

# System and Use Survey Results

## Patient Experience

### Community Paramedicine Remote Patient Monitoring (CPRPM)

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# GLOSSARY

CHF: Chronic Heart Failure

COPD: Chronic Obstructive Pulmonary Disease

CPRPM: Community Paramedic Remote Patient Monitoring

ED: Emergency Department

Infoway: Canada Health Infoway

OTN: Ontario Telemedicine Network

PREM: Patient Reported Experience Measure

PROM: Patient Reported Outcome Measure

# INTRODUCTION

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## 1.1 Background

In chronic conditions such as chronic heart failure (CHF) and chronic obstructive pulmonary disease (COPD), there is a shift from doctor-driven care towards more patient-centered integrated care with active involvement of and self-management by the patient. The Community Paramedicine Remote Patient Monitoring (CPRPM) program enlists the expertise of community paramedics to provide at-home patient education and remote patient monitoring services to people living with CHF and/or COPD. The program encourages patients to take a more active role in managing their own disease as well as reduce their use of 911 services and emergency department (ED) visits.

## 1.2 CPRPM Overview

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Patients living with CHF or COPD are often regarded as ‘high users’ of the healthcare system. Patients on the CPRPM program have a minimum of either three 911 calls, two ED visits or one hospitalization in the 12 months prior to enrollment.

CPRPM has been provided to over 500 CHF and COPD patients in Ontario since April 2015. Funded by Canada Health Infoway, Future Health has managed all aspects of the program including onboarding Emergency Medical Services (EMSs), recruiting patients, conducting in-depth analytics on patient data, and communicating results to policy makers and funding partners in the broader healthcare community.

Results to date are promising, with a demonstrated improvement in metrics such as 42% reduction in 911 calls and 40% reduction in ED visits.

## 1.3 Goals of CPRPM Program

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Leveraging the potential benefits of CPRPM requires a behavioral change on the part of both the community paramedics and patients. In order to navigate the case for change, common goals were established as a way to encourage behavior

modification and monitor the effects of the program. The specific CPRPM goals are as follows:

1. SELF-MANAGE – Help patient self-manage their conditions so they can stay in the comfort of their home longer.
2. ACCESS – Provide access to the appropriate person who can answer to their concerns in a more timely manner (as opposed to a single source such as 911).
3. MONITORING – Reassure patients their health is being monitored in an effort to provide comfort and decreased stress.
4. FACILITATE CARE – Help patients coordinate their care needs between health care providers.

## METHODOLOGY

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Quantitative (# of 911 calls, # of ED visits) and qualitative data (i.e., survey) collection occurred from April 2015 to August 2017. Post-discharge surveys were used to gather information regarding patient reported experience measures (PREMs) and patient reported outcome measures (PROMs). The design of the patient experience survey was consistent with the survey used for the Ontario Telemedicine Network (OTN) Telehomecare program funded by Infoway. Using a common survey was appropriate as there are a number of similarities. Both programs:

- Focus their intake on patients with CHF and COPD;
- Aim to reduce use of emergency departments;
- Partner with health service providers to increase the capacity of the healthcare system and facilitate integration;
- Help patients self-manage their condition from the home.

A total of 484 surveys were distributed during the time of the study. Distribution of the post-discharge survey was a formal requirement of the CPRPM patient discharge process (i.e., paper survey given to patient during the final home visit with paid postage return envelopes). A total of 159 surveys were returned (33% response) from 11 different Emergency Medical Services (EMSs) including Chatham, Cochrane, Essex-Windsor, Grey County, Guelph, Hamilton, Hastings, Middlesex-London, Parry Sound, Renfrew and Peterborough. Data analysis was completed by Queen's University and results are shared in this report.

## 2.1 Survey Summary

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The original survey was designed by OTN in partnership with Infoway. Telehomecare's patient-centered focus influenced the design to include an assessment of:

- User satisfaction, satisfaction with technology, information quality, service quality and system usage;
- Interaction with providers including health coaching, goal-setting, and self management; and
- Patient reported outcome measures related to health service utilization.

The OTN survey was modified for use in the CPRPM program. The primary design of the assessment remained consistent; modifications were contextual such as changing the program name (OTN to CPRPM) and providers (primary care to paramedics). The CPRPM survey also included the original open-ended questions that asked patients to make comments related to the how the program might be improved as well as generate comments or suggestions about the program. For a detailed report of the survey, please see Appendix A.

## RESULTS OF PATIENT SURVEY

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Survey responses are presented in number and percentages. The number of respondents for each category is represented by 'n' as not all respondents answered all questions. Graphics are used to illustrate the distribution of patient responses.

### 3.1 Patient Demographic Information

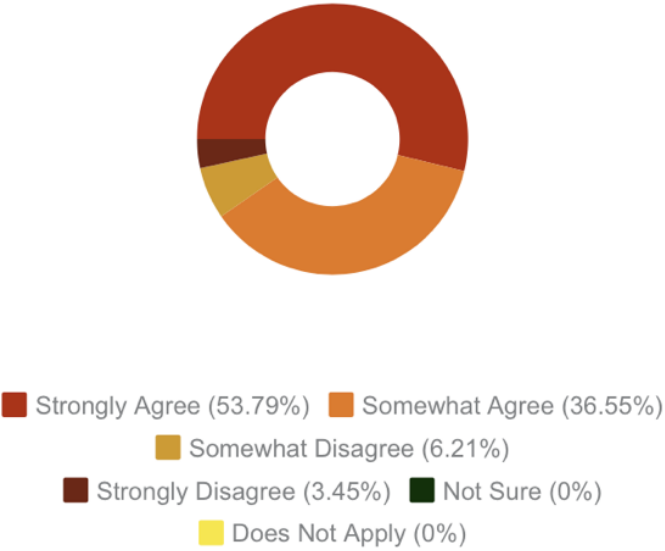
To protect the privacy and anonymity of patients, surveys were labelled with the CPRPM unique patient identifier (CPRPM Patient ID #). The CPRPM # was linked to demographic information provided on the patient enrollment form. Table 1 shows the breakdown of age and gender. Overall, there were 87 females (54.7%) and 72 males (45.3%) males that responded to the survey. The majority of respondents were from ages 75-84 (n=60; 37.7%).

Gender	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Age Bracket	Under 55		55-64		65-74		75-84		85 or over	
n	5	2	2	9	25	15	27	33	13	28
%	3.1%	1.3%	1.3%	5.7%	15.7%	9.4%	17.0%	20.8%	8.2%	17.6%

### 3.2 User Satisfaction

User satisfaction is integral to the CPRPM program’s success. To determine patient satisfaction with the program, respondents were asked to answer satisfaction questions relating to quality of life and self-management.

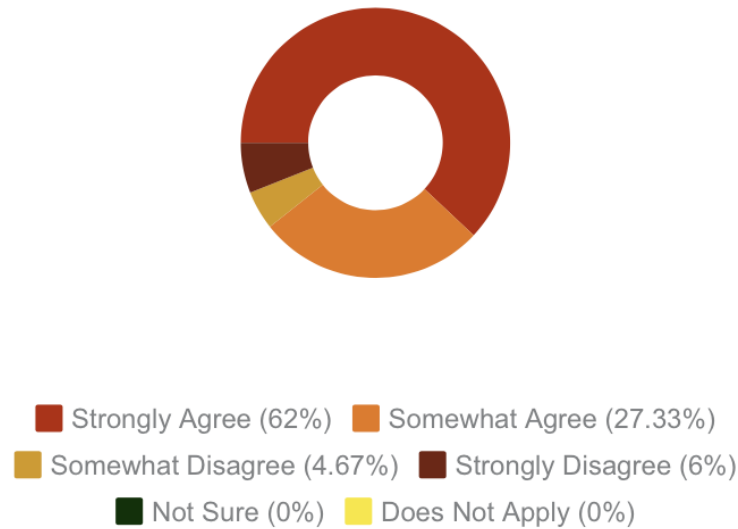
Figure 1 shows the degree to which respondents agreed with the statement: “Being in this program has made my quality of life better.” 93% (n=131) of participants responded positively (Strongly or Somewhat Agree), indicating that the majority of respondents had improvements in quality of life due to this program to some degree.



**Figure 1: The degree to which respondents agreed that the program improved quality of life.**

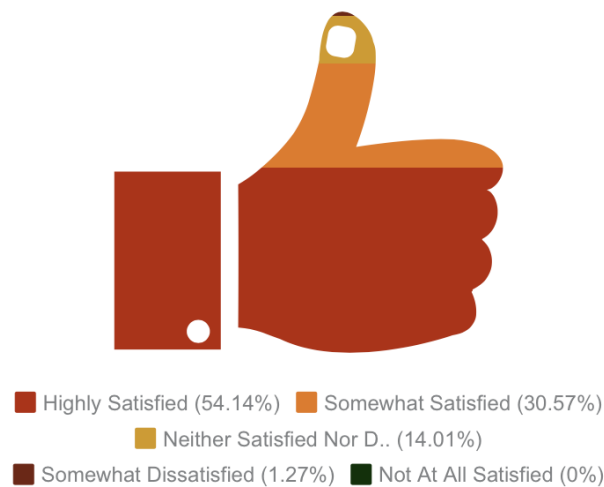
Respondents were asked if the CPRPM program improved their self-management skills. As shown in Figure 2, 85% (n=131) of respondents answered positively toward

the statement “*Being in this program allows me to better manage my own health.*” This indicates that CPRPM is successful in improving the self-management of disease.



**Figure 2: The degree to which respondents agreed that their self-management skills improved because of the CPRPM program**

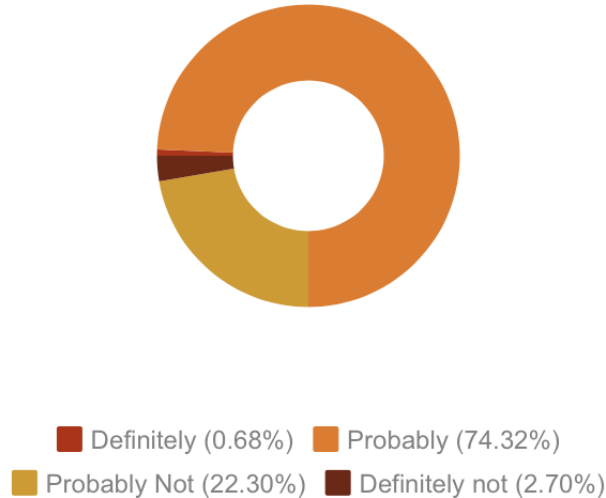
Figure 3 provides information regarding patients’ progress toward health goals. This question was chosen to highlight if the program succeeds in educating patients on setting and achieving goals related to managing their diseases. As shown below, 85% (n=133) of respondents were highly or somewhat satisfied with their progress towards their goals.



**Figure 3: Patient satisfaction with progress towards health goals**



The final indicator of program success is whether a participant would recommend the program to other patients in need of care. Figure 4 shows the likeliness that a respondent would recommend the program to others. Overall, 75% (n=111) responded positively towards recommending the program.

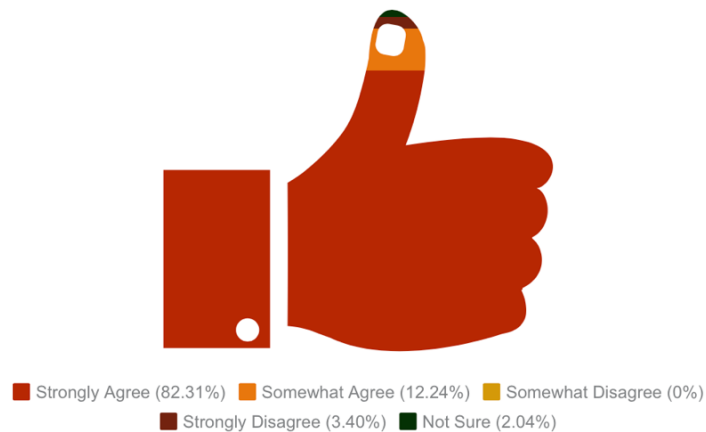


**Figure 4: Patients' likeliness to recommend the program to others**

### 3.3 Satisfaction with Technology

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Since technology is an essential part of the CPRPM program, it is imperative to evaluate the quality of the technology. Figure 5 shows the degree that respondents agree with the statement: *“the equipment that is used in my home is easy to use”*. 82% (n=121) answered that they strongly agree that the equipment for the CPRPM program is easy to use.

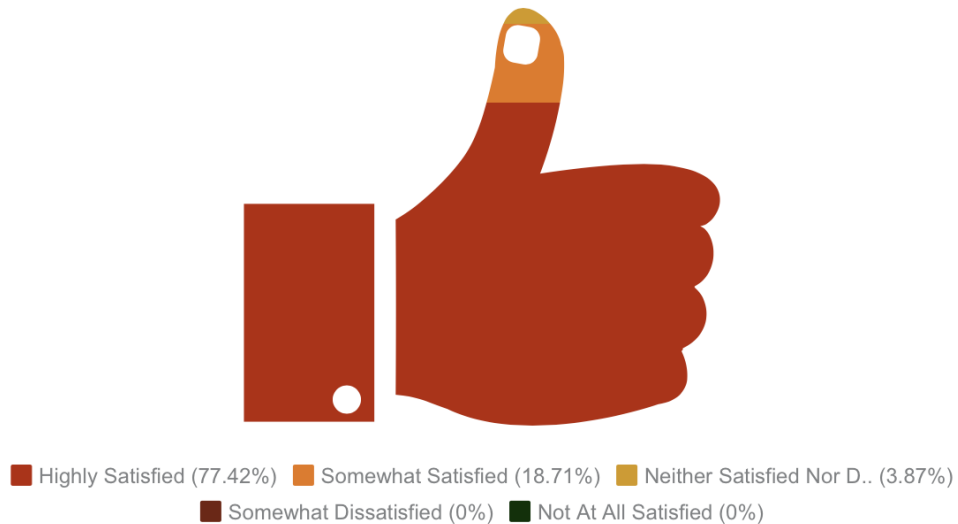


**Figure 5: Usability of equipment**

### 3.4 Information Quality

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Patients were asked how satisfied they were with the quality of healthcare, teaching, and coaching they received during the CPRPM program. Overall, 96% (n=149) of respondents indicated that they were either highly or somewhat satisfied with the quality of care they received. No respondent indicated that they dissatisfied. This indicates that from the patients' perspectives, the CPRPM program is providing high quality care through health coaching and teaching. This is demonstrated in Figure 6.



**Figure 6: Satisfaction with quality of care, teaching and coaching provided**

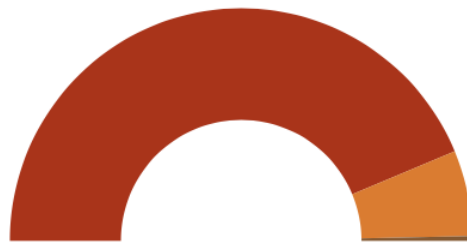
Respondents were also asked to what degree they agreed with the statement: “*I understand my chronic condition better as a result of this program.*” As shown in Figure 7, 85% (n= 129) of respondents answered positively, and only 8% (n= 12) responded negatively. This indicates that the education provided by the CPRPM program is achieving the desired results.



■ Strongly Agree (59.60%) 
 ■ Somewhat Agree (25.83%)  
■ Somewhat Disagree (6.62%)  
■ Strongly Disagree (7.28%) 
 ■ Not Sure (0.66%)

**Figure 7: Education Proficiency**

Finally, the patients’ confidence in sharing information with this program was high. As demonstrated in Figure 8, 87% (n= 132) strongly agreed that they felt comfortable sharing their health information with the program, with 99% (n= 150) responding positively. Overall, patients were not deterred by privacy concerns during the program.



■ Strongly Agree (87.42%) 
 ■ Somewhat Agree (11.92%)  
■ Somewhat Disagree (0%) 
 ■ Strongly Disagree (0.66%)  
■ Not Sure (0%)

**Figure 8: Confidence in sharing personal health information**

### 3.5 Service Quality

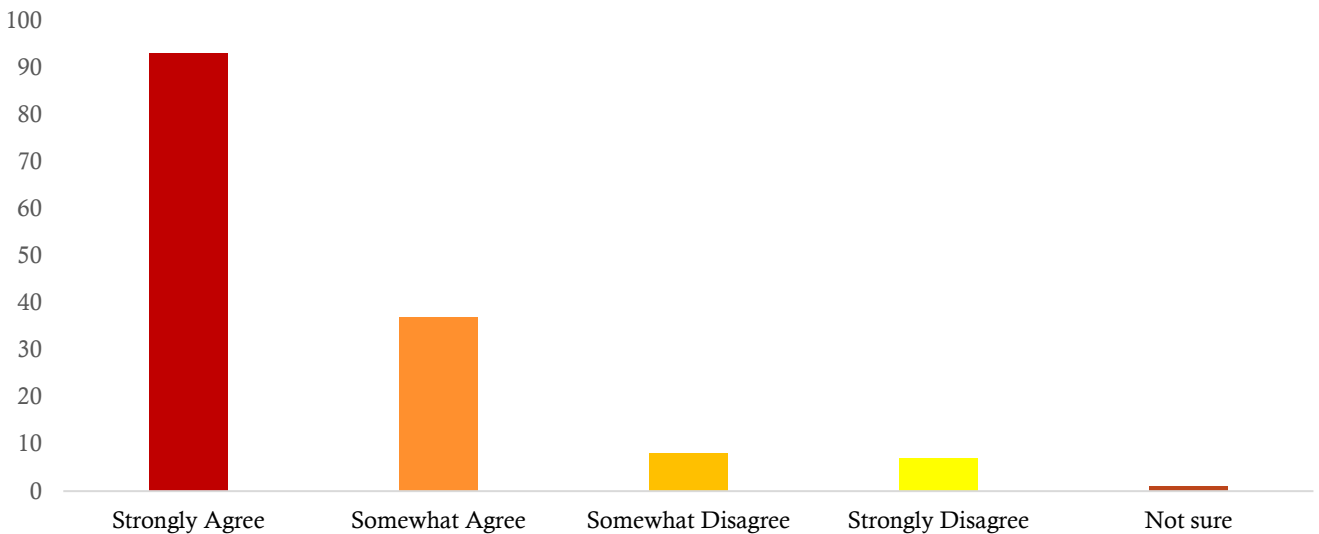
Respondents were asked to indicate their level of agreement and satisfaction for two statements related to system quality. Figure 9 provides distribution data on respondent’s general satisfaction with the program. As shown, 89% (n=130) of patients were highly satisfied with the service they received. 97% responded positively to the question: “in an overall, general sense, how satisfied are you with the quality of service you received?” No respondents were dissatisfied with the service.



**Figure 9: General Satisfaction**

The quality of service also affects caregivers and members of the patient’s family and as such, the survey asks the patient to rate their caregiver’s confidence in the quality of care the patient received. 89% (n=130) responded positively to the statement: “being in this program means my family and/or those who help me with my care feel sure that I am getting the care I need.” This indicates that caregiver satisfaction was high regarding the program and quality of care provided.

**Being in this program means my family and/or those who help me with my care feel sure that I am getting the care I need**



**Figure 10: Caregiver confidence in quality of care received**

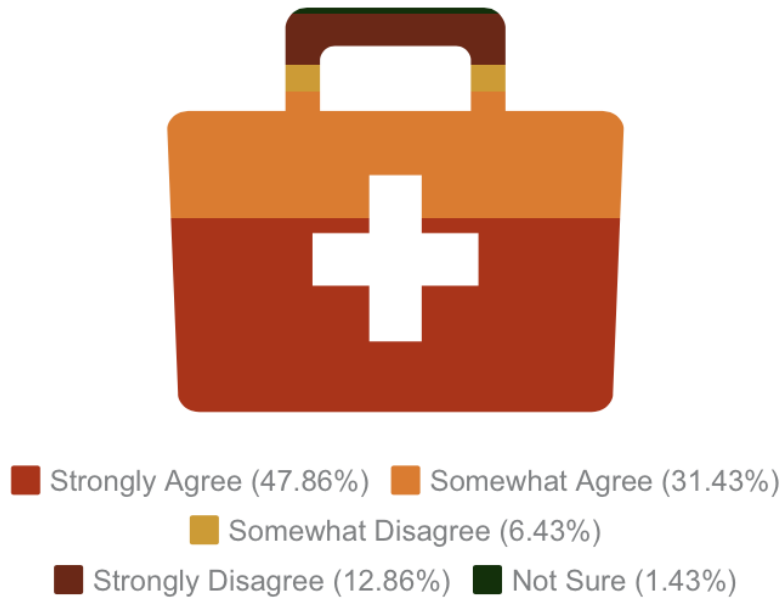
### 3.6 System Usage

The CPRPM program demonstrates benefits for the patient and health system alike. The program has focused on reducing ED visits and hospital admissions for HF and COPD. 87% (n= 130) of respondents answered positively to having less need to visit the emergency department since being enrolled in the program.



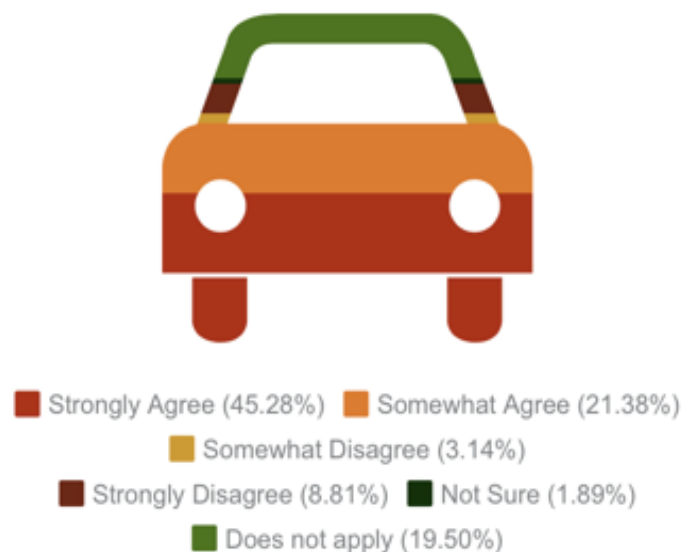
**Figure 11: Emergency department visits since enrolment**

Figure 12 shows distribution data on agreeance to the statement: *“I have had less need to visit my family doctor/nurse practitioner or walk-in clinic since starting the program”*. 79% (n= 111) of responses were positive, agreeing strongly or somewhat. This indicates that the CPRPM program decreases the need to visit a primary care physician while enrolled in the program.



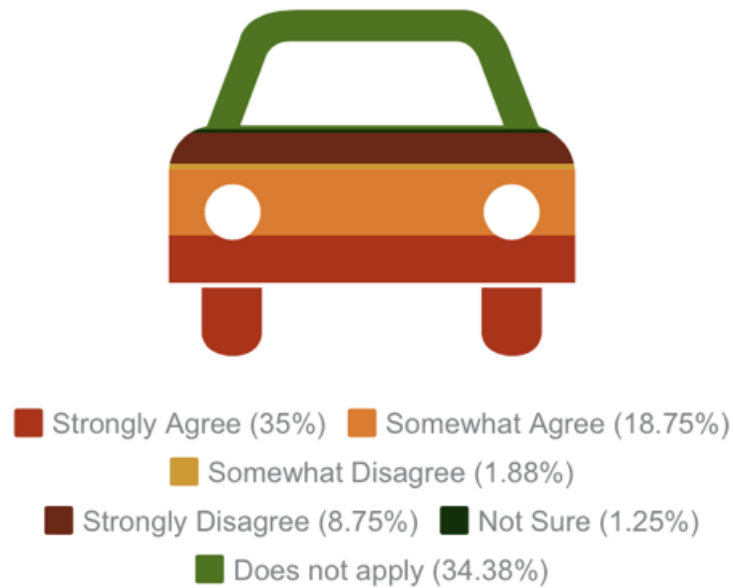
**Figure 12: Primary care provider visits during enrolment**

Figure 13 shows responses to the savings in travel time from not having to visit a health care provider during the enrolment in the CPRPM program. 83% (n=86) of respondents replied positively towards the program saving travel time. Also, for 19.5% of respondents (n=31) this question did not apply. Patients who responded strongly agree were asked to describe how many hours per month were saved in travel time due to the CPRPM system. 50 patients responded to this question, with a total of 391 hours saved. The mode savings was 4.0 hours per month.



**Figure 13: Patient travel time saved**

With the most prevalent patient population being from 75-84 years of age, many of the patients (65.6% of respondents, n= 105) have a caregiver or family member who accompanies them to their appointments. With the caregiver in mind, it is important to note their travel time savings as well. As shown in Figure 14, 54% (n=86) of respondents replied positively to caregiver travel time saved. Like the previous question, respondents were asked to report time saved if they strongly agreed. 40 participants responded to this question, with a total of 256 hours saved. Again, the mode savings was 4.0 hours per month.

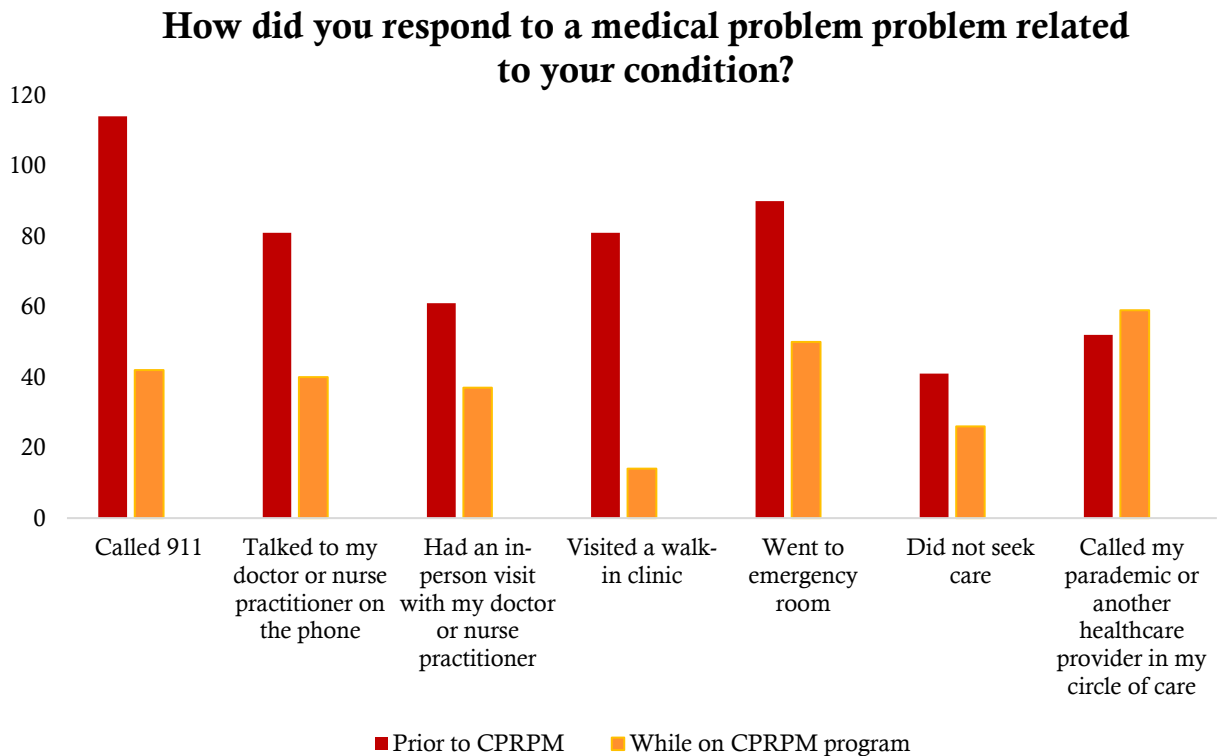


**Figure 14: Caregiver travel time saved**

Figure 15 shows respondent replies as to how they would respond to a medical problem before and after joining the CPRPM program. As shown, the most common method before joining the program was calling 911 (n=114), followed by going to the emergency room (n=90). A significant portion of respondents also chose to visit a walk-in clinic (n=81) or talk to their doctor/nurse practitioner on the phone (n=81). It is important to note that patients could “select all that apply”.

After joining the CPRPM program, respondents indicated that they chose these options much less frequently. Only 41 respondents indicated that they called 911, 40 that they talked to their doctor or nurse practitioner on the phone, and only 14 that they visited a walk-in clinic. The most common method in this case was calling a paramedic/healthcare provider in my circle of care (n=59). The second most

common method was going to the emergency room (n=50), however this was still significantly less common after joining the program than prior to it. Once again, it is important to note that patients could “select all that apply”. The comparison of these results indicates that there is a decrease in healthcare utilization due to the CPRPM program.



**Figure 15: Responses to medical problems before and after the program**

## Open-Ended Questions

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At the end of the survey, there was a section where respondents could answer the question “*Do you have any other comments or suggestions you would make regarding the CPRPM program?*” This section was responded to 80 times. Some high-level themes from the results are given below:



Many participants expressed the sense of security and other positive emotions they experience due to the program.

*I love the feeling of wellbeing I get with it!*

*I feel safer knowing I could call for advice.*

*I am very happy with this program. It has helped me to get established in the community and to trust there are good care workers out there.*

*It was helpful and reassuring that a second party was monitoring my case.*

*This is a fantastic program and should be continued on. It keeps seniors at home and feeling independent as we can be.*

Several respondents also noted the relieving effect on caregivers.

*(The program) put my caregiver at ease knowing that I was monitored.*

*The program gives the caregivers a sense of security knowing that their loved ones are being monitored.*

Many respondents took the opportunity to thank their clinicians, and some indicated that they no longer need to travel to the emergency room or doctor for assistance.

*I felt a piece of mind about my condition and I relied on the paramedics to call me if there were any problems. Thank you to all - this program is amazing. I am not going to emergency room [instead] I am calling the community paramedics.*

*I would like to thank everyone involved. I learned a lot more about my problem. I have not had to go to the hospital since I started.*

*Every member on the team I had were very helpful. I tell people about the program all the time. I want to thank all of them for teaching me so much.*

*The paramedics were knowledgeable and excellent to work with.*

A few gave suggestions for future improvements:

*Anyone with limited movement due to arthritis or other conditions could not use the BP cuff due to poor strength or knowledge of how cuff works - requires some practice to use on oneself.*

*Make communication seem more open from start (i.e., if there is a problem, don't be afraid to ask).*

*Equipment sometimes doesn't work due to batteries - perhaps better quality batteries would solve this issue.*

## CONCLUSION

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This evaluation focused on the experience and perceptions of users of the CPRPM program. Overall, the results of the survey were very positive. Especially high satisfaction levels were found with the quality of the service received (over 97%) and specifically the quality of information provided by the program (over 93% positive). In general, the technology was easy to use with improvements made as the program matured (over 98% agreement after July 2016). The only consistent issue with the technology was the need for better batteries as they died too fast.

This report also summarizes the impressive results related to reduced system utilization. Patients experienced major reductions in 911 calls and ED visits; survey results support preliminary quantitative results (i.e., 42% reduction in 911 calls and 40% reduction in ED visits).

## 4.1 Next Steps

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Patient experience surveys are extremely important to assessing the degree to which the CPRPM has achieved the specific goals of the program. As the CPRPM evolves, the program will continue to work closely with partners and stakeholders to evaluate the patient experience, health and system-related outcomes. A thorough quantitative analysis is underway that is being done in collaboration with the Institute for Clinical Evaluative Sciences (ICES).

The results of this survey will be used by Future Health to convey the patient benefits to EMSs currently involved and interested in implementing the program. The benefits summarized in this report are those felt by the patient and caregivers as well as benefits related to health system utilization. The feedback will guide Future Health to evaluate the potential benefits of additional technology solutions that will enhance the patient experience and help achieve the specific goals of the program.

## APPENDIX A

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**CPRPM Patient ID#:** \_\_\_\_\_

**Q1: In an overall, general sense, how satisfied are you with the service you have received?**

Highly satisfied	Somewhat Satisfied	Neither satisfied nor dissatisfied	Somewhat Dissatisfied	Not at all satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q2: How satisfied are you with the quality of the healthcare, teaching and coaching provided to you by the CPRPM program?**

Highly satisfied	Somewhat Satisfied	Neither satisfied nor dissatisfied	Somewhat Dissatisfied	Not at all satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q3: How satisfied are you with your progress towards the health goals that you have chosen to work on at the start of the program?**

Highly satisfied	Somewhat Satisfied	Neither satisfied nor dissatisfied	Somewhat Dissatisfied	Not at all satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q4: Please let us know how much you agree or do not agree with each of the statements below:**

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Not Sure	Does Not Apply to Me
a. Being in the CPRPM program has made my quality of life better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Being in the CPRPM program allows me to better manage my own health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Being in this CPRPM program means my family and/or those who help me with my care feel sure that I am getting the care I need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I understand my chronic condition better as a result of being in the CPRPM program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I have had less need to visit an Emergency Department since starting the CPRPM program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I have had less need to visit my family doctor/nurse practitioner or walk-in clinic since starting the CPRPM program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The equipment that I use in my home for the CPRPM program are easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. I feel confident sharing my personal health information with the CPRPM program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q5: The CPRPM program has saved me time by not having to travel to see a health care provider.**

Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Not Sure	Does Not Apply to Me
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you chose Strongly Agree or Somewhat Agree, how many hours, on average, did it save you over one month? \_\_\_\_\_ hours

**Q6: The CPRPM program has saved my family member(s) or caregiver time by not needing to travel to help me or take me to appointments.**

Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Not Sure	Does not apply to me
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you chose Strongly Agree or Somewhat Agree, how many hours, on average, did it save them in one month? \_\_\_\_\_ hours

**Q7: Compare a time you experienced a medical problem related to your condition (i.e., COPD, CHF) before joining the CPRPM program with a time you experienced a medical problem while on the CPRPM program. (Check off all that apply from the list below):**

	Prior to the CPRPM Program	While on the CPRPM Program
a. Called 911	<input type="checkbox"/>	<input type="checkbox"/>
b. Called my paramedic or another healthcare provider in my circle of care	<input type="checkbox"/>	<input type="checkbox"/>
c. Called family member or friend	<input type="checkbox"/>	<input type="checkbox"/>
d. Talked to my doctor or nurse practitioner on the phone	<input type="checkbox"/>	<input type="checkbox"/>
e. Had an in-person visit with my doctor or nurse practitioner	<input type="checkbox"/>	<input type="checkbox"/>
f. Visited a walk-in clinic	<input type="checkbox"/>	<input type="checkbox"/>
g. Went to emergency room	<input type="checkbox"/>	<input type="checkbox"/>
h. Did not seek care	<input type="checkbox"/>	<input type="checkbox"/>
i. Waited for someone from community paramedicine to contact me	<input type="checkbox"/>	<input type="checkbox"/>
j. Other (please write below)	<input type="checkbox"/>	<input type="checkbox"/>

**Q8: How likely are you to recommend this program to other patients with similar medical problems?**

Definitely

Probably

Probably Not

Definitely not

**Q9. How might the CPRPM program be improved moving forward?**

**Q10. Do you have any other comments or suggestions you would like to make regarding this program?**

**THANK YOU FOR YOUR RESPONSES**