Projectbase 4.0 – Project plan

Project plan

Project name	Harmonization of IV Practices
Client / Sponsor	Maksim Miterev
Project manager	Morvarid Sadat Binesh Tarigh, Lars Boaz Compagne, Martin Eriksson, Hazim Hazim, Joseph Henry Newman

0. Executive summary

The contents of this project plan provide a framework for work on the Harmonization of IV Practices Project.

Details of the project's background, purpose and goals should give an idea of context and aims (Section 1). Analysis can then be found as follows:

-Detailed breakdowns of the project requirements (S.3) show what has been requested and accepted by the project group, the full scope of the project shown in the WBS attachment -which provides an overview of all activities which shall be performed (S.2) and later in the report these are used to create a well-planned project schedule (S.10) (key milestones can also be found(S.8) to give a general idea of major tasks/events in the project's timeline). The Implementation of project work and how results are to be handed over is found in section 4.

-Contextual analysis is provided in section 5 in the form of S.W.O.T. evaluation, as well as, a stakeholder mapping & interest analysis.

-Clarity for working practices is provided (S.6,7), where the project's organizational structure, roles and responsibilities are explained. Policies for how communication and documentation should be done are laid out here too.

-Resource management is provided in sections 9 & 11. Initially going through all project activities to assess the time and budgetary resources required, then later looking at an overview of all project costs and categorizing these into internal, external and anything else.

-The project's risk management is provided in section 12 where all substantial risks are Identified, evaluated and precautionary measures/ responses are documented.

1. Background, purpose and goal

Background

The Canadian government has approved a project for building a modern academic healthcare facility for the Quebec province named McGill University Health Center (MUHC). As a part of this project, two existing hospitals: Royal Victoria and Montreal General, are to be merged and become part of the Glen site at MUHC. The new Glen site is scheduled to open in 2015.

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As a part of this move, patients and equipment are to be transferred to the new site. In order to understand other major risks of such a project, the executives visited hospitals in Europe and the US which had gone through similar move projects. One of the main problems identified was surprisingly not related to the physical move. It was observed that a major portion of the staff and managers were not satisfied after the move as they were not provided with enough time or help in the transformation process. This resulted in obstruction in their operations and rising levels of stress and discomfort among the teams.

MUHC executives have realized that the success of such a project would depend highly on the people involved. For this purpose, an office of the Transition Support Office (TSO) has been established with the responsibilities to review all processes, consolidate the merged teams and harmonize all clinical practices in order to find efficient and common ways. The TSO has been staffed with project management specialists working in close collaboration with other clinical staff.

The TSO has been given the task to provide support for the selection, implementation and use of new IV pumps. Intravenous (IV) pumps are used to administer intravenous fluids and medications to patients and are an essential everyday tool for nurses.

Following are the findings regarding the problems with current IV pumps:

- Various different types of pumps and systems are being used currently leading to inconsistent practices. It is also hard to ensure appropriate levels of training due to the varieties.
- It is soon time to renew the contracts for IV pumps, which implies urgency.
- The number of IV pumps available is not enough to cater for the needs. This results in stress among the staff and a culture of hoarding pumps.
- No system exists for pump management, tracking, restocking, maintenance and cleaning. This has a negative impact on the quality of care for the patients and increases the chance of infections and risks.

The process of procuring new IV pumps should be done in close collaboration with the clinical staff to ensure their needs are met. It is an interdepartmental and inter-professional responsibility. MCH and Lachine should also be involved in the decision process but they will not acquire the pumps soon as their contracts were recently renewed.

The IV pumps project should be completed before the move to Glen so that operations can run smoothly after the move.

Purpose

The purpose of the project is to optimize and harmonize the practice linked to the administration of the IV pumps.

Expected benefits from this project are:

- Improved quality and security of patient care linked to the administration of IV medications.
- Optimized and harmonized practices, contributing to decreasing medication errors.
- Increased ease of providing appropriate training to pump users.
- Accessibility of functional and clean IV pumps when needed.
- Optimal use of human resources.
- Increased caregiver satisfaction.
- Effective inter-professional and inter-departmental collaboration.
- Efficient management system for pumps, contributing to decrease in expenditure related to continual crisis management because of pump shortage.

Goal

"The goal is to have a newly implemented fleet of the iv pumps up and running before the opening of Glen site in 2015"

- **Specific:** The project is about implementing a new fleet of iv pumps.
- **Measurable:** You can see when the new fleet of iv pumps is up and running.
- **Achievable:** The project applies to select buy and implement a new fleet of iv pumps.
- **Realistic:** It is plausible with the given resources and time frame.
- **Time-based:** Before the 2015 opening of Glen site.

2. Project Scope

Scope

(See Appendix A: WBS)

The scope of the project consists of evaluating and selecting IV pumps for MUHC sites. It includes their implementation and harmonization of processes across the sites where the IV pump contracts are about to run out. Pumps used for pain management will not be considered as part of this project.

The scope can be divided into the following main packages:

- Research
    - The research phase is essential to understand the overall requirements and expectations of the IV pumps project. This package includes all preparatory work for the implementation of pumps and focuses on trying to figure out as many unknowns as possible. The package consists of both, research related to as well as research related to the product. During the research process, the project manager should find all core, primary and secondary stakeholders, and get them involved early in the process. Research activities for analyzing different types of pumps, their required quantity.

- Purchase of pumps

    - Activities related to the budget, such as creating the budget and getting it approved by upper management and stakeholders should also be performed as part of this package. Moreover it contains tender announcements and signing the contract of the acquired pumps.

- Implementation
    - The implementation work package focuses on what to be done when IV pumps have been acquired. It covers the course of events from installing pumps to evaluation post-implementation. When the IV pumps have been bought the project manager and stakeholder needs to make a decision on how the pumps should be used and make sure the right infrastructure needed is available depending on the decision. The deployment of the pumps then starts with a pilot project followed by a full-scale deployment with around the clock monitoring.It also contains Harmonization & optimization of process as a subpackage. This package consists of activities revolving around the new processes and practices that need to be implemented in order to ensure uniform practices throughout the hospital facilities. The creation of the processes regarding usage of IV pumps as well as their maintenance and management should be done as part of this package. As an essential part of process optimization, training activities regarding the use and management of new IV pumps, as well as adherence to selected practices should be conducted.

- Evaluate implementation
    - When the new system is up and running the evaluation of the implementations begins, a decision making structure is created to handle pinpointed issues related to practices with IV pumps.

3. Requirement specification

Product specification

1. Acquire state of the art technology
2. Sites involved: RVH, MGH, CHEST, Neuro, MCH and Lachine
3. New IV pumps for all MUHC sites except MCH and Lachine
4. No PCA pumps (pumps for pain)
5. Ensure one pump per patient
6. Drug library available with names of all medications and dosages. (if pumps used as smart)
7. Wifi (if pumps used as smart)
8. A pump management system (for central management, tracking)
9. A system for storage, maintenance and cleaning

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10. Processes made to ensure an appropriate level of training for use of the new pumps
11. There should be a comprehensive system of pump management

Project specification

1. Start project in January 2012.
2. Complete research & need assessment before the end of July 2012.
3. Budget for the first year (2012-2013) should not exceed CAD$3 million.
4. Total budget including purchase of equipment, professional support to implement, educate, and deployment should not exceed CAD$9 million
5. In terms of hours for the TSO, the project should be completed in 5600 hours
6. Project Manager should be available for at least 2.5 days per week for 2.5 years.
7. New changes should not be made after September 2012.
8. Call for tender for IV pumps should be sent before December 2012.
9. Full-scale implementation should be done before February 2014.
10. Project is expected to be completed by July 2014.
11. Project should be ready for the Glen opening in 2015.

Prerequisites

The core project team consisted of Kim Director of Nursing (Sponsor), Gilbert Pharmacist-in-Chief (Sponsor), Nicole clinical practice consultant, Maggie project manager and Martha(knowledge broker). As they don't have sufficient knowledge/competence to execute the project they need to collect a lot of expertise elsewhere.

1. Resources needed from other departments
    - Risk and Performance Expert
    - Pharmacist
    - Biomed experts
    - IT/IS
2. Other resources needed
    - Finance experts
    - Quality experts
    - Patient Safety experts
    - Performance
    - Legal experts
    - Logistics
    - Experts in process review and evaluation
    - Knowledge broker
    - Change management expert
    - Clinical practice consultant
    - Evaluation consultant
    - Training instructor (for the new technology)
3. Other projects in the organization, such as OACIS, CPOE, Pharmacy system must be aligned with this one.

4. Involvement from IS/IT in decision-making processes
5. Decisions should be taken as quickly as possible due to the sense of urgency
6. Management should try to build confidence and find ways to motivate the people involved as there is a lack of confidence due to previously failed initiatives.
7. Engagement from stakeholders around strategic decisions
8. Prepare RVH and NEURO to shift from regular intravenous bags to IV Pumps.

4. **Handover and implementation**

The project needs to be delivered before the opening of the MUHC Glen site in 2015. In order to make sure the project is delivered before the opening, it will be divided into different phases or milestones with the goal of completing them in 2014. This will ensure that there is enough buffer to cater for unforeseeable circumstances and events.

After gathering all the needs and requirements and identifying the practices which need to be harmonized, a selection of criteria will be developed, upon which vendors will be chosen for the tender. The call for tender for the IV pumps will then be conducted. The aim is to select a vendor for the IV pumps and sign a contract by the end of 2012. Once the contract has been made with a vendor, work on the implementation plan will start. The implementation plan will be focused on harmonization of IV practices, deployment of the IV pumps and communication, and pump logistics.

The actual implementation of the plan will start off with the deployment of pumps (with or without smart functions, depending on the decisions taken in earlier phases) as a pilot project. The pilot project will be evaluated and tested. The process of harmonizing practices will take place along with the pilot project. Once the pilot project is validated, training activities will start. Full-scale implementation of pumps and implementation of monitoring indicators will also start as soon as the pilot project is completed. The implementation along with the new processes is planned to be completed in the first quarter of 2014.

Once the implementation is done, quality will be reviewed on the basis of the data gathered through monitoring. The new IV pumps will start being used in daily operations and a decision-making structure for IV pumps will be formed. The goal is to replace all IV pumps with new ones by the middle of 2014 and to have new working practices and structures in place.

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5. Situational analysis and stakeholders

SWOT-analysis (See Appendix B: SWOT)	
Strengths	Weaknesses
Opportunities	Threats
Conclusions	

Stakeholder mapping (See also Appendix C- Stakeholder Power / Interest analysis.)	
Core stakeholders	
knowledge broker (Martha).	Infection control
Director of Nursing(Kim), Pharmacist-in-Chief (gilbert)	clinical practice consultant (Nicole)
Logistics	Maggie(Project manager)
Harmonization of IV Practices Steering Committee(executive): Nursing, Pharmacy, Biomed, IT, Finance, Quality, Risk & Performance, Logistics - director-level representatives	Harmonization of IV Practices Work-group (operational) clinicians from all MUHC sites. (giving consultancy to the Steering committee- recommendations etc)
Suzan(Head of TSO- managing project portfolio)- links with senior mgt.	
Primary stakeholder	
Patients	Finances
workgroups (fig 1): Drug library, Education, IV pump implementation, IV pump centralized process.	Nursing Staff
Secondary stakeholders	
The ministry	Transition Support Office (TSO)
Union	

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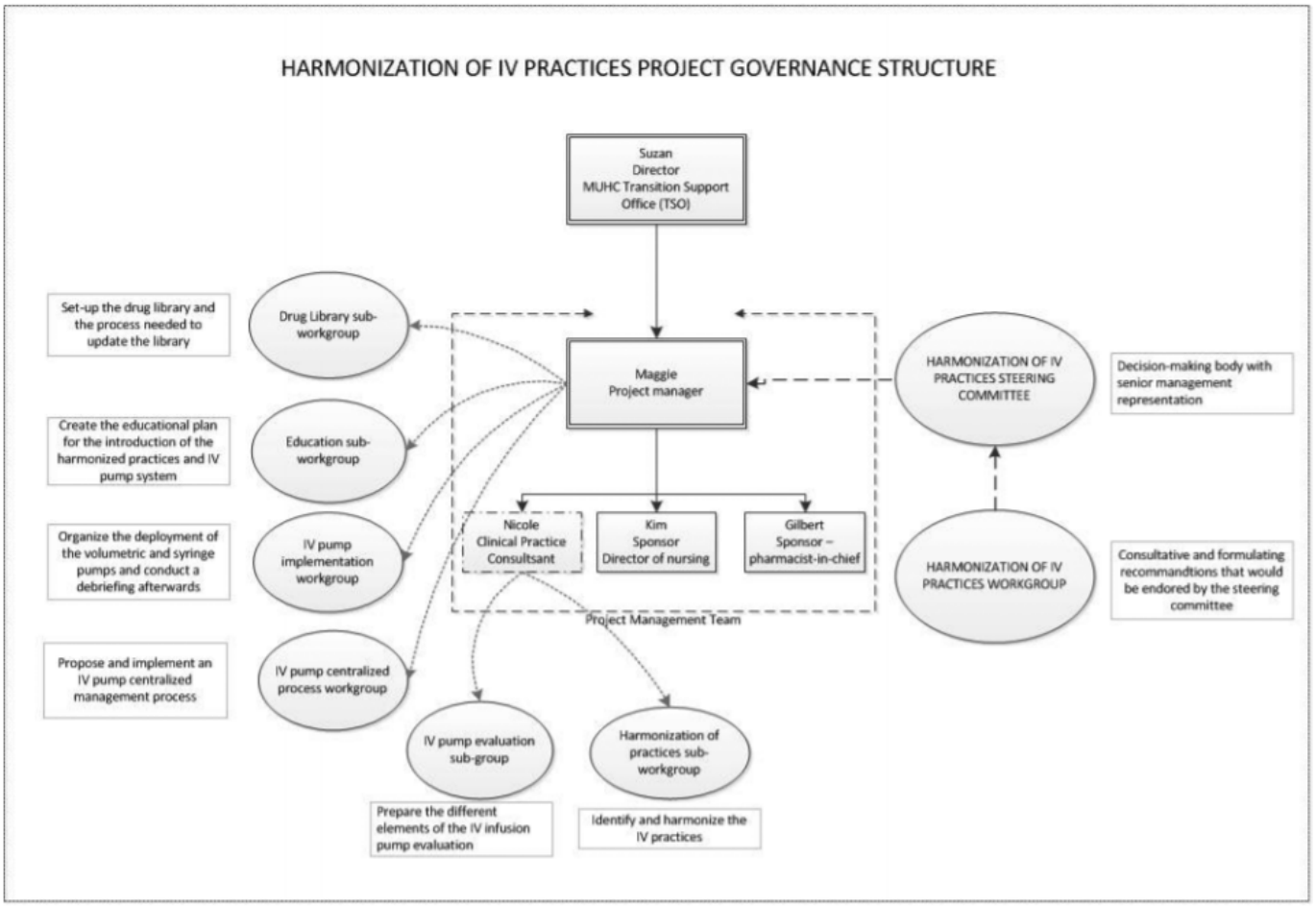
6. Organization and roles

Roles, responsibilities and authorities



Because of the complex nature of the transfer to the new Glen site and all the challenges this brings, for example, the merging of several work units, the Transition Support Office (TSO) was created. This organisation serves as an overseeing task force that makes sure the merge goes smoothly but also harmonizes clinical practices and reviews the change processes going on. This organisation is thus responsible for all practices of the merger including this project.

Suzan is the Director of TSO, which makes her responsible for 26 staff members who all work on different projects including Maggie.

When TSO was asked to provide support for the Intravenous (IV) Pumps Project, a member of TSO (Maggie) was asked to become manager of this project. With this, Maggie is responsible for the harmonization and optimization of practices and the selection and implementation of IV pumps.

The IV Pumps Project has two sponsors, the Director of Nursing (Kim) and the Pharmacist-in-Chief (Gilbert). The project sponsors are the reason for the project. They requested TSO to support them with the harmonization of IV practices. Since the nursing and pharmacist departments are responsible for the IV pumps, the directors of these departments are the project sponsors. They will be the most important stakeholders. In order to make the project succeed, the project sponsors must be highly involved- giving approval to all significant decisions and providing resources. While the project manager implements the policy and decides the steps that need to be taken, the sponsors must agree with these plans but can

also buy into strategies and solutions developed by the project group and manager. In this sense, a high degree of responsibility, influence on decisions and authority lies in many places- in contrast to a simple hierarchical pyramid structure in which some projects are executed.

Since the project manager is not a specialist in the field of IV pumps, a consultant is needed. Nicole is appointed as a clinical practice consultant. Nicole is not an employee of MUHC which makes sure she has an independent role in this project. She advises the project manager with the technical details and knowledge of the topic. This makes her responsible for the real 'end product' in a way that everything works as it should.

A knowledge broker (Martha) is necessary to provide clear communication within the project. This makes her responsible for the transfer of obtained information by for example the consultant to the sponsors. This is absolutely necessary because of the fact that there are so many different roles in the project. This makes it important that relevant information is delivered to the right people and in an effective way- without having to go through a long chain of project hierarchy before reaching recipients.

Since the project requires so much knowledge about different kinds of details and perspectives concerning the obtaining of, and future use of IV pumps, two committees are created to support the project manager. These are the Harmonization of IV Practices Steering Committee and the Harmonization of IV Practices Workgroup. The committees contain a lot of specialists from all the relevant departments within the hospital organization. The committees will be responsible for clinical founded decisions as well as, concerning multiple practical issues tangible to the project's application. This means the process requires a huge body of knowledge- hence such a complex project structure. These groups are under Maggie's responsibility, but also serve to give specialist information to the project for the purpose of making decisions. They also have a degree of influence and authority over the project decisions though not to the same extent as the two sponsors.

Staffing plan

- Suzan - Suzan is the head of the Transition Support Office (TSO). This institution was created by MUHC in order to support all the people involved in the redevelopment project with the transition.
- Maggie - Maggie is part of TSO where she got the role of project manager for the IV pump project.
- Nicole - Nicole is the clinical practice consultant which means that she has an independent role of advising in the project concerning clinical practices.
- Kim - Kim is the director of nursing and therefore a sponsor of the project. The IV pump project was namely requested by the nursing department.
- Gilbert - Gilbert is the pharmacist-in-chief and a sponsor of the project. The IV pump project was also requested by the pharmacist department.
- Martha - Martha is the knowledge broker which means that it is her role to make sure all the information is delivered to the right people.

7. Communication

Reports and documents

All work on the project must be documented to record activities performed and their status(estimated completion %), as well as hours worked and any costs for resources consumed during this work.

Hours must be logged onto the project's official time log to keep track of project costs- it is vital this is done accurately and immediately after every work event since many staff on the project are involved in multiple projects meaning if not tracked well it will become unclear how resources are being used.

At the completion of project activities, a results document must be reported giving details of what has been done, any deviations from the plan or expected results and a conclusive summary of what the activity has achieved. This should also document totals of time and costs consumed for the entire activity.

All project meetings must have minutes taken to document what has been communicated, the input/responses from project members and consultants and any decisions made or suggestions put forward for consideration or further research in the future. These reports shall be filed in the Project Meetings folder for ease of referencing by project staff.

At all project meetings, prior to beginning- persons must be delegated to take meeting minutes (Minutes should be brief but must contain all important information) and chair the meeting ensuring that the meeting flows efficiently and that relevant responses/ discussion is facilitated and that productive decisions or suggestions are made to further progress the project.

On a weekly basis- Maggie(PM) will review these documents and make a weekly report summarising what activities have been performed and a summary of their findings as well as weekly totals for project resources.

Communication plan

Who	Why	What	When	How	Responsible
Suzan (Director TSO)	The project is part of the merge- which Suzan is overseeing	Problems transcending the project and concerning the merge, project status	Weekly	Reports, meetings, emails, phone calls	Project manager
Maggie (PM)	The manager can solve project problems and needs to	Work performed, resources	Daily	Reports, Scrum meetings,	Project members

	know the progress	used, problems		emails, phone calls	
Nicole (Consultant)	She needs to know which information to deliver	The information that is needed for project members to do their tasks	Daily	Meetings, emails, phone calls	Project members/ manager
Kim (Sponsor)	Sponsor- needs to know which goals are already met	Progress made with respect to nursing	Weekly	Reports, Meetings	Project manager
Gilbert (Sponsor)	Sponsor- needs to know which goals are already met	Progress made with respect to pharmacy	Weekly	Reports, Meetings	Project manager
Martha (Knowledge broker)	Needs to pass on the information to other departments	Recent news/information	Daily	Reports, meetings, emails, phone calls	Project members

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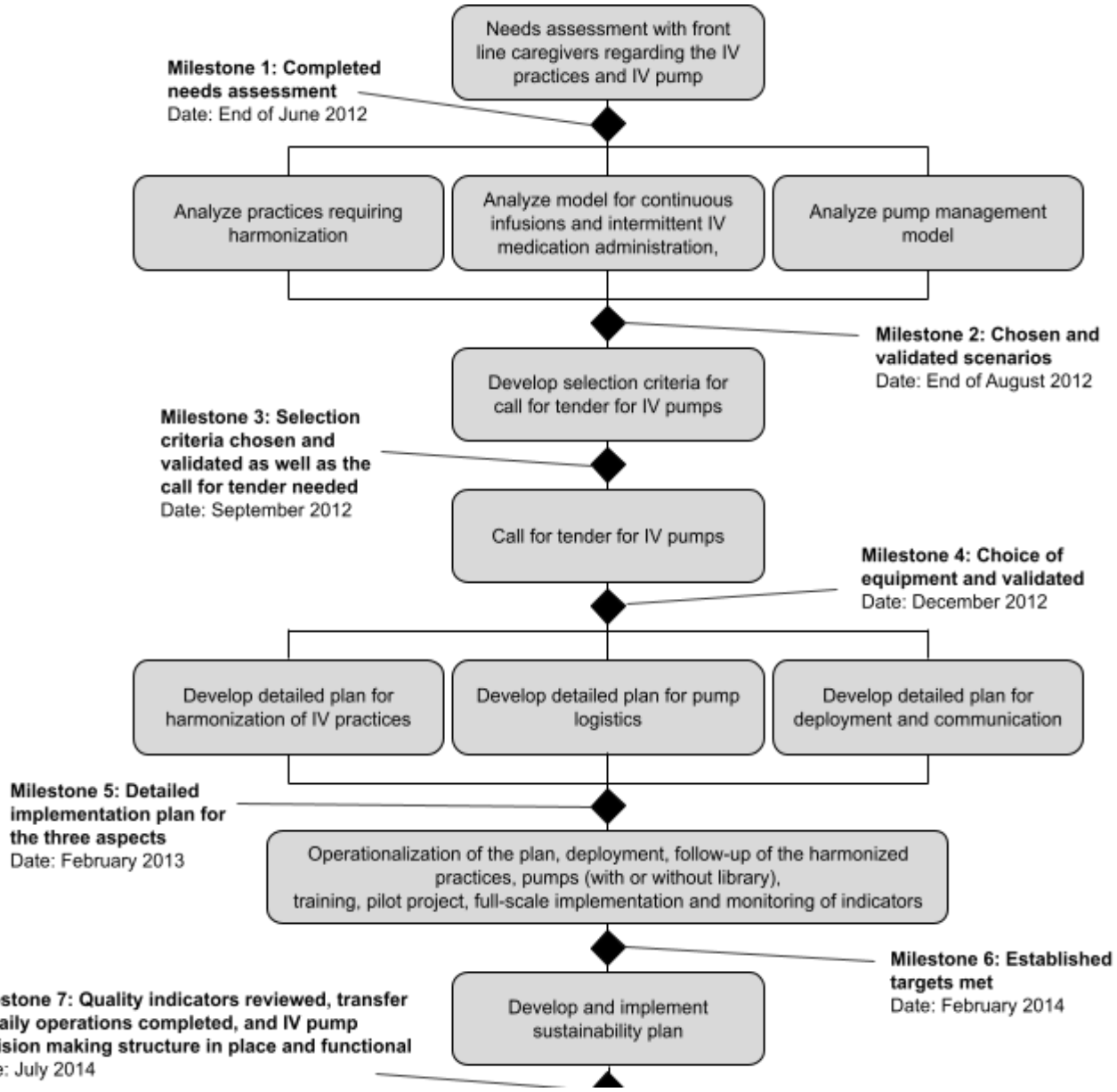
8. **Milestones/sprints**

Milestone plan



Sprints
(Not applicable for this project)

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9. **Activities**

Activity list				
ID	Activity	Resources	Start	Stop
1.1	**Research**			
1.1.1	**Find stakeholders**	Maggie (PM)	12-02-12	12-03-12
1.1.2	**Select Pumps**	Biomed experts, Process expert (IV pump management group), Evaluation consultant, Risk and performance expert Director of Quality, Patient Safety and Performance (Judy) Maggie (PM) Clinicians Director of Purchasing	12-03-12	30-09-12
1.1.2.1	Find the right type of pumps			
1.1.2.2	Find the right number of pumps			
1.1.2.3	Evaluate pumps			
1.1.2.4	Develop selection criteria for call for the tender for IV Pumps			
1.2	**Purchase of Pumps**			
1.2.1	**Call for tender syringe pumps**	Financial Experts, steering committee Legal expert	01-11-12	20-12-12
1.2.1.1	Buy syringe pumps			
1.2.1.2	Sign contract			
1.2.1.3	Make payment			
1.2.2	**Call for tender volumetric pumps**	Financial experts, steering committee Legal Expert	01-11-12	20-12-12
1.2.2.1	Buy pumps			
1.2.2.2	Sign contract			
1.2.2.3	Make payment			
1.2.3	**Ensure finances**	Financial experts Steering committee	1-10-12	30-10-12
1.2.3.1	Create Budget			
1.2.3.2	Get budget approved			

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1.2.3.3	Create a contract for pump acquisition	Legal experts		
1.3	**Implementation of pumps**			
1.3.1	**Install pumps**	IT/IS, Logistics, Director of Quality, Patient Safety and Performance (Judy), Project Manager (Maggie)	01-03-13	30-04-13
1.3.1.1	Deploy syringe pumps			
1.3.1.2	Deploy volumetric pumps			
1.3.2	**Implementation strategy**	IT/IS Clinical practice consultant Drug library workgroup	01-01-13	30-07-14
1.3.2.1	Infrastructure			
1.3.2.1.1	Ensure WiFi availability			
1.3.2.1.2	Build drug library			
1.3.2.2	Sustainable Implementation			
1.3.2.2.1	Start Pilot project			
1.3.2.2.2	Full-scale Implementation and monitoring			
1.3.3	**Harmonization and optimization of processes**	Training instructor (for the new technology), Logistics , Change management consultant, Director of nursing (Kim), Director of Quality, Patient Safety and Performance (Judy), Project Manager (Maggie)	01-05-13	28-02-14
1.3.3.1	Process Creation			
1.3.3.2	Creation of Training system			
1.3.3.3	Conduct Training			
1.3.3.4	Conduct debriefing after deploying pumps			
1.3.3.5	Storage, maintenance and cleaning			
1.4	**Evaluate Implementation**			

1.4.1	**Decision-making structure**	Steering Committee, Change management consultant Project Manager (Maggie)	01-03-14	30-07-14
1.4.2	**Issues related to practice**	Change management consultant, Director of nursing (Kim), Director of Quality, Patient Safety and Performance (Judy)	01-03-14	30-07-14
1.4.3	**Issues related to pumps**	Director of Quality, Patient Safety and Performance (Judy), Logistics	01-03-14	30-07-14
1.4.4	**Follow up budget**	Financial Expert, Steering Committee, Project Manager (Maggie)	01-03-14	30-07-14

10. **Schedule / Bar chart**

Schedule / Bar chart
See Appendix E

11. **Project budget**
(For detailed breakdown- See Appendix D: Project Budget)

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Internal costs	Internal costs include: 1. Project team salary 2. Support to implement 3. Kick-off meetings 4. Pre-study, planning, execution, follow up
External costs	External cost includes: 1. Purchase smart pumps (volumetric infusion pumps) 2. Purchase syringe pump 3. Work toward the integration of different systems and put in place the infrastructure to support the use of the smart pump technology 4. Adopt the syringe pump as the method of intermittent administration of certain IV medications 5. Opt for a tender evaluation with an adjusted price 6. Educate people about the new technology 7. External consultant salary 8. Legal fee
Other costs	1. Wi-fi technology 2. Purchase of equipment such as drug library, necessary maintenance equipment. 3. Unforeseen events 4. New storage for pumps
Summary=	Estimated budget: first-year—CAD$3 million (2012–2013), the remaining funds about CAD$6 million for a total of CAD$9 million (includes purchase of equipment, professional support to implement, educate, and deploy)

12. **Risk analysis and response planning**

Risk	Probability 1 to 5	Impact 1 to 5	Risk value = P * I	Risk Response
Gap between the chosen solutions and the user needs. (Issues such as the new drug	3	4	12	Plan to approach the scenarios to what they exactly need

library not meeting various specific user needs etc.)				
Inability to put in place the needed infrastructure to support the full use of the smart pump safety features	3	3	9	Train expert employees such as nurses to use all the features
Absence of allocated budget post implementation to ensure daily operations	3	4	12	Making the Ministry to increase the budget
Absence of a department willing to take on the management and upkeep of the IV pumps	2	4	8	Enter into a dialogue with relevant parties and aim to solve- training/financial issues may need resolving.
Lack of coordination between related projects such as equipment, harmonization of IV practices	3	3	9	Create TSO to support and handle this issue
Absence of full-time dedicated resources to the project	3	4	12	Hiring more expert employees

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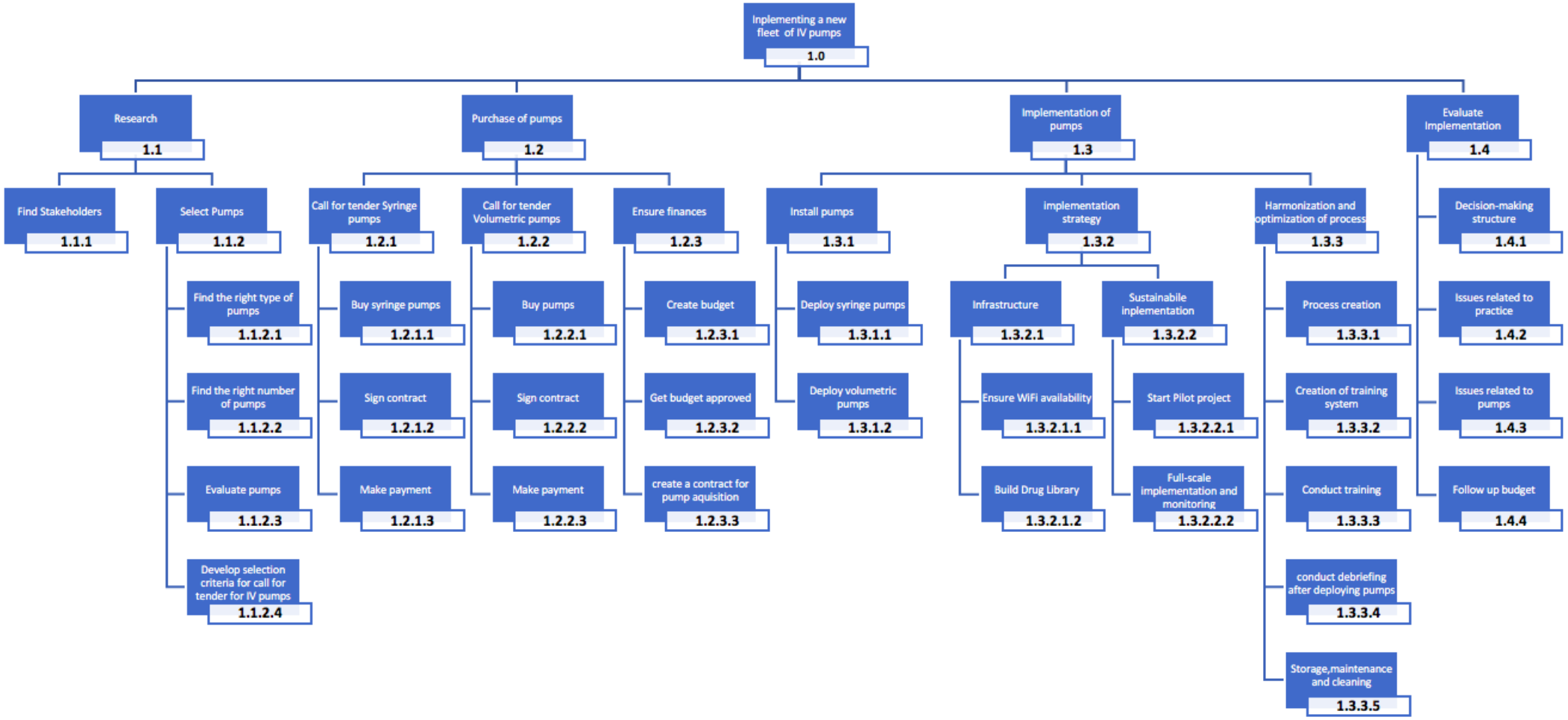
13. Appendixes

Appendix A: WBS



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Appendix B: Strengths, Weaknesses, Opportunities & Threats (S.W.O.T.) analysis

Strengths	**Weaknesses**
• Competence: Maggie has a wealth of experience, has overseen previous similar projects successfully such as the harmonization of clinical practices in 2012 and has several useful contacts as well as trust within the wider organisation (111). • The TSO is staffed with 26 full-time equivalent persons, who have collectively managed a portfolio of over 100 projects which implies good competence. (111) • There are 2 committees containing representatives/stakeholders to guide the clinical decision process- expertise. (111) • Implementation of a decision-making structure to facilitate the process and try to help the project progress despite its high complexity(112)	• Short deadline having initiated much of the work late on in the moving process (111,113) • There are different IV contracts to be managed (116) • Reliance on Wi-Fi technology- not available for many of the current hospitals (116) • Multiple stakeholders with high levels of influence/power.- Due to the nature of the project and its setting in healthcare- This makes the project vulnerable whilst being necessary to ensure required standards are met.
Opportunities	**Threats**
• Diverse practices, as well as varied systems and several vendors, is leading to inconsistencies- current practices are seen as not working (114) • As part of the redevelopment plan, a budget has been reserved for the purchase of new equipment such as IV pumps (114) • The move to a new location (The Glen) provides a natural opportunity to upgrade systems (116) • There is a stated- Urgent need of pumps (116) • Absence of a comprehensive system of pump management (114) • IV pump contracts are coming to an end, creating the sense of urgency to look at purchasing new pump technology (114) • There is a budget available that permits 1.5 IV lines/patient. (113) • There has been a user needs assessment. User input will be used to shape decisions which may be helpful in getting upgrades(116) • The aim of having a 1:1 pump-patient ratio has storage, maintenance and cleaning benefits- helping to gain support(117)	• Users lack of confidence due to past initiatives failure (116) • Budget issues- could be a challenge to obtain budget approval in a timely manner(117-118) • Difficulty with cooperating with other organisations & projects- alignment with OACIS, CPOE & Pharmacy- crucial (116) • The ministry wants a system which will work provincial-wide. This project requires technologies not installed in several locations (113) • The need for cooperation between several work bodies (some of which are not generally involved in these types of decisions) gives a high level of project complexity and risk of failure. (113) -Stakeholder presence- IS/IT has been missing at some meetings (116)- • Ministry approval of a high budget in a short time span is a challenge. This, coupled with their desire for uniform state-wide practices where many locations don't have the infrastructure to implement this suggested solution. (118)

Conclusions

The main weaknesses of the project are linked with budget issues, short deadlines, technical dependency and high complexity- given the number of key stakeholders and work bodies with influence in making decisions.

Nonetheless, there are many strengths: The experience and professionalism of Maggie- the project leader and the TSO organisation provide a good environment to achieve the key project goals. Initiatives such as the implementation of a decision-making structure and the work that has already been done to develop collaboration give the project a great foundation to build on.

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The main threats to the project are: The dependence on getting approval from the ministry -which desires statewide standards, (-much of which is currently unable to facilitate the solution suggested-) coupled with getting an adequate budget to bring in major infrastructure upgrades and lots of new equipment are big issues. At the time of the report, the budget seems to be unstable whilst it is a necessity in order for the project to progress with various calculations, decisions and contract commitments.

However- in connection with moving to a new facility, user and organizational dissatisfaction with the current- inconsistent practices, a stated urgent need for upgrades in equipment and the many benefits which the new technology can deliver- the timing is great for a major system overhaul and the bringing in of new practices.

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Appendix C: Stakeholder mapping & power / interest analysis

Core stakeholders	
knowledge broker (Martha).	Infection control
Director of Nursing(Kim), Pharmacist-in-Chief (gilbert)	clinical practice consultant (Nicole)
Logistics	Maggie(Project manager)
Harmonization of IV Practices Steering Committee(executive): Nursing, Pharmacy, Biomed, IT, Finance, Quality, Risk & Performance, Logistics - director-level representatives	Harmonization of IV Practices Work-group (operational) clinicians from all MUHC sites. (giving consultancy to the Steering committee-recommendations etc)
Suzan(Head of TSO managing project portfolio)-links with senior mgt.	
Primary stakeholder	
Patients	Finances
workgroups (fig 1): Drug library, Education, IV pump implementation, IV pump centralized process.	Nursing Staff
Secondary stakeholders	
The ministry	Transition Support Office (TSO)
Union	

Table a: Stakeholder mapping

High Power	**Keep satisfied** Finances Ministry	**Manage closely** Suzan H.IV.P. steering committee executives Infection control Nicole, Martha Kim Gilbert
Low Power	**Monitor** TSO org Hospital cleaning/maintenance Union	**Keep informed** Patients Nursing staff H.IV.P work group workgroups
	Low Interest	*High Interest*

Figure b: Stakeholder Interest / Power analysis mapping

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Appendix D: Project Budget

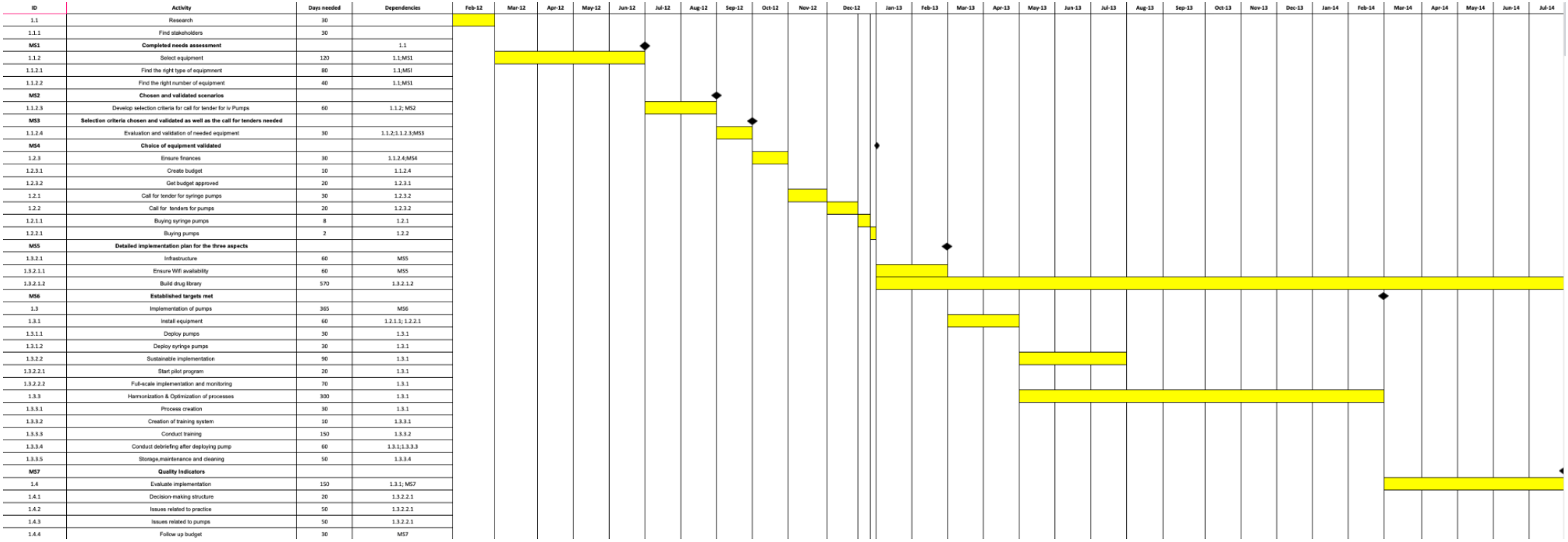
ID	Activity	Cost / day	Estimated Duration (Days)	Material	Total Cost
1.1.1	Find Stakeholders	5000	30	-	0.15 M
1.1.2	Select Pumps	4,700	210	0.2M	1.2M
1.2.1	Call for tender for syringe Pumps	5,000	30	0.55M	0.7M
1.2.2	Call for tender for volumetric Pumps	5,000	30	0.55M	0.7M
1.2.3	Ensure Finances	3,300	30	-	0.1M
1.3.1	Install Pumps	2,060	365	1.75M	2.5M
1.3.2	Implement Sustainability	2,190	570	0.75M	2M
1.3.3	Harmonization and optimization of processes	1,350	300	0.1M	0.5M
1.4.1	Decision-making structure	5,000	20	-	0.1M
1.4.2	Issues related to practice	4,000	50	0.2M	0.4M
1.4.3	Issues related to pumps	4,000	50	0.2M	0.4M
1.4.4	Follow up budget	3,300	30	-	0.1M
Total ($CAD)					9M

Projectbase 4.0 – Project plan

Appendix E: Schedule Bar Chart

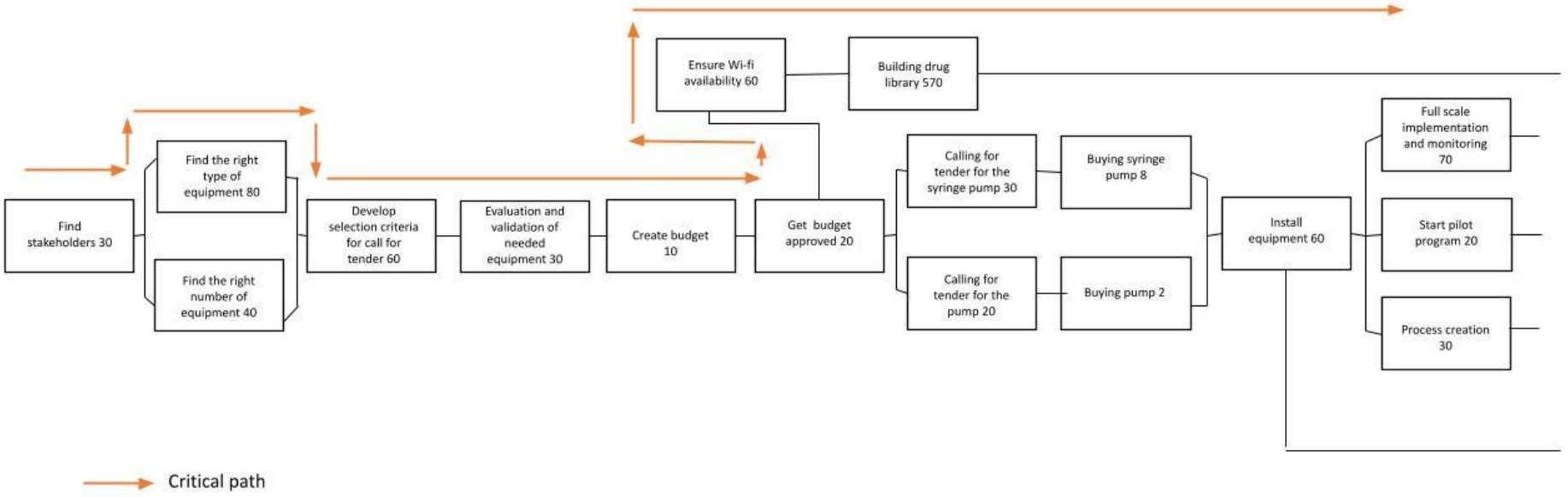
https://docs.google.com/spreadsheets/d/1EX2kxjq4BCF-kj7Cyv-pfP8QbbM1uo2vccg9iDirsM8/edit#gid=612251600

ID	Activity	Days needed	Dependencies
1.1	Research	30	
1.1.1	Find stakeholders	30	
MS1	**Completed needs assessment**		1.1
1.1.2	Select equipment	120	1.1;MS1
1.1.2.1	Find the right type of equipmnent	80	1.1;MS!
1.1.2.2	Find the right number of equipment	40	1.1;MS1
MS2	**Chosen and validated scenarios**		
1.1.2.3	Develop selection criteria for call for tender for iv Pumps	60	1.1.2; MS2
MS3	**Selection criteria chosen and validated as well as the call for tenders needed**		
1.1.2.4	Evaluation and validation of needed equipment	30	1.1.2;1.1.2.3;MS3
MS4	**Choice of equipment validated**		
1.2.3	Ensure finances	30	1.1.2.4;MS4
1.2.3.1	Create budget	10	1.1.2.4
1.2.3.2	Get budget approved	20	1.2.3.1
1.2.1	Call for tender for syringe pumps	30	1.2.3.2
1.2.2	Call for tenders for pumps	20	1.2.3.2
1.2.1.1	Buying syringe pumps	8	1.2.1
1.2.2.1	Buying pumps	2	1.2.2
MS5	**Detailed implementation plan for the three aspects**		
1.3.2.1	Infrastructure	60	MS5
1.3.2.1.1	Ensure Wifi availability	60	MS5
1.3.2.1.2	Build drug library	570	1.3.2.1.2
MS6	**Established targets met**		
1.3	Implementation of pumps	365	MS6
1.3.1	Install equipment	60	1.2.1.1; 1.2.2.1
1.3.1.1	Deploy pumps	30	1.3.1
1.3.1.2	Deploy syringe pumps	30	1.3.1
1.3.2.2	Sustainable implementation	90	1.3.1
1.3.2.2.1	Start pilot program	20	1.3.1
1.3.2.2.2	Full-scale implementation and monitoring	70	1.3.1
1.3.3	Harmonization & Optimization of processes	300	1.3.1
1.3.3.1	Process creation	30	1.3.1
1.3.3.2	Creation of training system	10	1.3.3.1
1.3.3.3	Conduct training	150	1.3.3.2
1.3.3.4	Conduct debriefing after deploying pump	60	1.3.1;1.3.3.3
1.3.3.5	Storage,maintenance and cleaning	50	1.3.3.4
MS7	**Quality Indicators**		
1.4	Evaluate implementation	150	1.3.1; MS7
1.4.1	Decision-making structure	20	1.3.2.2.1
1.4.2	Issues related to practice	50	1.3.2.2.1
1.4.3	Issues related to pumps	50	1.3.2.2.1
1.4.4	Follow up budget	30	MS7



Projectbase 4.0 – Project plan

Appendix F: CPM Chart (see both parts which make up whole path)



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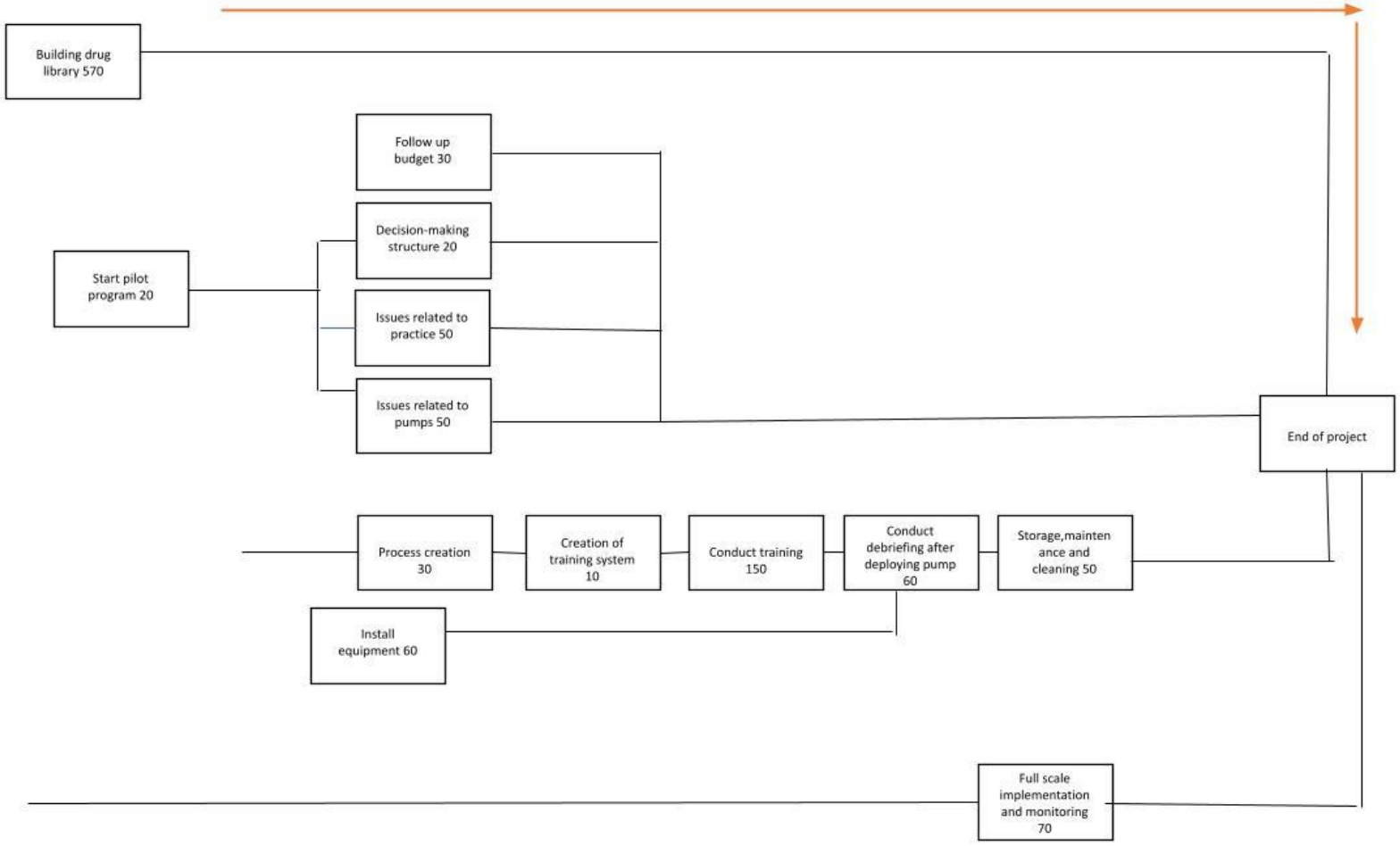

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b) Governance of the project

The project is at its early stage. When you agreed to be the project manager, the project was understood as a simple matter to make a technical decision on IV pumps. This evolved dramatically as the project is not only about the material choice of the pumps but mainly the use of their smart features. As in any project life cycle, ignorance, uncertainty and ambiguity are the characteristics of projects at the initiating phase. What to do and how to do it are simply unknown (Turner & Cochrane, 1993). And it is only progressively that knowledge is developed and decisions can be made on both what to do and how to do it (Winter & Szczepanek, 2009). Complexity should be addressed and analyzed through the analysis of the environment and establish a relationship with the risk assessment (Cooke-Davies, Cicmil, Crawford, & Richardson, 2007).

Therefore, reason briefly (1/2 – 1 A4 page) on the Governance of the project: Who is part of the project management team? What is the role of the different committees? What is the role of the TSO manager? Who is accountable for those decisions?

The project management team consists of Maggie, Kim, Gilbert, Martha, and Nicole, whilst Suzan oversees the project portfolio in which this project sits. Maggie is the project manager, Kim and Gilbert are the project sponsors, Martha is the knowledge broker and Nicole is the consultant . The management team thus consists of 5 persons who all have a different voice in the process of the project.

Maggie the project manager is ultimately responsible for the making/facilitation of all key decisions in the project and she is answerable to suzan who is overseeing the entire merge project of the hospital into its new facility.

The two sponsors Gilbert and Kim are responsible for large units/ organizations within the hospital and in this case operate both as clients, as well as, key experts shaping the project outcomes. They each come with their own perspectives (namely nursing practices-kim and pharmacy/medicine-Gilbert) and specific requirements which they want and need the project to deliver to ensure their own departments benefit from the results. They must therefore be in agreement with the project group's solutions for decisions to be approved.

Given the unique quality demands of this project, and that the research and decisions must be carried out with a high level of expertise, Nicole has been recruited as an expert consultant to give input from a clinical practices perspective. Her understanding of the hands-on needs of staff and of the technological details of the products in question are vital in such a project. Though not a sponsor, her input will carry weight within the project and will be vital in shaping decisions. Under her responsibility is a pump evaluation group- assessing the technology in question- and- a harmonization of practices group- both of which generate expert information- vital for the project management team to make well-informed and quality decisions.

Given the complexity of the project, in terms of the amount of information which is to be processed, the amount of expertise required and the number of parties with influence in making decisions- Maggie was wise to recruit Martha as a knowledge broker for the project. Having her work and the construction of a decision making framework are vital to ensure a healthy flow of information throughout the projects work- ensuring all people, workgroups and committees have all relevant information to discuss and make suggestions/decisions over- and to ensure the project doesn't grind to a halt but can keep progressing forward smoothly and produce results. At an early stage in the project this may have seemed unnecessary, but as it matured and the number of people working directly within the project, and having an

influence on it grew hugely, having such measures in place is great to facilitate the progression of knowledge and ensure a smooth project process and good decisions an all the various stages.

As well as the key project members mentioned above various work groups were also created to deal with various practical issues concerning the application of the projects decisions and delivery- such as: organising the drug library, educating staff, pump implementation and practices- these again show great project governance in creating a framework where correct expertise is in relevant places to ensure quality results are delivered. In a similar way- having a harmonisation of IV practices steering committee giving input from key senior management of key departments tangible to the project to Maggie is yet another example of good governance. Again it ensures a smooth transition and that those affected by/affecting the delivery of the project's results are taken into account appropriately.

In summary- the project governance/framework is highly complex to match the complexity of such an expertise dependent and high stakes project. Responsibility is far different than a simple management pyramid/triangle structure reflecting the numerous influences in this decision making process. Between them Maggie and maybe Susan have put in place a great project governance foundation for the project to produce a top quality outcome.

c) Context of the project: Politics/Stakeholders

Stakeholder analysis is of prime importance here (Eskerod & Vaagaasar, 2014). Beyond the instrumental understanding of the stakeholders, this situation requires more than a traditional approach. It needs to engage all of them in a common solution. You will have to identify and analyze the main stakeholders in this project. They are also asking to observe and challenge how you as a PM deal with each of them.
Hence, it is important to think how your project could be anchored with the context to have the stakeholder involvement in the best way.
So, prepare one page (A4) with reasoning on Politics/Stakeholders: Who are the key stakeholders? What are each stakeholder's objectives and interests vis-à-vis this project? What has to be done to bring them in the "same" project?

In answer to this question I will go through all of the significant stakeholder groups and give analysis as to what their objectives and interests are followed by any measures seen as necessary/diligent to ensure they become/remain on board and satisfied with the project and it's deliverable outcomes. Starting in order of highest influence core stakeholders- using the stakeholder mapping and analysis found in appendix c of our report- and working down to less influential secondary stakeholder parties, followed by a brief summary to close.

Sponsors:
The two key sponsors are Kim(Director of Nursing) and Gilbert(pharmacist-in-chief). They have requested the project be undertaken and are as such the main clients of the results which are to be delivered. They come with a unique set of demands, all of which must be met and all large decisions approved of in order to satisfy the needs of the hospital departments for which they represent. Given this, them being on board with the project is paramount. However, at the same time their engagement is essentially guaranteed. Thus the only measures to be taken are to ensure a healthy line of communication is maintained with them throughout the project and that the decision making process is heavily shaped by their

expertise and input on matters. These measures are already well embedded into the project governance structure and as such can be seen as under control.

HIVP steering committee:
The Harmonization of IV practices Steering committee and Infection Control represent a number of work departments in the hospital. The senior managers on the steering committee all have their own interests as to how the project will impact their respective departments, many of which in healthcare systems are also absolute requirements for running of hospital services. Maggie took this into account in creating the committee from an early stage to show the value of these voices and attempt to help develop 'buy in' to the project. This can be seen as a strong and effective move in setting a platform for success. Nonetheless, fragilities remain and there is a risk that some departments may resist change as new implementations are brought in- one such issue lies with the maintenance of new pumps for instance-. The project must do as much as possible to make decisions in the best interests of all whilst at the same time realising you can't always please everyone- as such the diligent work in communication and decision making procedures must be continued and if any fragmentation occurs as a result of decisions these must be addressed and solved quickly.
As for Infection control their needs may well have medical backing and as such they can put a stop to any implementation which may be seen as dangerous to human health. their requirements are absolutes- but the project is being carried out diligently with medical experts and thorough research so hopefully risk of issues here is minimal.

Users and primary workers:
The hospital's patients and practitioners(nurses etc.) are very much those highly affected by the implementation of the project and are such primary stakeholders. Whilst they may have a low level of influence in decision making, it is vital the project keeps them firmly in focus throughout. Scepticism to change is known to exist due to prior initiatives failing so getting started positively with the aim of continuing with momentum is a good aim and since future reviews of the project's results will listen to these people, it is important they are satisfied. Measures such as surveys with follow up analysis during the research phase- which the project has already been doing are important and keeping up such practices as pilot schemes and full-scale implementation is carried out should help ensure these people are and indeed feel heard.

Financiers, ministry:
The Canadian ministry and financial directors of the hospital have a relatively low interest in the details of the project. They have placed the authority for the majority of decisions in the hands of those involved in the project. Nonetheless they have a few basic demands such as the desire that implementations of this project can be replicated to make statewide standards. Furthermore, any changes in the budget can have major implications on which solutions are/aren't possible for the project. Thus ensuring that sufficient information is communicated and that their demands are met/discussed for approval is essential prior to big decisions and implementation is essential as keeping them on board is a must!.

unions, other hospital workers:

Initially and during much of the project process less tangible workers such as cleaners and maintenance staff(amongst many others) as well as potentially unions representing such groups, will have a relatively low interest. Whilst they will not be central factors in deciding on implementations, neglect of these groups could prove harmful in the future if disgruntled employees gather forces in criticism of the pumps or issues surrounding them. One specific such is recognized is if maintenance should refuse to work with the machines. In a similar way to staff and users it is therefore important that these people are heard and that a framework is created to prevent such issues from becoming problematic. And again it's important to note this has been addressed by the project with measures such as the creation of the steering committee as well as being analysed in the risk section of this report.

In summary the project has numerous stakeholders(and stakeholder groups) each with varying interests and objectives. Some are hugely significant and central in all decisions while others are relatively peripheral to the project but none should be neglected. Each must be heard and treated with appropriate respect and where possible have their opinions shape outcome, or at least be taken into account as the project is planned, executed, implemented and followed up. If this is done successfully it should help ensure the engagement and 'buy in' to the project's work and to the success of the project on the whole not just in meeting all requirements but in long lasting satisfaction for all concerned.