Agenda – Council – January 28, 2015

Report – Standing Policy Committee on Protection and Community Services – January 12, 2015

Item No. 2 Authorization to Engage in Discussions with Province of Manitoba for Potential Rollout of Winnipeg Fire Paramedic Service Electronic Patient Care Reporting System to Province of Manitoba

STANDING COMMITTEE RECOMMENDATION:

On January 21, 2015, the Executive Policy Committee concurred in the recommendations of the Standing Policy Committee on Protection and Community Services and submitted the following to Council:

1. That the Winnipeg Fire Paramedic Service (WFPS) Patient Care Reporting (ePCR) system provincial rollout plan attached as Appendix A be endorse din principle.

2. That the Winnipeg Fire Paramedic Service be authorized to engage in discussions with the Province of Manitoba for potential rollout of the WFPS ePCR system to the Province of Manitoba.

3. That, in the event discussions with the Province of Manitoba are successful, the WFPS report back to Council with an implementation plan.

4. That the Proper Officers of the City of Winnipeg do all things necessary to implement the intent of the foregoing.

Agenda – Council – January 28, 2015

Report – Standing Policy Committee on Protection and Community Services – January 12, 2015

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On January 21, 2015, the Executive Policy Committee concurred in the recommendations of the Standing Policy Committee on Protection and Community Services and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On January 12, 2015, the Standing Policy Committee on Protection and Community Services concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

ADMINISTRATIVE REPORT

Title: **Request for Authorization to Engage in Discussions with Province of Manitoba for Potential Rollout of Winnipeg Fire Paramedic Service Electronic Patient Care Reporting System (ePCR) to Province of Manitoba**

Critical Path: **Standing Policy Committee on Protection and Community Services – Executive Policy Committee - Council**

AUTHORIZATION

Author	Department Head	CFO	CAO
John Lane	John Lane	M. Ruta	D. Joshi

RECOMMENDATIONS

1. That Council endorse in principle the Winnipeg Fire Paramedic Service (WFPS) ePCR provincial rollout plan attached as Appendix A.

2. That the Winnipeg Fire Paramedic Service (WFPS) be authorized to engage in discussions with the Province of Manitoba for potential rollout of the WFPS electronic patient care reporting (ePCR) system to the Province of Manitoba.

3. That, in the event discussions with the Province of Manitoba are successful, WFPS report back to Council with an implementation plan.

4. That the proper officers of the City of Winnipeg do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

Council approval is requested to engage in discussions with the Province of Manitoba for potential rollout of the WFPS ePCR system to the Province of Manitoba.

IMPLICATIONS OF THE RECOMMENDATIONS

A province-wide common platform for ePCR records is desired by Manitoba Health. If WFPS does not participate with the province on this initiative, the province could choose a different platform. The potential requirement for WFPS to change their platform would be very costly and labour-intensive.

The province has indicated that significant funding is available in this fiscal year to proceed with the provincial ePCR initiative. Participation with the province will enable WFPS to take advantage of this funding.

HISTORY

On May 18, 2012 the Minister of Health announced an external review of Emergency Medical Service (EMS) for the province of Manitoba.

The review was conducted and completed in March 2013 by Mr. Reg Toews, former CEO of the former South Eastman Regional Health Authority with the support of Fitch & Associates who provided subject matter expertise. A report called The Manitoba EMS Review – Consultant Report was published. The report makes fifty-four (54) recommendations and proposes an implementation strategy with timelines. One of the recommendations is to implement an electronic patient care record system across the province.

There are two principal emergency medical dispatch centers in the Province. The Medical Transportation Coordination Centre (MTCC) located in Brandon provides EMS and inter-facility dispatch for all of rural Manitoba and portions of the north and WFPS provides dispatch for fire, EMS and inter-facility transfer for Winnipeg.

While MTCC collects accurate and extensive information on dispatch process, it does not collect any patient care information. Therefore, there is a large gap in the information available which seriously impedes any assessment of the quality of patient care provided. In essence, quality of care provided by the paramedics in the province cannot effectively be measured.

WFPS has an electronic patient care reporting system that was implemented in 2007. Since that time WFPS has benefitted from having improved data collection, quality of care that can be measured and analyzed for improvement, and excellent patient care tracking. Additional benefits include the ability to produce reports that can be used to perform quality assurance, data analysis, medical staff training and improved billing.

While using the same program throughout all regional health authorities has its benefits, stakeholders of both organizations will need to consider the emergent dependency on each other as a result of using the same system throughout.

In practical terms, it means that activities such as system changes, system upgrades and maintenance have to be carefully planned and executed. These types of changes will be difficult and may not be possible to do in some cases, for instance, if the change is going to negatively impact one of the other regions or sites. A change advisory board would need to be established to guide, authorize, plan and

execute such changes. Implications of the dependency are great and need to be carefully considered further.

If authorization to engage in discussions with the Province of Manitoba for potential rollout of the WFPS ePCR system to the Province of Manitoba is granted and through discussions it is determined to be feasible, this rollout will be negotiated as an addendum to the Service Purchase Agreement with the WRHA for the provision of Emergency Medical Response Services, Inter-Facility Transport and Community Paramedicine. The WRHA agreement expires on December 31, 2014, and an extension for the period January 1, 2015 to December 31, 2015 has been requested under a separate administrative report. Negotiations for this rollout would be included for the 2016 agreement.

An Electronic Patient Care Record System – Scoping document that outlines a potential plan for rollout of ePCR to the Government of Manitoba is attached as Appendix A.

FINANCIAL IMPACT

Financial Impact Statement **Date:** December 12, 2014

Project Name: **First Year of Program**

Request for Authorization to Engage in Discussions with Province of Manitoba for Potential Rollout of Winnipeg Fire Paramedic Service Electronic Patient Care Reporting System (ePCR) to Province of Manitoba

	0	1	2	3	4
Capital					
Capital Expenditures Required	$ -	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	-	-	-	-	-
Additional Capital Budget Required	$ -	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	-	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ -	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$ -				
Total Additional Debt Required	$ -				
Current Expenditures/Revenues					
Direct Costs	$ -	$ -	$ -	$ -	$ -
Less: Incremental Revenue/Recovery	-	-	-	-	-
Net Cost/(Benefit)	$ -	$ -	$ -	$ -	$ -
Less: Existing Budget Amounts	-	-	-	-	-
Net Budget Adjustment Required	$ -	$ -	$ -	$ -	$ -

Additional Comments: At this stage the report is requesting authorization to enter discussions with the Province therefore there are no financial impacts. As part of these discussions however, we would seek a commitment to cover the cost of WFPS staff time and other associated costs in meeting our obligations in the provincial roll out of ePCR.

original signed by
John Hall, ACMA, CGMA
Controller, Finance

CONSULTATION

In preparing this report there was consultation with:

SUBMITTED BY

Department: Fire Paramedic Service
Division: Administration
Prepared by: Michelle Weimer
Date: December 12, 2014
File No.

Appendix A

Winnipeg Fire Paramedic Service

Electronic Patient Care Record System - Scoping

Government of Manitoba Rollout

Sandeep Anand, P.Eng.

6/9/2014

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1. INTRODUCTION

1.1.Purpose of the document

The purpose of this document is to provide stakeholders with a high level understanding of the province-wide rollout plan for an electronic patient care record system (ePCR) used at Winnipeg Fire Paramedic Service (WFPS).

1.2.Background

On May 18, 2012 the Minister of Health announced an external review of Emergency Medical Service (EMS) for the province of Manitoba.

The review was conducted and completed in March 2013 by Mr. Reg Toews, former CEO of the former South Eastman Regional Health Authority with the support of Fitch & Associates who provided subject matter expertise. A report called The Manitoba EMS Review – Consultant Report was published.

The report makes fifty-four (54) recommendations and proposes an implementation strategy for them with timelines. One of the recommendations of the report is to implement an electronic patient care record system across the province.

There are two principal emergency medical dispatch centers in the Province. The Medical Transportation Coordination Centre (MTCC, located in Brandon) provides EMS and inter-facility dispatch for all of rural Manitoba and portions of the north; and Winnipeg Fire Paramedic Service that provides dispatch for fire and EMS and inter-facility transfer for Winnipeg.

The report notes that while MTCC collects accurate and extensive information on dispatch process, it does not collect any patient care information. Therefore, there is a large gap in the information available which seriously impedes any assessment of the quality of the patient care provided. In essence, quality of care provided by the paramedics in the province cannot effectively be measured. Therefore, there is a business need for tracking patient care electronically.

There are five (5) Regional Health Authorities (RHAs) in the province of Manitoba;
1. Interlake/Northern Eastman, 2. Southern, 3. Prairie Mountain, 4. Northern and 5. Winnipeg. Outside of the Winnipeg RHA, there are 98 individual EMS stations spread throughout the province. There are 166 transporting ambulance vehicles and 30 air ambulance platforms. As well, there are 12 non-transporting medical first response agencies.

It is noted in the report that WFPS operates an effective ePCR system. This provides WFPS and Winnipeg RHA with valuable information that the rural and northern EMS services do not have. There is a desire to have a common ePCR program across the province.

Since March 2013, an EMS review task force (RTF) has been established and several projects have started in order to address the recommendations of the report. Goal of this project is to address recommendations 5, 37 & 38 of the report (Toews 2013).

> *5 - Integration of CAD and ePCR data should be accomplished in a timely fashion*
> *37 – Establish province-wide standard data set, using ePCR capable of integrating EMS with other Health Information*
> *38 – Consider utilizing/extending the WFPS platform with full transparency and availability to the province*

2. PROPOSED SOLUTION

2.1.Solution Description

The Government of Manitoba is seeking to implement province-wide an electronic patient care records system.

WFPS has an electronic patient care record system in use since 2007. The system was implemented to replace paper patient care record forms in use at that time. Since that time WFPS has benefitted from having improved data collection, quality of care that can be measured and analysed for improvement, and excellent patient care tracking. However, the real power of the system comes from the ability to produce reports that can be used to perform quality assurance, data analysis, medical staff training and improved billing.

WFPS ePCR system is a purchased commercial off-the-shelf product which is part of a suite of products called 'Rescue Net ePCR Suite' available from ZOLL Data Systems, Inc.

WFPS Computer Aided Dispatch (CAD), a custom solution, and the billing system ("Great Plains") are integrated with ePCR. The system is available on ruggedized laptops to the crews as part of their 'medical kit' and is used to document patient care in the field at patient site. The information collected is stored and transmitted securely from the field environment to the City of Winnipeg data centres over cellular connection.

At a high level, the system has been setup with the following capabilities within the WFPS environment:

- ability to receive automated incidents from WFPS CAD; integrated with CAD
- ability to record patient care information
- ability to transmit information from patient site directly and securely to the data centers
- ability to send completed patient care reports via faxing service to the receiving hospital or facility
- ability to record EKG information and store it with the patient care record
- ability to send EKG information via corporate email infrastructure to the on-call cardiologists and medical supervisors for STEMI care
- ability to work in a 'stand-alone' mode, i.e. crews can document patient care on their laptops even when there is no connection to the data center
- workflow and quality assurance features which medical supervisors and senior staff can use to review and observe reports of crews in order to manage quality of care provided
- standard reports for all levels of stakeholders such as executives, senior management and supervisors
- incident search capability

In technical terms, the system has essentially two components: 1. Client Side and, 2. Backend Infrastructure.

The Client Side is made up of 'Tablet PCR' application and a local database installed on each ruggedized laptop.

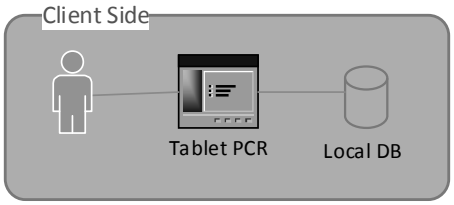

Figure 1 – Client Side on Crew Laptops

The Backend infrastructure is a made up of a number of servers including databases, application and fax servers that reside inside the City of Winnipeg data centers. For simplicity, the picture below shows the infrastructure conceptually; in reality, the backend setup is complex in nature, but is not discussed in this paper.

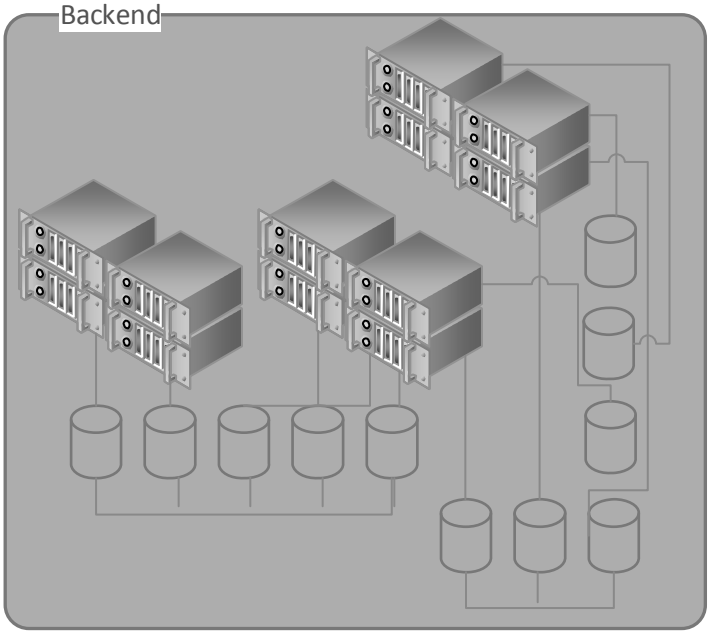

Figure 2 – Conceptual Backend Infrastructure for ePCR

In WFPS environment, the Client Side is constantly connected to the CAD and the Backend Infrastructure over a secure cellular network. While there is a business need for this setup in WFPS, a constant connection to the Backend is not necessary for the system to operate.

Crews can continue to document patient care on their laptops independent of the Backend, for instance, if the cellular connectivity is lost or connection to one of the servers is lost. The Client Side synchronizes with the Backend when the connection becomes available at a later time.

The current vision is to roll this system out to all rural RHAs in the province eliminating paper PCR forms.

2.2.Solution Scope – Approach and Methodology

In March 2014, an all-day meeting took place between WFPS IT staff members and MTCC IT and dispatch staff. The current paper process of patient care recording in the province was discussed at a high level. A brief demonstration of the WFPS ePCR system was provided to the staff present in the

meeting. Various aspects of the solution design and architecture were discussed from potential technical challenges such as limited to no wireless connectivity in remote areas to user support models. It was concluded that rollout is technically possible but with limited system capability.

For instance, due to limited wireless connectivity at various sites throughout the province, mobile connectivity and faxing capabilities are not going to be possible. There is also the problem of several types of EKG monitors in use throughout the province i.e. there is no standardization on the use of monitors. Therefore, EKG send/upload feature cannot be deployed and should be considered after the province has standardized on EKG monitors.

For the system rollout in general, it is recommended that a phased approach be used as follows:

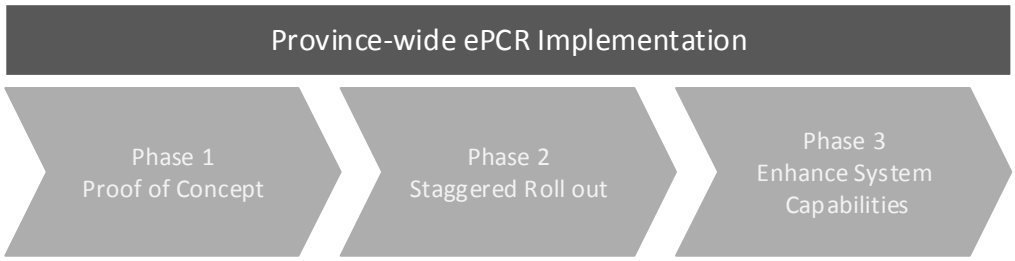

Figure 3 – Province-wide ePCR Implementation

A general methodology consisting of five stages listed below should be followed for roll out to each site:

1. Requirements gathering
2. Design
3. Implementation
4. Testing
5. Go-Live and Support

Phase 1 – Proof of Concept (POC)

During this phase a project team should be formed to select a site with a small number of users. Tablet PCR with WFPS configuration would be deployed to these users. The system would be modified to create a 'new company' for the selected site and for the new users.

To prove the concept, the following activities and steps are envisioned:

Primary Activities	Major Milestones	Specific Activities
• **Project Kick-off** • **Establish Governance Model** • **Establish Team** • **Project Planning** • **Requirements Gathering for POC** • **Design finalization** • **Configure Proof of Concept**	• Kick-off meeting conducted • Governance Model Established • Project Team Formed • Design finalized • Proof of Concept Go Live	• Select a site with 5 to 10 users from one of the rural regional health authorities • Configure WFPS ePCR system to accommodate the new 'company' and the new users • Deploy WFPS ePCR system configuration on a rugged tablet; crews will use the tablet in a stand-alone mode • Setup a dedicated wireless access point at the destination facility; crews will use this connection to connect to the City of Winnipeg data center over the provincial data network to

	synchronize patient care data with the backend servers hosted inside City's corporate environment. • Setup a wireless printer at the destination facility; crews will use this printer to print the patient care report for the receiving hospital.

This phase of the project will help to discover technical challenges early. The lessons learned from it will help better design the approach for Phase 2. Timeline for this phase is envisioned to be from three to six months.

Phase 2 – Staggered Rollout

A Staggered Rollout strategy will roll out the system to small subset of the regions in defined "waves" based on specific requirements of the site. This approach lends itself to iterative improvements where necessary. Because of the smaller, more focused scope, it allows the team to mitigate risks more effectively than compared to a "big bang" rollout.

This phase will commence once the POC has been successfully completed. Detailed requirements of each site must be collected during this phase. Integration possibilities with MTCC CAD system should be explored at this stage as well. Detailed system architecture and a realistic project plan should be developed before proceeding with the rollout.

Phase 3 – Enhance System Capabilities

After the system has been rolled out to all sites in RHAs, mobile connectivity, faxing and EKG send/upload features should be considered during this phase.

2.3.Solution Architecture

The following figure shows high level conceptual architecture of the proposed solution. Detailed architecture must be created per site during Phase 2.

Note that crews will document patient care in a stand-alone mode. Upon arrival at the destination facility (station or hospital), the system will connect to the dedicated wireless access point at the site and transmit collected information to the Backend servers through Provincial Data Network (PDN) and a secure connection to the City of Winnipeg data centers.

Once documentation is complete, crews will print, if necessary, the patient care report on the dedicated printer available at the site.

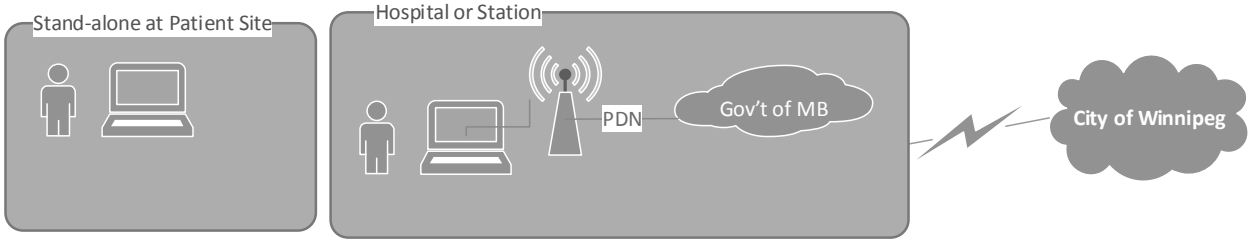

Figure 4 – Conceptual Architecture

2.4. Out of Scope

The following features are out of scope for the province-wide solution:

- ability to send completed patient care reports via faxing service to the receiving hospital or facility; alternative is to print the reports at receiving facility
- ability to record EKG information and store it with the patient care record; only possible for E-series and X-series Zoll devices in WFPS configuration
- ability to send EKG information via email to the on-call cardiologists or medical supervisors

These capabilities should be considered in Phase 3.

2.5.Resources

A Project Manager for the duration of the project and 3.5 full time equivalents (FTEs) with technical skills are required during and after the project to support the solution. Following resources are required for the POC:

Resource	Area of Expertise
Project Manager	Project Management (IT)
ePCR System Administrator	ePCR Configuration
ePCR System Support	ePCR support
Rugged Laptop/Tablet Support	Panasonic Repair Certification
Infrastructure Support	Networking, Security, Databases
Training	ePCR user experience
Subject Matter Experts	Provincial EMS processes

2.6.Governance Model

It is recommended that a

- project steering committee be established with stakeholders from Government of Manitoba and City of Winnipeg to provide direction to the project team
- project team be formed with technical members from both organizations to perform the technical work
- project manager be assigned to lead the project team, plan and execute the project.

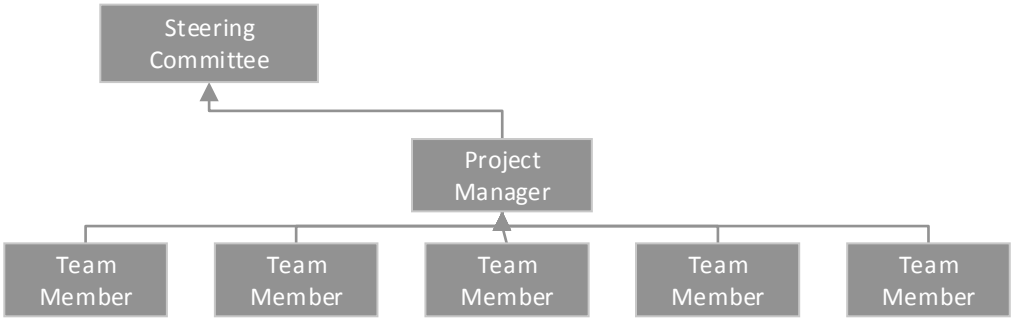

Figure 5 – Project Governance Model

2.7.Support Model

Four components of support need to be considered as follows:

1. **Rugged laptop/tablet support** – includes setup/configuration and physical repairs of rugged laptops and/or tablets, installation and support of operating system and Tablet PCR, recovery of local database, when necessary etc.

2. **ePCR System configuration support** – includes setup of new sites, users, close call rules, workflows and reports within the system.

3. **User support** – includes fielding support calls from users and providing help.

4. **Infrastructure support** – includes setup/configuration and support of the backend application and database servers, security and network connectivity as well as software upgrades and maintenance.

It is envisioned that multiple 'super users' per site would be trained to field calls from provincial crew members to provide User Support. The 'super users' will triage the initial call and provide first-tier support to the crew members. Depending on the nature of the call, they will either resolve the issue or contact WFPS ePCR support team during the hours of 8:00 am to 4:30 pm on weekdays.

Rugged laptop/tablet support is to be arranged by site 'super users' and provided by a Panasonic repair facility.

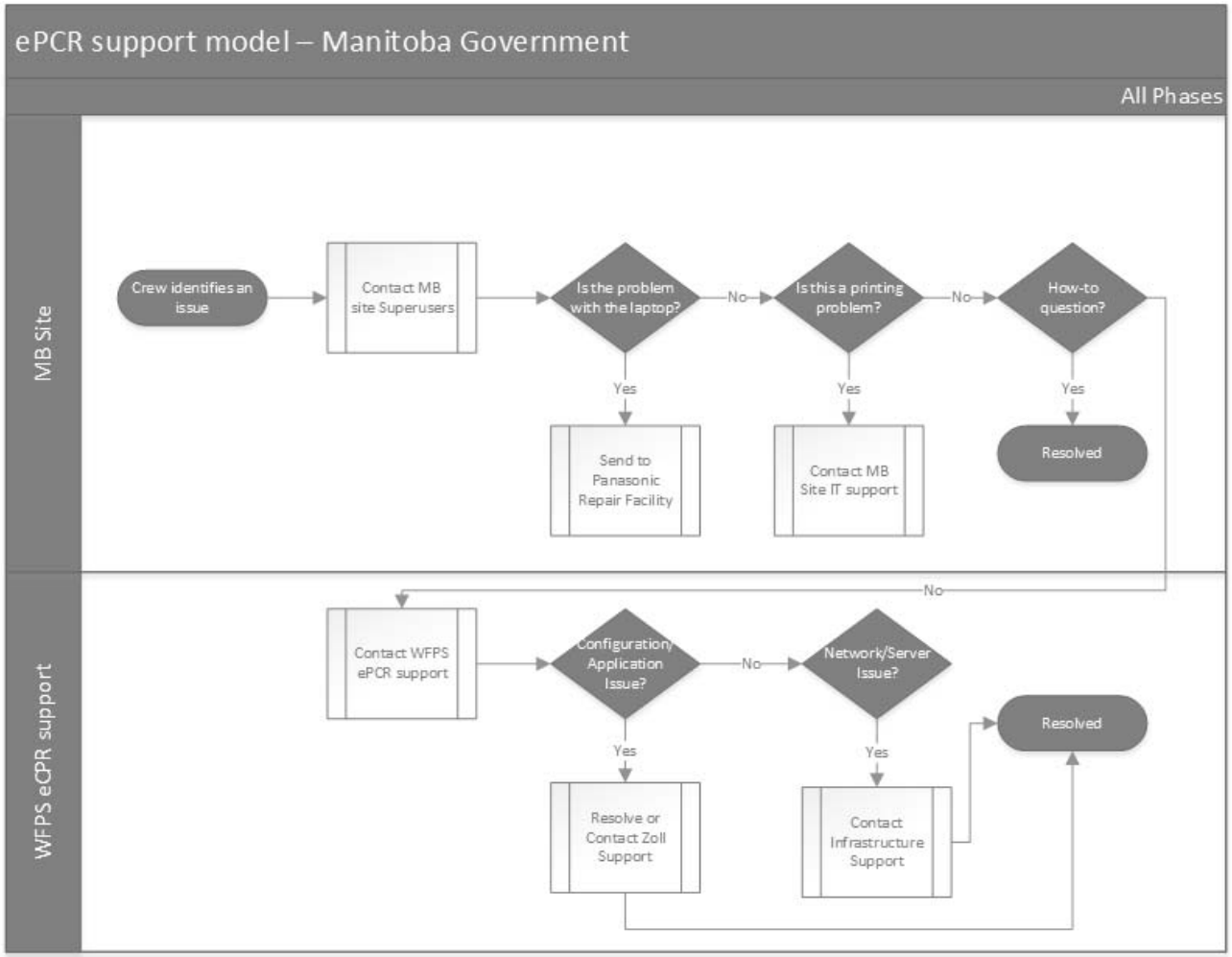

Figure 6 – Support Model

2.8.Assumptions

Key project assumptions are listed below. This list may require updating during requirements gathering stage.

1. Appropriate authority and approvals to proceed with the project are in place
2. Adequate funding is available to proceed with the project
3. Adequate resources are available or can be made available or personnel with equivalent experience can be hired
4. Appropriate product licensing is in place
5. Dedicated wireless connections to provincial data network at the stations/facilities/hospitals exist
6. Connectivity to City of Winnipeg network is possible over provincial data network
7. Dedicated printers at stations/facilities/hospitals are available for printing patient care reports
8. Panasonic rugged laptops or tablets have been purchased and supplied to WFPS
9. Integration with MTCC CAD is possible and will not hinder functionality/integration of ePCR with WFPS CAD
10. No backend infrastructure upgrades are required

2.9. Considerations

While using the same program throughout all regional health authorities has its benefits, stakeholders of both organizations need to consider the emergent dependency on each other as a result of using the same system throughout.

In practical terms, it means that activities such as system changes, system upgrades and maintenance have to be carefully planned and executed. These types of changes will be difficult and may not be possible to do in some cases, for instance, if the change is going to negatively impact one of the other regions or sites. A change advisory board (CAB) would need to be established to guide, authorize, plan and execute such changes.

Implications of the dependency are great and need to be carefully considered further.

2.10. Next Steps

Next steps are proposed as follows:

- Seek approvals to proceed with the project
- Secure project funding
- Establish project steering committee, team and Governance model
- Prepare statement of work detailing accepted project scope, approach and project execution plan.

2.11. Reference

Toews, R. (2013) Manitoba EMS System Review – Consultant Report