Evaluation of web-based patient portal for chronic disease management

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OVERVIEW...

1. Background
2. Methods
3. Results
4. Discussion/Conclusions
5. Question period
BACKGROUND
Chronic Disease: World

Public Health Agenda for Chronic Diseases, 2008

Annual Global Mortality, by Category
Chronic Illness

- Diabetes
- Respiratory diseases (asthma, COPD)
- Other "noncommunicable" diseases
- Cancer
- Cardiovascular diseases

Chronic Disease: CAN/ON

**CANADA:**
- >9 million sufferers (1)
- Accounts for 87% of all disability
- 67% of all healthcare costs (1)
- 2015: cause 89% of all deaths (2)

**ONTARIO:**
- 1/3 ppl have at least 1 CD (3)
- Costs ~$80billion/year (3)
- High prevalence of Prostate cancer and Type II Diabetes in Ontario (4)
Type II Diabetes: CAN/ON

![Diabetes Prevalence by Region, 2003 & 2025](image)

- **International Diabetes Federation, 2005**

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- **Ontario**

- **Canadian Diabetes Association, 2005**
Prostate Cancer: CAN/ON

Prostate Cancer (C61), World Age-Standardised Incidence and Mortality Rates, World Regions, 2008 Estimates

Estimated Age-Standardized Incidence Rates for Selected Cancers by Sex and Province, Canada, 2011

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Canadian Cancer Society, 2011

Cancer Research UK, 2008
The research institute of London Health Sciences Centre and St. Joseph’s Health Care, London.
Chronic Disease: Trends

- ↑ cohort of aging baby-boomers
- ↑ prevalence of diabetes and cancers
- Inadequate CD management and treatment (3)
- Web 2.0 viable option for improving patient engagement
Hypothesis:

*CD patient participatory care needs* requires innovative use of communication technology, including interactive, tailored programs with feedback and social support through networks, not to mention access to care.
Objective:

1. In conjunction with a web portal provider, develop, implement and evaluate web-based CD management system for patients with diabetes (My Diabetes Wellness Portal™ (MyDWP)) and prostate cancer (Proportal™ (ProP)).

2. Test the effectiveness and usability of interactive web-based patient portal to provide prostate cancer, and diabetes patients with knowledge guidance and education necessary to help them understand their disease.
METHODS

SAMPLE
- Recruited at local hospital
- Two disease cohorts
- Inclusion/ Exclusion

STUDY DESIGN
- Pilot
- Allocation to customised portals
- Usual care + intervention
- Followed for 6 months
- REB #16100E
Welcome Al Ankinator!

My Well-To-Do's
- Complete the Conditions & Diagnosis section of your PHR
- Add some personal goals
- Enter your medications into your cabinet
  - View Full List

My Achievements
- PHR Notifications: 0 of 5 Complete!
- Well-To-Do: 1 Complete!
- Forum: 1 Messages Posted!
- Blood Pressure: 38% Optimal!

My Notifications
- Inbox (0 unread, 0 require confirmation)
- No Influenza Shot recorded in the past year. Details...
- No Weight reading recorded today. Details...
- No Clinic Blood Pressure recorded in the past three months. Details...
- No Lipid tests recorded in the past year. Details...
- No Pneumococcal Vaccine recorded in the past 5 years. Details...

Library
- Managing Congestive Heart Failure - A self-management resource for patients with Congestive Heart Failure. A 7 session guide to taking charge of the controllable aspects of your illness.
- Accupril Monograph - Contains Monograph & Patient information on the medication Accupril.
- Lipitor Monograph - Contains Monograph & Patient information on the medication Lipitor.
  - Go to Library...

Community Forum
- Diabetes Supplies: "Any Pharmacy" 0 0 0
- Diabetes Supplies: "Where is the best place to buy test strips?" 0 0 0
- Food: "osdfsfa" 0 0 0
  - Go to the Community Forum...
PRIVACY

- Encrypted stored data
- Portal company did not have access to any data
- Established secure hospital firewall
- Anonymised logins
- Disease specific data provided through manual entry & HL7 data transfer
Usability Assessment

Quantitative
Telephonic surveys at 3 months
28 likert scale items and 4 open-ended questions
Questions based on Evagelista et al 2006
Content: motivation, expectation, specific features, benefit.

Qualitative
Focus groups with each cohort at study end
Semi-structures interview schedule
Contents: motivations, expectations, usability, future recommendations
ANALYSIS

QUANTITATIVE
- Frequency of items in survey
- Usage statistics monitored by portal

THEMATIC
- Grouped open-ended survey questions
- Focus group transcripts
- Pre-empted and emergent themes
## Participation
- 34 participants completed survey
- 7 participants took part in focus groups
- Overall 99 participants consented to participate in study

<table>
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<tr>
<th>Themes</th>
<th>Features</th>
<th>Future Portal Recommendations</th>
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<tr>
<td>b. Expectations</td>
<td>b. Tracking tools</td>
<td>b. Pedagogy</td>
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<td>c. Usability</td>
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<td>e. Privacy &amp; Security</td>
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DISCUSSION
Overview:

- Tailored, interactive web-based portal essential
- n = 58 across both cohorts logged in and used the portal
- Majority derived benefit from the tool
Next steps:

- Enhance interactive social medium
- Engage participants in evaluation to ensure sustainability
- Participant recommendations
  - Emphasize social aspects of portal
  - Improve self-management opportunities
Study Limitations:

- Patient attrition
- Bias
CONCLUSION
Closing remarks:

• Pilot study marks important journey into e-based CD management
• Exploring cost-effective ways to improve CD self-management is of growing importance
• Future portals can be designed based on the findings of this research
Acknowledgements:

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References:

6. Allan J. Collins, CKD and the Public Health Agenda for Chronic Diseases, Figure 12.1 (continued; Volume Two) USRDS 2008 ADR, CDRG presentation, 25 March 2009
THANK YOU!!
Questions?

http://www.ithinkresearch.com/

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