)*

Case A's Important Project Management Practices

After analyzing all of the project management practices identified respective to the narrowed research questions, it was possible to create a consolidated list of 15 practices deemed important by the majority of participants from case A. This list is demonstrated in table 11.

Table 11. *The project management practices deemed important by participants from case A and organized according to PMBOK®'s ten knowledge areas (KA).*

KA	Project Management Practice
1	Create preliminary schedule
	Define problem (background)
	Define SMART objectives
	Define mandate/mission
	Define roles and responsibilities for each team member
	Execute activities
	Perform formal project closure
2	Develop work breakdown structure
	Document project
3	Create timeline (develop logical schedule of activities)
7	Hold synchronous communication (meetings)
	Communicate with external stakeholders
9	Identify risks
Total	13 Project Management Practices from 5 KAs

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

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Impact of Project Management Practices

The comments pertaining to the impact of the project management practices utilized on project completion were analyzed and revealed two principal themes: 1) excessive and 2) structured.

The first theme consolidated the remarks expressing that the all of the time and work put into the project was needless. For example:

Quote 35. *It was too much [management] for the little thing we wanted to do. You know... It was too much. (A2)*

Quote 36. *It took a magnitude that was perhaps too big for this little project and the time we had to put in. (A3)*

So in the opinions of project A team members too much attention was devoted to this small project. Since the project risks were minor, over-managing the project was perceived preposterous.

Nonetheless, members from team A still acknowledged positive value in the project management practices they employed. Namely, the biggest advantage of employing project management principles in A's small project was that it permitted structure. This structure was related to organizing participant's thoughts, project description, outline, and communication. For example:

Quote 37. *Yes, in general the tools served us well to structure our encounters and communications. [...] I would say [the impact was] very positive. (A1)*

The presence of structure facilitated the project's development.

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4.1.4. Within-Case A Analysis Overview

A team from the staffing department in Hospital 1 spent little over a year working on a project whose aim was to solve a frequent process inefficiency related to filling out the notice of post modification forms. This project's goal was not achieved by the original project team as the project got absorbed by a larger IT project. Thematic analysis revealed that the team perceived the project to be unsuccessful but presented many elements of success such as the revelation of their problem to other departments and an increase in communication between their department and these other departments. Overall, team A identified 35 unique project management practices, 15 of which were deemed important by the majority of the team. Team A felt that they lacked project control because they did not gain enough decisional authority, did not apply enough stakeholder communication, and did not schedule appropriate time to manage project. Furthermore, despite their project goal was significantly problematic to be consumed by a larger project, the team perceived performing a thorough risk analysis to be a nonessential practice in the case of their small project. On the contrary, well defining the project (i.e., its mission and vision) were stated as essential practices to be adopted in every project. In sum, the staffing project team specified that employing all project management practices seems excessive to the management of small projects in hospitals, but the overall usage of project management practices positively impacts the project by providing it structure.

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4.2. Within-Case Analysis – Case B

4.2.1. Case B Summary

In March 2014, a team from the pharmacy department in Hospital 1 began their project entitled “*Where is my benzo?*” – as in benzodiazepine, with the desire to conform to new regulations declared by the Ontario College of Pharmacists (OCP). More specifically, the project problem settled in the fact that Hospital 1 was treating benzodiazepines (a class of drugs) as a regular prescription. However, at the time, the OCP declared the Benzodiazepine and Other Targeted Substances Regulation (BOTSR), a norm originally announced by legislation entitled the Drug and Pharmacies Regulation Act (Ontario College of Pharmacists, 2013). Not respecting OCP norms corresponded to the risk to fail future inspection and jeopardize pharmacists’ licenses. Thus, the goal of the project was to implement changes that would ensure that the use and storage of benzodiazepines across Hospital 1 remained safe and met the norms and recommendations of the OCP.

Two and a half years after the team started working on this project, the project is still in progress and has an official end anticipated at the time of a future inspection in 2019.

In the summer of 2016, this team was interviewed about their small project. Originally, this team consisted of seven people; however two of the members left the team during the project due to long-term sickness leave and another member left as they changed jobs. The remaining four people consisted of a clinical pharmacist, two pharmacy technicians and the chief pharmacist who is also the manager of the pharmacy department. The timeline below helps illustrate the sequence of events mentioned.

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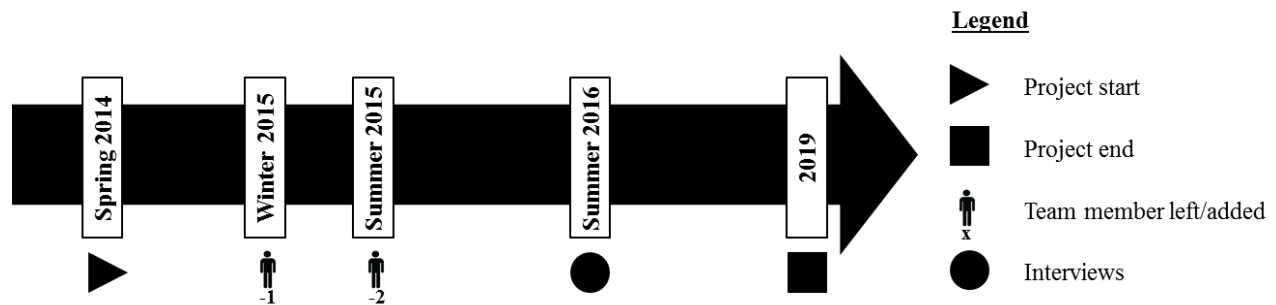


Figure 6. Case B project timeline.

4.2.2. Project Success Perception

Team members from project B were asked if they perceived their project to be a success. Because the project was still in progress and the official project end is predicted to be in 2019, this question was slightly modified to: “Do you qualify your project to be a success so far?” The responses to this question were analyzed thematically and one main theme emerged.

The theme that emerged was anticipated project success. Although the current state of the project was agreed to lack success as it was not completed, all the team members agreed that the project goal will be achieved in the near future. For example:

Quote 38. *I'd say it's going to be a success. At this present date it is not, but it will be. (B2)*

The majority of the members in case B defined their perception of success during the interview to help support their claim. This perception mainly had to do with the achievement of an operational goal. For example, a team member specified:

Quote 39. *Once the drugs [benzodiazepines] are stored in the right places and people use them safely, it [the project] will be a success. (B4)*

Interestingly, no interviewed member explicitly expressed that their project's success will be based on the results of the future mandatory inspection.

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Moreover, certain members highlighted current elements of success which support their confidence in the project's fruition. Team agreement regarding the project vision and the steps required to achieve this vision supported the team's confidence. This was achieved through the presence of great teamwork, which was stated as one of the main elements of success.

Quote 40. *It was a success for teamwork because I was very pleasantly and positively surprised to see that there were a lot of pharmacy technicians who got involved and then took time to work on the project. (B1)*

Another main element of success specified was managing to identify medication access weaknesses present in Hospital 1, raising awareness across the hospital regarding these shortcomings, and increasing communication with other healthcare staff in Hospital 1. The following quote helps better illustrate this:

Quote 41. *Because they [team members] were able to identify the gaps in the different places in the hospital, it is a success. [...] I think it was a success also because we talked, we went to see the nurses on the units to know how they worked, and we raised awareness by talking to the people who did not know, that were unaware of the law and the changes that were to come. So we helped prepare the ground work for people, and maybe it will be less difficult during the implementation, less resistance I would say. (B4)*

In sum, case B's project is currently in progress, is anticipated to be successful because of the current presence of successful elements such as team confidence in project success, team agreement regarding the project vision and project execution, increased project awareness across the hospital, and increase in communication with hospital staff.

4.2.3. Case B Project Management Practices

In total, 47 unique project management practices were mentioned by participants in case B. After reorganizing the project management practices based on PMBOK's ten knowledge

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areas, it was possible to observe that the practices were mentioned for only nine knowledge areas (integration, scope, time, cost, quality, human resource, communication, risk, and stakeholder management). Case B's summary table is demonstrated in table 12.

Table 12. *Case Summary table organized according to PMBOK®'s ten knowledge areas (KA) for case B which demonstrates the percentage of the interviewed team members that stated a project management practice in response to the interview questions 2a, c, d, and e.*

KA	Project Management Practice	Q2a	Q2c	Q2d	Q2e
		%	%	%	%
1	Brainstorm (start-up project)	50	0	0	0
	Create project charter	25	0	0	25
	Assess and document current state	0	0	0	50
	Define problem (background)	25	0	0	25
	Define SMART objectives	50	0	0	25
	Define mandate/mission	50	0	0	25
	Define vision	75	0	0	25
	Define project success	0	0	0	25
	Define team name	25	0	0	0
	Define roles and responsibilities for each team member	100	0	0	25
	Gain project plan approval	50	50	0	0
	Kick-off meeting	25	0	0	0
	Create preliminary schedule	75	0	0	0
	Execute activities	0	50	0	0
	Update project charter	25	0	0	0
2	Consider constraints	50	0	0	0
	Define scope	0	0	0	50
	Develop work breakdown structure	0	25	0	50
	Document project	75	50	0	25
	Establish change management strategy	0	50	0	0
3	Define phases/activities	100	0	0	25
	Estimate required resources	25	25	0	0
	Estimate timescale for phases/activities	50	25	0	0
	Develop milestones (key dates/deadlines)	50	0	0	25
	Schedule appropriate time to manage project	0	75	0	0
	Prioritize project	0	50	0	0
	Create timeline (develop logical schedule of activities)	100	0	0	75
	Monitor project progress	100	0	0	0
4	Create conceptual budget estimate	25	0	0	0
5	Define objectives (measures)	0	0	0	25

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6	Develop team governance plan (decision-making)	0	25	0	0
	Create core project team	25	75	0	0
	Review roles and responsibilities for each team member	0	25	0	0
7	Develop communication plan	0	25	0	50
	Organize synchronous communication (meetings)	100	50	0	0
	Organize asynchronous communication	75	0	0	0
	Hold synchronous communication (meetings)	100	25	0	25
	Communicate with internal stakeholders	25	0	0	0
	Communicate with external stakeholders	50	25	0	25
9	Identify risks	100	25	0	0
	Analyze risks (probability, impact, priority)	100	0	50	25
	Develop risk mitigation plan and strategy	0	0	0	25
	Reanalyze risks (probability, impact, priority)	0	50	0	0
10	Identify stakeholders	50	50	0	50
	Develop stakeholder management strategy	0	0	25	0
	Keep stakeholders involved	0	25	0	0
	Review stakeholder management strategy	0	25	0	0
Total Project Management Practices		30	21	2	21

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. Interview question 2a = what project management practices were applied? Interview question 2c = which applied project management practices did you perceive as unnecessary to the successful completion of the small project? Interview question 2d = which unapplied project management practices did you perceived as necessary to the successful completion of the small project? Interview question 2e = what managerial practices do you perceive as essential in managing small projects in hospitals?

Note3. SMART = Specific, Measurable, Achievable, Realistic, Timely

Applied Project Management Practices

Case B's data identified 30 unique applied project management practices from eight knowledge areas (integration, scope, time, cost, human resource, communication risk, and stakeholder management). Overall, 21 practices were stated by more than half the project team. These practices correspondent to six knowledge areas: cost and human resource management were the two excluded from the original eight stated.

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Unapplied Project Management Practices Considered Necessary

In total, 21 project management practices were mentioned as unapplied but necessary to the completion of case B's small project. These were identified from seven knowledge areas (integration, scope, time, human resource, communication, risk, and stakeholder management). In all of these seven KAs, ten practices were specified by the majority of the team.

Thematic analysis revealed lack of project prioritization to be the main theme which seemed to govern the responses related to unapplied but necessary practices.

To begin, most participants explicitly stated that project B's department did not perceive the project as a priority issue:

Quote 42. *I also understand that we got engaged in a project even though it is not the department's number one priority.*
(B1)

This characteristic seemed to influence participants' mindset by decreasing their perception of project importance and in turn affecting the management of their project. B2 demonstrates this by saying:

Quote 43. *At some point after being told to push back because [the project] it's not a priority, well you lose interest. That's why, maybe [we should have been] pushing more.* (B2)

Moreover, employee turnover's impact on the project team decreased the impact of project management. Although employee turnover was not the result of decreased interest in the small project but simply a result of various personal reasons, the lack of team stability combined with the prolonged project timeline furthered a decreased interest, perceived prioritization and perceived feasibility of the small project. For example:

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Quote 44. *We should have stabilized the team earlier because I think that didn't help at all [...] towards the end, two or three people led the whole project. Then it was difficult. (B4)*

All of these factors led to the application of a less rigid project management methodology such that pre-established milestones and deliverables were not met and continuously pushed to a later time. Additionally, participants expressed that they did not revise their initial plans and analyses after changing their timeline. The following statements made project B's members realize the importance of remaining rigorous in the management of any project:

Quote 45. *There was always this tendency to accept to delay our deadlines or to accept to push things back because there was no decision-making – there were people [team members] who left and then we were not enough – and we no longer knew where we were going. I think we should have been firmer and more vigilant on the fact that the project is launched, that we need deadlines and that we must reach these deadlines. I think we were not strict enough on that. (B1)*

Quote 46. *Risk management, well in fact we should have done it more than once. [Same with] stakeholder management, perhaps that would have also been necessary to repeat a second time. (B3)*

Finally, all team members had the following argument:

Quote 47. *There was often a lack of time. (B1)*

This sub-theme is comprehensible as team B lacked in prioritizing their project.

Applied Project Management Practices Considered Nonessential

There were two project management practices from two knowledge areas (risk and stakeholder management) identified to be applied and perceived as nonessential to the completion of small project B. Only one project management practice from the risk management

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knowledge area was agreed to be unnecessary by all participants interviewed in case B: reanalyzing risks and their probability, impact, and priority.

Thematic analysis revealed a better explanation why team B perceived reanalyzing risks to be nonessential. Misemploying risk analysis presented itself as the overarching theme. Truthfully, participants explained that most of their employed project management practices were useful:

Quote 48. *I did not see anything that was superfluous or useless.*
(B4)

However, the majority of the team explained that they did not attribute a lot of importance to the evaluation of risks. After assessing the risks a second time during the project, the group noticed that they identified the same risks as the very beginning. Although the risks were identified, the team did not find effective solutions to mitigate them and therefore dealt with the impediments when they occurred. Consequently, risk analysis was perceived as unnecessary:

Quote 49. *It seems to me that we did not really attribute a lot of importance to this document [risk map]. In fact, it's not that we did not attribute importance; it's that we had listed the risks but that we did not really have the means to prevent them. Some of them occurred, and we just dealt with them.* (B1)

Interestingly, more than half of the team mentioned that they did not think they performed risk management properly. It was explained that the value in performing risk analysis and mitigation was well understood, and that perhaps a mistake in risk identification and management was settled. For example:

Quote 50. *Like, you see the utility in that [risk management]. It's just at times I think maybe we just didn't do it well.* (B3)

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Doing anything improperly is understandably incorrect and unnecessary. Thus, team B's improper risk analysis may have biased their perception of the importance of this project management practice.

Project Management Practices Considered Essential

Altogether, 21 project management practices from seven knowledge areas (integration, scope, time, human resource, risk, and stakeholder management) were extracted as essential practices for small projects in hospital settings. From these 21 practices, six were stated by more than half of the group, each from a different KA. These practices consisted of; assessing and documenting the current state/environment, defining the scope, developing the work breakdown structure, creating the timeline by developing the logical schedule of activities, developing a communication plan, and identifying the stakeholders. These practices were a part of the integration, scope, time, communication and stakeholder management knowledge areas, respectively.

The thematic analysis supports the results from the content analysis. The theme which embodies the essential project management practices is establishing project expectations. These expectations mainly pertain to the project's vision, impact, action-plan, stakeholders, roles, and risks. Although everything related to delineating the project's characteristics was perceived as important, acknowledging the work required, the project risks, and the stakeholders involved and affected by the project were underlined as fundamental. The following quotes demonstrate this:

Quote 51. *Like really everything [is essential], you know, really writing everything what there is to do and establish [what to do]. [...] In order of importance: timeline, one, risk management, two, stakeholder management, three. (B3)*

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Quote 52. *[What is essential is] having a good idea of what's coming, where you put the stakeholders at the start, what are the steps, the small milestones. (B2)*

Clearly establishing project success and how it will be measured was also identified as critical. For example:

Quote 53. *Definitely determining the roles, communication, knowing the current state [of the project], knowing what success looks like and what's essential to the project's success. (B4)*

Although project B was not yet completed, all team members had a vision of their project's success.

Case B's Important Project Management Practices

After analyzing all of the project management practices identified respective to the narrowed research questions, a consolidated list of 30 practices deemed important by the majority of participants from case B was created. This list is demonstrated in table 13.

Table 13. *The project management practices deemed important by participants from case B and organized according to PMBOK®'s ten knowledge areas (KA).*

KA	Project Management Practice
1	Assess and document current state
	Brainstorm (start-up project)
	Define SMART objectives
	Define mandate/mission
	Define vision
	Define roles and responsibilities for each team member
	Gain project plan approval
	Execute activities
	Create preliminary schedule
2	Consider constraints
	Define scope
	Develop work breakdown structure
	Document project
3	Establish change management strategy
	Define phases/activities
	Estimate timescale for phases/activities

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	Develop milestones (key dates/deadlines)
	Create timeline (develop logical schedule of activities)
	Monitor project progress
	Schedule appropriate time to manage project
	Prioritize project
6	Create core project team
	Develop communication plan
	Organize synchronous communication (meetings)
7	Organize asynchronous communication
	Hold synchronous communication (meetings)
	Communicate with external stakeholders
9	Identify risks
	Reanalyze risks (probability, impact, priority)
10	Identify stakeholders
Total	30 Project Management Practices from 7 KAs

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. SMART = Specific, Measurable, Achievable, Realistic, Timely

Impact of Project Management Practices

The main impact of the project management practices which surfaced from project B's responses to question 2. b. was organization. All team members expressed that this theme contributed positively to their project. Some team members explained that they did not perceive this to be the case in the beginning stages of their project as the project was not concrete and that they only realized this impact as the project progressed. In fact, the more the project advanced, the more the team understood its project and was capable of envisioning success. This is not surprising given the "progressive elaboration" component of projects (PMI, 2013b). The project management practices applied particularly helped organize meetings and save time on monitoring the project. The two following quotes illustrate the abovementioned:

Quote 54. *[In the beginning] we did not really feel that it served us very much, but in reality it served us because it allowed us to make things clear, have the right chronology and do*

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things in the right order. [...] It helped us get organized and create a timeline that was relevant to everything we had to do – which allows us to go to the end and really deploy a well prepared project that gives us hope that it will succeed. (B1)

Quote 55. *Until now, it gave a little more structure when we followed them [project management practices] properly. When we meet, there are no questions like "where are we at?", "what do we need to do?" It [the project] advances a little bit. (B3)*

4.2.4. Within-Case B Analysis Overview

A team from the pharmacy department from Hospital 1 began working on a project called “Where is my benzo?” in March 2014 whose goal is to treat benzodiazepines as regular prescriptions in order to conform to a new regulation declared by the OCP. This project is still in progress and is expected to be officially completed in 2019 after an official OCP inspection. Thematic analysis revealed that the team anticipates their project to be a success and that they already perceive elements of success such as increased communication between healthcare staff and a better understanding of their hospital’s functionality. Overall, team B identified 47 unique project management practices, 30 of which were deemed important by the majority of the interviewed members. Lack of project prioritization was indicated as the main unapplied but perceived as necessary practice as it disrupted project continuity and team stability. Originally, the interviewed members perceived risk analysis as an applied but nonessential practice, yet the team also expressed misemployment of proper risk identification, evaluation and importance. Establishing project expectations, such as clearly identifying the project’s vision, impact, action-plan, stakeholders, roles, and risks, was considered essential for the management of any small project in hospital settings. In sum, team B considered the employment of project management practices to be beneficial as they helped organize and monitor the project.

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4.3. Within-Case Analysis – Case C

4.3.1. Case C Summary

In May 2014, a team from the department of continuing professional development in Hospital 1 began their project titled “LMS 2.0” (which refers to an improved Learning Management System (LMS)) with the desire to improve a logistical problem in their department. More specifically, in the department of continuing professional development in Hospital 1, there is a Center which offers general, mandatory and/or specialized training sessions in electronic format, on-line or in simulation labs (Duckett, 2010). This Center offers numerous trainings; however several trainings end up being cancelled due to problems related to the recurring lack of training attendance and training evaluations. These problems and lack of participation were speculated to be linked with confusion regarding the Center’s registration and management process. Therefore, in February 2014, the Center revealed the LMS as a means to help with the self-management and advancement of one's own continuing professional development. More specifically, the LMS allows the learner to register via the web to courses and events offered by the Center and keep track of the online and in-class trainings they completed. This new system was quickly adopted by Hospital 1 staff, partners and community and overcame several barriers to continuing professional development (Journal Montfort, 2015). However, like any major project, the LMS still required improvement and many users of the LMS were still not fully aware of the services offered by the Center.

Thus, the team decided to undertake a project whose objective was to restructure the services offered by the Center according to the different types of users in order to facilitate the self-management of learning and decrease the cancellation rate of trainings and events offered.

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One and a half years after the team started working on the project, the project was absorbed by a larger information technology project. This resulted in cessation of the project by the continuing professional development team in December 2015.

In the fall of 2016, this team was interviewed about their small project. Originally, this team consisted of seven people; however, during the project one of the members left the team due to maternity leave, another left the team due to long-term sickness leave, two others desisted and one member who was added to the team. The remaining four people consisted of a nurse, a nurse who is also a clinical educator, a clinical educator, and a continuous professional development manager. However, only the 3 former members were interviewed. The timeline below helps illustrate the sequence of events mentioned.

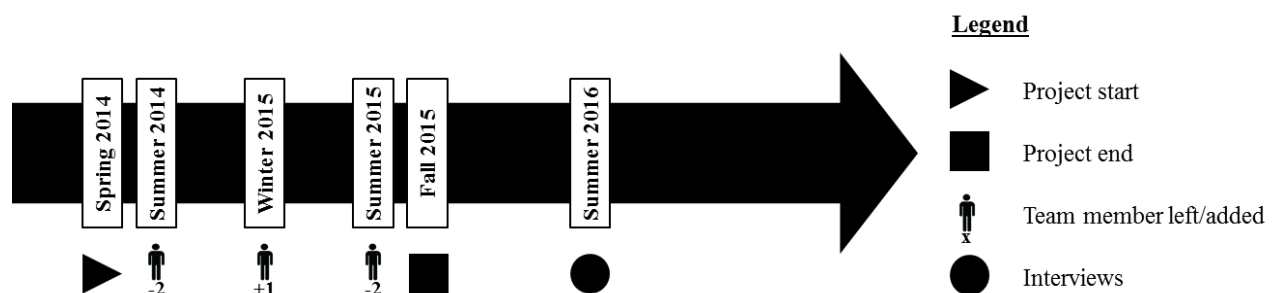


Figure 7. Case C project timeline.

4.3.2. Project Success Perception

Participant's responses regarding project success were analyzed thematically. One main theme emerged: lack of success.

The project goal was stated to not have been met:

Quote 56. [...] *we really did not reach our goal.* (C1)

Additionally, most of the project team members expressed that they did not accomplish many of the planned tasks, resulting in very little progress in their project. For instance:

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Quote 57. *How does it qualify as a success? Well, that it advances. It has not advanced much. (C2)*

The purpose behind the lack of progress in the project seemed to be related to a lack of common team project vision. In fact, team members often emphasized that the team member who had the original project idea (participant C3) also acted as the project leader and did not always successfully convey her vision:

Quote 58. *The leader had a good vision of where we were going, she was trying to share it with the team but it was not always clear to the team what direction we were going. (C1)*

Interestingly, after analyzing case C's interview responses, it was possible to notice that participant C3 – perceived as the project leader – stated a slightly different project goal than the other interviewed team members. All participants referred to their written mandate stated in their official project documents to express their project goal. According to them the mandate stated:

Quote 59. *The project consists of restructuring the services offered by the Centre according to the different types of users in order to facilitate the self-management of learning.*

However, C3 elaborated on the fact that the project scope was reduced during the project to help increase chances of success. The following quote helps exemplify this:

Quote 60. *We started with a great idea to realize that in the end we could split the project [...] we really concentrated on doing a cleanup of the [existing] trainings [in the Centre], regrouping trainings and fix everything to do with the rules of nomenclature. That was our plan. (C3)*

Consequently, participant C3 mentioned that there is presence of some project success as the goals depicted from the smaller scope have been met.

Quote 61. *It is not perfect, and we will rework it because we have new data. But if I ask myself did we accomplish what we wanted to accomplish? I would say yes. (C3)*

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Nevertheless, participant C3 still did not award the project a status of success because the electronic system they were working on had gathered new information which also needed to undergo modifications:

Quote 62. *Because there have been changes afterwards [of what our team worked on] today we will have to take back and rework what we did. (C3)*

Overall, project C's team members predominantly agreed on the lack of success of their project because of lack of progress in task completion. More unapplied practices than applied practices were stated in this team. The lack of a common vision and common project goals contributed to a blurred perception of project success.

4.3.3. Case C Project Management Practices

Summary Table

In total, 46 unique project management practices were mentioned by participants in case C. After reorganizing the project management practices based on PMBOK's ten knowledge areas, it was possible to note that practices were mentioned from all ten knowledge areas. Case C's summary table is demonstrated in table 14.

Table 14. *Case Summary table organized according to PMBOK®'s ten knowledge areas (KA) for case C which demonstrates the percentage of the interviewed team members that stated a project management practice in response to the interview questions 2a, c, d, and e.*

KA	Project Management Practice	Q2a	Q2c	Q2d	Q2e
		%	%	%	%
1	Brainstorm (start-up project)	0	33	0	0
	Create project charter	67	0	0	0
	Define problem (background)	67	0	0	33
	Define SMART objectives	0	67	0	67
	Define deliverables	33	0	0	0
	Define mandate/mission	100	0	0	100
	Define vision	0	100	0	33
	Define roles and responsibilities for each team member	67	0	0	100

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	Create accountability	33	0	0	0
	Kick-off meeting	0	33	0	0
	Create preliminary schedule	67	0	0	0
	Execute activities	67	33	0	0
	Define scope	33	67	0	67
	Develop work breakdown structure	0	100	0	100
2	Document project	100	0	0	33
	Establish change management strategy	0	33	0	0
	Refine scope	0	33	0	33
	Define phases/activities	100	0	0	67
	Estimate required resources	0	0	0	33
	Estimate timescale for phases/activities	0	33	0	0
	Develop milestones (key dates/deadlines)	100	33	0	67
3	Schedule appropriate time to manage project	0	33	0	33
	Prioritize project	0	33	0	33
	Create timeline (develop logical schedule of activities)	67	33	0	67
	Monitor project progress	67	100	0	33
	Communicate performance feedback	0	0	0	33
4	Create conceptual budget estimate	0	33	0	33
	Acquire funding	0	33	0	0
5	Define objectives (measures)	0	0	0	67
	Develop team governance plan (decision-making)	33	33	0	0
	Create core project team	0	67	0	67
6	Develop project team organizational culture (group effectiveness/team building)	33	0	0	0
	Review roles and responsibilities for each team member	0	67	0	0
	Develop communication plan	33	67	0	33
	Organize synchronous communication (meetings)	33	67	0	0
7	Hold synchronous communication (meetings)	100	33	0	67
	Hold asynchronous communication (meetings)	33	0	0	0
	Communicate with internal stakeholders	67	0	0	0
	Communicate with external stakeholders	33	67	0	0
	Identify risks	67	0	0	0
8	Analyze risks (probability, impact, priority)	33	67	0	0
	Develop risk mitigation plan and strategy	0	67	0	0
9	Consult experts	67	0	0	33
	Identify stakeholders	33	33	0	33
10	Identify stakeholder needs	33	0	0	0
	Keep stakeholders involved	0	33	0	0
Total Project Management Practices		27	28	0	24

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Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. Interview question 2a = what project management practices were applied? Interview question 2c = which applied project management practices did you perceive as unnecessary to the successful completion of the small project? Interview question 2d = which unapplied project management practices did you perceived as necessary to the successful completion of the small project? Interview question 2e = what managerial practices do you perceive as essential in managing small projects in hospitals?

Note3. SMART = Specific, Measurable, Achievable, Realistic, Timely

Applied Project Management Practices

The content extracted from case C's data identified 27 unique project management practices from eight knowledge areas (integration, scope, time, human resource, communication, procurement, risk, and stakeholder management). There were 15 practices stated by the majority of the project team which are a part of six KAs: integration, scope, time, communication, procurement, and risk management.

Unapplied Project Management Practices Considered Necessary

Case C identified 28 project management practices as unapplied but necessary to the completion of small project C. These were identified from eight knowledge areas (all except quality and procurement management). The majority of the team mentioned 12 project management practices from seven KAs (all except cost, quality, and procurement management).

Interestingly, group C stated more unapplied than applied project management practices. This fact is understandable as group C's project did not progress in its original mission very much. Upon conducting thematic analysis, two main themes were revealed: 1) lack of consistency and 2) lack of control. These themes were the result of team C lacking interest, team stability, time, and authority.

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First of all, the project team had a difficult time deciding which project they wanted to work on. This is illustrated as follows:

Quote 63. *It was very difficult to find a project that concerns everyone because we all have different simulation laboratories. In fact, because we [planned on doing this] project on our working hours, we did not want to waste our time. (C2)*

After the project topic was decided, the project team continued to struggle to share a common project definition and vision. Additionally, the project got carried through inopportune periods because it occurred throughout two summers during which participants had uncoordinated schedules and took vacation. This factor made it so that meetings were often cancelled, which ruined the feeling of continuity of the project:

Quote 64. *[We did not] keep the meetings close together because there were times when we had no meetings, and that made us move away from the project. (C1)*

Another factor which hindered the project's progress was the change in project team composition. As stated by a team member:

Quote 65. *One of them [a team member] went on maternity leave, two of them left; one of them went on sick leave. There are some who just withdrew; there are two who just decided that it was a project that no longer interested them. (C1)*

Although the reasons for team member turnover varied, lack of interest in the project was underlined by all three interviewed participants as significantly disappointing. For example, C3 said:

Quote 66. *The people who left the team just because they're not happy in the team [...] I found it a shame that the people left because they found that it [the project] was not advancing. (C3)*

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Therefore, a common project interest was identified as being of significant importance for project progress.

Lastly, the second theme revealed was a lack of control. This was mentioned by two team members as an unapplied but necessary element which delayed the development of the project. As the team collaborated with an external computer software company to achieve their goal of restructuring the services offered by their proprietary software, they felt that they did not have a lot of control over several of the project tasks. This quote illustrates this:

Quote 67. *I would choose one [a project] on which I have a little more, not impact, but... well there was not much we could do, we had no control. (C2)*

This resulted in unsteady progress as the team felt they had to continuously depend on an external stakeholder for their project to advance. Overall, the team recognized that they did have a lot of authority and that they did not launch their project in ideal circumstances as they had many obstacles which interrupted their project's steady development.

Applied Project Management Practices Considered Nonessential

There were no practices that project C applied and considered nonessential. In fact, this was also the theme resulting from the thematic analysis. Although the project had little advancement, the time invested into it was valued and understood. C3 supports this:

Quote 68. *I think that everything was necessary. I think taking time to think about what we want to do and how we want to do it is important. (C3)*

All group members expressed that the knowledge gained from the project management practices applied was beneficial to their small project and transferable to other projects:

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Quote 69. *So there's nothing unnecessary that was done. I think that it will all serve [in the future]. [...] on a personal level it brought me some positive points. (C1)*

Project Management Practices Considered Essential

Altogether, 24 project management practices from nine knowledge areas (none from the risk management area) were mentioned as essential practices by group C for small projects in hospital settings. From these 24 practices, 11 were stated by more than half of the group. These included; defining Specific, Measurable, Achievable, Realistic, Timely (SMART) objectives, defining the mandate/mission, defining the roles and responsibilities of each team member, defining the scope, developing the work breakdown structure, defining the phases and activities, developing the milestones by identifying the key dates and deadlines, creating a timeline by developing the logical schedule of activities, defining the objectives with their measures, creating a core project team, and holding synchronous communication sessions such as meetings. These were part of six KA's; integration, scope, time, quality, human resource, and communication management.

Group C's thematic analysis revealed two main themes: 1) clarity and 2) commitment. Theme 1 involves setting clear project goals and having a well-defined mandate, whereas theme 2 concerns the necessity in having a committed team.

All members of project team C explicitly stated that the mandate needs to be clear. For small projects, the purpose and objectives have to be definite, realistic and attainable. As a matter of fact, goals need to be SMART for projects to succeed. For example:

Quote 70. *It is important that the objectives are very clear for everyone. The mandate must be clear and it must be measurable. (C2)*

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Additionally, it was mentioned that the team members need to be committed. Having significant interest in the project and endorsing the mandate were portrayed as being the basis to commitment. For instance:

Quote 71. *The other [essential] thing is to focus on what we want to work on and then make sure that people are interested in it. Even if they are be experts in it [the project's topic], it does not matter if they lack interest. (C3)*

To further illustrate the necessity expressed for having committed project members in a project, one team member expressed:

Quote 72. *I think you cannot just do a project part-time, once a month. It requires someone having eyes on it almost all the time. (C2)*

Thus, having interested and motivated participants which prioritize and commit to a project's mission are perceived as indispensable elements by case C for managing small projects in hospital settings.

Case C's Important Project Management Practices

The analysis of the project management practices extracted from the narrowed research questions allowed a list of 27 practices deemed important by the majority of participants from case C. This list is demonstrated in table 15.

Table 15. *The project management practices deemed important by participants from case C and organized according to PMBOK®'s ten knowledge areas (KA).*

KA	Project Management Practice
1	Brainstorm (start-up project)
	Create project charter
	Define deliverables
	Define vision
	Kick-off meeting
	Create preliminary schedule
	Define problem (background)

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	Define mandate/mission
	Execute activities
2	Define scope
	Develop work breakdown structure
	Refine scope
3	Define phases/activities
	Estimate timescale for phases/activities
	Prioritize project
	Create timeline (develop logical schedule of activities)
6	Develop team governance plan (decision-making)
	Develop project team organizational culture (group effectiveness/team building)
	Review roles and responsibilities for each team member
7	Organize synchronous communication (meetings)
	Hold asynchronous communication (meetings)
	Communicate with external stakeholders
	Develop communication plan
	Communicate with internal stakeholders
9	Identify risks
	Analyze risks (probability, impact, priority)
	Develop risk mitigation plan and strategy
Total	27 Project Management Practices from 6 KAs

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Impact of Project Management Practices

Participants were asked: What impact did these applied practices have on the success of the project? The responses were analyzed thematically and two leading impacts of project management practices were identified: negligible and helpful.

The impact of the project management practices applied was perceived as negligible by two teammates. One participant found it difficult to answer this question as they did not think they had the opportunity to properly apply the bulk of the project management principles they knew. For instance, one team member expressed:

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Quote 73. *I feel frustrated [...] Would I feel comfortable managing another project? No, because I did not feel that I put that [project management knowledge] into practice. [...] I learned a lot of things that I will do differently. I especially learned that for me, I have to believe in it [the project] to lead it well. (C2)*

Another participant explained that they also did not think a lot of project management principles were applied to this project because the project did not progress a lot; therefore, the role of project management was perceived to be minor in this project. Nonetheless, the majority of participant still explained that from what was applied from project management was generally accepted to be helpful in both this project and on a personal level. C1 and C3 illustrate this:

Quote 74. *At the level of the project as such, I do not think it has advanced it more than it would have if there had not been project management. [...] It's certain that I personally understand a little more what project management is. (C1)*

Quote 75. *The fact we were outlined, we knew that we have to do 'this' and we have to do 'that' and that have a guide somewhere, I think it helped us. (C3)*

4.3.4. Within-Case C Analysis Overview

A team from the department of continuing professional development from Hospital 1 spent over a year and a half working on the “LMS2.0” project whose goal was to improve the logistics of their Learning Management System by facilitating the self-management of learning and decrease the cancellation rate of trainings and events offered. This project’s goal was not realized by the original project team as the project got absorbed by a larger IT project. Thematic analysis revealed that the project team perceived the project to be unsuccessful as there was a lack of a common vision and the project goal was not achieved. Overall, 46 unique project management practices were identified, 27 of which were deemed important by the majority of the team. A lack of consistency and project control were acknowledged due to a deficiency in

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project interest, team stability, time, authority, and steady progress. No applied project management practices were considered as nonessential. In fact, team C stated more unapplied than applied project management practices. Contrarily, project clarity and commitment – potentially achieved by identifying a clear and compelling project mandate and setting project goals – were identified as essential in the management of any small project in hospital settings. In sum, team C perceived the project management practices employed in their project to have a negligible impact because they did not have the impression the project progressed a lot, which in turn did not allow them to properly apply the bulk of project management. Nevertheless, project management practices were attributed a positive and helpful value in the guidance of this project and personal projects.

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4.4. Within-Case Analysis – Case D

4.4.1. Case D Summary

In September 2014, a team from Hospital 2 worked on a project titled “*Electronic Medical Record (EMR) system implementation in the Cancer Center project*” whose aim was to make logistical improvements in the Hospital’s Cancer Center. This Center is composed of several cancer care facilities ranging from medical, surgical and radiation oncology to supportive and palliative care, nutrition and social services. One of the missions of this Cancer Center is to consolidate all aspects of the cancer program in one location (MUHC, 2017). However, these facilities input patient health information into different EMR charting sources (ex: Oasis, ARIA, Med-Urge) which causes decentralization of patient information and ineffective patient and clinician communication. As patients in the Cancer Center often make use of multiple services in an alternating manner, the need for health information centralization and communication between the facilities is increased. More specifically, the particular issue this project arose from is that three services (radiation oncology, medical oncology and supportive palliative care services) – which a single patient often visits – do not use a common EMR and hinder the achievement of the Cancer Center’s mission.

Thus, in September 2014 this group of healthcare staff from Hospital 2 decided to attempt to integrate the Cancer Center’s services to facilitate and improve the exchange of information between patient’s and clinicians by adapting a common EMR system. This team agreed on the fact that the EMR system used by the department of radiation oncology for the past six years, is more adaptable than other EMR systems used in the Cancer Centre and is capable of integrating other care services (MUHC, 2015). Therefore, the goal of the project was to expand the implementation of the radiation oncology EMR system to medical oncology and supportive

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palliative care services as a means of centralizing patient information among these frequently visited services.

Just over one year after the team started working on the project, the project stopped due to implementation issues. This resulted in cessation of the project by the team in January 2016.

This team was interviewed about their small project in the summer of 2016. Originally, this team consisted of nine people; however, one of the members left the team towards the end of the project due to a job post change. The whole team (including the member who left) was interviewed and consisted of: a programmer-analyst, a clinical nurse specialist from palliative care, a radiation oncologist, an information systems technician from medical physics, a medical physicist, a nurse manager from ambulatory hematology oncology, a nurse manager from palliative care, the chief of the department of medical physics and a project manager from the transition office. The timeline below helps illustrate the sequence of events mentioned.

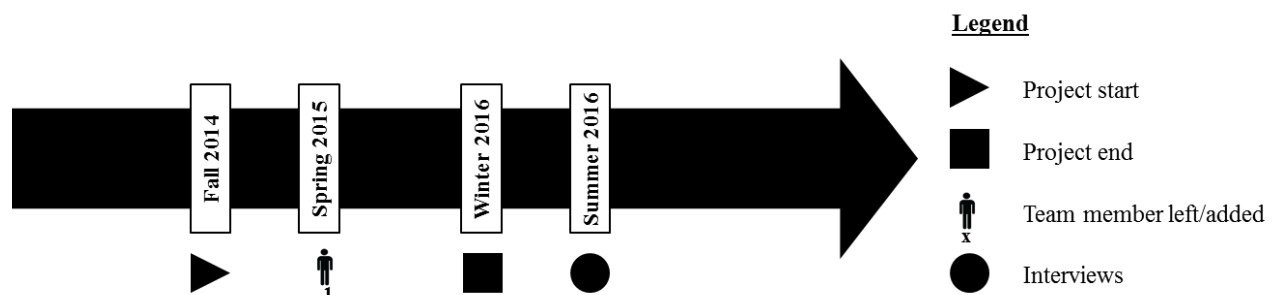


Figure 8. *Case D project timeline.*

4.4.2. Project Success Perception

The data pertaining to participants perceptions regarding project success was analyzed thematically. Two main themes emerged in case D: 1) project failure, and 2) successful project by-products.

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The former theme pertains to participant's collective agreement that the overall project was a failure. As the projects stakeholders did not want to adopt the product created by project team D, the project was not successfully implemented and perceived as a failure by its members. For example:

Quote 76. *The project is over and the project failed, unfortunately. We were not successful in bringing it to fruition, which was really too bad because we spent a lot of time on it. (D7)*

Quote 77. *I think we invested a huge amount of time in meeting, figuring out what the logistics were, planning, and then a huge amount of time in training our staff. So all these people in radiation oncology were training our staff, and then we never used it [the program]. So that's why I think it wasn't really a success. (D6)*

Additionally, the majority of the project team mentioned that the project failure was the result of a lack of approval for their product from external stakeholders. As illustrated by D7, the lack of project approval was a known mistake:

Quote 78. *I think it comes back to looking at our stakeholders, reaching out to them and making sure we had approval for the project from everyone. (D7)*

Although the team knew that they did not necessarily communicate with and receive the approval of all their external stakeholders, they continued to execute their project with the idea that their product's benefits being undeniable. Towards the completion of their product, they became aware that not communicating and advertising their product to external stakeholders was a limitation as it did not allow intended users (such as other departments expected to use the product) to convey their input and desired expectations:

Quote 79. *They [other departments] did not want it [the product] because it was not presented. It was like them telling them "this is the house, this is what we built for you" [and them replying:] "Well you know what, I don't like it". And then it was erased completely from the board. (D1)*

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Nonetheless, team D remained optimistic and still stated that their project brought several benefits. This was the latter theme extracted and it presented two main benefits. Firstly, the team did not perceive the project to be a waste of time, and perceived it as a great learning experience.

Quote 80. *It's not a success but it's certainly a rewarding and interesting experience – to see how to do or not do certain things. (D9)*

Project D team members also mentioned that they were happy about learning more about the functioning of their work environments processes and their co-workers. The following quote helps demonstrate this:

Quote 81. *I have learned about the functioning of different departments. I have learned how to interact with people and how to have separate expectations for each person, depending on their personality and depending on their assumed role. I have learned a lot about my colleagues, whom you can go to to get certain things done. (D8)*

Moreover, the team was glad that their small project still created improvements in the overall operations of the Cancer Center. The goal of the small project was to centralize patient information, and part of achieving this goal included standardizing all patient charts in the departments of the Cancer Center. As some of these departments at the time project D kicked off were still inputting patient information into both a paper and electronic chart because they were unconvinced of the efficiency of the electronic database, standardizing the electronic charts was perceived as a great success and permitted the elimination of a redundant practice. As supported by a team member:

Quote 82. *I think that having managed to develop programs for [the clinics] that did not yet have electronic forms – and so that we no longer need to have shadow charts in our external clinics – for that, it was a success. (D5)*

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Overall, project D's implementation of their product did not occur which resulted in the common agreement that the project failed. However, the project revealed two main positive by-products: increased learning and understanding of their work environment, and the elimination of unnecessary practice through successful standardization of patient charts in the Cancer Center.

4.4.3. Case D Project Management Practices

Summary Table

In total, 51 unique project management practices were mentioned by participants in case B. After reorganizing the project management practices based on PMBOK's ten knowledge areas, it was possible to notice that the practices were mentioned for all ten knowledge areas. Case D's summary table is demonstrated in table 16.

Table 16. Case Summary table organized according to PMBOK®'s ten knowledge areas (KA) for case D which demonstrates the percentage of the interviewed team members that stated a project management practice in response to the interview questions 2a, c, d, and e.

		Q2a	Q2c	Q2d	Q2e
KA	Project Management Practice	%	%	%	%
1	Brainstorm (start-up project)	22	0	0	0
	Create project charter	22	0	0	11
	Define problem (background)	44	0	0	33
	Define SMART objectives	56	0	0	33
	Define deliverables	11	0	0	11
	Define mandate/mission	56	0	0	11
	Define vision	44	0	0	22
	Define project success	11	0	0	0
	Define roles and responsibilities for each team member	67	0	0	44
	Gain project plan approval	33	11	0	0
	Kick-off meeting	22	0	0	0
	Create preliminary schedule	44	0	0	0
	Execute activities	78	33	0	0
	Record lessons learned	0	0	0	11
2	Consider constraints	44	11	0	11
	Define scope	22	0	0	44
	Develop work breakdown structure	0	11	0	11

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	Document project	44	22	0	0
	Establish change management strategy	0	22	0	0
	Define phases/activities	44	0	0	0
	Estimate required resources	44	0	0	33
	Estimate timescale for phases/activities	56	0	0	0
	Develop milestones (key dates/deadlines)	100	0	0	44
3	Schedule appropriate time to manage project	0	44	0	0
	Prioritize project	0	22	0	0
	Create timeline (develop logical schedule of activities)	100	0	0	56
	Monitor project progress	67	11	0	22
	Communicate performance feedback	0	22	0	33
4	Acquire funding	0	11	0	11
	Develop detailed budget estimate	0	11	0	0
5	Celebrate achievements	0	11	0	0
	Develop team governance plan (decision-making)	44	0	0	11
	Create core project team	33	0	0	44
6	Develop project team organizational culture (group effectiveness/team building)	0	22	0	33
	Review roles and responsibilities for each team member	0	11	0	11
	Develop communication plan	11	33	0	44
	Organize synchronous communication (meetings)	44	0	0	11
	Organize asynchronous communication	11	0	0	0
7	Execute communication plan (advertise)	11	0	0	0
	Hold synchronous communication (meetings)	89	0	0	0
	Hold asynchronous communication (meetings)	22	0	0	0
	Communicate with internal stakeholders	33	0	0	22
	Communicate with external stakeholders	56	0	0	22
	Identify risks	33	11	0	44
8	Analyze risks (probability, impact, priority)	67	0	0	33
	Develop risk mitigation plan and strategy	0	44	0	22
	Review risk analysis	11	0	0	0
9	Consult experts	33	0	0	22
	Identify stakeholders	67	22	0	11
10	Identify stakeholder needs	11	0	0	11
	Develop stakeholder management strategy	0	0	0	11
Total Project Management Practices		38	18	0	32

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. Interview question 2a = what project management practices were applied? Interview question 2c = which applied project management practices did you perceive as unnecessary to the successful completion of the small project? Interview question 2d = which unapplied project management practices did you perceived as necessary to

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the successful completion of the small project? Interview question 2e = what managerial practices do you perceive as essential in managing small projects in hospitals?

Note3. SMART = Specific, Measurable, Achievable, Realistic, Timely

Applied Project Management Practices

The content extracted from case D's data identified 38 unique project management practices from eight knowledge areas (integration, scope, time, human resource, communication, procurement, risk, and stakeholder management). There were 12 common practices were stated by the majority of the project team which are part of five KAs: integration, time, communication, risk, and stakeholder management.

Unapplied Project Management Practices Considered Necessary

Case D perceived 18 project management practices as unapplied but necessary to the completion of their project. These were identified from nine knowledge areas – all except procurement management. None of these 18 practices were stated by more than half of the team.

Case D's members voiced several unapplied yet necessary practices. Thematic analysis encompassed all of these statements into two main themes: 1) lack of validation and 2) lack of resource assessment. The first theme is the result of participants expressing an absence of sense of accountability from team members and key stakeholders and a lack of formality in the project management practices applied. The second theme concerns primarily a lack of participant capability and time assessment.

More specifically, in theme 1, a lack of accountability was underlined by three project team members. For example one team member stated:

Quote 83. *I felt that at least for certain people, the sense of responsibility was not always there. (D8)*

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This sense of responsibility was further illustrated:

Quote 84. *So it would have been nice if they [the hospital management] could have prioritized us more because we were very dependent [on them]. [...] You know, healthcare is special. First of all, it's government, so there's no accountability. I'll put it very clearly: there's no accountability. The project was not done. Nothing changed. [...] There's no incentive for anybody to improve a system. That's the problem. There's no incentive to improve the system in healthcare. You're not incentivized. There are no stocks, there's no board, there's no shareholders who are unhappy, there's no profits at the end of the year. (D2)*

These absences of accountability testified seemed to be directly related to a lack of stakeholder project buy-in and approval:

Quote 85. *Well, I think the key stakeholders weren't at the table at the beginning. (D6)*

The setting in which the project was conducted revealed a sense of decreased importance and approval from key stakeholders may have rejected this perception.

Furthermore, the lack of project validation was emphasized by unfavourable comments pertaining to formal project management techniques. Team D's members indicated a poor methodical approach in their project management. For example:

Quote 86. *I would have probably changed it [the management of the project] a little bit and do the meetings in a bit more formal way. (D4)*

This was recognized as problematic as it did not encourage the team to be adequately organized and to effectively monitor their project. The team also admitted that it began the project with a lot of optimism, which may have caused their project to lack realism. In fact, several team members specified that they did not feel as if their initial stakeholder and risk analysis were done

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properly and that they should have proceeded to repeat these practices as this quote demonstrates:

Quote 87. *It's not that we didn't do it [stakeholder analysis]. I think we didn't do it well enough. I think it comes back to looking at our stakeholders, reaching out to them and making sure we had approval for the project from everyone. [...] In the case of this particular project, there was this huge unknown that came out of nowhere. [...] That IT and IS were going to say no [to our project]. Honestly, that was huge. It came out of nowhere. So was that [a lack of] stakeholder analysis? Was that [a lack of] risk analysis? It's a little bit of both. We tend to be optimistic, so I don't think we did the risk analysis piece as objectively as we could. It's a tough one to do [...] it's often limited to what you know. (D7)*

Additionally, a lack of resource assessment was identified. The two main resources which lacked assessment were identified to be team member's project management abilities and time.

This topic was initially revealed by team member D9:

Quote 88. *I think the evaluation of [the team's] capacity and the efforts required was missed. Verifying if we [the team] have the capabilities and the resources to do this project, well that was also missed. (D9)*

These shortcomings were portrayed not only through the absence of applying formal project management methodology, but also through misjudgements in power of decision and lack of expertise. For instance, D7 said:

Quote 89. *Maybe Dr. X [our project leader] underestimated things, because it's not his expertise to say: "Oh, with a project like this, the IS is the key person that we need to have involved from day one and agree on things before we continue." (D7)*

Moreover, the team's optimism and ambition biased their judgement related to time management. The original timeline hoped to complete the project by the time of a major event – the relocation of several hospital's into a single one. The timeline, however, was continually

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pushed due to improper assessment of the time requirements to execute the project and unpredicted factors out of the team's control. Consequently, several participants expressed the necessity of having realistic goals and being familiar with the events occurring in the environment, in which the project occurs. The following quotes demonstrate this:

Quote 90. *So [we did not have] realistic goals I guess in terms of time. I think it was just way too ambitious in such a short time at the same time as we were planning this huge move. So within the context, I just think the timing of it wasn't good. [...] We tried to keep on track. But I'm not sure if we did it as systematically as we should have. (D6)*

Quote 91. *I learned mainly maybe not to be as optimistic, that things always run late, that we try to account for everything but we're never able to account for everything, that what is not in our control always ends up taking more time than we expect. (D2)*

One participant expressed that having had properly assessed the knowledge and time resources required several times during the project could have allowed the project to end sooner:

Quote 92. *Maybe the project could have been killed earlier so that we hadn't spent so much time doing it. (D8)*

Applied Project Management Practices Considered Nonessential

There were no practices that project D applied and considered nonessential. Thematic analysis supported this finding through one theme: unavoidable practices. Team D acknowledged their time invested in preparing and managing their project as quintessential to its progress although the project's final outcome was unsuccessful. For instance, D6 expressed:

Quote 93. *I didn't feel like any of that was a waste of time. I think that it was just the timing of all this was off. (D6)*

Likewise, the majority stated that going through and applying project management methodology is required regardless of the perception in utility. Participant D1's quote elucidates this:

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Quote 94. *I think that all that we did was necessary, and I think that we have to go through it no matter what. I don't think we can avoid any of those steps. (D1)*

Project Management Practices Considered Essential

In all, 32 project management practices from nine knowledge areas (all except quality management) were identified as essential practices for all small projects in hospital settings. From these, only 'creating a timeline by developing a logical schedule of activities' from the time knowledge area was mentioned by more than half of the team members. Two main themes arose from the thematic analysis of the data: 1) defining the action plan and 2) managing risks.

Defining the action-plan theme included all of the participant's comments regarding project goals, tasks, their time requirements, and role assignment. All participants indicated that these elements shape the project's vision and scope, which are imperative to managing any small project in a hospital setting:

Quote 95. *Having a clear vision of what the project is, setting clear objectives, making sure that the right people are in the room, having realistic expectations about the timeline, and then setting those key milestones along the way. So [it is essential] just to give you a good picture of where you're going and how you're going to get there. (D6)*

The second theme (managing the project's risks) encompassed everything to do with identifying and analyzing the project's risks as well as communicating them to the potentially impacted stakeholders. The team admitted that their lack of communication with their external stakeholders was a big limitation, and therefore it is necessary to do so in all projects:

Quote 96. *[It is essential] to have good communication, to get feedback –we got no feedback. (D1)*

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Also, identifying the risks and being prepared to conquer them if they arise through both the development of a risk mitigation plan and strategy and the confirmed commitment of the concerned parties was identified as essential. The following statements confirm this:

Quote 97. *I think the risk management aspect is important. Identifying failure modes and having a plan B or a plan C, like having some kind of contingency [is essential]. (D4)*

Quote 98. *Well for me, all is essential; the risks are essential, the stakeholders, to ensure that people are on board, to know what the impacts are, that is essential. (D9)*

Case D's Important Project Management Practices

After analyzing all of the project management practices identified respective to the narrowed research questions, 19 practices deemed important by the majority of participants from case D were consolidated into a list. This list is demonstrated in table 17.

Table 17. *The project management practices deemed important by participants from case D and organized according to PMBOK®'s ten knowledge areas (KA).*

KA	Project Management Practice
1	Define SMART objectives
	Define mandate/mission
	Define roles and responsibilities for each team member
	Execute activities
2	Define scope
3	Estimate timescale for phases/activities
	Develop milestones (key dates/deadlines)
	Create timeline (develop logical schedule of activities)
	Monitor project progress
	Schedule appropriate time to manage project
6	Create core project team
7	Develop communication plan
	Hold synchronous communication (meetings)
	Hold synchronous communication (meetings)
	Communicate with external stakeholders
9	Analyze risks (probability, impact, priority)
	Develop risk mitigation plan and strategy

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Identify risks	
10	Identify stakeholders
Total	19 Project Management Practices from 7 KAs

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. SMART = Specific, Measurable, Achievable, Realistic, Timely

Impact of Project Management Practices

One central theme emerged from the thematic analysis regarding the impact of project management practices on project completion: usefulness. The project management practices applied were considered useful in two regards: 1) focusing and structuring the project and 2) gaining transferable knowledge from applying these practices.

Case D did not think that the time invested into the project was a waste of time:

Quote 99. *Although [the project] didn't succeed, so I should say to the unsuccessful rather than the successful, they [project management practices] were all necessary. They helped us, although we didn't succeed. (D2)*

Working as a team and conversing about all aspects which the project affects allowed the team to explore the variables needed to be considered in management. Two participants even explained that understanding the value attributed to all of the work done made the project an enjoyable experience. For example:

Quote 100. *I didn't feel like it was a waste of time and I think it really did help us focus and move forward and bring in some things that we probably wouldn't have done if we hadn't had those discussions. [...] It was such an exciting project and actually, I have to say, it was the most fun project I had ever worked on. (D6)*

Additionally, the management of their small project allowed the whole team to learn more about project management and the functioning of their organization. Participants explained

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that the knowledge gained from their use and misuse of project tools allowed them to understand how to effectively structure a project and transfer this understanding to other activities which they take part in. Two quotes help demonstrate the theme of usefulness:

Quote 101. *We as a team learned that these tools existed, that these tools help and that we should use them. And they did, they guided us. We were a little bit all over the place. They actually gave us structure. (D2)*

Quote 102. *In fact we've used [those project management practices] for a number of other projects I've been involved in. (D7)*

4.4.4. Within-Case D Analysis Overview

A team from the Cancer Center in Hospital 2 worked on a project whose goal was to make logistical improvements in the Cancer Center by centralizing patient information through the adaptation of a common EMR system in three frequently visited departments. After working on the project for a little over a year, the project ceased as the EMR system was not adopted by the targeted departments. Thematic analysis revealed that the project team perceived the project to be a failure (as it was not successfully implemented) and to have successful by-products, such as the elimination of a redundant administrative task and a better understanding of the functioning of their work environment. Overall, 51 unique project management practices were identified, 19 of which were deemed important by the majority of the interviewed members. Lack of validation and lack of resource assessment were identified as unapplied and considered necessary due to an inadequate sense of accountability, realism, capability, and time. No applied project management practice was considered nonessential as value was attributed to all practices regardless of their utility perception. Defining the project's action-plan and managing the project's risks – as well as communicating them to all affected stakeholders – were perceived essential in the management of any small project in a hospital setting. In sum, the employment of

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project management practices was perceived useful in the management of team D's small project as it allowed to structure the project and gain transferable knowledge.

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4.5. Within-Case Analysis – Case E

4.5.1. Case E Summary

In October 2015, a team from the children's services in Hospital 2 began their small project titled "*We should talk*" with the desire to improve communication within the hospital. More contextually, Hospital 2 acknowledges that involving families in hospital planning, evaluation and policy-making improves children's care (The Children, 2017). Therefore, Hospital 2 adopted a patient and family-centred care (PFCC) approach to help include families as full partners in children's health care. As a means of encouraging the PFCC approach, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), a survey instrument and data collection methodology for measuring patients' perceptions of their hospital experience (CMS, 2014), was administered and analyzed in the summer of 2014. This patient satisfaction survey demonstrated that less than 70% of parents in Hospital 2 do not know how to report a problem and that healthcare staff does not necessarily listen to the parents' concerns. Furthermore, survey statistics demonstrated that only one eighth of staff felt it was easy to speak up, two eighths of patients and families reported they were always listened to, and half of families said they were encouraged to ask questions (The Children, 2015). These statistics were perceived worrisome as they may directly impact the quality of care being delivered which may contribute to preventable medical errors, hinder patient experience, decrease staff satisfaction and workplace safety (The Children, 2015) and interfere with the PFCC vision.

Thus, the team decided to undertake a project whose objective was to address the lack of communication between patient or family and hospital staff as a means to support the PFCC vision. More specifically, the project goal was to raise awareness about patient safety to

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encourage and inspire people to speak up about safety concerns and potentially decrease the prevalence of adverse events.

Exactly one year after the team started working on the project, the project was considered completed in October 2016.

Throughout the late summer of 2016, this team was interviewed about their small project. Originally, this team consisted of ten people; however during the project, two of the members left the team due to maternity leave. This team consisted of: the PFCC coordinator, a family/patient advisor, an attending physician from the division of general pediatrics, a knowledge broker, the assistant to the director from quality, patient safety and performance, an attending physician from pediatric critical care, one communication officer from public relations and communications, the assistant to associate director general and manager of admitting and registration services, a research clerk from the emergency department, and a pediatric emergency medicine physician. Only the former four project team members were interviewed. The timeline below helps illustrate the sequence of events mentioned.

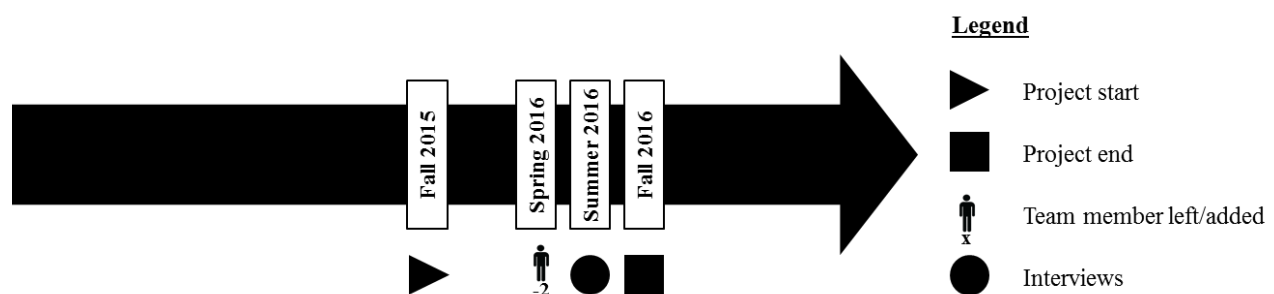


Figure 9. Case E project timeline.

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4.5.2. *Project Success Perception*

The participants from case E stated that their project was near completion but still in progress. They anticipated the official project end to be in less than a couple of months. To accommodate this, the interview question regarding project success was slightly modified to: “Do you qualify your project to be a success so far?” The responses to this question were analyzed thematically and one main theme emerged: perceived success.

All team members interviewed from case E explicitly stated that they perceive their project to already be a success, despite it not being officially over. The project goal was perceived to already be achieved because team members noticed an increase in awareness regarding patient safety and communication. In other words, the project goal seemed to already be achieved within the desired timeline. Participant E4’s declaration confirms this:

Quote 103. *I think that we have found that awareness is high among staff members and those patients’ and families are noticing our message, so I think that that is a success. (E4)*

To support the claim that the ‘We should talk’ campaign works, several team members elaborated on anecdotes they witnessed, such as:

Quote 104. *So the other day I was up on the floor and I had one of my colleagues coach someone in how to speak to a difficult physician and raise her point. And then we stood there and listened to the live version. And that was a success for me because it worked. (E2)*

Although the project was perceived successful, all of the interviewed participants underlined that it is sometimes difficult to prove their project success. The team continually administers surveys to various hospital staff, patients and their family members in order to test the efficiency of their campaign; however, they find that these surveys do not always accurately reflect the campaign’s direct influence. The following quote helps illustrate this challenge:

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Quote 105. *It's hard to know what the changes are due to. It could be anything. There could be confounding variables. We moved to a new hospital, but those statistics are continually updated and we have what we call a dashboard where anyone in the hospital can just go on the internet and look at these stats. [...]Every day we learn new information that just confirms to me that the project was a success. So if you want to know statistically, our statistics have increased slightly in certain domains but culture change is never measurable, in my opinion. (E2)*

In order to demonstrate and finalize the project's success before the project officially ends, participant E3 specified that the team is trying to get some hard data:

Quote 106. *Now we're really focusing on the data piece of it which is trying to see if we have a success or not. (E3)*

Moreover, another element which supported the team's perception of project success was the fact that the initial project expanded into a larger project. The original small project was often referred to as 'phase one' because the team had recently expanded the project into three phases:

Quote 107. *'We should talk' phase two education and 'We should talk' phase three branding of quality. (E1)*

Group E demonstrated confidence in the fact that their small project laid out the necessary ground work for a bigger project.

Quote 108. *We've implemented a dashboard related to that data that's now internally available to anybody, and we've supported a new project that's developing organizational dashboards related to this. So from that point of view that was a success. (E1)*

Overall, project E's was perceived as successful by its team members although it was not officially over because the team claimed the team professed increased awareness regarding patient safety, thus claimed their project goal was achieved. In addition, their project developed into a larger one, thus supporting the initial small project's success achievement.

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4.5.3. Case E Project Management Practices

Summary Table

In total, 54 unique project management practices were mentioned by participants in case A. After reorganizing the project management practices based on PMBOK's ten knowledge areas, it was possible to detect that the practices mentioned corresponded to all ten knowledge areas. Case E's summary table is demonstrated in table 18.

Table 18. Case Summary table organized according to PMBOK®'s ten knowledge areas (KA) for case E which demonstrates the percentage of the interviewed team members that stated a project management practice in response to the interview questions 2a, c, d, and e.

KA	Project Management Practice	Q2a	Q2c	Q2d	Q2e
		%	%	%	%
1	Brainstorm (start-up project)	75	0	0	0
	Create project charter	75	0	0	50
	Assess and document current state	0	0	0	25
	Define problem (background)	75	0	0	25
	Define SMART objectives	100	0	0	25
	Define deliverables	50	0	0	0
	Define mandate/mission	75	0	0	75
	Define vision	50	0	0	0
	Define roles and responsibilities for each team member	75	0	0	25
	Create accountability	25	0	0	50
	Gain project plan approval	50	50	0	50
	Kick-off meeting	75	0	0	0
	Create preliminary schedule	75	0	0	0
	Refine project charter	25	0	0	0
	Execute activities	25	25	0	25
2	Define scope	25	0	0	0
	Develop work breakdown structure	50	0	0	25
	Document project	50	0	0	25
	Refine scope	50	0	0	25
	Reaffirm project mandate/mission	0	0	0	25
3	Define phases/activities	100	0	0	0
	Estimate timescale for phases/activities	25	0	0	0
	Develop milestones (key dates/deadlines)	50	0	0	0
	Develop critical path	25	0	0	0
	Schedule appropriate time to manage project	0	50	0	0

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	Create timeline (develop logical schedule of activities)	100	0	0	0
	Monitor project progress	100	0	0	0
	Communicate performance feedback	0	25	0	0
4	Acquire funding	75	0	0	0
	Develop detailed budget estimate	0	25	0	0
5	Define objectives (measures)	50	0	0	50
	Perform cost/benefit analysis	25	0	0	0
	Review cost/benefit analysis	0	25	0	0
	Celebrate achievements	25	0	0	25
6	Develop team governance plan (decision-making)	50	0	0	25
	Create core project team	25	25	0	25
	Develop project team organizational culture (group effectiveness/team building)	75	25	0	50
	Review project team organizational culture (group effectiveness/team building)	50	50	0	0
	Review roles and responsibilities for each team member	0	25	0	0
7	Develop communication plan	50	0	0	0
	Organize synchronous communication (meetings)	25	0	0	25
	Hold synchronous communication (meetings)	75	0	0	25
	Communicate with internal stakeholders	25	0	0	0
	Communicate with external stakeholders	50	0	0	25
8	Identify risks	25	0	0	0
	Analyze risks (probability, impact, priority)	75	0	0	0
	Develop risk mitigation plan and strategy	50	0	0	50
	Review risk analysis	25	0	0	0
	Reanalyze risks (probability, impact, priority)	0	25	0	0
9	Consult experts	100	0	0	0
10	Identify stakeholders	100	25	0	25
	Identify stakeholder needs	25	0	0	0
	Develop stakeholder management strategy	0	0	0	50
	Keep stakeholders involved	0	75	0	0
Total Project Management Practices		44	13	0	24

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. Interview question 2a = what project management practices were applied? Interview question 2c = which applied project management practices did you perceive as unnecessary to the successful completion of the small project? Interview question 2d = which unapplied project management practices did you perceived as necessary to the successful completion of the small project? Interview question 2e = what managerial practices do you perceive as essential in managing small projects in hospitals?

Note3. SMART = Specific, Measurable, Achievable, Realistic, Timely

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Applied Project Management Practices

The content from case E's identified 44 unique project management practices from all ten knowledge areas. From all the KAs, more than half of group E identified 30 practices. This group identified the most applied project management practices.

Unapplied Project Management Practices Considered Necessary

13 project management practices perceived as unapplied but necessary to the completion of project E were identified from seven knowledge areas (integration, time, cost, quality, human resource, risk and stakeholder management). Gaining project plan approval from the integration KA, scheduling appropriate time to manage the project from the time KA, reviewing the project team organizational culture (group effectiveness/team building) from the human resource KA, and keeping stakeholders involved from the stakeholder KA were the 4 project management practices mentioned by more than half of team E.

Thematic analysis underscored a lack of team debriefing during the project execution phase. For example, one team member expressed:

Quote 109. *I think we didn't do a team debrief or group effectiveness meeting when we should have. (E2)*

This team mentioned that they spent several meetings before launching their project where they established a team organizational culture. However, after the project launch, team members' workload increased significantly and the pre-established team culture was not revisited, participant E1 shows this:

Quote 110. *We had three, probably, meetings where we had time set to say: "Well, how are we communicating, how are we functioning as a team?" And after the launch there was a period where really there was a lot of stuff happening. [...] The challenge we had at the time is this project was*

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happening during a massive transformation where we're moving buildings, where the government is reorganizing the people at the top that keep their jobs or don't. People didn't want to [debrief] and so many things were happening that we only had limited time [during meetings]. (E1)

Not revisiting the group's dynamics caused tension and minor conflict in the team. The tension primarily stemmed from not re-clarifying the roles assumed by each member, as demonstrated by E4:

Quote 111. *I think that one of the things that was initially clear but got less clear overtime was the delineation of roles. [...] I think that re-clarification of roles is something that is extremely rarely done in healthcare and I think needs to be done more. (E4)*

Ultimately, the lack of team debriefing decreased internal communication:

Quote 112. *It's funny, this project was about speaking up and my biggest challenge was to speak up myself because in a team setting, I think it is sometimes difficult to do that. (E4)*

Hence, team E recognized that they did not debrief enough and that holding team effectiveness meetings is critical to the team's management efficiency.

Applied Project Management Practices Considered Nonessential

There were no practices that project E applied and considered nonessential. All participants explicitly stated that they did not perceive anything to be unnecessary. This was the theme that emerged during thematic analysis. In fact, all employed practices by group E were perceived as valuable whatever their priority, as illustrated with the following quote:

Quote 113. *To be honest, I think that all of the things that we did where necessary, I just do not think I would grade them as being the same priority. (E4)*

Additional value was attributed to the project management practices employed due to the learning opportunity provided by these practices to the team members:

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Quote 114. *I don't see any of them [project management practices] as being unnecessary. Yeah, the whole thing was like a learning experience.* (E2)

Project Management Practices Considered Essential

Overall, there were 24 project management practices from seven knowledge areas (integration, scope, quality, human resource, communication, risk, and stakeholder management) mentioned as essential practices for small projects in hospital settings by group E. From these 24 practices, eight were stated by more than half of the group. Four project management practices (creating the project charter, defining the mandate/mission, creating accountability, and gaining project plan approval) were a part of the integration knowledge area, one project management practice (defining objectives and their measures) was from the quality management knowledge area, one project management practice (developing a project team organizational culture (group effectiveness/team building) was from the human resource management knowledge area, one project management practice (developing a risk mitigation plan and strategy) from the risk management knowledge area, and one project management practice (developing a stakeholder management strategy) from the stakeholder management knowledge area.

Many comments regarding defining the project and its characteristics were made by all team E members. However, gaining project approval was the theme which governed the participant's responses. In order to receive project approval from the key stakeholders, the team expressed that first the project's mission, goals, constraints, costs, and scope must be well defined. In fact, it was underlined that investing time into the project plan before proceeding to project's execution phase was what allowed for good management. For example one team member said:

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Quote 115. *I think it's important to follow the steps. I'm like a very organized person and there's a reason, define, measure. Like there's a reason that those steps exist, and I think to have a successful project you really need to take a step back and not just look for the solution but you need to measure and really focus in on what the problem is versus just taking wild guesses. (E2)*

In other words, elaborating the project charter was recognized as a necessity to be able to seek approval. For example:

Quote 116. *[It's essential to have] a project charter and defining what it is. Having some executive sign this charter is essential because you're going to be competing with many other projects at the same time, pooling the resources. (E3)*

Gaining project approval was also underlined as the overarching essential practice due to the nature of hospital settings. It was identified that in these settings there are a lot of changes happening and receiving approval from management may sometimes be a challenge:

Quote 117. *We did not get approval for certain things that would have helped us get excess in the project. Mainly, like we thought that we could change all the screensavers in the organization but we were unable to do that. We thought that we would have access to the TV's in the patient rooms, and that ended up being something that we could not easily access. There were a lot of barriers as to what was possible to do. (E4)*

Therefore, to successfully manage projects in these settings, team E elaborated on the fact that creating accountability through approval of key stakeholder is of key importance:

Quote 118. *I think you have to have a focused mission. I think you need a project charter to be signed by the CEO or by whoever is the senior leader. And I think you need to clarify internal communication strategy and decision making. I think that's key and I think it needs to be on paper and that any time problems arise, you just pull out that paper and say, okay, how do we resolve this so that it doesn't become an individual versus an individual? It's a team thing and the team is accountable. (E1)*

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Case E's Important Project Management Practices

The project management practices analyzed respective to the narrowed research questions permitted the creation of a consolidated list of 34 practices deemed important by the majority of participants from case E was created. This list is presented in table 19.

Table 19. *The project management practices deemed important by participants from case E and organized according to PMBOK®'s ten knowledge areas (KA).*

KA	Project Management Practice
1	Brainstorm (start-up project)
	Create project charter
	Define problem (background)
	Define SMART objectives
	Define deliverables
	Define mandate/mission
	Define vision
	Define roles and responsibilities for each team member
	Gain project plan approval
	Kick-off meeting
	Create preliminary schedule
	Create accountability
2	Develop work breakdown structure
	Document project
	Refine scope
3	Define phases/activities
	Develop milestones (key dates/deadlines)
	Create timeline (develop logical schedule of activities)
	Monitor project progress
4	Schedule appropriate time to manage project
	Acquire funding
5	Define objectives (measures)
6	Develop team governance plan (decision-making)
	Develop project team organizational culture (group effectiveness/team building)
	Review project team organizational culture (group effectiveness/team building)
7	Develop communication plan
	Hold synchronous communication (meetings)
	Communicate with external stakeholders
8	Analyze risks (probability, impact, priority)

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	Develop risk mitigation plan and strategy
9	Consult experts
	Identify stakeholders
10	Keep stakeholders involved
	Develop stakeholder management strategy
Total	34 Project Management Practices from 10 KAs

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. SMART = Specific, Measurable, Achievable, Realistic, Timely

Impact of Project Management Practices

The primary impact of project management practices identified in project E was the importance of applying project management practices. As a matter of fact two team members expressed the following:

Quote 119. *Without it [project management practices], it wouldn't have happened. (E1)*

Quote 120. *I think it [applying project management practices] was the most important part of the project. (E2)*

The rigorousness in the project methodology employed by team E made all team members realize the importance and benefit of the practices they used. Some of the benefits stated included; structuring the project and members roles, understanding the project, learning to effectively cooperate with other team members and key stakeholders, remaining focused and time-efficient.

More than half the interviewed participants also expressed that the formality adopted in the project supported the main theme extracted. Participant E4 illustrates this:

Quote 121. *I think that they served to better frame the project for all of us. I think that what for me was very striking is that it gave a certain formality to the process. [...] It made it more authentic. It made it a little bit more concrete what we were all working towards. (E4)*

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Thus, project management principles and tools used in the small project were perceived as imperative to the project.

4.5.4. Within-Case E Analysis Overview

A team from the children's services in Hospital 2 worked on a project whose goal was to increase awareness about patient safety within its hospital to inspire patients, family members, and hospital staff to speak up more often about safety concerns. A year after beginning the project, the project was considered complete. Thematic analysis revealed that the project team perceived project success several months before the official completion of the project as anecdotal evidence and project expansion suggested the achievement of the project's goal. Overall, 54 unique project management practices were identified; 34 of which were deemed important by the majority of the interviewed members. Lack of team debriefing was acknowledged as unapplied and necessary by team E due to the presence of team conflict. Value in every applied project management was professed, thus no applied project management practice was considered nonessential. Gaining project approval was stated as indispensable in the management of any small project in a hospital setting as it requires a project to be well defined and understood. In sum, the employment of project management practices was perceived important and imperative in the management of team E's small project as it warranted several benefits such as project structure, understanding the project, and remaining time-efficient.

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4.6. Cross-Case Analysis

The following section reviews the trends in project management practices applied and unapplied across all five cases studied and their link with perceived project success. A list of 43 project management practices deemed important is consolidated, chief elements linked to project success are examined, and the need for having a leader in small projects is presented.

4.6.1. Project Management Practices

Master Table

In total, 73 unique project management practices were mentioned by the participants from cases A-E. After reorganizing the project management practices based on PMBOK's ten knowledge areas, it was possible to observe that the practices mentioned represented all ten knowledge areas. The master table is demonstrated in table 20.

Table 20. *Master table organized according to PMBOK®'s ten knowledge areas (KA) for cases A-E which demonstrates the percentage of the interviewed cases that stated a project management practice in response to the interview questions 2a, c, d, and e.*

KA	Project Management Practice	Q2a	Q2c	Q2d	Q2e
		%	%	%	%
1	Brainstorm (start-up project)	80	20	0	0
	Create project charter	100	0	0	60
	Assess and document current state	0	0	0	40
	Define problem (background)	100	0	0	100
	Define SMART objectives	80	20	0	80
	Define deliverables	80	0	0	20
	Define mandate/mission	100	0	0	100
	Define vision	80	20	0	80
	Define future state	0	20	0	0
	Define project success	20	0	0	20
	Define project benefits	20	0	0	0
	Define project title	20	0	0	0
	Define team name	20	0	0	0
	Define roles and responsibilities for each team member	100	0	0	80

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	Create accountability	40	0	0	20
	Gain project plan approval	60	60	0	20
	Kick-off meeting	60	20	0	0
	Create preliminary schedule	100	0	0	20
	Refine project charter	20	0	0	0
	Execute activities	80	100	0	40
	Update project charter	20	0	0	0
	Perform formal project closure	0	20	0	0
	Create project report (document for future reference)	0	20	0	20
	Record lessons learned	0	0	0	20
2	Consider constraints	60	20	0	20
	Define scope	80	20	0	80
	Develop work breakdown structure	20	60	0	80
	Document project	100	60	20	80
	Establish change management strategy	0	60	0	0
	Refine scope	20	20	0	60
	Reaffirm project mandate/mission	0	0	0	20
3	Define phases/activities	100	0	0	40
	Estimate required resources	60	0	0	40
	Estimate timescale for phases/activities	60	40	0	20
	Develop milestones (key dates/deadlines)	100	20	0	80
	Develop critical path	20	0	0	0
	Schedule appropriate time to manage project	0	80	0	60
	Prioritize project	0	60	0	20
	Create timeline (develop logical schedule of activities)	100	20	0	80
	Monitor project progress	80	60	0	60
	Communicate performance feedback	0	60	0	40
4	Create conceptual budget estimate	20	20	0	20
	Acquire funding	20	40	0	20
	Develop detailed budget estimate	0	40	0	0
5	Define objectives (measures)	20	0	0	60
	Perform cost/benefit analysis	20	0	0	0
	Review cost/benefit analysis	0	20	0	0
	Celebrate achievements	20	20	0	20
6	Develop team governance plan (decision-making)	60	40	0	40
	Create core project team	60	80	0	80
	Develop project team organizational culture (group effectiveness/team building)	40	40	0	40
	Review project team organizational culture (group	20	20	0	0

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	effectiveness/team building)				
	Review roles and responsibilities for each team member	0	80	0	0
	Develop communication plan	60	60	0	60
	Organize synchronous communication (meetings)	100	40	0	40
	Organize asynchronous communication	40	0	0	0
7	Execute communication plan (advertise)	20	0	0	0
	Hold synchronous communication (meetings)	100	40	0	60
	Hold asynchronous communication (meetings)	40	0	0	0
	Communicate with internal stakeholders	80	0	0	20
	Communicate with external stakeholders	100	40	0	60
	Risk management	0	0	20	0
	Identify risks	100	40	20	20
8	Analyze risks (probability, impact, priority)	100	20	40	60
	Develop risk mitigation plan and strategy	20	40	0	60
	Review risk analysis	40	0	0	0
	Reanalyze risks (probability, impact, priority)	0	40	0	0
9	Consult experts	60	0	0	40
	Identify stakeholders	100	80	0	80
	Identify stakeholder needs	60	0	0	20
10	Develop stakeholder management strategy	0	0	20	40
	Keep stakeholders involved	0	60	0	0
	Review stakeholder management strategy	0	20	0	0
Total Project Management Practices		55	43	5	49

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. Interview question 2a = what project management practices were applied? Interview question 2c = which applied project management practices did you perceive as unnecessary to the successful completion of the small project? Interview question 2d = which unapplied project management practices did you perceived as necessary to the successful completion of the small project? Interview question 2e = what managerial practices do you perceive as essential in managing small projects in hospitals?

Note3. SMART = Specific, Measurable, Achievable, Realistic, Timely

Applied Project Management Practices

The content extracted from all cases identified 55 unique project management practices from all ten knowledge areas. Only 33 common practices which are part of eight knowledge

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areas (all except cost and quality management) were stated by more than half of the project teams.

Unapplied Project Management Practices Considered Necessary

In total, 43 project management practices from nine knowledge areas (all except procurement management) were identified as unapplied but perceived as necessary to the completion of a small project. Only 14 practices from six knowledge areas were mentioned by more than half the cases in this study. More interestingly, from these practices, only four from four knowledge areas were mentioned in response to question 2.b. These include: establishing a change management strategy from the scope management area, communicating performance feedback from the time management area, reviewing roles and responsibilities for each team member in the human resource management area, and keeping stakeholders involved throughout the entirety of the project for the stakeholder management area.

After reviewing the themes which emerged in the within-case analyses, it is possible to state that project control was the most underemployed process. This deficiency negatively affected proper project monitoring. In turn, smooth adaptation to change, dynamic performance and stakeholder feedback suffered. Every case supported these shortcomings through indicating a lack of sufficient scheduled time to complete the project. This weakness strongly links with the fact that the healthcare professionals partaking in these small projects often do so in addition to their regular work. In most cases, their demanding work is prioritized over the management of their small project, therefore making it challenging to schedule appropriate time for their subsidiary initiative.

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Applied Project Management Practices Considered Nonessential

Five project management practices were stated as nonessential from three knowledge areas: scope, risk, and stakeholder management. None of these were stated by more than half the cases in this study. Therefore, the overall trend demonstrates that no project activity is unnecessary and that value in the project management process is perceived by healthcare workers involved in small projects in hospital settings.

Although most comments and practices perceived as nonessential sourced from the risk management knowledge area, the within-case analyses revealed that risk analysis may have been poorly used. In fact, in some cases, the gravity of risks was misjudged because the project's overall impact was undervalued. For example, knowing that failure to achieve the project's mission would also prevent the creation of novelty in the current operational functioning.

Project Management Practices Considered Essential

49 project management practices from all ten knowledge areas were identified as essential to the management of any small project in a hospital setting. From these practices, 22 of them from eight knowledge areas (all except cost and procurement management) were stated by more than half of the cases.

The strongest theme which emerged regarding essential project management practices regarded defining the project. A well-defined project included understanding the project's problem, mission, vision, and consequences. Clearly establishing expectations pertaining to team, stakeholder, resource, success, and execution requirements were also seen as essential to the contribution of a well-defined project. Nonetheless, defining the project's development in

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time and employing practices (i.e., defining the scope, the work breakdown structure, the timeline) from the time and scope management areas were also deemed essential.

Important Project Management Practices

After analyzing the master table (table 20) which identifies all of the project management practices respective to the narrowed research questions, it was possible to create a consolidated list of 43 practices from nine knowledge areas deemed important by the majority of participants from all five cases. This master list of important project management practices is demonstrated in table 21 and could serve as a guideline for future small projects executed in a hospital setting which meet Chiocchio, Rabat & Lebel's (2015) definition.

Table 21. *The project management practices deemed important by participants from cases A-E and organized according to PMBOK®'s ten knowledge areas (KA).*

KA	Project Management Practice
1	Brainstorm (start-up project)
	Create project charter
	Define problem (background)
	Define SMART objectives
	Define deliverables
	Define mandate/mission
	Define vision
	Define roles and responsibilities for each team member
	Gain project plan approval
	Kick-off meeting
	Create preliminary schedule
2	Execute activities
	Consider constraints
	Define scope
	Develop work breakdown structure
	Document project
	Refine scope
3	Establish change management strategy
	Define phases/activities
	Estimate required resources
	Estimate timescale for phases/activities

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	Develop milestones (key dates/deadlines)
	Schedule appropriate time to manage project
	Prioritize project
	Create timeline (develop logical schedule of activities)
	Monitor project progress
	Communicate performance feedback
5	Define objectives (measures)
	Develop team governance plan (decision-making)
6	Create core project team
	Review roles and responsibilities for each team member
	Develop communication plan
	Organize synchronous communication (meetings)
7	Hold synchronous communication (meetings)
	Communicate with internal stakeholders
	Communicate with external stakeholders
8	Consult experts
	Identify risks
9	Analyze risks (probability, impact, priority)
	Develop risk mitigation plan and strategy
	Identify stakeholders
10	Identify stakeholder needs
	Keep stakeholders involved
Total	43 Project Management Practices from 9 KAs

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. SMART = Specific, Measurable, Achievable, Realistic, Timely

Interestingly, only four common important project management practices from three knowledge areas were stated by all five projects in this study. These reveal absolute relevance and include: defining the project mandate and mission from the integration management knowledge area, creating the project timeline through the development of a logical schedule of activities from the time management knowledge area, holding synchronous communication and communicating with external stakeholders from the communication knowledge area.

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Impact of Project Management Practices

Overall, it is possible to state that project management practices positively impact the management and execution of small projects in hospital settings. Employing project management practices revealed to be important, helpful and useful in the organization and structure of a small project. This positive impact is supported by the fact that all cases perceived value in the use of project management practices in their project and agree that no practice is unnecessary, unless misemployed.

Nevertheless, it was also stated in one case that employing too many project management practices is perceived as excessive in the context of small projects. Although this outlook was not mentioned in all of the cases, it is an important consideration factor as it can blur the project vision. In fact, over-management is unfavourable because it prioritizes technique over execution. Rather than incorporating observations, feedback, and realities, emphasis is placed on theory which works in many cases; but not all. It is crucial to recognize the uniqueness of projects and the absence of a generalizable ‘success’ formula; in this case-by-case discipline, a series of practices cannot dictate the result of a project for countless other internal and external factors affect success.

Taking this into consideration, it is possible to suggest that small projects may not require all existing project management practices to be applied. Considering that the list of important project management practices (as demonstrated in table 21) only contains 43 practices, it is presumed that the attention dedicated to project management technique is not overwhelming to the outcome, thus its incorporation more or less avoids the risk of over-managing small projects. It is important to remember that the list of important project management practices consolidated in this thesis is merely a guideline for future small projects. Evidently, other project management

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practices not found in the suggested list (as they were not stated in the small projects studied) may be beneficial to the management of small projects in hospitals.

4.6.2. *Project Management Practices and Perceived Project Success*

The common and successful project management practices used by healthcare providers during the management of small projects in Canadian hospital settings are of central interest in this study. In order to better understand the factors affecting project outcomes, the cases in this study were case-ordered by the researcher according to the perceived success variable. Thus, a case-ordered descriptive matrix was created (view table 22) which displays first-level descriptive data from each case for the project success perception variable (Miles & Huberman, 1994).

Table 22. *Case-ordered descriptive matrix according to the perceived success variable.*

	Total perceived success by team	Justification	# important P.M.P.s*	# of KAs	
	Case E	Yes	Project goal achieved	34	10
	Case B	Yes	Anticipated project goal achievement	30	7
	Case D	No	Project goal not achieved (product not implemented)	19	7
	Case A	No	Project goal not achieved (project absorbed)	13	5
	Case C	No	Project goal not achieved (project absorbed)	27	6

*P.M.P. (Project Management Practice)

Interestingly, it is possible to observe a link between the cases' success ranking and the number of project management practices and knowledge areas applied. This could potentially be explained by the assumption that the more project management practices are applied from multiple knowledge areas, then the more time a team devotes to their project. This increased time devotion could result in better planning, analysis, and understanding of the project at hand. Although this sample includes cancelled projects, these projects would have possibly had a

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different outcome if they would have explored all KAs. Based on this presumption, it could be indicative that it is beneficial for small projects to explore all ten PMBOK knowledge areas and apply as many project management practices as they are comfortable with.

Further exploration of table 22 permitted cases to be grouped based on the status of the perceived success variable into 2 families: successful (abbreviated to “S”) and unsuccessful (abbreviated to “U”). The S group consists of cases B and E which achieved or anticipated to achieve project success. The U group consists of cases A, C and D who did not perceive to have achieved overall project success.

In order to better understand the similarities and differences between the S and U families, the limitations and negative contributors specified in the within-case analysis of the U family have been reviewed. This review revealed four main limitations stated in cases A, C and D which included: lack of project control, lack of project validation, lack of resource assessment, and lack of project consistency. Lack of project control was characterized by a deficiency in decisional power by project team members and a lack of feedback from the main stakeholders during the project. Lack of project validation was characterized by a lack of project approval from key stakeholders, a deficiency in the sense of accountability, and a lack of formality in the management process of the project. Lack of resource assessment was characterized by a lack of participant capability and time assessment. Lack of consistency was characterized by a lack of project prioritization, a lack of project team stability and commitment, and a lack of steadiness in the progression of the project.

A causal display was created (view figure 10) which displays the main causal data from the U family and its link with the project outcome (Miles & Huberman, 1994). In other words,

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figure 10 represents the limitations stated by the U family and links them to the lack of project success.

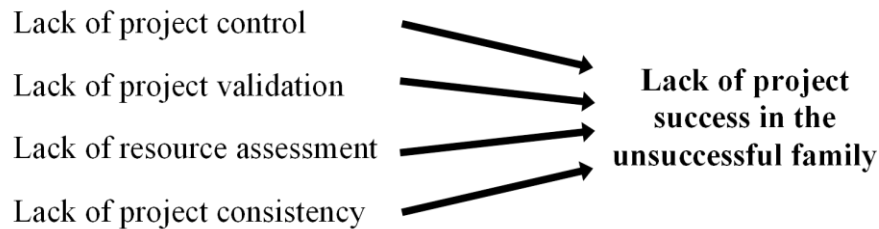


Figure 10. Causal display of the unsuccessful (U) family and its link with project outcome.

Next, these factors stated in the within-case analyses of U which affected the project were analyzed and contrasted with the S family. The important project management practices tables from each case were analyzed to assist this comparison. After amalgamating the important project management practices from cases A, C and D and comparing them with the amalgamated important project management practices from cases B and E, it was possible to eliminate the practices found in both families and create a table indicating the remaining important project management practices and their respective family percentage (view table 23).

Table 23. The remaining important project management practices and their respective family percentage post-comparison of the unsuccessful and successful family.

KA	Project Management Practice	Family	% of cases from family
1	Assess and document current state	S	50
	Create accountability	S	50
	Perform formal project closure	U	33
	Gain project plan approval	S	100
2	Consider constraints	S	50
	Establish change management strategy	S	50
	Define scope	U	33
4	Acquire funding	S	50
5	Define objectives (measures)	S	50
6	Review project team organizational culture (group effectiveness/team building)	S	50
	Review roles and responsibilities for each team member	U	33

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7	Hold asynchronous communication (meetings)	U	33
	Communicate with internal stakeholders	U	33
8	Reanalyze risks (probability, impact, priority)	S	50
9	Consult experts	S	50
10	Keep stakeholders involved	S	50
	Develop stakeholder management strategy	S	50

Note1. Knowledge area (KA) 1 = integration management, 2 = scope management, 3 = time management, 4 = cost management, 5 = quality management, 6 = human resource management, 7 = communication management, 8 = procurement management, 9 = risk management, and 10 = stakeholder management.

Note2. The unsuccessful (U) family consists of cases A, C and D in this study, whereas the successful (S) family consists of cases B and E in this study.

By reviewing table 23, it is possible to identify only one project management practice acknowledged by a whole family. This practice consists of gaining project plan approval and is not stated as an important practice by any of the cases in U. This fact is suggested to be indicative of a significant difference between the S and U families. Although it is difficult to infer causation from a single variable, it is still possible to examine the diverse effects stemming from a single major variable (supposed as the probable cause) through an effects display, as suggested by Miles and Huberman (1994). Consequently, an effects display was created (view figure 11) which elaborates on the negative effects of a lack of project approval on the management of a small project whilst taking into consideration all limitations stated by the U family (as demonstrated in figure 10).

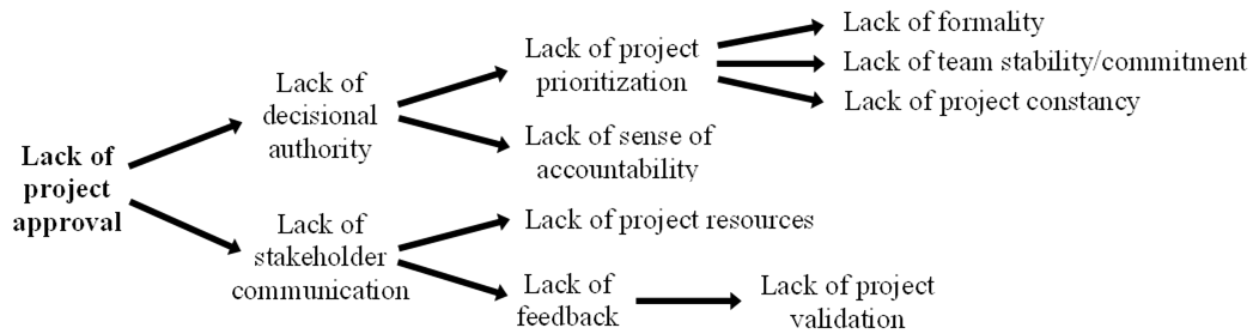


Figure 11. *Lack of project approval in small project management effects display.*

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Figure 11 demonstrates that the lack of approval from the appropriate stakeholder creates a series of limitations. A deficiency in project approval affects decisional authority because it can erode credibility or reputation when parties propose projects that are not yet accepted by the appropriate decision-maker. Some cases of failure include not receiving approval from the right stakeholder due to overestimating the possessed decisional authority, project inappropriateness, or insufficient stakeholder analysis, only to find out that it is unconstitutional or not a priority in the hospital's context. Lack of project prioritization in turn decreases the project's sense of legitimacy, devotion and steadiness. Moreover, projects without proper approval and lacking in decisional power do not warrant an accountable party who can protect project interests and account for its performance. In the latter case, this can affect the quality of output whereas the former scenario can result in small project integration into larger projects; which can cause project failure as well.

In all cases, defective communication with appropriate stakeholders is a causing barrier. Communication with appropriate stakeholders assures that investments into the project align with hospital management's plans, strategy and expectations. In fact, insufficient communication with stakeholders can affect the project team's ability to understand hospital needs due to a lack of regular feedback from stakeholders. As project launch is contingent upon seeking approvals from parties of different levels of hierarchy, reaching a sufficient level of approval requires project teams to invest their time, knowledge and resources into convincing various levels of management (starting from the bottom and moving upwards) that their project has validity and pertinence for the organization.

Explicit mention from the S family help support the importance of gaining appropriate project approval. Quote 118 and the following help illustrate this:

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Quote 122. *You need a project charter to be signed by the CEO or by whoever is the senior leader. [They need to] literally sign the charter. I really believe that getting the executive to be accountable is a great strategy because then they're accountable to make the project go. Especially in a massive organization, it's necessary. (E1)*

Quote 123. *You cannot do anything when she [the department manager] is not there. She has to approve everything we do. [...] Once approved, she informs all other managers. (B3)*

In brief, gaining project approval from the appropriate stakeholder is perceived as quintessential to the management of a successful small project in a hospital.

4.6.3. Project Management Resources and Project Success

According to Schwalbe (2013), improved project management techniques continuously emerge within the healthcare system. Undoubtedly, advancements in technology, research, and project execution drive the need for healthcare providers to continuously learn and adapt to novel project findings. To assist the accommodation of these changes, it is beneficial to actively study small project teams. However, the provision of tools and resources to support the management of projects in hospitals does not warrant project success. From the five projects analyzed in this study, only two were perceived successful. According to Attarzadeh and Ow's (2008) project success classifications (project success, project challenged, and project impaired), the classification of the project outcomes in this study could be reviewed: project D would be considered successful, project B and E would be considered challenged, whereas project A and C would be considered impaired. Although all project teams participated in a basic project management training course prior to the deployment of their small project, which supplied them with these basic resources, the achievement of project success is infrequent based on this review. Consequently, a need for small projects to define their own success – as well as share this

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perception with involved stakeholders – while considering the project resources (such as the list of 43 important project management consolidated in this thesis) available to them is recognized.

4.6.4. Presence of a Team Leader and Project Execution

Cross-case analysis also revealed that the presence of a team leader was a significant factor influencing project execution. Three common points regarding leadership were identified: 1) changes in the core team occurred in all cases, 2) a team leader was present in all cases, and 3) almost all cases explicitly specified that it is important to have a team leader. Cross-case analysis data in Table 24 displays relevant information as well as indicates if a change in the team leader occurred throughout the project.

Table 24. *The presence of a team leader, the changes in the core team members and the presence of team leader change for cases A-E.*

Case	Presence of team leader	Start # of core team members	Changes in core team members	End # of core team members	Change in team leader
A	Yes	4	-1 member	3	No
B	Yes	7	-3 members	4	Yes
C	Yes	7	-4 members, +1 member	4	Yes
D	Yes	9	-1 member	8	No
E	Yes	10	-2 members	8	No

There is evidence supporting a lack of core team stability in every small project team. Commonalities between all five cases are identified in table 24 through the departure and addition of core team members. A project's progress only seemed to be affected when changes to the core team involved the team leader. Although a team leader was present in every case, there were notable differences in the clarity of identification of the team leader when grouping the cases according to the presence or absence of change in the team leader. Respectively, it was

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possible to group cases A, D and E together into one family, and cases B and C into another family.

In cases A, D and E, the team leader was very clearly identified by all members of the core project team, and the leaders identified themselves as a leader during the interview. The two following quotes from case D help illustrate this happening:

Quote 124. *I understand that our team leader was X (name of leader). He was the person in charge, and our liaison between our group and higher management. (D1)*

Quote 125. *I was pretty much the leader of the project. [...] It was a project I wanted to implement. We got the team. We got the help and I was leading it. (D2)*

On the contrary, in cases B and C, the team leader was not clearly identified as there was a change of leader during the project. In these two cases, the original team leader consisted of one of the core team members which left the project team due to sickness. This detail made it more difficult to clearly identify a dominant project leader. However, the team's reaction to the departure of their original leader presented itself as an influential factor in the project's functioning.

More specifically, it was interesting to note that case B positively reacted to the departure of their team leader, whereas case C seemed to have negatively reacted to this event. The positive reaction was linked to the fact that a team member in case B decided to take on the role of team leader to assist the project's continuation. In other words, a new leader emerged within the team. This is illustrated by the following quote:

Quote 126. *Our team leader went on sick leave. At first, she was supposed to leave for six weeks, but after that time she did not come back. There was a discussion [in our team] if we should just let it [the project] fall because she [the original project leader] is not there. Then I said: "No, it's not*

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because she's not there that we should stop everything. We must take the initiative!" *That's what I did, I said that somebody has to take charge of the project, so I did.* (B3)

In the case of the negative reaction, no team member took the initiative to become the new project leader, thus leaving the project without a leader. Interestingly, this lack of emerging leadership seemed to be linked to a lack of project understanding. For example, C1 stated:

Quote 127. *We did not know in what direction we were going [in our project], so we were missing a little leadership. Nobody wanted to take the leader role precisely for that reason, because they did not know what the project consisted of.* (C1)

The time period over which there was no leader in case C resulted in temporary cessation of project activities. This interruption was perceived as a negative reaction as it directly impacts the project timeline and causes project delay. Project progression was only set in motion once the original leader returned. This is supported by participant C3:

Quote 128. *[The project] was going nowhere and team members said they needed direction. I told them: "Go ahead, take the lead!", but we simply lost players because no one was leading. [...] So I had to put myself back as a leader and a manager in this project to get things moving. I took the lead and I rolled my eyes.* (C3)

These project team reactions support the need of having leaders in small projects. The leader in a small project does not necessarily need to be the same individual throughout the whole project, but presence of on-going leadership seems to contribute positively to small project management in hospitals. This claim is further supported by explicit statements from almost all participating small projects in this study:

Quote 129. *I think that every project needs a leader. If there is no leader, there can be a lot of good ideas, there can be a lot of enthusiasm, but then the project can go in every direction, and it will end up going nowhere.* (B1)

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Quote 130. *It takes someone to direct [the project] in the background. Be a little conductor. If there is no conductor, sometimes you work well as a team, you can play the same music, but the conductor is there to make sure everything goes smoothly. (C1)*

Quote 131. *I also learned that it [a small project] does need a dedicated leader because when that person works hard, everyone else is much more likely to put in their weight. If your leader is someone who does not take themselves seriously, then everyone else just takes it easy. (D8)*

In summary, it is suggested that small project teams in healthcare be comprised of individuals possessing a leadership capacity. Presence of this characteristic could help ensure continuous project activity and a sense of direction in small project execution.

4.6.5. Cross-Case Analysis Overview

A total of 73 unique project management practices were identified in this study and were presented in a master table (table 20). From these practices, 43 from nine of PMBOK's knowledge areas (all areas except cost management) were deemed important by the majority of cases and could serve as basic project management practice guidelines for future small projects conducted in hospitals. Defining the project mandate and mission, creating the project timeline, holding synchronous communication, and communicating with external stakeholders were recognized as the most important project management practices.

Overall, value in applying project management practices was perceived by all cases. Emphasis was placed on the importance of clearly defining a project, its features, expectations, and impacts. Cross-case analysis also revealed the main shortcomings in the management of small projects. These were related to insufficient time dedicated to managing small projects which in turn affected project control, prioritization and constancy. A lack of project approval from the accurate stakeholder(s) was presumed to be the most significant limitation when

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comparing the successful and unsuccessful projects in this study. In turn, this lack of approval was explained to decrease a team's decisional authority and stakeholder communication, thus undermining project credibility, accountability, resources, and overall efficiency. Lastly, the presence of on-going leadership in small projects was demonstrated to be a significant factor influencing project execution. The lack of leadership capacity presence in a small project team could potentially cease project progress and negatively affect its outcome.

Chapter 5. Discussion and Conclusion

The following chapter discusses the results of the data analyses performed and presents the conclusions for the research. The limitations present in this study are also discussed and areas for future research which could help better understand the dynamics and management of small projects in hospital settings are suggested. This chapter concludes the thesis by summarizing the findings, their implications, and the contributions made to scholarly knowledge and practice.

5.1. Discussion

The set of projects analyzed provide a comprehensive outlook on small project management in hospital settings. The findings demonstrate the importance of applying project management practices in these contexts, and emphasize the need to have a well-defined project, gain the appropriate approvals, and possess leadership capacity in the small project team to help ensure success.

Gaining Project Approval

Referring back to the Chiocchio, Rabbat & Lebel's (2015) definition of small projects used in this study, it is critical to note that small projects follow a bottom-up approach, in contrast to the top-down executive decision model, where project orders need to be implemented as higher authority sees fit. Small projects must obtain approbation from their superiors, and any deviation from the adequate pecking order impacts the initial project's goals (Gbedemah, S. & Morgan, 2010; Brailsford, Bolt, Connell, Klein, & Patel, 2009). This would not be so problematic if it was not for the ambiguity surrounding the chain of command. Indeed, the recurring main limitation seen in these projects has been lack of appropriate approval (Hartzler, McCarty, Rasmussen, & al., 2013; Auvinen, Kohtamäki, & Ilvesmäki, 2012; Hällgren, & Lindahl, 2017). When a small project initiator sets out to pursue a specific objective, he/she must

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get consent from a person or group which can relay the information to the right people. They must be willing to serve as mediators and be accountable for correct transfer of information/resources (Jacobsson, 2011).

However, hospital environments are chaotic and house a variety of different competing hierarchies (Oliver, 2006). Thus, if leaders of small projects get the go-ahead from a party which does not fulfill the aforementioned roles, then the project can take on a completely different dynamic. Since hospitals involve multiple stakeholders, each with their own set of characteristic goals, it is also difficult to determine whether the project can be qualified as successful (Cooke-Davies, 2002; Schwalbe, 2007; PMI, 2013a; Serrador & Turner, 2015). As discussed earlier, success can take on different connotations for the different members involved, adding an extra barrier in determining whether a project can be qualified as successful or not.

Nature of the Project Team

Furthermore, the shortcomings identified in this study, such as the lack of gaining proper project approval could be linked with to the nature of a small project team. These teams rarely have a dedicated project manager which undoubtedly affects the leadership and liaison aspects of management (Jacobsson, 2011). In fact, the project manager's role broadly consists of developing and implementing a project vision which guides a team of people towards desired outcomes (Wright, 1997; Anantatmula, 2015). This leadership role assigns authority to the project manager, enabling him/her to make decisions. Although this is the most traditional and commonly applied management approach in project contexts, the appointment of a project manager can instigate several risks (De Meyer, Loch, & Pich, 2002; Marzagão & Carvalho, 2016). Firstly, poor project results can stem from responsibility avoidance by other team

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members. They may avoid handling tasks or taking accountability for quality outcomes because they are not directly in charge of delivering success (Clements, Dault, & Priest, 2007). This is also caused through insufficient empowerment; when project managers fail to involve team members in the vision-building process, motivation can be lost, causing mediocre project outcomes. Secondly, the appointment of a project manager can create hierarchy which in a small team can cause time waste due to excessive formalization of processes (Zika-Viktorsson, Sundström, & Engwall, 2006). This is unnecessary as it causes longer streams of communication and stretched decision-making. Thirdly, should the project manager leave or cause problems, project continuity would be affected. Hence, it is risky to appoint a leader because replacing such individual by succeeding power to another member would become time consuming and challenging.

Contrastingly, instead of appointing a project manager, teams can incorporate shared leadership practices (Al-Sawai, 2013). This approach, characterized by equality among project members, requires decisions to be made together as a group, thus implicating all individuals in the management process. Since no leader is appointed, different roles are distributed and rotated with time (Mathieu, Tannenbaum, Kukenberger, Donsbach, & Alliger, 2015). Through changing roles, team members are able to understand the full spectrum of a project by experiencing its different facets (Allison, Misra & Perry, 2014). Though it empowers members and motivates them – also through eliminating meaningless roles – some shortfalls can be perceived making this approach unfavourable. In fact, a lack of individual accountability is again a risk since everyone is equally responsible for results (Cleary, Molyneaux & Gilson, 2013). Though responsibilities are distributed, no one in particular will be appointed to respond for project failure or success, making it less stressed upon. Moreover, shared leadership can be the source of

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power struggles when leaders emerge naturally. It can also cause insufficient task specialization; everyone becomes a generalist in the project resulting in shortcomings of expertise (MacNaughton, Chreim, & Bourgeault, 2013; Chiocchio, 2015). Most importantly, one of the greatest challenges of shared leadership is its difficulty of being implemented when basic managerial practices are not in place (Allison, Misra & Perry, 2014). Immature small project teams in hospitals may have difficulty naturally adapting the shared leadership approach when they have not yet developed essential basic self-government practices which are pre-required to adapting shared leadership.

Overall, the contrasts between single and shared leadership are of significance in the hospital context of small projects; they illustrate variances in group dynamics and how they affect outcomes. Though perhaps a project manager is not crucial *per se*, Jacobsson (2011) argues that it is important to have a project liaison: one individual in charge of involving stakeholders or of managing risk for example. Additionally, team members require autonomy to build confidence in their individual role which is hindered when roles are switched or shared (MacNaughton, Chreim, & Bourgeault, 2013). Since small projects are already short in nature, teams do not have sufficient time to engage in the team socialization process to discover each member's weaknesses and strengths. Thus, the shared leadership approach can cause struggles. Although most small project teams in this study had no project manager in place, such individual can improve results and increase success by altering team guidance and dynamics, therefore contributing to project success (Al-Sawai, 2013; Anantatmula, 2015).

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5.2. Research Limitations and Future Research

While this research allowed to gain further insight about project management practices and depicted a clearer picture of the realities of small projects within the health field, several limitations have been identified.

The most obvious limitation of this research pertains to the small number of cases analyzed. Due to the novelty of the research, few projects were examined (only five cases), thus diminishing the potential generalizability of the findings. Moreover, although various elements of qualitative research were used, the robustness of the findings could have been improved by incorporating other data collection tools such as anonymous surveys (to decrease bias) or researcher observation (to gain more objectivity) during group encounters.

Secondly, the time of occurrence of interviews with respect to the evolution of the project was inconsistent. The participants interviewed were at different stages of completion of their corresponding projects and several had already finished their involvement in the project months ago. These interviewees often forgot salient details and some had personal opinions influenced by the outcome of their projects. Therefore, future research should ensure that data collection occurs at similar phases of the project, to control for unwanted personal bias of the participants.

Thirdly, this research did not consider provincial discrepancies, differences in hospital philosophies/locations and budgets implicated. In other words, socioeconomic, political, and institutional factors were omitted from my analysis. Data was collected from two different geographical locations, yet we do not know if or how macro-level factors influenced small project management practices. Future research should investigate the importance and relevance of these variables and their potential influence on the dynamics of small projects in healthcare.

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Finally, a recurring struggle was the difficulty of identifying the person(s) accountable for the success of the project. Group dynamics, team member experience, hierarchy, and quality of relationships within the groups were not analyzed, but these could have been pivotal in explaining the outcomes observed. Organizational behaviour could serve as an important theoretical framework to better understand the interplay between group dynamics and success of the projects. Other fields such as psychology and sociology could also prove useful in gaining more knowledge. Future research should consider interdisciplinary approaches and tackling the issues discussed.

5.3. Conclusion

This study investigated the common and successful project management practices used by healthcare providers during the management of small projects in two different Canadian hospital settings. Over the summer of 2016, 23 healthcare professionals from five small projects which met Chiocchio, Rabbat & Lebel's (2015) small project definition commented on their project's management practices and success during a semi-structured interview. Within-case and cross-case inferential processes revealed a list of 43 important project management practices which could serve as a guideline for future small projects. Further analysis of the data demonstrated constructive value in employing project management principles while emphasizing the need to clearly define the small project's purpose, expectations and impacts as well as scheduling sufficient time to manage the project. Gaining project approval from the appropriate stakeholder(s) was identified as the most significant factor when comparing the successful and unsuccessful projects in this study, and is therefore a critical component to the successful evolution of these projects. Finally, presence of a leader in small project teams showed to positively influence project execution. It is suggested that small project teams in healthcare be

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comprised of individuals possessing a leadership capacity. The following recommendations outline the conclusions of this thesis:

- 1 This study recommends future small healthcare projects to **use Chiocchio, Rabbat and Lebel's (2015) small project definition** to better characterize and understand their projects.
- 2 As healthcare professionals working on small projects in hospital settings perceive value in the discipline of project management, **fundamental elements from this discipline should be applied and further studied** in healthcare contexts.
- 3 This study contributes **a list of 43 project management practices** deemed important in the management of a small project in a hospital setting and could **serve as a guideline for future small projects** conducted in similar settings.
- 4 It is recommended that small project teams acknowledge the need to **regularly dedicate time to the management** of their small projects.
- 5 Small project teams should **focus on well-defining their project** by ensuring that their scope and objectives are clearly understood by all team members.
- 6 Small project teams should **perform a proper stakeholder analysis and gain the appropriate project approvals** prior to the execution of their project.
- 7 It is recommended that small project teams be comprised of **stable core members and possess a leadership capacity** as a means to ensure consistency in project execution.

Collective successful completion of small projects has the potential to significantly impact and improve healthcare. Thus, further studies can help understand the dynamics and execution of such projects to contribute tailored recommendations to support to their success.

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5.3.1. Implication of findings

This study helped clarify which management practices need to be improved upon and adhered to in small projects in hospital settings. Firstly, it is recommended that future small projects review the small project definition used in this study to help them understand the nature of their endeavor. Secondly, healthcare professionals who initiated these small projects overall agreed that principles of project management and project management practices added positive value to the execution of their project. This perception is evidenced by the compiled list of 43 project management practices deemed important by the individuals in this study. Therefore, this list is proposed as a guideline for future projects of this type. Thirdly, small project management outcome is highly dependent on execution and external influencing factors. Insufficient time dedicated to the management of small projects governed among the shortcomings identified. Future small projects should especially focus on defining the project and ensuring that the scope and objectives are clearly understood. They should also perform a thorough stakeholder analysis to gain the right approvals prior to executing their project. Fourthly, it is recommended that small project teams review the characteristics of the individuals in their team prior to project deployment to ensure the presence of leadership capacity. Lastly, more research on small project management and their team dynamics is needed to better understand the interplay between these factors and project success.

5.3.2. Contribution to Knowledge

The scientific goal of this proposed study was to acquire new knowledge on small projects conducted within hospital settings in order to propose basic project management practice guidelines. Such goal was achieved through identifying the main causes of problems in small projects and by defining a series of 43 important project management practices for small projects

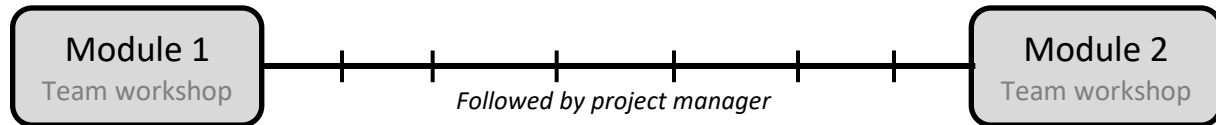
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in hospital settings. Furthermore, the findings suggested that the discipline of project management is relevant to the field of healthcare as value in project management principles was perceived by healthcare staff. This research provided a new reflection on aspects of hospital management and contributed to better understanding the dynamics of small project management within the healthcare framework.

Appendix A – Project Management Training Course Outline

Project management training in the hospital world: Towards a transprofessional change (Chiocchio & Richer, 2014)

Structure of the presentation:



Module 1: Fundamentals of project management and collaborative roles in project teams

Exercise 1 - Acquisition of a common vision

Module 2: Fundamentals of Risk Planning and Management

Exercise 2 - Risk management plan

Course objectives (related to module 1 - project management):

1. Making decisions based on the triple constraint of a project
2. Plan the different phases of a project
3. Identify relevant milestones for a project
4. Identify the risks inherent in a project
5. Plan to avoid, control or reduce the risks of a project
6. Analyze how to integrate changes to a project plan
7. Establish performance targets to monitor the success of a project

Course objectives (related to module 2 - interprofessional work in a project context):

1. Active creativity contribution is needed for an innovative project
2. Active practical problem solving contribution is necessary for an innovative project
3. Play important informal role in a project (i.e., make me (project manager) the devil's advocate)
4. Play important formal role in a project by using my expertise and your personal experiences, or those of others, that would be relevant to the organization's operations
5. Play important formal role in managing a project using leadership, coordination or liaison skills
6. Interact with others in a project to maximize success
7. Facilitate the full participation of others in a project

Exercise 1 (Chiocchio et al., 2012, p. 27):

As a team, can you describe your project in one or two sentences? For example, fill out the following: *The problem is* (state problem) . *The* (title) *project aims to* (state project goal) *by the end of* (month, year) *to achieve* (state project mission) .

Exercise 2 (Chiocchio et al., 2012, p. 139-141):

1. *Individually* - List all the risks (the events and situations) you think could negatively affect your project. To help you, think about what could reduce the quality of your finished product, make you fall behind or require you to invest more time than you planned.

2. *As a team* - Make a common list of the risks you found individually. Do not eliminate any risk at this stage. Just make sure that there is no duplication and that all participants understand each of the risks mentioned.

4. *As a team* – Find a consensus of the "official" ratings your team will assign to each risk. Avoid simply averaging individual ratings. Discuss the reasons that led you to assign your odds. Listen to the views of others and adjust as necessary. Once the probability and impact of the team's assigned ratings have been determined, multiply the two ratings to obtain the risk index.

3. *Individually* - Evaluate each risk based on the likelihood of the risk occurring (low, medium or high) and the impact on the project if the risk occurs (small, medium or large).

5. *As a team* - Order the risks in descending order of index. Determine whether each risk should be Prevented, Controlled or Accepted.

Appendix B – Consent Form

Formulaire de consentement Membre du projet

Titre du projet: Gestion de projet et collaboration trans-professionnelle : leur incidence lors de transformations organisationnelles

Noms des chercheurs : François Chiocchio [PhD-PMP-CHRP] | École de gestion Telfer | francois.chiocchio@telfer.uottawa.ca
Monika Jasinska | École de gestion Telfer | miasi071@uottawa.ca

Invitation à participer : Je suis invité(e) à participer à la recherche nommée ci-haut et menée par Dr Chiocchio.

But de l'étude: Le but de l'étude est de mieux comprendre l'effet d'une formation conjointe « gestion de projet » et « collaboration trans-professionnelle » sur le succès des projets de changement.

Participation: Ma participation consistera à participer à une entrevue individuelle d'une durée d'environ 60 minutes concernant votre implication dans la gestion du projet.

Risques: Je comprends que ma participation à cette recherche nécessite que j'y consacre du temps en plus du travail habituel que j'ai à faire. J'ai reçu l'assurance du chercheur ou des membres de son équipe que tout est fait en vue de minimiser ce risque. Par exemple, des périodes de temps seront allouées durant le travail pour ma participation aux activités nécessaires à ce projet de recherche. Ma confidentialité sera préservée dans la mesure où la loi et les règlements pertinents le permettent.

Consent Form Project member

Project title: Project management and cross- professional collaboration : their impact on organizational transformation

Names of researchers: François Chiocchio [PhD-PMP-CHRP] | Telfer School of Management | francois.chiocchio@telfer.uottawa.ca
Monika Jasinska | École de gestion Telfer | miasi071@uottawa.ca

Invitation to Participate: I am invited to take part in a study which title appears above led by Dr Chiocchio.

Purpose of the study: The aim of the study is to better understand the effect of a joint training program on "project management" and on "trans-professional collaboration" on the success of change initiatives.

Participation: My participation will consist of participating in an individual interview lasting about 60 minutes concerning your involvement in the management of the project.

Risks: I understand that my participation in this research requires that I spend time on it in addition to the usual work I do. I have received assurances from the researcher or team members that everything is done to minimize this risk. For example, periods of time during work hours will be allocated for activities necessary to this research project. My confidentiality will be protected to the extent permitted by applicable laws and regulations.

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Bienfaits: Ma participation à cette recherche aide à mieux comprendre comment les équipes peuvent mieux collaborer et mieux gérer les projets et ce, dans le but d'en maximiser le succès.

Confidentialité et anonymat: Je comprends que les réponses que je donnerai seront recueillies et analysées de façon confidentielle. Un numéro de code me sera attribué. Les informations recueillies seront donc codées et seuls François Chiocchio et ses collègues formés auront accès à la liste des noms et des numéros de codes. Le traitement des informations est effectué de manière entièrement indépendante de *votre lieu de travail*. Aucune donnée nominale ne sera transmise à au Centre ou à ses dirigeants. Les données saisies sur format papier seront conservées sous clé. Les données électroniques souscrivent au protocole d'encryptage Secure Socket Layer 3 (SSL3) et ne sont accessibles que par mot de passe. Les entrevues seront enregistrées et transcrites verbatim par du personnel qui auront signé une entente de confidentialité. Les verbatim seront dénominalisés. Toutes les précautions seront prises pour préserver mon anonymat. Seules les moyennes générales sans possibilités de m'identifier personnellement seront rendues publiques dans des rapports ou des articles scientifiques. Je comprends que la seule utilisation valide des informations fournies par les questionnaires consiste à faciliter la collaboration dans les équipes de projet.

Conservation des données: Les enregistrements et les verbatim des entrevues seront conservés sur un ordinateur dont l'accès sera autorisé par l'utilisation d'un mot de passe détenu exclusivement par l'équipe de recherche. De plus, tous les données recueillies sur format papier ou sur support électronique (incluant les verbatim) seront conservées de façon sécuritaire sous clé ou par mot de passe pendant 7 ans. Après cette période, les données seront détruites par déchiqueteur ou effacement électronique permanent. Seules les données de groupes ne permettant pas de m'identifier pourront être conservées après cette période et ce pour une durée maximale additionnelle de 3 années.

Benefits: My participation in this research will result in a better understanding of how teams can better collaborate and better manage projects in order to maximize success.

Confidentiality and anonymity: I understand that the answers I give will be collected and analyzed confidentially. A numeric code will be assigned to me. The information collected will be coded and therefore only François Chiocchio and his trained colleagues will have access to the names and code numbers. The processing of information is done so entirely independent of *your workplace*. No nominal data will be sent to the Centre or its management. The data captured on paper will be kept under lock and key. Electronic data will conform data encryption protocol Secure Socket Layer 3 (SSL3) and are accessible only by password.

Interviews will be recorded and transcribed verbatim by staff who signed a confidentiality agreement. The verbatim will be made innominate. Every precaution will be taken to preserve my anonymity. Only general averages without possibility to identify me will be made public in reports or scientific articles. I understand that the only valid use of the information provided by the questionnaires is to facilitate collaboration in project teams.

Data conservation: The recordings and verbatim of the interviews will be kept on a computer whose access will be authorized by the use of a password that exclusively the members of the research team will know. Furthermore, all data collected on paper or in electronic format (including the verbatim) will be kept safely under lock and key will be password-protected for 7 years. After this period, the data will be destroyed by shredding or using permanent electronic data deletion technology. Only group data that do not allow to for personal identification will be kept after this period and for an additional maximum period of three years.

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Participation volontaire: Ma participation à cette recherche demeure volontaire, je peux refuser de participer et je peux me retirer à tout moment, sans préjudice de la part de l'équipe de et sans devoir justifier ma décision. Si je choisis de me retirer de la recherche, je pourrai accepter ou refuser que les données qui auront déjà été recueillies soient conservées pour fins d'analyse.

Pour tout renseignement additionnel concernant cette étude, je peux communiquer avec

- François Chiocchio par courriel (francois.chiocchio@telfer.uottawa.ca) ou par téléphone au (613) 562-5800 poste 8840.

Pour tout renseignement sur les aspects éthiques de cette recherche, je peux m'adresser au

- Responsable de l'éthique en recherche, Université d'Ottawa, Pavillon Tabaret, 550, rue Cumberland, pièce 154, (613) 562-5387 ou ethics@uottawa.ca.
- *Votre comité d'éthique de recherche*

Veuillez imprimer cette feuille pour vos dossiers.

Acceptation: J'ai lu et examiné le document d'information et de consentement et l'étude m'a été expliquée. Mes questions ont été répondues à ma satisfaction. On m'a donné le temps de réfléchir pour savoir si je veux prendre part à cette étude. En remplissant et en soumettant le questionnaire je consens à participer à cette recherche menée par François Chiocchio et ses agents de recherche. De plus, nous aimerions vous contacter dans le futur pour voir si vous seriez intéressé à participer à d'autres études. S'il vous plaît indiquer ci-dessous si vous êtes prêt à être contacté au sujet des futures études de recherche.

☐ **Oui, je suis d'accord pour être contacté au sujet des études futures.**

☐ **Non, je ne veux pas être contacté au sujet d'études futures.**

Signature du participant : _____

Date : _____

Signature du chercheur : _____

Date : _____

Voluntary Participation: My participation in this research is voluntary, I can refuse to participate and I may withdraw at any time without prejudice on the part of the research team and without having to justify my decision. If I choose to withdraw from the research, I can accept or refuse to have data already collected about me be retained for analysis.

For additional information regarding this study, I can contact

- François Chiocchio by email (francois.chiocchio@telfer.uottawa.ca) or by phone at (613) 562-5800 ext 8840.

For information on the ethical aspects of this research, I can contact the

- Head of Research Ethics, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, (613) 562-5387 or ethics@uottawa.ca.
- *Your Ethics Research Committee*

Please print this information sheet for your files.

Acceptance: I have read and reviewed the Information and Consent Document and the study was explained to me. My questions were answered to my satisfaction. I was given time to think about whether I want to take part in this study. By filling up and submitting the questionnaire I consent to participate in this research by François Chiocchio and his research staff. Additionally, we would like to contact you in the future to see if you would be interested in participating in other research studies. Please indicate below if you are willing to be contacted about any future research studies.

☐ **Yes, I agree to be contacted about future research studies.**

☐ **No, I do not want to be contacted about future research studies.**

Participant signature: _____

Date: _____

Researcher signature: _____

Date: _____

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