Using Technology to Improve Access: Secure Messaging

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8 Change Concepts for Practice Transformation

1. Foundational Changes
   Engaged Leadership
   QI Strategy
   Empanelment

2. Changing Care Delivery
   Continuous, Team-based Healing Relationships
   Patient-Centered Interactions
   Organized, Evidence-based Care

3. Changing Patient Experience
   Enhanced Access
   Care Coordination
Evaluation of 2003 - 2005 Early MYCHART Use in Kaiser Northwest Region

Summary of Findings

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CareOregon
Clinical Systems Innovations

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Kaiser Foundation Health Plan
National Market Research

SNMHI Webinar
April 24, 2012
Kaiser Permanente

An integrated care delivery system

8.9 million members
8 regions (across 9 states and DC)

Kaiser Northwest Region
15 clinic sites
2 hospitals
In 2005: 337,000 Kaiser members, 250 primary care PCPs
First to launch EPIC (1997) and MYCHART (2002)

Kaiser launched EPIC across all regions in 2002

- Focus on preventive care
- Salaried doctors shape patient care and performance standards and policies.
- Multi-disciplined, team based care, population/disease management practices to attend to real patient need, minimize hospitalization
A KP Question in 2002: will the EMR and internet services drive transformation of care delivery, particularly in primary care?

Managing a Pre-paid system

- Forecast of population need and demand...
- Plan for delivering the right care and services to improve health, affordably...
- Efficient delivery of services....
- Who bears the risk?

Secure messaging:
- Part of core practice, or new service?
- Opportunity to improve KP price point?
  - attract and retain a balanced profile of members?
  - replace existing workload? More efficient?
    Opportunity for increased panel size, lower total cost of care?
or
- Open floodgate to unmet demand? New demand…. (“…just want to talk”)?
  - More work for the more productive??
- Opportunity for improved quality, or increased risk of medical liability?
Our First Study: KP National funded evaluation of 2002-2003 cold start MYCHART pilot in KPNW – *helped propel full scale launch of MYCHART in KPNW*

**KPNW 2002 MYCHART PILOT**
- features and functionality,
- tracking and management
- training
- marketing
- Integration into EPIC

- Worries – patient and PCP value and use

**KPNW STUDY #1 :**
- 2000 registered users
- 15 PCPs at 2 clinic sites
- marketed by PCP direct mail letter under PCP signature
- became 1000 message users
- initiating 2000 message encounters

**STUDY RESULTS:**
- Patients highly satisfied!
- Message content and length appropriate.
- PCP buy-in and testimonials
  - Vision: powerful tool for managing populations
  - Team workflows, cross coverage can manage flow and medical risk
  - appears to replaces phone calls and some visits; not clearly more efficient than phones.
- Concern with how MYCHART workload is counted
- Clinicians with more MYCHART experience were confident in their ability to manage frequent or long, open ended complex requests..
- Workload fears: > 10 messages/day,

**KPNW Policy Decisions**
- secure messaging part of primary care core practice!
- reimburse PCPs for workload impact.!

Make secure messaging core to specialty care!

**RESULT:**
- **MYCHART roll out to all KPNW**
- **Full scale TV, radio, print marketing**
- Launch Full Evaluation Study of MYCHART 2005 impacts

|------|------|-----------|--------------|-------------|-------------|

*EPICARE FOR CLINICIANS*
So in 2004 KP National and KPNW funded an IRB approved evaluation of MYCHART in the KPNW region

Purpose: answers to these study questions could compel and guide integration of secure messaging into practice:

Who are the PCPs who used MYCHART?

Who are the member users?

What are members saying about use and value?

What is the impact on
• clinician workload?
• office visit utilization?

What is the profile of MYCHART PCP encounter content?

What are KPNW implementation learnings?
Our study revealed important aspects of adoption and spread

SURPRISE:
Limited spread of secure messaging use across PCP panels in spite of mid 2005 PR blitz

- Proactive PCP’s converted registered patients to message users.
- PCP interest in championing MYCHART hinged on practice vision, confidence in workflows, and on individual practice style
  - pace and work patterns
  - Use of technology
  - approach to direct patient phone communication
  - style of setting boundaries
  - years of practice experience

- Most PCPs still hesitant: concerns about workload, in spite of reimbursement – concerns about volume, boundary setting; workflow and practice style disruption, liability for missed medical risk
KPNW Implementation Team interventions helped the early spread of MYCHART

2005: KPNW MYCHART implementation team interventions:

- PDSAs with clinics to improve workflows
  - Use of PCP and team pools
  - Scope of practice decision chart – who should respond to messages
  - Supported a variety of locally selected workflow options: first touch, message response flow, PCP out of office
- Training for boundary setting and integration into work flow
- Clinic and PCP level MYCHART management reports
- Easy access to live technical help, clinical guidance
Primary Care Clinicians – Number of Email Encounters

Significant variation but wide use

Average Number of Email Encounters
= 27 per Adult PCP in January 2006
Members: Who were the early adopters of My Chart?

• As of September 30, 2005, My Chart users represented only 5% of all adult members.
• Women were more likely than men to register for My Chart.
  – 5.6% of women members and 4.4% of male members
• Older members were somewhat more likely to register.
  – Women 45 to 64 years old and men over 45 years were somewhat more likely to register than other age groups.
• Patients with chronic diseases were more likely to register for My Chart.
• There was no significant difference between men and women in the rate of messaging after adjusting for age and health status.
  – During the evaluation period, 62% of My Chart users sent messages to their PCP
  – On average, 4.2 messages sent to PCP per My Chart user per year, representing about 2.9 email encounters per year.
Members’ messages to their primary care clinician

- Two-thirds of encounters involved one member message and one clinician response.
  - Another 20% of encounters involved 2 member messages and two or more clinician responses.

- Nearly half of member encounters began with a clear request; the members knew what they want.
  - However, one-third of encounters began with diffuse, open-ended or complex questions.

- Members typically presented one or two requests per message
  
<table>
<thead>
<tr>
<th>Requests</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 request</td>
<td>36%</td>
</tr>
<tr>
<td>2 requests</td>
<td>32%</td>
</tr>
<tr>
<td>3 requests</td>
<td>23%</td>
</tr>
<tr>
<td>4 plus requests</td>
<td>7%</td>
</tr>
</tbody>
</table>
What were the main reasons members emailed their primary care provider?

- Three-quarters of members’ emailed their clinician about an ongoing problem or care plan; almost one-quarter emailed about a new medical event or condition.
- About 50% of patients reported the primary reason for emailing was to:
  - Report a change in a medical condition (16%)
  - Discuss a new condition or symptom (12%), or
  - Discuss a change in prescription dose or need for a new prescription (21%)
- Email messages from members were clinically relevant
  - Nearly two-thirds of member-initiated email encounters required clinical assessments or decisions.
  - Another one-quarter of encounters were requests that require clinical actions (orders, tests results).
  - Less than 5% of members mentioned a non-medical reason for emailing
Patients reported many different reasons for e-mailing their PCP.

Reasons sorted by the primary reasons for emailing.

Note: Percentages are for Primary Reason.
What did members say about My Chart secure messaging use and value?

Overall members were extremely satisfied with email exchanges they have with their PCP

- 85% rated encounters 8 or 9 on a 1-9 scale
What led to member satisfaction with email encounters?

**Satisfaction was associated with:**

- Whether all questions were answered
- Completeness of answers
- Whether the email exchange yielded the results the member wanted
- Timeliness of PCP’s responses
- Courtesy of PCP’s responses
- Amount of influence the member wanted and had in decisions—shared decision making
Satisfaction with email encounters was **not** associated with:

- Specifics of members’ requests
  - Whether members emailed about new or ongoing problems
  - The specific types of requests members made
  - Whether members’ requests were complex or open-ended
- The following characteristics of clinician responses
  - The clinical intensity of the assessments or actions included in the clinicians’ responses
  - Whether the exchange included an out-of-office auto reply
  - Whether the clinicians’ responses contained slang or grammar and spelling errors
- Clinicians’ historic office visit patient satisfaction scores
- Members’ demographics or health status
Nearly 75% of members reported receiving their clinicians’ responses within 24 hours. Less than 4% reported response times over 48 hours.

Members’ ratings of clinicians’ response times begin to fall sharply after 24 hours.
Did email encounters substitute for office visits?

- My Chart resulted in an estimated 7% to 10% reduction in primary care office visits for My Chart users.
  - This finding is based on a comparison of primary care office visit rates among My Chart users prior to and after signing up for My Chart, as well as a comparisons of visit rate changes between My Chart users and a matched control group.
    - Primary care visits included primary care daytime visits, urgent care and visits to KPNW emergicenters.
  - How clinicians and members use email communication will continue to develop.
  - My Chart users were sicker than the general membership; so their experience at the time of the evaluation may not accurately predict the amount of visit substitution as secure messaging is broadly adopted by KP members.
Did email encounters substitute for phone messages?

**Member Perspective**

- Over 60% of members indicated that they would have called the doctors’ office or the advice nurse if email had not been available when they initiated their email encounter
  - Another 25% indicated that they would have called to schedule an appointment. Many of these calls likely would have been resolved on the phone by an advice nurse or clinician.

**Clinician Perspective**

- Ten clinicians who kept time logs observed that the profile of members’ request is very similar for email and member initiated phone calls.
  - These clinicians indicated that nearly all low clinical intensity emails, and most of the higher clinical intensity emails, would have replaced phone calls.
Did email encounters create new demand?

- Only 11% of members initiating an email encounter with their primary care clinician indicated that they would not have contacted KP if email had not been available to them.
  - Almost 4% said that they would have ignored the issue.
  - The remaining 7% indicated that they would have chosen their own self-care steps.
How did the efficiency of email encounters compare to the efficiency of phone calls?

• The estimates of how long it took clinicians to answer an email encounter are based on time log data recorded by 10 clinicians who are in the group of high volume My Chart users.
  – The particular value of this case-study is the comparison of times to answer email encounters and telephone encounters.

• There was little difference in the average time for these clinicians to complete a member initiated phone encounter and an email encounter.
  – Email encounters: 5.7 minutes, including research and other work involved in the response.
  – Telephone encounters took the clinicians an average of 5.4 minutes, for encounters not handed off to nurses/medical assistants.
Conclusions

- How many messages did clinicians receive?
  - On average, 4.2 messages per My Chart user per year, representing about 2.9 email encounters per year.

- Did email messages substitute for primary care office visits?
  - Yes, there is strong evidence that My Chart messaging reduced the primary care visit rates of My Chart members.

- Did My Chart email messages substitute for a phone messages?
  - Yes, the majority of email encounters replaced phone calls.

- Did My Chart messaging create new demand from members?
  - Members reported about 11% of the encounters represented new demand--i.e., they would not have contacted KP if email messaging were not available.

- How does the efficiency of email encounters compare to phone calls?
  - There was little difference in the average time for clinicians to complete member initiated phone encounters and email encounters. Individual clinician experiences may vary based on practice patterns.
Findings published since our studies suggest secure messaging can improve the value equation of care delivery.

Published findings report a similar profile of message users at Group Health, high patient satisfaction with no adverse impacts on PCPs, evidence of impact on quality,

2009 McColl study of MYCHART users at Group Health
higher use associated with female gender, greater overall morbidity, and PCP use of messaging with other patients.
Less associated with over 65, and Medicaid.

2009 a broad literature survey:
patients satisfied, PCPs report no adverse impacts, economic benefits evident in larger health care systems,

2009 Kaiser and GH studies:
Messaging associated with better performance on HEDIS measures of diabetes control and LDL
But other studies report slow spread where clinician workload impacts and reimbursement not well managed:

Studies 2008 – 2011 describe slow adoption of secure messaging use across office-based physicians

A 2010 NEJM article shows the profile of a busy primary care practice:

PCPs offering secure messaging adding 17 emails per day to average of 18 visits, 24 phone calls, 55 inbasket items.

Workload difficult to manage without boundaries on panel size/workload, reimbursement tied to workload, radical change in practice design.

2009 national survey results suggest Office-based Physicians hesitant to advocate/initiate: various surveys:

Percent connected to patients grew from 25 percent in 2006 to 39 percent in 2009

2009 survey -- only 6.7 percent routinely using email; of those w technology in place, only 19 percent were.

Reasons: lack of reimbursement, potential for increased workload, maintaining data privacy, avoiding increased medical liability, uncertain impact on care quality

A 2011 study shows Physicians reporting frequent use of email hasn’t changed much since 2005

Interest in future use is lower in 2008 than 2005
Use of secure messaging is spreading more effectively in large pre-paid systems that have accounted for PCP workload impacts.

A 2011 article in *Journal of Oncology Practice* reported on use of secure messaging in NCAL Kaiser as of December 2010 reported that:

- 64 percent of eligible plan members had signed up.
- 60 percent female.
- Median age 48, range 13-95.
- Average 3.5 messages per day across all 7k KP primary and specialty care physicians.
- Majority of communication handled directly by physicians.
- Lots of implementation effort, training, etc. for physicians.
- Lots of resources on line for patients.
- No assessment yet of usefulness of secure messaging for oncology patients, but secure messaging highly valued by patients who are engaged in intensive, complicated treatment regimens involving multiple specialties.
About Group Health...

- Integrated health insurance & delivery system
- Founded in 1946
- Consumer governed, non-profit
- Membership: 628,000    Staff: 9,390

- Multispecialty Group Practice
  - 26 primary care medical centers
  - 6 specialty units, 1 hospital
  - 960 physicians
- Contracted network
  - > 9,000 practitioners, 39 hospitals
The Ideal System

- Home as Hub
- Consumer-Centric
- Secure & Seamless Transitions
- Customized
- Integrated & Leveraged
Patient Centered Health Informatics

EHR Implementation
Traditional: Doctors First

2003
2004
2005
2006

EpicCare for physicians
Patient Online Medical Record
EHR Implementation
Group Health: Patients First!
MyGroupHealth for Adults

- 252,000 Enhanced Services Members

MyGroupHealth Big Bang
8/14/03

Health Profile launch

70% of GHC clinic patients access their care teams online
Lab Page Views

35,000 - 50,000 page views per week
Secure Messaging Usage

7,000 – 10,000 Secure Messages a week
Automated Results Sharing

- Incoming interface shares normal results in real time, abnormals next day.
### Lab Results in Context

#### Prothrombin Time

**Test Overview**

Prothrombin time (PT) is a measure of how long it takes blood to clot. At least 12 common blood proteins, or blood clotting factors, are needed for clotting and blood to properly clot. The pathologist, or factor, is one of several clotting factors produced by the liver. Adequate amounts of vitamin K are needed to produce prothrombin.

#### Prothrombin Time

**Test Results**

<table>
<thead>
<tr>
<th>Date</th>
<th>Test</th>
<th>Authoring Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/14/2004</td>
<td>TUMOR NECROSIS FACTOR-ALPHA (PAP)</td>
<td>ANDREA MCCOA</td>
</tr>
<tr>
<td>04/12/2004</td>
<td>PROTIME</td>
<td>STEVEN HOCKEMD</td>
</tr>
<tr>
<td>04/12/2004</td>
<td>SPEC RATE</td>
<td>Barbara J Dattler</td>
</tr>
<tr>
<td>11/17/2003</td>
<td>HEMOGLOBIN ALC</td>
<td>STEVEN HOCKEMD</td>
</tr>
<tr>
<td>11/17/2003</td>
<td>ELECTROLYTES</td>
<td>STEVEN HOCKEMD</td>
</tr>
</tbody>
</table>

#### Note:

The status column indicates whether you have viewed your test results.

For more information: Understanding lab test results.
Shared Problem List

Medical Problems

New Problem | Sort Problems

Problem

ADV EFF YELLOW FEVER VAC (aka YELLOW) [5449.3]
2 DEG BURN FINGR W THUMB [844.24]
SCHIZOID PERSONALITY DISORDER [301.20]
LUMBAGO [724.2]
INFC/INFLAM INTERN JOINT DEV (aka JOINT) [896.66]
CONGESTIVE HEART FAILURE, UNSPEC [128.0]
ECZEMA HERPETICUM [951.8]
DIABETES UNCOMPL ADULT TYPE II [250.1] 0
OLD MYOCARDIAL INFARCT [412]
BENIGN HYPERTENSION [401.1]
SCHIZOAFFECTIVE DISORDER [295.70]

Health Issue

Cellulitis Of Hand

Date Noted
11/14/2003
Tennis Elbow

Topic Overview

What is tennis elbow?

Tennis elbow, also known as lateral epicondylitis or epicondylopathy, occurs when there is tendon damage at the elbow where some of the forearm and hand muscles connect to the upper arm bone.

What causes tennis elbow?

Tennis elbow can also result from using the wrong type of sports equipment or improper technique. A tennis racquet with a grip too large for your hand can put a lot of pressure on your tendon. Hitting the ball late in the swing can also cause tennis elbow.
Mobile Applications for MyGroupHealth

![Android Logo]

11,290

![Apple Logo]

25,421
Secure Messaging and E Visits

• To the extent we keep the patient at the center and organize to meet their needs, secure messaging is a core functionality

• Satisfier for patients, payors (increasingly) and employers

• Time motion study suggests that a Secure Message/ E visit takes half of the time of a phone visit

• Workflow efficiencies abound
  – Triage
  – Asynchronous activity
  – Batching

• Documentation of care is improved – especially for patients

• Integration with an EMR will help offset the documentation burden of clinicians
Challenges

- The Adaptive/Cultural change is harder than the technical change
- Engaging clinical staff in sign up
- Recognizing that the digital divide is smaller than you think
- Managing the time requirement for indirect patient care
  - There will be few messages at first
  - Clinicians will want time to manage their highest demand day before there is steady volume
Shifting Demand:
If e-mail were not available, would you...

Organizing care around the needs and preferences of the patient....

In a way that benefits clinicians, payors and purchasers
Benefit to our Success

“My non-Group Health friends and co-workers are jealous of me and my accessibility to Group Health. What a wonderful service.”
Barriers

- Patient access
- $$$
- Work flow
Vulnerable population access

- MiVIA™ program [www.MiVIA.org](http://www.MiVIA.org)
- REC}s
• One time: Meaningful use incentive
• Potential for ongoing support:
  – Colorado Medicaid: Accountable Care Collaborative
  – North Carolina Community Care Networks
  – Dual eligible programs
Work flow

• Reliability
• Simple
emailing your patients

About 67,200,000 results (0.34 seconds)

Featured articles - Integrating patient email into your practice...
www.tmlt.org/newscenter/features/patient_email.html
Integrating patient email into your practice. by William Malamon. <- Featured Articles
Home. Email has come a long way since the birth of the Internet 40 years...

Recent Events | Effective Patient-Provider Email: A Pediatrician's...
Laura M: do you have any issues with patients over-using the email? how do you handle that? Robin P.: Do you limit your emails to specific types - RX refills, ...

Email and your patients - Is it too risky and time-consuming, or an...
www.modernmedicine.com/...Now/Email...your-patients/.../726070
Jun 10, 2011 – A decade ago, a risk management consultant in Washington State predicted that "within the next few years all clinicians will be routinely using...

Email with Patients -- Health Information Technology -- American...
www.aafp.org › ... › Connect and Communicate
Market Your Email Service -- If you leave it to word-of-mouth, patients will eventually learn about your new email service. Promoting it will bring quicker results...