Case Study: Giving Patients Online Access to Their Health Records

Mark Leavitt, MD, PhD - CEO, MedicaLogic
Richard Skinner - CIO, Providence Health System
Dick Gibson, MD, PhD - Medical Director of Information Systems, Providence Health System

Panel Presentation
The Symposium on eHealthcare Strategies
Phoenix, Arizona - February 2000
22 hospitals
5,000+ acute and long-term licensed beds
Served more than 1 million people through managed care plans in 1997
Primary care visits 1,523,286
Outpatient facility visits 2,873,246
Inpatient admissions 159,259
Employees (FTE) 25,000
Six **ACTIONS**

A ctively live out the mission and values, in balance with fiscal stewardship

C ustomers come first

T otal quality in all health care experiences

I nformation for breakthrough performance

O pportunities for physician leadership and involvement

N urture internal and external relationships
February 2, 1999

**Agenda**

Financial Report
New Acquisitions Strategy
*Internet based Access to Medical Records*

Mark Leavitt
Medicalogic
Connecting Patients and Physicians via the Web: The AboutMyHealth concept

Presentation for Oregon Management Council, Providence Health System
February 1999

Mark Leavitt, MD, PhD - CEO, MedicaLogic
Here’s the Pitch...

- Internet usage is growing explosively
- Health information is the #2 most frequent search topic among Internet users
- Your doctors could be disintermediated
- You already have >100 physicians using electronic medical records
- You have >150,000 electronic patient records
- Put those records online and let patients access them
- We’ll figure out the security, privacy, and other issues somehow - trust me
Here’s What It Might Look Like
AboutMyHealth

Welcome to AboutMyHealth!

AboutMyHealth is an experimental website that gives you the opportunity to take a more active role in your health care. It gives you direct access to your computerized medical record information, such as medical problems, medications, allergies, vital sign measurements (weight, height, blood pressure), laboratory results, and more. It offers you a chance to communicate with your doctor's office other than by phone. Finally, it allows you to access the myriad of resources available on the internet for learning more about your health.

Using AboutMyHealth is easy. At the left of the screen you'll see a list of topics. The major topic areas include "My Medical Records," "Learn More About," and "Send a Message." When you click on any of these major topic areas, it expands to reveal particular topics underneath. Just click on any of these particular topics to view or enter information on it. That's all there is to it!

When you're finished, click the Exit topic on the lower left. Thanks for trying AboutMyHealth!
AboutMyHealth

Name, address, phone, and insurance information that we currently have on file for you:

First Name... Carl
Last Name... Callaway
Middle Initial... S
Address........ 7443 SW Nyberg Road
City............ Tualatin
State.......... OR
Zip............. 97223
Home phone.. 503 620-9134
Day phone.... 503 624-2093
Primary Ins... CHC (Gold Plan)

Send Changes
Health Problems currently shown in your record:

- Coronary Artery Disease
- ---Infarction, Myocardial
- ---S/P Implantation of Defibrillator
- Hypertension
- Bronchitis
AboutMyHealth

Medications currently shown in your record:

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prinivil tabs 20 mg</td>
<td>1 po qd</td>
</tr>
<tr>
<td>Aspirin tabs 81 mg</td>
<td>1 po qd</td>
</tr>
<tr>
<td>Isosorbide dinitrate tabs 20 mg</td>
<td>1 po bid</td>
</tr>
<tr>
<td>Zoloft tabs 50 mg</td>
<td>1 po qd</td>
</tr>
</tbody>
</table>

Common abbreviations:

qd=once daily | bid=twice daily | tid=three times daily | qid=four times daily
qam=every morning | qpm=every evening | qhs=every bedtime
q4h=every 4 hours | q6h=every 6 hours | q8h=every 8 hours

My medical records...
Address, insurance, etc...
Health problems...
Current medications...
Allergies to medicines...
Weight | height | BP
Cholesterol | Other tests...
Preventive care due...
Next appointment date...
Print a wallet card...
Who has seen my record...
Learn more about...
Send a message...
Exit...
Blood Pressure measurements in your record:
# AboutMyHealth

Preventive care due, according to your record:

<table>
<thead>
<tr>
<th>Test or Procedure</th>
<th>Interval</th>
<th>Last Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu vax</td>
<td>every 12 months</td>
<td>5/23/1997</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>every 12 months</td>
<td>not known</td>
</tr>
<tr>
<td>Rectal exam</td>
<td>every 12 months</td>
<td>5/23/1997</td>
</tr>
</tbody>
</table>

My medical records...  
Address, insurance, etc...  
Health problems...  
Current medications...  
Allergies to medicines...  
Weight | height | BP  
Cholesterol | Other tests...  
Preventive care due...  
Next appointment date...  
Print a wallet card...  
Who has seen my record...  
Learn more about...  
Send a message...  
Exit...
A wallet card with your medical information:

- **Problems:**
  - Coronary Artery Disease
  - Infarction, Myocardial
  - S/P Implantation of Defibrillator
  - Hypertension
  - Bronchitis

- **Medications:**
  - Prinivil tabs 20 mg 1 po qd
  - Aspirin tabs 81 mg 1 po qd
  - Isosorbide dinitrate tabs 20 mg 1 po bid
  - Zoloft tabs 50 mg 1 po qd

- **Allergies:** Nitro-Dur

- **Patient:**
  - Carl S. Callaway
  - 7446 SW Nyberg
  - Tigard, OR 97223
  - Home: 503 620-9134
  - Work: 503 624-2099

- **Physician:**
  - Harry S Wirolon, MD
  - Southside Clinic
  - 1231 Medical Drive
  - Portland, OR 97112
  - 503 555-5099

Print the card by pressing the PRINT button or selecting File>Print Frame on your browser. Cut out the card along the outline. Fold it first along the horizontal line, then along the vertical line so your name and your physician's name shows on the outside, and the medical information is hidden within. Slide the card into your wallet or purse.
### AboutMyHealth

**Who has recently seen your record:**

<table>
<thead>
<tr>
<th>Date</th>
<th>User</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/22/1998</td>
<td>Harry Winston MD</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>12/19/1998</td>
<td>Harry Winston MD</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>12/01/1998</td>
<td>Jennifer Aniston</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>10/12/1998</td>
<td>Harry Winston MD</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>08/01/1998</td>
<td>Harry Winston MD</td>
<td>Internal Medicine</td>
</tr>
</tbody>
</table>
AboutMyHealth

To request an appointment, please mark the days and time periods that suit your needs:

- [ ] Monday mornings
- [ ] Monday afternoons
- [ ] Tuesday mornings
- [ ] Tuesday afternoons
- [ ] Wednesday mornings
- [ ] Wednesday afternoons
- [ ] Thursday mornings
- [ ] Thursday afternoons
- [ ] Friday mornings
- [ ] Friday afternoons

Note: Appointment requests by e-mail take four business days. If you need an urgent appointment, please call the office immediately instead.
Please mark the medications you need refilled:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage</th>
<th>Refill Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prinivil tabs 20 mg</td>
<td>1 po qd</td>
<td></td>
</tr>
<tr>
<td>Aspirin tabs 81 mg</td>
<td>1 po qd</td>
<td></td>
</tr>
<tr>
<td>Isosorbide dinitrate tabs 20 mg</td>
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<td></td>
</tr>
<tr>
<td>Zoloft tabs 50 mg</td>
<td>1 po qd</td>
<td></td>
</tr>
</tbody>
</table>

Note: Refills by e-mail take two business days. If you are completely out of your medication, please call the office instead.
Discussion
Survey of patient attitudes: AboutMyHealth.net concept

- Offline (mailed) survey to 9500 nonselected patients of three EMR-equipped primary care practices

- Besides Providence, includes data from two other large healthcare delivery systems in Western and Eastern Virginia

- Results tabulated from 480 responses
  - Approximately even distribution of ages from 21-75 years old
  - 70% are female
  - 67% use a computer at home
Accessibility

“I think this would make my doctor’s office more accessible.”
With sufficient security and privacy, I would use this private web site to send a non-urgent question to my doctor’s office.

Communication

"With sufficient security and privacy, I would use this private web site to send a non-urgent question to my doctor’s office."

[Bar chart showing percentage of respondents who strongly agree, agree, disagree, and strongly disagree with using a private web site to send non-urgent questions to their doctor’s office, categorized by whether they use their home PC or not.]
Prescriptions

“With sufficient security and privacy, I would use this private web site to request regular prescription refills.”

![Bar chart showing percentages of respondents who agree or disagree with using a private web site for prescription refills, with options to use home PC or not.]

Percentage of Respondents

Strongly Agree | Agree | Disagree | Strongly Disagree
---|---|---|---
Use Home PC | Don't Use Home PC
Privacy

“I would be comfortable with the privacy and confidentiality of my medical information.”
"A service like this would help me manage my health."

Managing Health

Percentage of Respondents

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Use Home PC
Don't Use Home PC
Oregon Management Council

November 2, 1999

Agenda

Financial Report
New Acquisitions Strategy
About My Health Status Report

Mark Leavitt
Medicalogic
AboutMyHealth
Progress Report

Presentation for Oregon Management Council,
Providence Health System
November 1999

Mark Leavitt, MD, PhD - CEO, MedicaLogic
Architecture

San Francisco Data Center, MedicaLogic

- Internet
- Health
- Record
- Database

Web and Application Server Farm

Responsibility of MedicaLogic

Encrypted VPN

Sync Station

Providence Health System, Portland

Logician

EMR Database

EMR Workstn

EMR Workstn

EMR Workstn
Security

- Patients must authorize on-line access in person at the office, with photo ID
- Only authorized records are transferred to our data center
- Access requires password and digital certificate
- Roving access (temporary certificate) via multiple-challenge questions
- 128-bit encryption used throughout
- External audit and testing of security procedures
Message Center

Incoming messages:

- 5/18/99 Appointment Confirmed: Southside Clinic
- 5/15/99 Refill Request Confirmed: Southside Clinic
- 5/18/99 Immunization Due: Southside Clinic

Request an appointment with:
- Harry S. Winston M.D.: Southside Clinic
- Frederick P. Smith M.D.: Eastside Clinic
- Kelly Pitts M.D.: Southside Cardiology

Request a refill for:
- Proventil AER 90 MCG/ACT: Dr. Winston, Southside Clinic
- Beclometh AER 42 MCG: Dr. Winston, Southside Clinic
- Septra DS TABS 800-160 MG: Dr. Smith, Eastside Clinic
- Prednisone TAB 10 MG: Dr. Pitts, Southside Cardiology

See your Medication Charts for more detailed information

Send a message to your doctor's office:
- Harry S. Winston M.D.: Southside Clinic
- Frederick P. Smith M.D.: Eastside Clinic
- Kelly Pitts M.D.: Southside Cardiology
Chart Summary

**My Medical Summary**

**Personal Information**
Judy S. Pullman  
40 Magnolia Rd, Apt 125  
Salem, WA 97902  
Home phone: 503-299-7222  
Day phone: 503-531-7509

**Physician Information**
Harry S. Winston MD  
10288 SW 43rd Ave  
Portland, OR 97202  
503-233-2233

**Problems**
- Asthma
- Cervical Arthritis, minor diagnosis
- Acute Upper Respiratory Infection, minor diagnosis
- Acute Sinusitis

**Medications**
- Proventil AER, 60 mg/act
  - 2 puffs 4 times daily for shortness of breath
- Beclovent AER, 42 mg/CG
  - 4 puffs twice daily
- Prednisone TAB, 10 mg
  - 2 p.o. twice daily on day 1, 2 p.o. once daily the next 4 days, then 1 p.o. once daily 5 days

**Allergies**
- Aspirin
- Erythromycin

Send a message or a question to the office of Harry S. Winston, M.D.

Visit Providence Health System website
Problems List

About MyHealth.net  Judy S. Pullman  May 25, 1999

Health Info
- My Medical Summary
- Health Problems
- Medications List
- Allergies
- Height & Weight
- Blood Pressure
- Cholesterol

Registration Info
- Address & Phone
- Personal Contacts
- Pharmacy
- Employer
- Insurance
- Directories
- Who's Seen My Chart
- Future Appointments
- Printable Wallet Card

Health Problems
- Current Health Problems diagnosed at Southside Clinic:
  - Asthma, diagnosis recorded 4/25/1970
  - Cervical Atypism, minor diagnosis, recorded 1/12/1999
  - Acute Upper Respiratory Infection, minor diagnosis, recorded 11/15/1998
  - Acute Sinusitis, diagnosis recorded 12/15/1998

Past Health Problems on record: ▼ open this list

Send a message or a question to the office of Harry S. Winston M.D.

Visit Providence Health System website
Graphs
Wallet Card

Printable Wallet Card

Print this card by pressing the PRINT button or selecting File>Print from your browser. Cut out the card along the outline. Fold it first along the horizontal line, then along the vertical line so your name and your physician’s name shows on the outside, and the medical information is hidden within.

AboutMyHealth.net Judy S. Pullman May 25, 1999

Health Info
- My Medical Summary
- Health Problems
- Medications List
- Allergies
- Exercise
- Blood Pressure
- Cholesterol

Registration Info
- Address & Phone
- Personal Contacts
- Pharmacy
- Employee Insurance
- Directives
- Who’s Seen My Chart
- Future Appointments

Printable Wallet Card

Health Problems
- Asthma
- Cardiovascular Disease, minor diagnosis
- Acute Lower Respiratory Infection, minor diagnosis
- Acute pancreatitis

Medications
- PROVENTIL (inhaled)
- BECLOVENT (inhaled)
- SPRINTAL (tablets 100-150 mg)
- Presc: PMS 720 mg

Allergies
- ASPARAGUS
- ERTHYROMYCIN

Primary insurance coverage
- Providence Health Plan
- Contact: Betty Hilt
- 825 NE Roseway, Portland, OR 97231
- Primary phone: 503-233-5900
- Fax: 503-233-5901
- Group: UO4737938
- Member #: 72742947
- Plan: 2V
- Benefit code: 15DOU, RX5S9O, H5P78BDL

AboutMyHealth.net Judy S. Pullman 60 Magnolia Rd, Salem, WA 97007 Home: 503-299-7222 Work: 503-531-7768

Emergency Contact

www.aboutmyhealth.net

Send a message or a question to the office of Harry S. Winston M.D.

Providence Health System website

MedicaLogic
Connecting Physicians and Patients
First Sign-Up
It’s in your court now...
Sign-Up Trend
7/99-10/99

Cumulative AboutMyHealth Patients

- Baylor
- Providence
- Carilion
- Riverside

Week Ending

Registered Patients

28-Jul-99
4-Aug-99
11-Aug-99
18-Aug-99
25-Aug-99
1-Sep-99
8-Sep-99
15-Sep-99
22-Sep-99
29-Sep-99
6-Oct-99
13-Oct-99
20-Oct-99
27-Oct-99

215
159
85

0
50
100
150
200
250
Cumulative Logins by Month
7/99-1/00

Legend
- Providence Family Practice - Wilsonville
- Riverside Hilton Family Practice
- Christianburg Family Practice Clinic
- Baylor Family Practice Center
Distribution of Page Views

- Message Center: 44%
- Charts: 30%
- Search: 12%
- News: 14%
Message Distribution
7/99-1/00

- Questions: 57%
- Chart updates: 16%
- Appointments: 12%
- Portal feedback: 13%
- Refills: 2%