



Nova Scotia Personal Health Record *Demonstration Project*




Mary W. Russell
June, 2014

Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

What we set out to learn

Is there a viable business case for Nova Scotia to roll out the PHR Solution province-wide?



Capital Health district
Population over 400,000
GPs 500
Specialists 913
(Medicine Blue Cross, 2013)

Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

Presenter Disclosure

- **Presenter:** Mary Russell
- **Relationships with commercial interests:**
 - Nothing to disclose


Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

Primary Evaluation Question

What are the benefits (issues) of the PHR tool ...


- to patients?
- to providers?
- to the healthcare system?



Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Implementing the RelayHealth PHR Solution




- Provider uptake was voluntary (target 30 family physicians within Capital Health district).
- Patients recruited by practices (target 100 patients/physician).
- Functions implemented included eResults, eBooking, eMessaging and patient health information repository.
- PHR project guided by multi-stakeholder Steering Committee, co-chaired by patient rep and DHW.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Evaluation Model Adapted from CHI Framework



Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Developing the Benefits Evaluation

- Benefits Evaluation Working Group (BEWG) with representation from the DHW Health Information Office (Business Intelligence, Analytics & Privacy), DHW Primary Health Care branch, family physicians and PHR project team.
- Epidemiologist engaged at key points in the development of indicators, measures and data collection tools.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Key Benefit Areas

	PATIENT	PROVIDER	HEALTH SYSTEM
Chronic Disease Management	<ul style="list-style-type: none"> • Increased participation in disease management by patient. Increased self-management of health. 	<ul style="list-style-type: none"> • Increased volume of self-reported patient information for providers to use in addressing chronic disease management. 	<ul style="list-style-type: none"> • Improved adherence to CDM clinical practice guidelines.
Patient-Provider Interaction	<ul style="list-style-type: none"> • Increase in direct communication from family practice. 	<ul style="list-style-type: none"> • Improved communication about non-routine needs with patients. 	<ul style="list-style-type: none"> • Improved adherence to CDM clinical practice guidelines.
Health Service Utilization	<ul style="list-style-type: none"> • Better access by patients to their personal health information. 	<ul style="list-style-type: none"> • Increased provider capacity for patient education, improved chronic disease management utilizing PHR visits for care between visits. Improved clinical workload. 	<ul style="list-style-type: none"> • Improved provider capacity for patient education and reinforcement of self care. Improved CDM management utilizing PHR visits for care between office visits.
Quality of Health care Service	<ul style="list-style-type: none"> • Increase in patient-centred access to health service. 	<ul style="list-style-type: none"> • Increased volume of self-reported patient information for providers to use in making clinical plans. 	<ul style="list-style-type: none"> • Improved health system coordination.
PHR uptake	<ul style="list-style-type: none"> • # of patient adopters • Satisfaction 	<ul style="list-style-type: none"> • PHR utilization • Satisfaction 	

Dissemination supported by literature review

Better health outcomes.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Selecting Indicators

- BEWG reviewed a long list of potential indicators to weed out the “would-be-interesting” from the “must-know” to start to inform the business case.
- Each domain had one main indicator.
- Each of the PHR functions was also included within the final indicator selection.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Data Streams

- Patients: focus groups (n=33); survey (RR17.3% of PHR users; 95% confidence interval +/- 3.1%)
- Providers (physician surveys and informal focus groups, admin staff focus groups, practice pre-implementation assessment, entry and exit interviews)
- RelayHealth utilization reports
- Literature search
- Case study (clinical services profile)

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project


Key Limitations

- Short data collection period (max. 12 months).
- Delay of PHR/EMR integration made it impossible to measure some workflow impacts.
- Self selection of demo practices likely = disproportionate representation of “technology innovators” than found in general MD population.
- Patient recruitment = patient visiting clinic during demo period, could mean user group has higher service needs.
- Patient survey link failed with some browsers (may have resulted in higher representation of tech-savvy respondents).
- PHR enrolment of partial patient population = dual workflow = certain inefficiency.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Patient Adoption



Target reached:

- 6 months early
- 67% higher than anticipated patient adoption

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Overall, patients love it:

- **98%** want to continue receiving their test results electronically.
- **98%** have confidence in the information presented in their eResults.
- **85%** said that having online access to their test results changed positively how much they feel they can manage their own health.
- **77%** feel more involved in their health care because of having a PHR.
- **68%** would call or visit the practice to follow-up test results if they had heard nothing.
- Only **10%** would still want to discuss normal test results received through their PHR.
- **91%** who eMessaged their doctor for advice said they would otherwise have made an appointment to see their doctor.
- **86%** of patients with a PHR would tell a friend to get one.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

What physicians said about perceived PHR value

- **100%** said receiving eResults is valuable or extremely valuable to both patients and practice.
- **100%** said broadcast message function is valuable or extremely valuable to patients; 94% to practice.
- **95%** said eBooking function is valuable or extremely valuable to patients; 90% to practice.
- **93%** said eMessaging to patient groups is valuable or extremely valuable to patients; 94% to practice.
- **87%** said secure messaging to get routine medical advice is valuable or extremely valuable to patients; 69% to practice.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Patient-rated PHR usability

	Very easy or somewhat easy	Somewhat or very difficult	Tried
Setting up your PHR	97%	3%	(95%)
Setting up a PHR for a child, spouse, or parent	94%	6%	(30%)
Logging in to your PHR	98%	2%	(97%)
Putting personal health information into your PHR	94%	6%	(37%)
Sending a message to your doctor through your PHR	97%	3%	(67%)
Getting test results through your PHR	96%	4%	(76%)
Requesting an appointment with your family doctor through your PHR	97%	3%	(48%)

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Key Findings: eResults


	Agree or strongly agree	Disagree or strongly disagree	Can't rate
I have confidence in the information presented in my test results	98%	1%	1%
Having online access to my test results increases the amount of information I have about my health	95%	3%	1%
I would like to continue to receive my test results electronically	99%	1%	0%
I find online test results confusing and difficult to understand	15%	81%	4%
I like the screen layout of my test results in my PHR	81%	10%	9%

- Most highly rated PHR function by both patients and providers.
- 85% of patients who received a eResult reported that it positively changed how they feel they can manage their own health.
- Reporting normal test results through the PHR could decrease the number of patients seeking follow up from around 70% to 10%.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Key Findings: eBooking

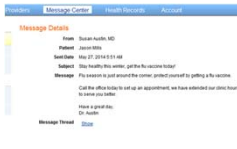


- Patients liked “not having to wait on hold” and ability to initiate appointment request anytime.
- Created dual workflow inefficiencies for some staff / impact-neutral for others.
- Patients would prefer to view practice schedule and confirm appointment in single transaction.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Key Findings: eMessaging (broadcast)




- Potential administrative efficiency gains with broadcast message function (flu clinic notices, advisories about changes to clinic office hours) and customized messages to patient subgroups.
- Patients reported high likelihood that they would open messages of all types from their family practice, but some feedback about the need to avoid excessive messaging to patient in-boxes in an age of spam.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Key Findings: eRecord



- Many patients reported that they had hoped more information would be available in their PHR.
- Expressed an expectation that this would be achieved through electronic transfer (did not want to manually input their own data).
- As PHR/EMR integration had not occurred by survey time, it is therefore too soon to tell if patients will value a PHR as their central health information repository.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

Key Findings: eMessaging (eVisits)

Where the business case appears to reside.

- a decrease in the volume of office visits not requiring hands on care from a doctor;
- an increase in the capacity for a practice to provide comprehensive support (particularly to patients with chronic illness), and;
- better access for those people who require an in-person visit with a family doctor (this includes the availability of more same-day appointments).

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

A Case Study Experiment

- Demo practice with 1,300 patients and ≈ 50% with a PHR.
- All PHR functions implemented.
- Pre- and post-PHR practice health services volume compared.
- Pre- and post-PHR practice appointment availability compared.

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

A Case Study Experiment: the data

Year	Lifestyle Counseling	Office Visits
2012	~500	~2000
2013	~600	~1750

- Change in practice service profile:
 - ↓ regular office visits
 - ↑ complex and proactive care (e.g. CDM) visits

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

A Case Study Experiment: the data

Year	Total Services Provided
2012	~5000
2013	~6000

- Total services provided ↑22% post-PHR.
- In-clinic patient services decreased (negative impact in FFS).

Benefits Evaluation Summary

Nova Scotia Personal Health Record Demonstration Project

A Case Study Experiment: the data

Week	2011/12	2012/13	2013/14
Dec-wk1	~5	~10	~10
Dec-wk2	~5	~10	~10
Dec-wk3	~5	~10	~10
Dec-wk4	~5	~10	~10
Jan-wk1	~5	~10	~10
Jan-wk2	~5	~10	~10
Jan-wk3	~5	~10	~10
Jan-wk4	~5	~10	~10
Feb-wk1	~5	~10	~10
Feb-wk2	~5	~10	~10
Feb-wk3	~5	~10	~10
Feb-wk4	~5	~10	~10

- Change in appointment vacancy rate post-PHR implementation = increase in open appts

Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

Key Recommendations

- Need more time with larger sample to further test findings.
- Integration of PHR with practice-based EMR is essential.
- Funding model to compensate physicians for eWork is essential.
- User education for physicians and patients needed to optimize the PHR as a health management tool and practice efficiency solution.
- Recognize the central role of practice administrative staff as the front line of patient recruitment, and often of patient support.
- Need physician champions for next wave implementation.

Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

In a nutshell ...



- Patients love their PHR.
- Providers would like to be able to use a PHR as part of their practice model.
- The PHR appears to be a promising technology to help clinicians be more productive, practices be more accessible and patients more involved in their healthcare.

There is directional evidence for a business case.

Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

Feedback to Solution Design

- Suggested enhancements :
 - ✧ patient desire for interoperability with external health monitoring devices
 - ✧ view practice schedule re: eBooking (need to discuss with physicians)
 - ✧ 1 800 line-early issues addressed
 - ✧ ability to release selected test results
 - ✧ ?simplify patient inputting of modified information (such as medication doses)-in discussion

Benefits Evaluation Summary

Nova Scotia Personal Health Record *Demonstration Project*

For more information:

Mary W. Russell BN, MHA, FCCHL
 Project Director, Personal Health Records
 Nova Scotia Department of Health and Wellness
 Health Information Office
 1894 Barrington Street
 PO Box 488
 Halifax, NS B3J 2R8
 Phone: 902 424-6408
 Fax: 902 424-0506

Benefits Evaluation Summary