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Jan 29th, 12:00 PM

## 2010 K12 Awardees: Overview of Research Projects

Sarah L. Cutrona

*University of Massachusetts Medical School*

*Et al.*

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Cutrona SL, Santry HP. (2014). 2010 K12 Awardees: Overview of Research Projects. UMass Center for Clinical and Translational Science Seminar Series. Retrieved from [https://escholarship.umassmed.edu/umccts\\_seminars/2014/seminars/1](https://escholarship.umassmed.edu/umccts_seminars/2014/seminars/1)

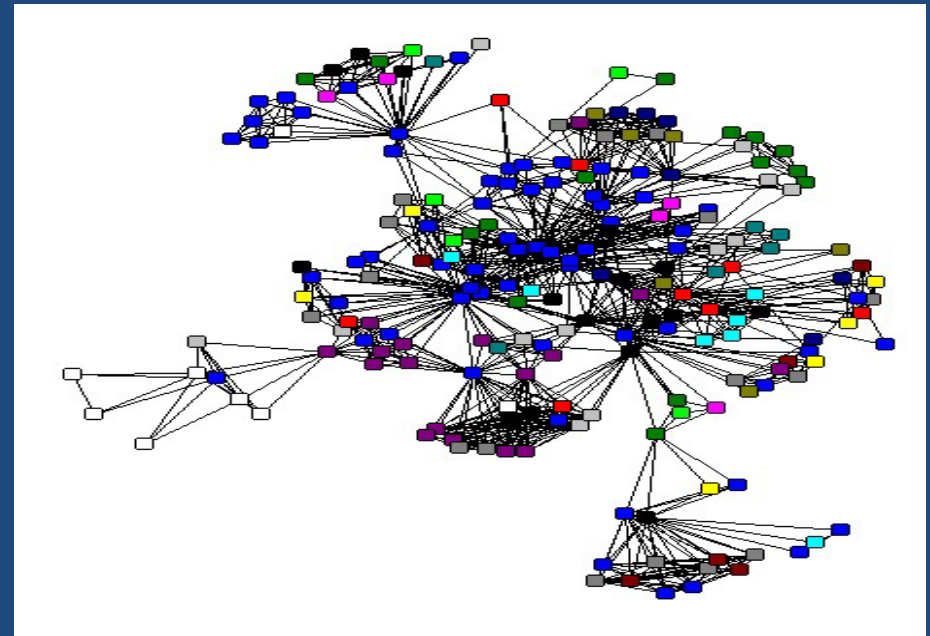
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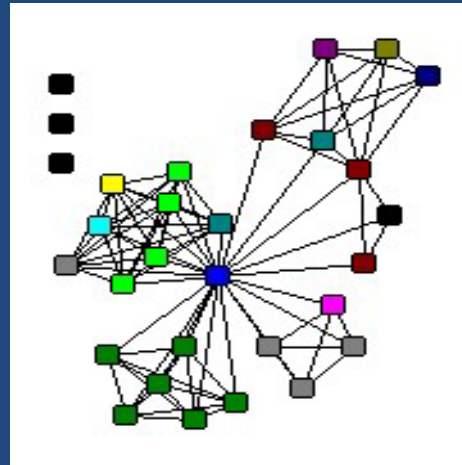
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# Electronic Transmission of Health Information across Networks



**Sarah L. Cutrona, MD, MPH**  
Assistant Professor of Medicine  
Division of General Medicine/Primary Care  
Meyers Primary Care Institute

# E-Communication across Networks



# E-Communication across Networks

A. Social Networks



B. Healthcare Networks

# E-Communication across Networks



## A. Social Networks

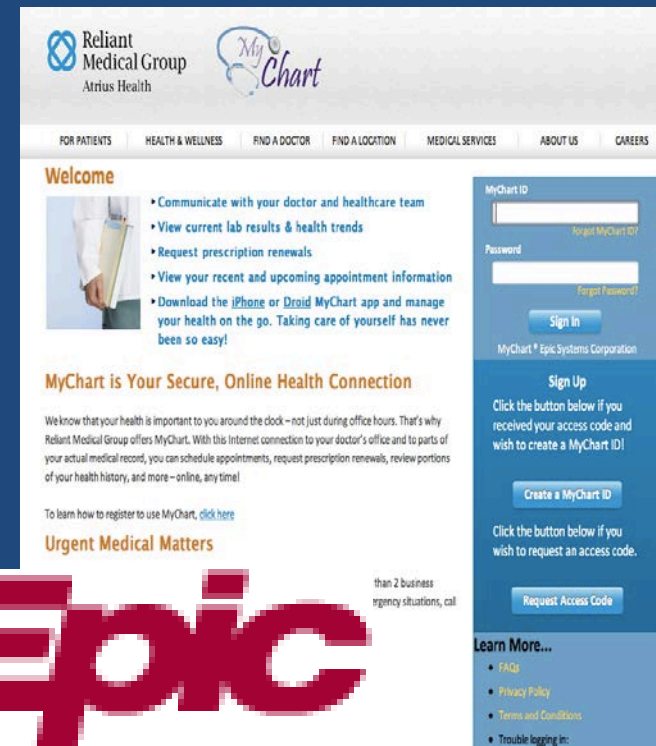
1. Internet, email & social media
2. Health Literacy/Language choices
3. Peers (peer referrals, seeking health info on behalf of others)

## B. Healthcare Networks

# E-Communication across Networks

## A. Social Networks

## B. Healthcare Networks



The screenshot shows the MyChart patient portal for Reliant Medical Group (Atrius Health). The page features a navigation menu with links for Patients, Health & Wellness, Find a Doctor, Find a Location, Medical Services, About Us, and Careers. The main content area includes a 'Welcome' section with a list of services: communicating with the healthcare team, viewing lab results, requesting prescription renewals, and viewing appointment information. Below this is a 'Sign Up' section with a description of MyChart's benefits and a 'Create a MyChart ID' button. A 'Request Access Code' button is also present. The right sidebar contains a login form with fields for MyChart ID and Password, and a 'Sign In' button. At the bottom, there is a 'Learn More...' section with links to FAQs, Privacy Policy, Terms and Conditions, and a 'Trouble logging in?' link. The Epic logo is visible in the bottom right corner.

Reliant Medical Group  
Atrius Health

MyChart

FOR PATIENTS | HEALTH & WELLNESS | FIND A DOCTOR | FIND A LOCATION | MEDICAL SERVICES | ABOUT US | CAREERS

### Welcome

- Communicate with your doctor and healthcare team
- View current lab results & health trends
- Request prescription renewals
- View your recent and upcoming appointment information
- Download the iPhone or Droid MyChart app and manage your health on the go. Taking care of yourself has never been so easy!

### MyChart is Your Secure, Online Health Connection

We know that your health is important to you around the clock – not just during office hours. That's why Reliant Medical Group offers MyChart. With this Internet connection to your doctor's office and to parts of your actual medical record, you can schedule appointments, request prescription renewals, review portions of your health history, and more – online, any time!

To learn how to register to use MyChart, [click here](#)

### Urgent Medical Matters

than 2 business  
agency situations, call

MyChart ID

Forgot MyChart ID?

Password

Forgot Password?

Sign In

MyChart® Epic Systems Corporation

Sign Up

Click the button below if you received your access code and wish to create a MyChart ID!

Create a MyChart ID

Click the button below if you wish to request an access code.

Request Access Code

Learn More...

- FAQs
- Privacy Policy
- Terms and Conditions
- Trouble logging in:

Epic

# E-Communication across Networks

## A. Social Networks

## B. Healthcare Networks

### 1. Pulling in the patient

- E-portal Use
- Patient updating own EHR

### 2. Syncing In/Outpatient networks

FOR PATIENTS | HEALTH & WELLNESS | FIND A DOCTOR | FIND A LOCATION | MEDICAL SERVICES | ABOUT US | CAREERS

### Welcome

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MyChart ID  
  
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Click the button below if you received your access code and wish to create a MyChart ID!

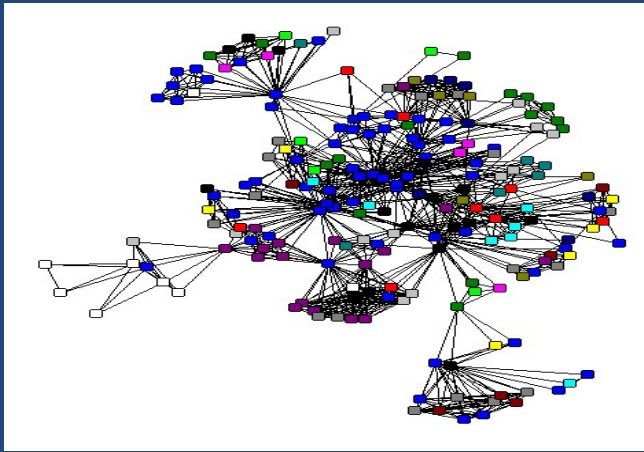
[Create a MyChart ID](#)

Click the button below if you wish to request an access code.

[Request Access Code](#)

Learn More...

- [FAQs](#)
- [Privacy Policy](#)
- [Terms and Conditions](#)
- [Trouble logging in:](#)



# Social Networks

Social networks are  
the collections of social ties  
among friends\* or family.

\* From the book *Networks, Crowds, and Markets: Reasoning about a Highly Connected World*.

By David Easley and Jon Kleinberg. Cambridge University Press, 2010.

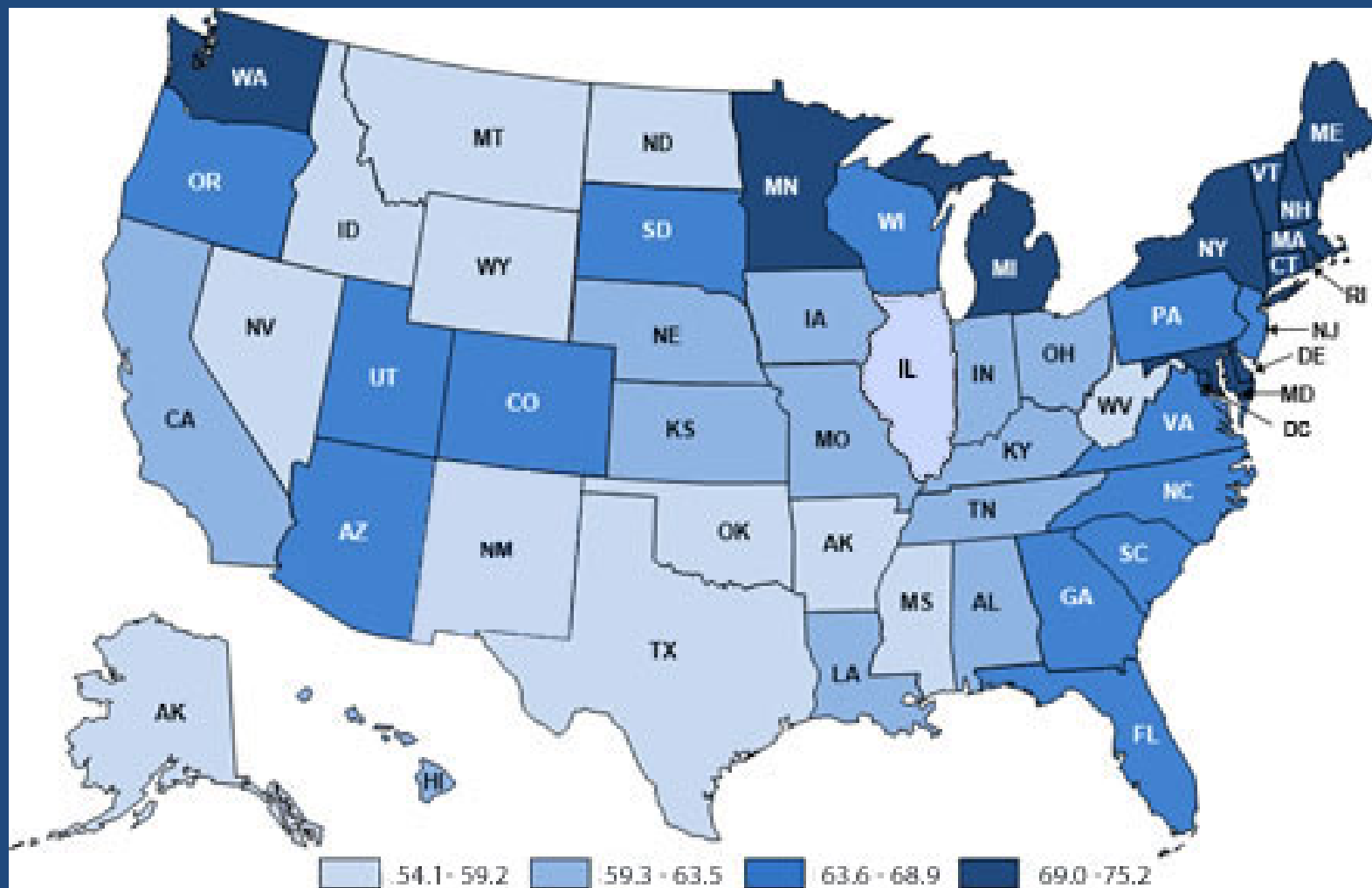
Complete preprint on-line at <http://www.cs.cornell.edu/home/kleinber/networks-book/>



# Percentage of Adults Aged 50–75 Years Who Reported Being Up-to-Date\* with Colorectal Test Screening, by State

## Behavioral Risk Factor Surveillance System, United States, 2010

\*“Up-to-date” =FOBT within 1 yr, a sig w/in 5 yr + FOBT w/in 3 yrs, or a colo wi/in 10 yrs.



# CRC screening prevalence, adults 50 and older, BRFSS 2006,2008

- Massachusetts ranks 4<sup>th</sup> nationally

All races: 69.6%

White 70.6% (rank 6<sup>th</sup>)

African-American 63.3% (rank 10<sup>th</sup>)

Hispanic 57.5% (rank 9<sup>th</sup>)

# CRC screening prevalence, adults 50 and older; BRFSS 2012

- Massachusetts ranks FIRST nationally

All races: 76.3% Up to date

White

African-American

Hispanic

- 65.1% of all Americans up to date

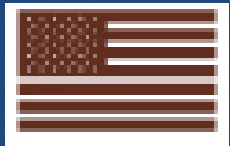
**Vital Signs: Colorectal Cancer Screening Test Use —  
United States, 2012**

**Weekly**

**November 8, 2013 / 62(44);881-888**

*On November 5, 2013, this report was posted as an MMWR  
Early Release on the MMWR website <http://>*

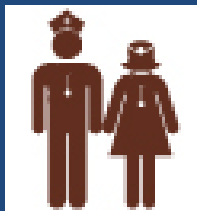
# To improve rates of CRC screening, the CDC describes roles for:



The Federal Government

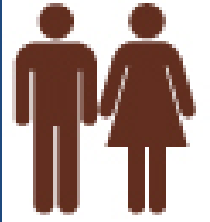


State and Local Public Health



Doctors, nurses and health systems

# To improve rates of CRC screening, the CDC describes roles for:



## **Everyone:**

- Learn options, get the test that's right for you
- Know your family history and personal risks
- Contact your local health dept to learn how to get tested
- Encourage friends and family members to be tested for CRC.

# Campaigns: Use of Peer support



- Bowel UK  
“Be Behind it” campaign



**I got screened.  
Now, I'm talking about it.**



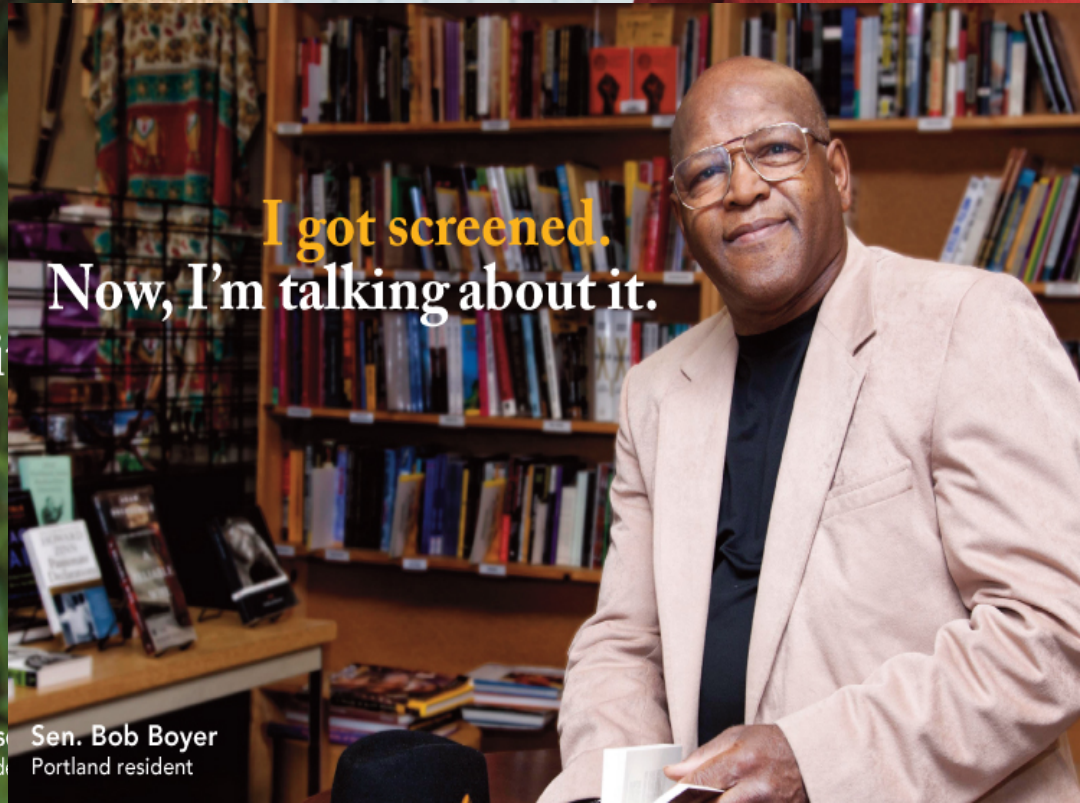
**I got screened.  
Now, I'm talking about it.**

Wendy Richardson  
Gearhart resident



**I got screened.  
Now, I'm talking about it.**

Mark Gustafson  
Astoria resident



**I got screened.  
Now, I'm talking about it.**

Sen. Bob Boyer  
Portland resident

# Willingness to use email & social media to discuss CRC screening

Cutrona et al. Willingness to use email & social media to discuss cancer screening among insured adults.

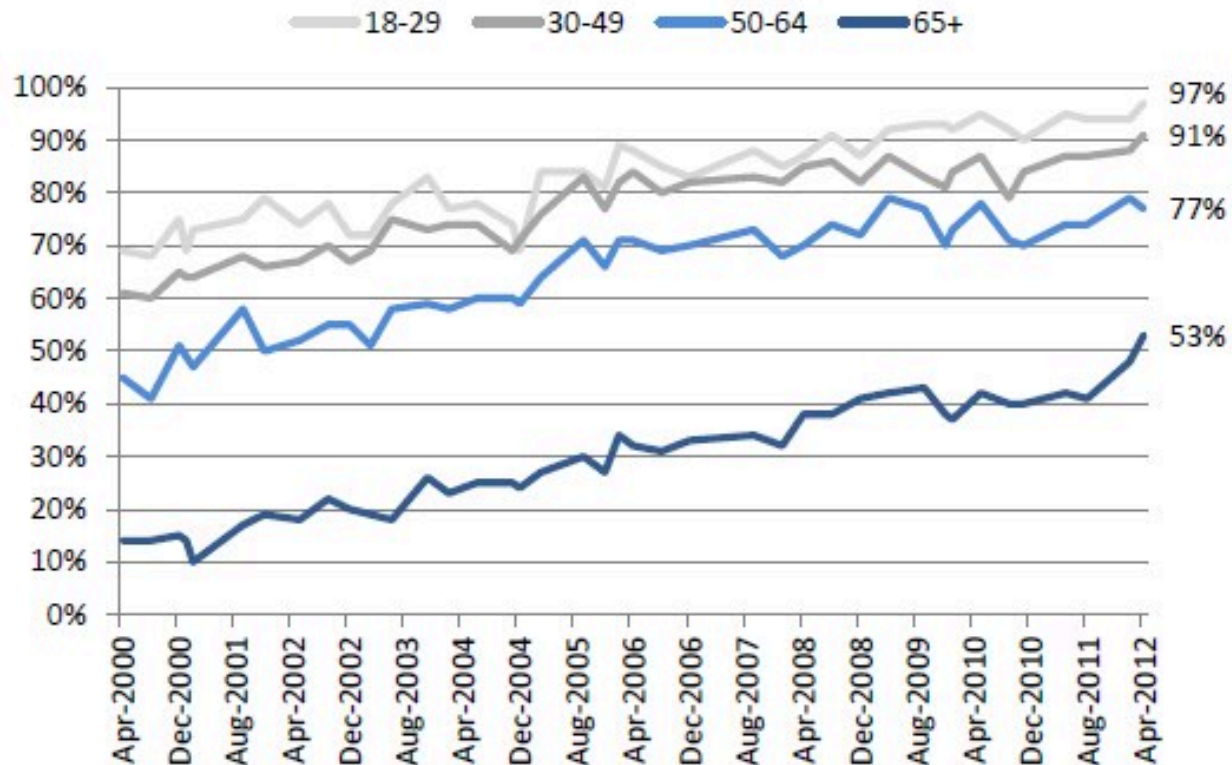
*JMIR Research Protocols* 2013; Nov 28; 2(2) e52.



# Internet & Email use in target age group

## Internet use by age group, 2000-2012

% of American adults age 18+ who use the internet



Source: Pew Internet & American Life Project Surveys, April 2000-April 2012.

More: <http://pewinternet.org/Trend-Data/Internet-Adoption.aspx>

“Email use continues to be the bedrock of online communications for older adults..

Among all adult internet users, 91% use email, with 59% doing so on a typical day. “

As of August 2011, 86% of internet users ages 65 and older use email, with 48% doing so on a typical day.

<http://www.pewinternet.org/Reports/2012/Older-adults-and-internet-use/Main-Report/Internet-adoption.aspx>

Pew Internet poll 2012

## Who uses social networking sites

*% of internet users within each group who use social networking sites*

<b>All internet users</b>	<b>66%</b>
<b>Gender</b>	
Men	61
Women	71*
<b>Age</b>	
18-29	86***
30-49	72**
50-64	50*
65+	34
<b>Race/Ethnicity</b>	
White, non-Hispanic	64
Black, non-Hispanic	68
Hispanic (English- and Spanish-speaking)	72
<b>Household Income</b>	
Less than \$30,000	71*
\$30,000-\$49,999	69
\$50,000-\$74,999	60
\$75,000+	69*
<b>Education level</b>	
Less than high school	63
High school grad	62
Some college	71*
College+	67
<b>Geographic location</b>	
Urban	69
Suburban	65
Rural	64

**Note:** \* indicates statistically significant difference between rows. Extra asterisks mean differences with all rows with lower figures.

Source: The Pew Research Center's Internet & American Life Project, January 20 – February 19, 2012 Winter Tracking Survey. n=1,729 adult internet users ages 18 and older, including 901 cell phone interviews. Interviews were conducted in English and Spanish.

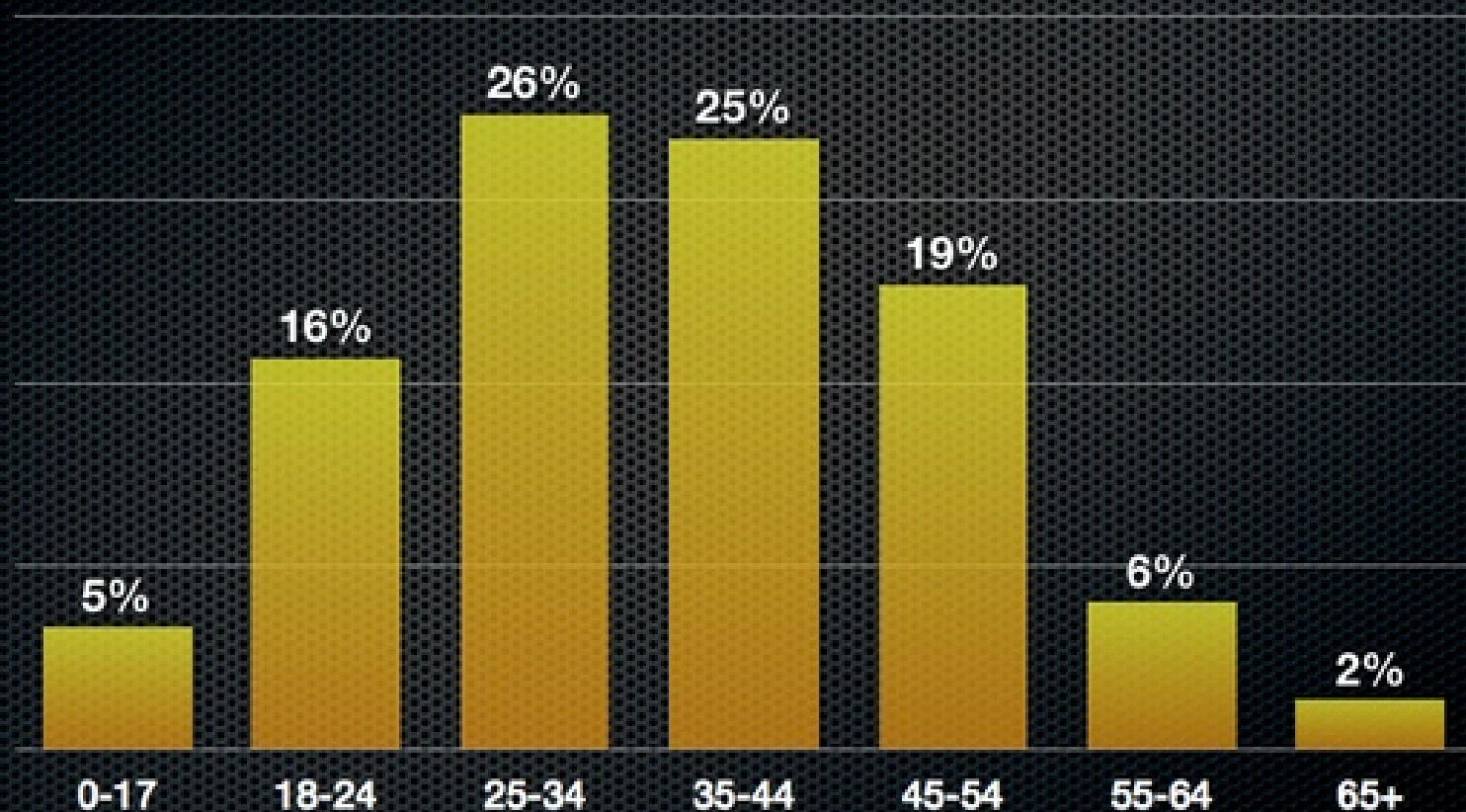
As of February 2012, 66% of online adults use social networking sites.

50% of those age 50-64

34% of 65+

## Age distribution on social networks & online communities

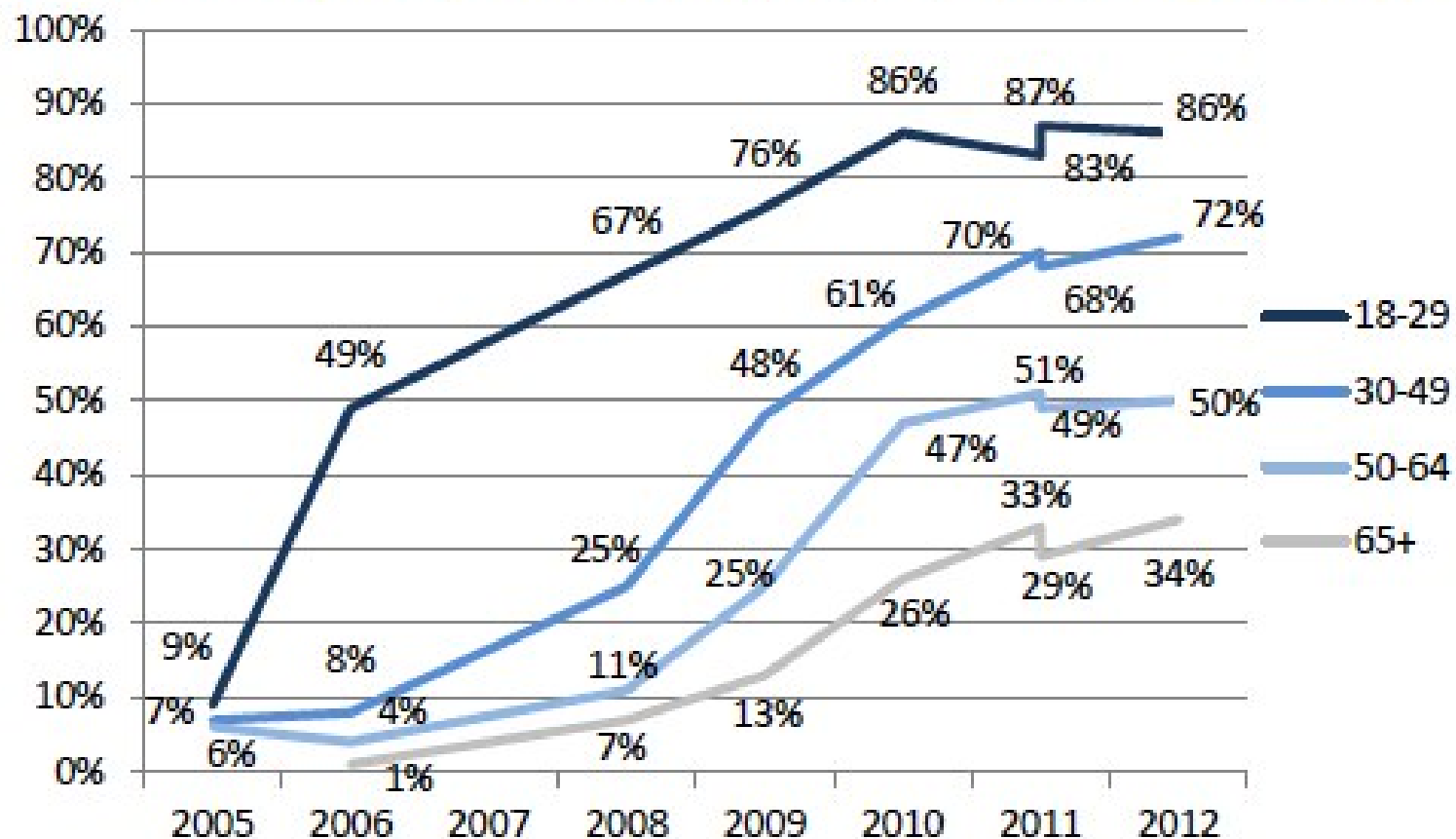
Average based on the 24 sites included in this survey.



Data source: DoubleClick Ad Planner (Google), U.S. demographics, June 2012.

[www.pingdom.com](http://www.pingdom.com)

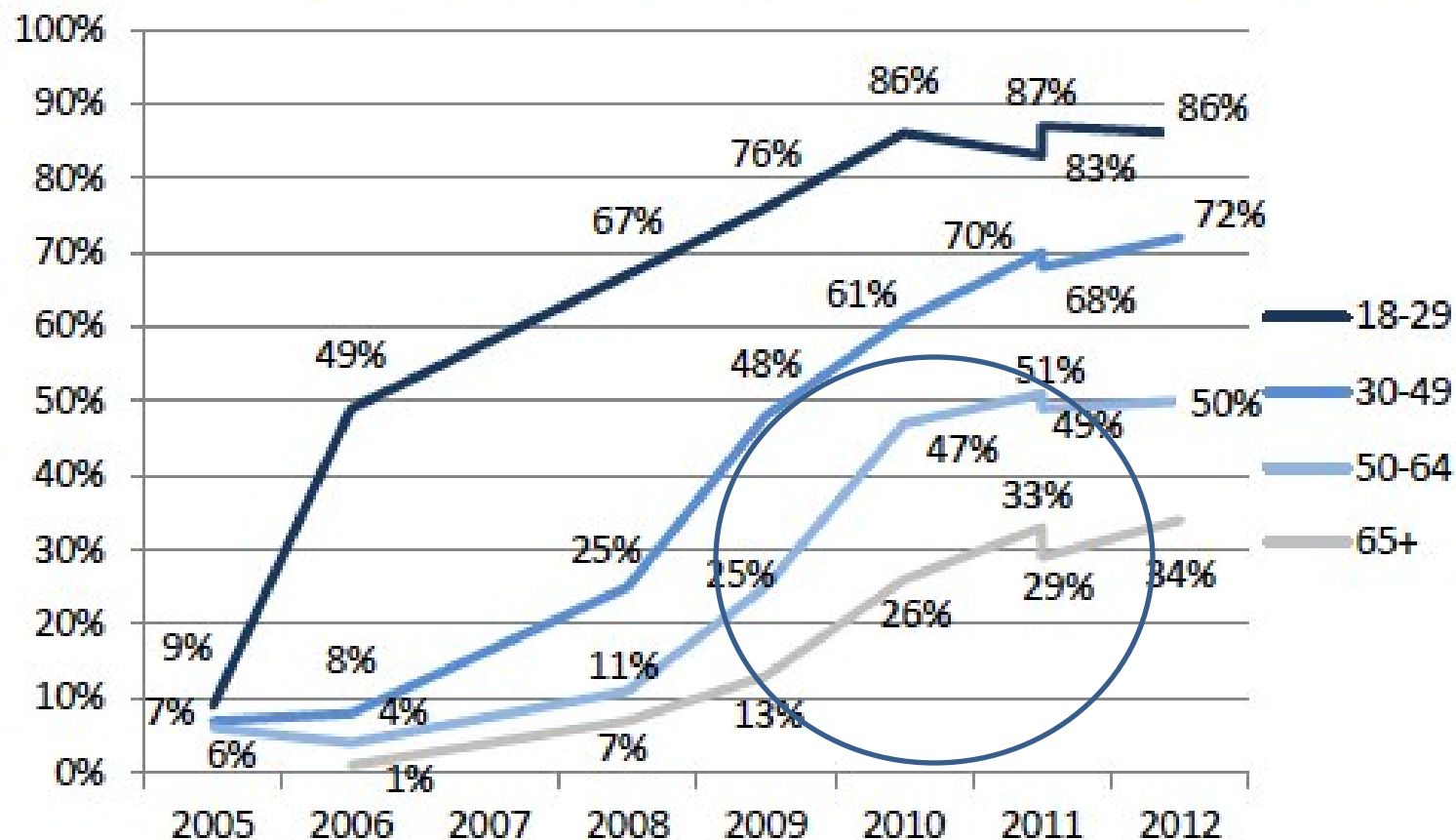
## Social networking site use by age group, 2005-2012



**Note:** Total n for internet users age 65+ in 2005 was < 100, so results for that group are not included.

**Source:** Pew Research Center's Internet & American Life Project surveys: February 2005, August 2006, May 2008, April 2009, May 2010, and May 2011, and February 2012.

## Social networking site use by age group, 2005-2012



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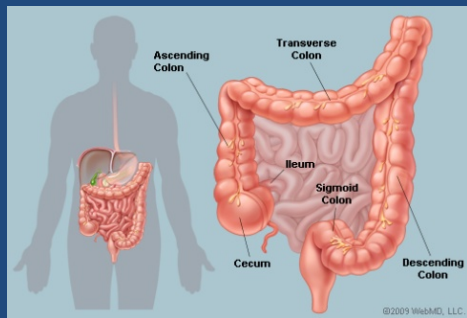
# Social Networking for Health

- 17.0% of internet users have visited a social networking site such as Facebook or LinkedIn “to read and share about medical topics”
  - 12.9% of internet users 50-64
  - 7.6% of internet users aged 65 to 74

Health Information National Trends Survey 2012  
(Cycle 1). <http://hints.cancer.gov/Default.aspx>.  
Accessed November 27, 2012.

“I got mine, have you gotten yours?”

Will people share  
colorectal cancer screening experiences  
by email or social media in order to  
promote screening in friends and  
family?



# Methods: In-person Interviews 2011-2012

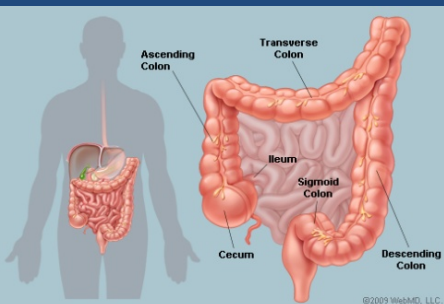
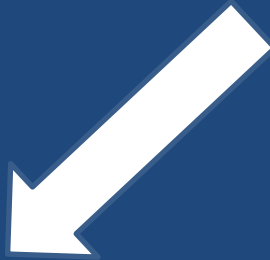
- 438 insured adults ages 42-73
- MA (Reliant Medical Group/Fallon) 46%,  
Kaisers Georgia & Hawaii
- Part of CRN-funded Oral Health Literacy  
Study
  - PI: Kathy Mazor
- Sociodemographic Data
- Health literacy levels, numeracy



# Methods: In-person interview

## What are people already doing?

- Current + past use: **email & e-communication** (texting, facebook, twitter, IM, online/video chat, LinkedIn, other)
- Discussion of **health topics** via these modes



# Interviews Assessed:

1. Willingness to encourage CRC screening among friends/family by sharing own screening experiences

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4. Projected # of message recipients (per sender)

# Interviews Assessed:

1. **Willingness** to encourage CRC screening among friends/family by sharing own screening experiences
  2. Preferred **Mode** of message transmission
  3. Estimated **Impact** of message on recipient
1. Projected # of message recipients (per sender)  
**Reach**

# Results

Cutrona et al. Willingness to use email & social media to discuss cancer screening among insured adults.

*JMIR Research Protocols* 2013; Nov 28; 2(2) e52.

# Characteristics (n=438)

Characteristic		N	%
<b>Race/Ethnicity</b>	<b>Black/African American</b>	<b>64</b>	<b>14.6</b>
	<b>Asian/Pacific Islander/Native Hawaiian</b>	<b>51</b>	<b>11.6</b>
	<b>White/Caucasian</b>	<b>281</b>	<b>64.2</b>
	<b>Other or Unknown/Not Reported</b>	<b>39</b>	<b>8.9</b>
<b>Education</b>	<b>Up to High School Graduate</b>	<b>104</b>	<b>23.7</b>
	<b>Any College – Graduate Degree</b>	<b>331</b>	<b>75.6</b>
<b>Age</b>	<b>40-49</b>	<b>52</b>	<b>11.9</b>
	<b>50-59</b>	<b>157</b>	<b>35.8</b>
	<b>60 and Older</b>	<b>229</b>	<b>52.3</b>
<b>Gender</b>	<b>Female</b>	<b>247</b>	<b>56.4</b>
<b>Self-reported Health Status</b>	<b>Excellent/Very Good</b>	<b>240</b>	<b>54.8</b>
	<b>Good/Fair/Poor</b>	<b>197</b>	<b>45.0</b>
<b>Ever had colonoscopy</b>	<b>Yes</b>	<b>318</b>	<b>72.6</b>



# Characteristics (n=438)

<b>Used email in past week</b>	<b>Yes</b>	<b>370</b>	<b>84.5%</b>
<b>Used e-communication* in past week</b>	<b>Yes</b>	<b>245</b>	<b>55.9%</b>

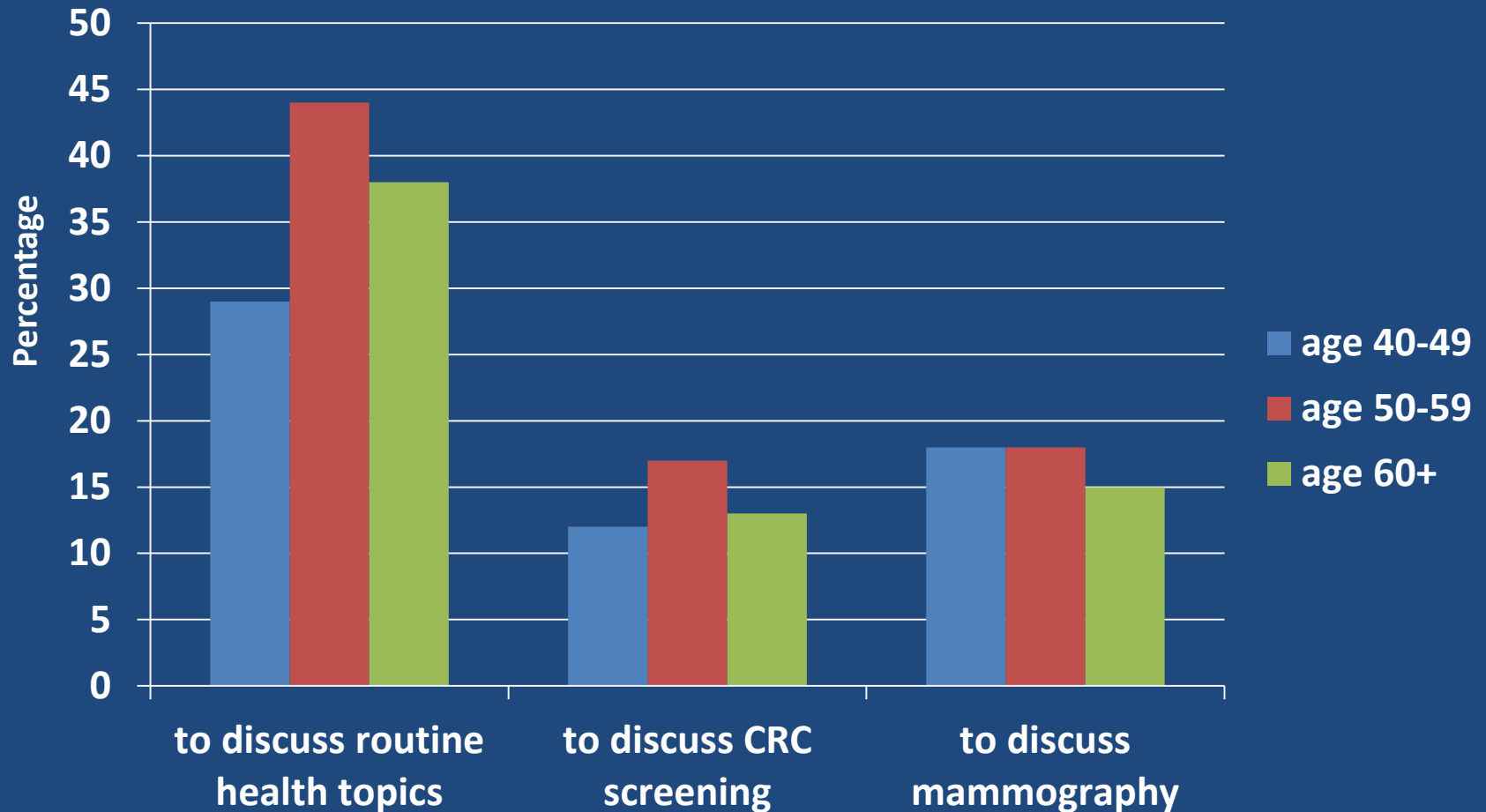
**\*Texting, facebook, Twitter, instant messaging, online/video chat, LinkedIn or other**

# Use of E-mail

n=438

- 33.8% had used email to discuss routine health topics
- 12.6% used email to discuss CRC screening

# Among email users (n= 380) Health-related Reasons for Use, by Age Group



P=NS for differences between groups

Cutrona et al. Willingness to use email & social media to discuss cancer screening among insured adults.

*JMIR Research Protocols* 2013; Nov 28; 2(2) e52.

# Use of E-communication & Social Media\*

n=438

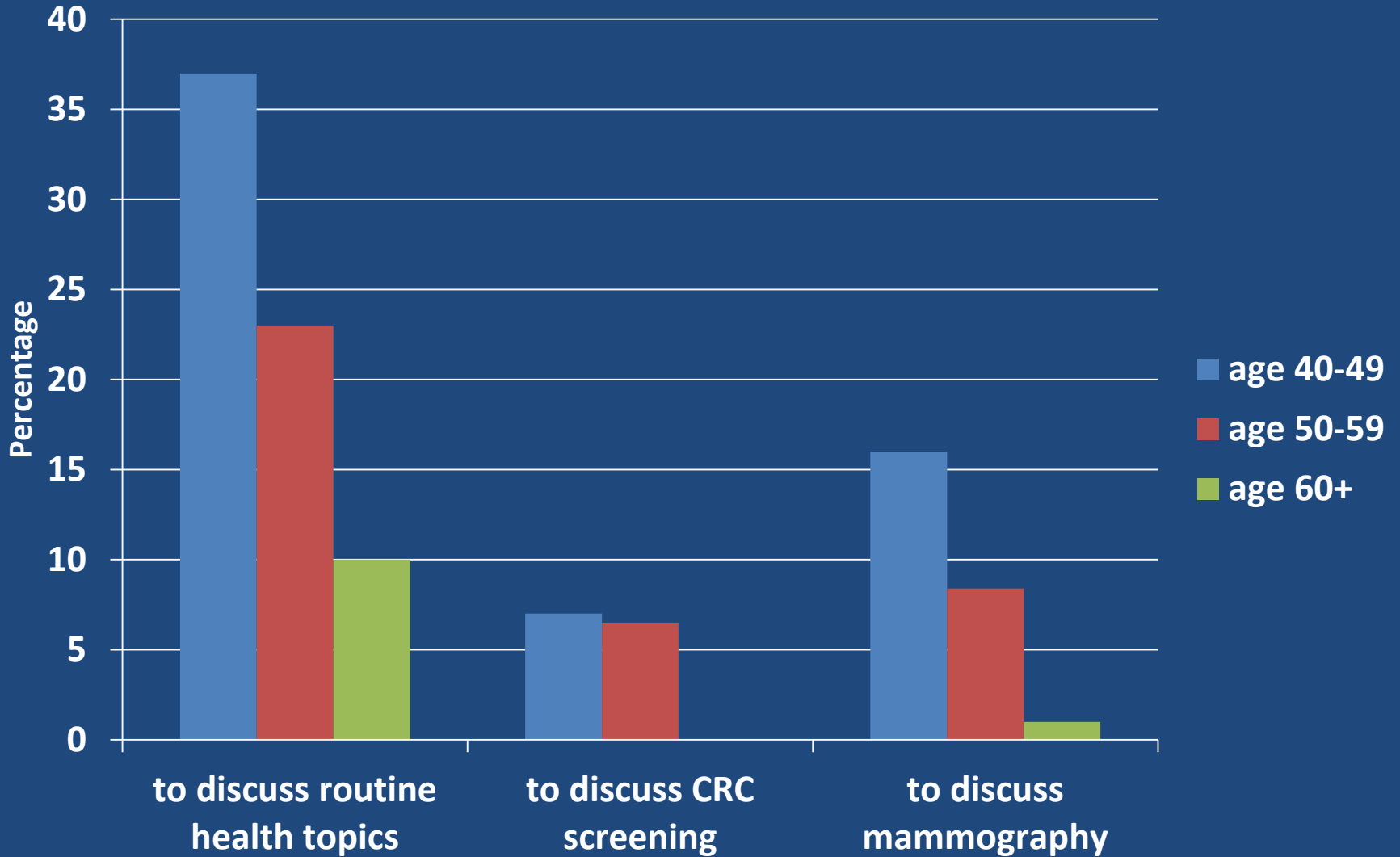
- 56.4% ever used
- 11.6% discussed routine health topics
- 2.3% ever used to discuss CRC screening

**\*Texting, facebook, Twitter, instant messaging, online/video chat, LinkedIn or other**

Cutrona et al. Willingness to use email & social media to discuss cancer screening among insured adults.

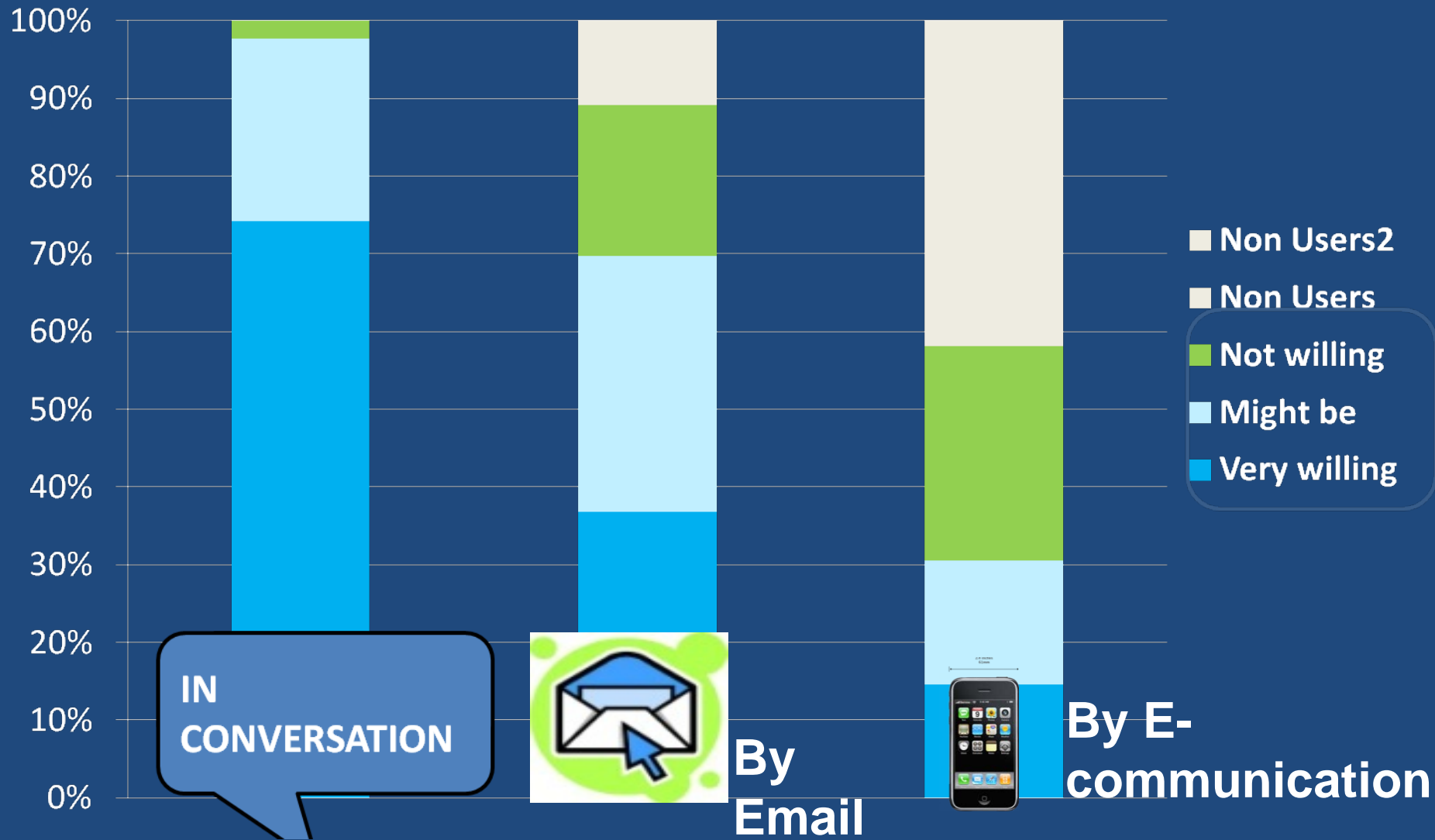
*JMIR Research Protocols* 2013; Nov 28; 2(2) e52.

# Among E-communication Users (N=247) Health-related Reasons for Use



P<0.01 for difference between age groups for discussing routine health topics. All others N

# MODE: How willing would you be to share your colon cancer screening experience with others?



## Perceived Impact

Due to  
communication  
with friends or  
family...

- **24%** have ever **scheduled** a cancer screening
- **6.2%** have ever **avoided** a cancer screening

# Perceived Impact

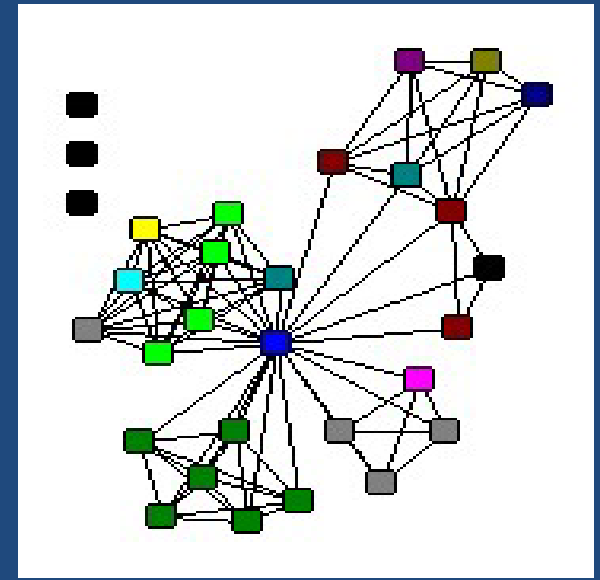
- **21.7%** believe friends/family completed cancer screening
- **2.1%** believe friends/family avoided cancer screening

A yellow speech bubble with a black outline and a tail pointing towards the bottom left. It contains the text "Due to communication with you..." in bold black font.

**Due to  
communication  
with you...**

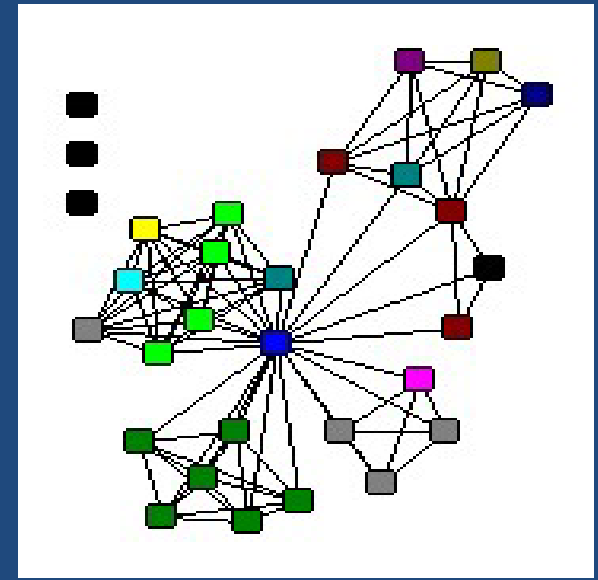


# Reach



# Reach

255 respondents reported willingness to send out a total of **4,107** emails



# Routine Health Topics: Who do you talk to? Study ID: \_\_\_\_\_

Immediate Family		In-Laws		Extended Family		Close Friends		Acquaintances	
Laptop = 4 E =		Laptop = 2 E =		Laptop = E =		Laptop = 3 E =		Laptop = E =	
C=	M=	C=	M=	C=	M=	C=	M=	C=	M=
4	1	1							
Social Group - Religious		Social Group - Recreation		Social Group - Work		Social Group - Education		Social Group - Other	
Laptop = E =		Laptop = E =		Laptop = E =		Laptop = E =		Laptop = E =	
C=	M=	C=	M=	C=	M=	C=	M=	C=	M=

# Willingness & Mode

Email



- 1/3 discussed routine health
- >10% discussed CRC screening
- 68.7% would consider discussing CRC screening

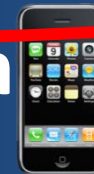
# Willingness & Mode

Email



- 1/3 discussed routine health
- >10% discussed CRC screening
- 68.7% would consider discussing CRC screening

E-Communication



- >10% discussed routine health
- <5% discussed CRC screening
- 30.1% would consider discussing CRC screening

\*Texting, facebook, instant messaging/online chat, video chat, twitter, LinkedIn

# Willingness & Mode

Email



- 68.7% would consider discussing CRC screening

E-Communication



- >30.1% would consider discussing CRC screening

# Impact & Reach

- 24% have scheduled cancer screening due to influence of friend/family
- Estimated would send avg of 16 emails/person

# What would people write?

Cutrona SL et al. Email to promote colorectal cancer screening within social networks: Acceptability and content. *Under Review.*



There are a few ways to get screened for colon cancer. I just got a colonoscopy (which is one way to get screened).  
*It wasn't fun but it wasn't all that bad.*  
If you want I'd be happy to talk to you about what my experience was like.

# What would people write?

There are a few ways to get screened for  
*A wasn't how long*  
If you want I'd be happy

Cutrona SL et al. Email to promote colorectal cancer screening within social networks: Acceptability and content. *Under Review.*

“The prep took longer than expected,  
(you know that I’m full of it! 😊)  
but the test itself was easy”

...one way to get screened).



# What would people write?

There are a few ways to get screened for colorectal cancer. If you want I'd be happy to help you choose the best one for you.

Cutrona SL et al. Email to promote colorectal cancer screening within social networks: Acceptability and content. *Under Review.*

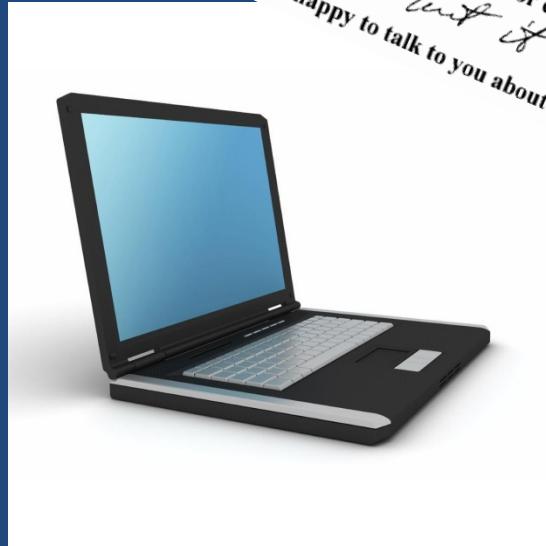
“The prep took longer than expected, (you know that I’m full of it! 😊) but the test itself was easy”

one way to get screened).

It’s time to clear the chutes!

# What would people write?

Cutrona SL et al. Email to promote colorectal cancer screening within social networks: Acceptability and content. *Under Review.*



There are a few ways to get screened for colon cancer. I just got a colonoscopy (which is one way to get screened).  
*If you want I'd be happy to talk to you about what my experience was like.*  
*It wasn't fun but it wasn't all that bad.*

## How do they describe their health information network?

Routine Health Topics: Who do you talk to? Study ID: 3

Immediate Family	In-Laws	Extended Family	Close Friends	Acquaintances
☐ = 4 E =	☐ = 2 E =	☐ = E =	☐ = 3 E =	☐ = E =
C= 4 M=	C= 1 M=	C= M=	C= M=	C= M=
Social Group - Religious	Social Group - Recreation	Social Group - Work	Social Group - Education	Social Group - Other
☐ = E =	☐ = E =	☐ = E =	☐ = E =	☐ = E =
C= M=	C= M=	C= M=	C= M=	C= M=



- 1/3 of group had used email to discuss routine health topics such as cancer screening or vaccines.



# E-Communication across Networks

## A. Social Networks

## B. Healthcare Networks

### 1. Pulling in the patient

- E-portal Use
- Patient updating own EHR

### 2. Syncing In/Outpatient networks



The screenshot shows the MyChart patient portal for Reliant Medical Group (Atrius Health). The page features a navigation menu with links for Patients, Health & Wellness, Find a Doctor, Find a Location, Medical Services, About Us, and Careers. The main content area includes a 'Welcome' section with a list of services: communicating with the healthcare team, viewing lab results, requesting prescription renewals, and viewing appointment information. Below this is a 'MyChart is Your Secure, Online Health Connection' section with a brief description and a link to learn more. The 'Urgent Medical Matters' section is partially visible. On the right side, there is a login form with fields for MyChart ID and Password, and buttons for 'Sign In' and 'Request Access Code'. A 'Sign Up' section is also present, with a 'Create a MyChart ID' button and a 'Request Access Code' button. The Epic logo is visible in the bottom right corner of the screenshot.

# System Alignment for VaccinE Delivery (SAVED)

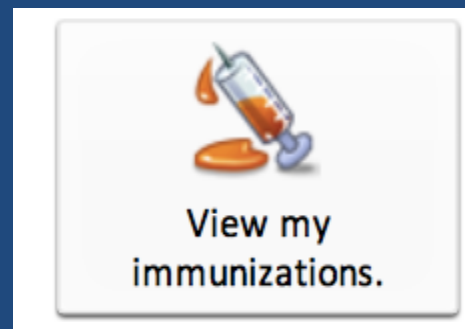
Improving rates of flu & pneumococcal  
vaccination via EHR-based patient outreach,  
improved EHR accuracy & physician alerts

**Funding agency:** Pfizer  
Independent Grants for  
Learning & Change  
**PI:** Cutrona

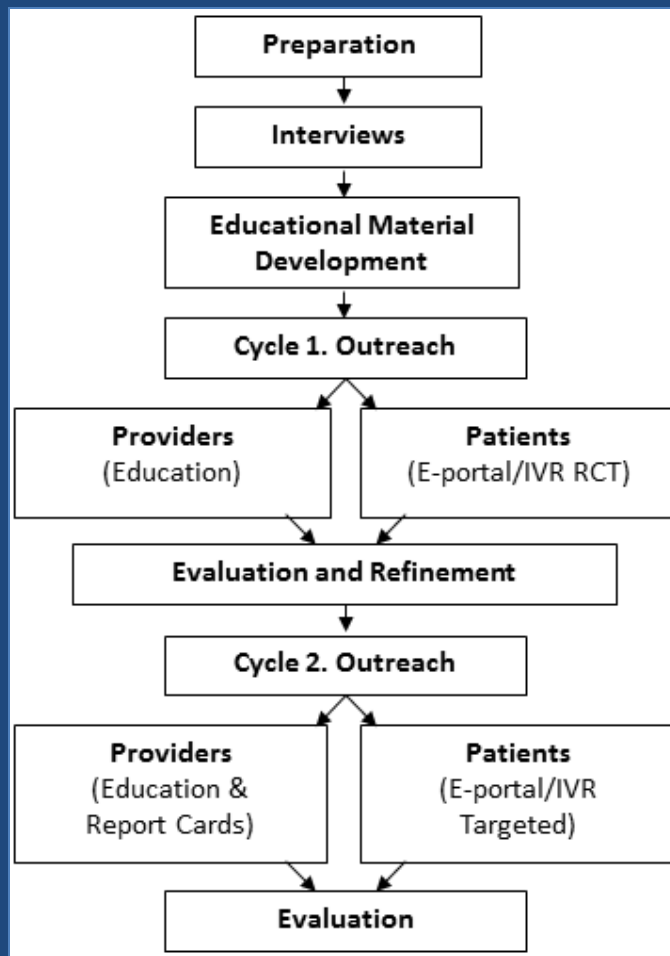
**\$635,000**

**1/1/2014-7/1/2016**

**Reliant Medical Group /Meyers Primary  
Care Institute**



# System Alignment for VaccinE Delivery: SAVED

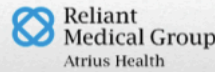


## Key Objectives.

- I. To improve rates of influenza and pneumococcal vaccination in eligible patient populations via:
  - a. **Patient-level messages** targeted at unvaccinated patients.
  - b. **Provider- and staff-level educational interventions** and system support
- II. To improve the capture of vaccinations administered to Reliant Medical Group (RMG) patients in the community, hospitals and nursing facilities via **system-level electronic Health Information Exchange (HIE)**.



# E-portal Outreach & Patient-Enabled EHR-updating



Log Out

FOR PATIENTS | HEALTH & WELLNESS | FIND A DOCTOR | FIND A LOCATION | MEDICAL SERVICES | ABOUT US | CAREERS

FOR PATIENTS | HEALTH & WELLNESS | FIND A DOCTOR | FIND A LOCATION | MEDICAL SERVICES | ABOUT US | CAREERS

Welcome, **Meera Sreedhara**

## Your MyChart Home.

If you do not see a Lab Result that you are expecting, please call your provider's office to inquire.

Home

## Welcome



- ▶ Communicate with your doctor and healthcare team
- ▶ View current lab results & health trends
- ▶ Request prescription renewals
- ▶ View your recent and upcoming appointment information
- ▶ Download the [iPhone](#) or [Droid](#) MyChart app and manage your health on the go. Taking care of yourself has never been so easy!

## MyChart is Your Secure, Online Health Connection

We know that your health is important to you around the clock – not just during office hours. That's why Reliant Medical Group offers MyChart. With this Internet connection to your doctor's office and to parts of your actual medical record, you can schedule appointments, request prescription renewals, review portions of your health history, and more – online, any time!

To learn how to register to use MyChart, [click here](#)

## Urgent Medical Matters

Please do **not** use MyChart to send any messages requiring urgent attention (i.e. in less than 2 business days). For urgent medical matters, please contact your doctor's office by phone. In emergency situations, call 911.

## Tips

Having Trouble with using Mychart with AOL, [click here](#)

MyChart ID

Password

MyChart

Click the button below if you wish to create a MyChart ID!

Create a MyChart ID

Click the button below if you wish to request an access code.

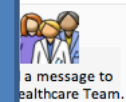
Request Access Code

## Learn More...

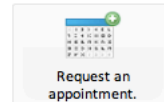
- [FAQs](#)
- [Privacy Policy](#)
- [Terms and Conditions](#)
- [Trouble logging in:](#)



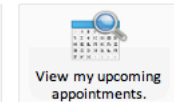
Influenza. You are overdue for it.



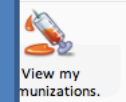
View my message to healthcare Team.



Request an appointment.



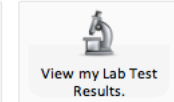
View my upcoming appointments.



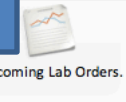
View my immunizations.



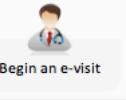
Request RX Renewal.



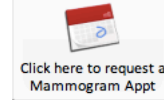
View my Lab Test Results.



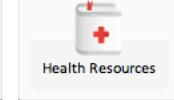
Upcoming Lab Orders.



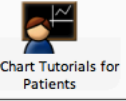
Begin an e-visit



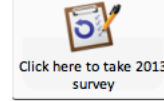
Click here to request a Mammogram Appt



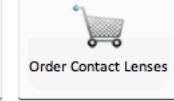
Health Resources



MyChart Tutorials for Patients



Click here to take 2013 survey

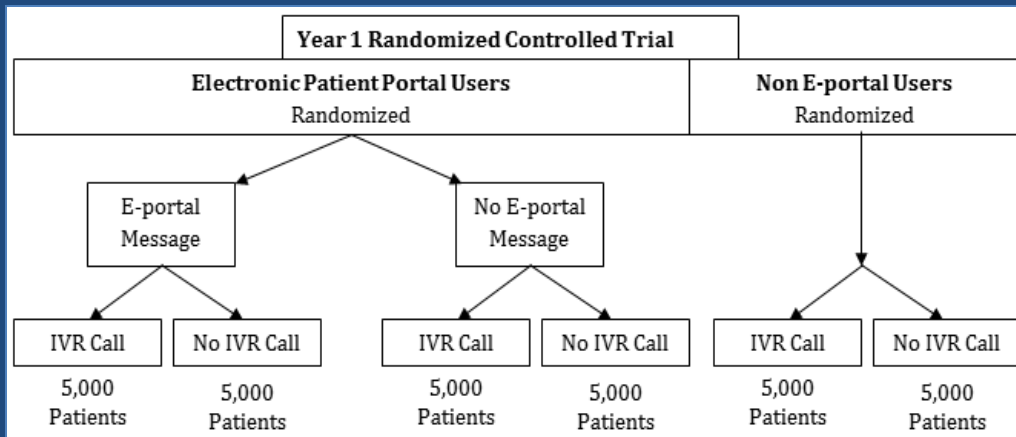



Order Contact Lenses

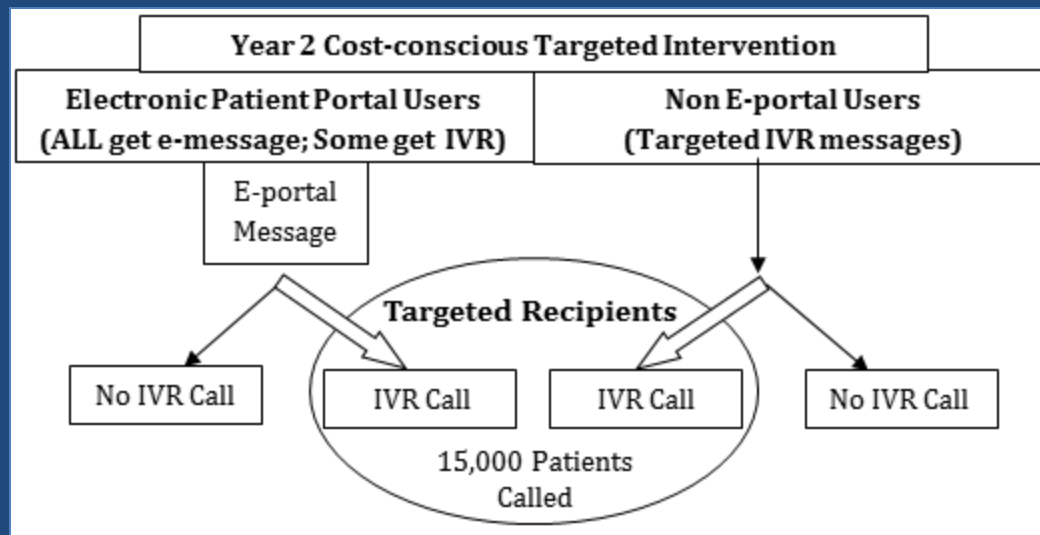
## Latest News

Upcoming Events at Reliant Medical Group  
[Click here to view our Calendar of Events.](#)

# System Alignment for VaccinE Delivery: SAVED

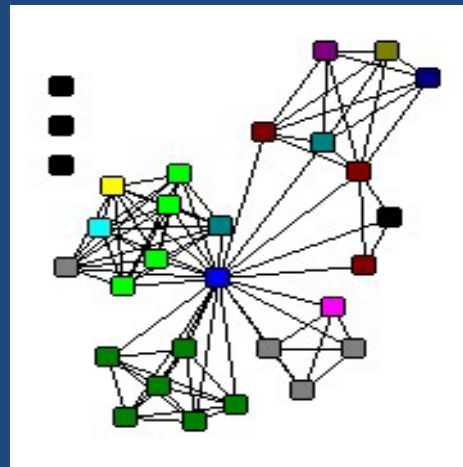


 Schedule a(n) Influenza. You are overdue for it.





# Thank you.



# Career Development for an Academic Acute Care Surgeon and Acute Care Surgery Practice Patterns: A Tale of Two Complexities

Heena P. Santry, MD MS  
UMass Clinical Research Scholar 2010–2015  
CTSA Seminar January 29, 2014

Surgical Research  
Scholars Program



# About Me

8 years of post-graduate clinical training

+

2 years of research fellowship training

=

Academic Career in Acute Care Surgery (ACS)



# Why does ACS exist as a Subspecialty?

»» Background & Significance



# Lack of Access to EGS Care

FUTURE OF EMERGENCY CARE

## HOSPITAL-BASED EMERGENCY CARE AT THE BREAKING POINT

Committee on the Future of Emergency Care  
in the United States Health System

Board on Health Care Services

INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES

THE NATIONAL ACADEMIES PRESS  
Washington, D.C.  
[www.nap.edu](http://www.nap.edu)

COMMENTARY

## The Impending Disappearance of the General Surgeon

Josef E. Fischer, MD

Furthermore, current surgical residents are being trained in the environment of an 80-hour work week. These indi-

## The Shortage of On-call Surgical Specialist Coverage: A National Survey of Emergency Department Directors

Mitesh B. Rao, MD, MHS, Catherine Lerro, MPH, and Cary P. Gross, MD

ASA FORUM 2

## Access to Care and the Surgeon Shortage

*American Surgical Association Forum*

*George F. Sheldon, MD, FACS*

# Re-invention of Trauma Surgery

*The Journal of TRAUMA® Injury, Infection, and Critical Care*

## **Trauma/Critical Care Surgeon: A Specialist Gasping for Air**

*Jorge L. Rodriguez, MD, A. Britton Christmas, MD, Glenn A. Franklin, MD, Frank B. Miller, MD, and J. David Richardson, MD*

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## **Redefining the Future of Trauma Surgery as a Comprehensive Trauma and Emergency General Surgery Service**

Patrick K Kim, MD, G Paul Dabrowski, MD, FACS, Patrick M Reilly, MD, FACS,  
Susan Auerbach, MHA, RHIA, Donald R Kauder, MD, FACS, C William Schwab, MD, FACS

---

# Systems Improvement

1966 IOM Report  
“Accidental Death  
and Disability:  
The Neglected  
Disease of  
Modern Society”

THE NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

A National Evaluation of the Effect  
of Trauma-Center Care on Mortality

*The Journal of TRAUMA® Injury, Infection, and Critical Care*

**A Systematic Review and Meta-Analysis Comparing Outcome  
of Severely Injured Patients Treated in Trauma Centers  
Following the Establishment of Trauma Systems**

*Brian Celso, PhD, Joseph Tepas, MD, Barbara Langeland-Orban, PhD, Etienne Pracht, PhD, Linda Papa, MD,*

PAPER

**Enhanced Trauma Program Commitment  
at a Level I Trauma Center**

*Effect on the Process and Outcome of Care*

*Edward E. Cornwell III, MD; David C. Chang, PhD, MPH, MBA; Judith Phillips, RN, BS; Kurtis A. Campbell, MD*

# Trauma-EGS Synergy

- ▶ Trauma

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In theory, ACS brings together the most skilled and available surgeons with dedicated resources to improve the care of EGS patients.

due to

e in

Behavioral malfeasance

Physiologic malfeasance



# But...

- » 10 years after the specialty developed



# My Early Aspirations

- ▶ Develop care
  - My mo
- ▶ Develop
  - K a
  - RO
  - T3
  - Re
- ▶ Purs
  - Wh
  - Ha
  - How can ACS be utilized to optimize outcomes?

Surgery remains rooted in the belief that HSR can be done well on the rare nights/weekends you aren't caring for patients.

# My Institution's Goals

- ▶ Division
  - Research
- ▶ Department
  - Research with
- ▶ University
  - Support factors

UMass Clinical Scholar Award (K12) provides 50–75% protected time over 5 years for mentored research & career development.

nt

rch



# UMass Clinical Scholar Award

- ▶ Dep
  - Pri
  - Ma de
- ▶ Div
  - Cl
  - Ma pr
- ▶ Univ
  - Int
  - Risky to support a surgeon

Definitely helps me early in my career but my 5<sup>th</sup> month on faculty might have been too soon.



# My Overall K12 Aims

- ▶ Refine education in health services research
- ▶ Extra-departmental mentorship
- ▶ Execute research to study ACS practice variations and outcomes
- ▶ Successful R01 by year 5



# Overall Complexities

- ▶ Small  
few  
◦ “W  
res
- ▶ Hea  
◦ “Y  
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Divisional &  
departmental goals are  
not explicitly in the  
aims. Protected time  
was undefined.

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# K12 Research Aims

- ▶ To describe ACS practice patterns and impact of ACS practice variations on outcomes for EGS and trauma
- ▶ To determine predictors of EGS outcomes and develop a validated risk stratification score
- ▶ To design a National Emergency Surgery Registry



# Research Complexities

- ▶ ACS  
tryi
- ▶ Good
- ▶ Reg

My aims were too ambitious both in terms of time and costs.

ent



# So how have I done?

»» Relative to what I said I would do



# Refine Education in HSR

- ▶ Unavailable
  - ▶ Ability
    - Quality
    - Global
  - ▶ Treatment  
pro
- Find opportunities to improve knowledge and skills in any way possible, even if not in a traditional classroom.

# Extra-departmental Mentorship

- ▶ Cat
- ▶ Epit
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  - Em
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  - Of
  - Ra
  - Sh
- ▶ Out

Choose a good mentor  
and then take advantage  
of everything that the  
mentor offers.

# Executing Research Aims

- ▶ To c  
of A  
EGS
- ▶ To c  
dev
- ▶ To c  
Reg

Spend less time  
criticizing yourself for  
under-accomplishment  
and more time writing.

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and  
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# Qualitative Study of ACS practice Patterns

- ▶ Variations identified
  - ▶ Care structure (e.g. patient cohorting, continuity clinics)
  - ▶ Workforce (e.g. critical care certification)
  - ▶ Resource allocation (e.g. dedicated EGS OR, in-house call)
  - ▶ Communication (e.g. face-to-face morning report)
  - ▶ Data collection (e.g. data registries)
- ▶ ACS models treat “time sensitive surgical disease”
- ▶ “Better outcomes” than the ‘traditional on-call’ models
- ▶ “It takes more than a surgeon with a sharp knife and a willing attitude.”
- ▶ Worry that ACS will become “wastebasket of [patients and diseases] that no one else is willing to care for”
- ▶ “No one-size fits all”
- ▶ “Disaster surgery”



# Survey of University Hospital EGS Practices (N=321)

- ▶ 82% response rate
- ▶ EGS Coverage Models
  - 52% 'traditional on-call'
  - 32% ACS model
  - 15% 'hybrid' model
- ▶ EGS care variations
  - 66% had in-house attending coverage 24/7
  - Face-to-face signouts 44%
- ▶ Patient cohorting
  - 22% EGS patients alone
  - 21% EGS w/ trauma patients
  - 19% EGS w/ elective general surgery patients
  - 33% EGS w/ trauma and elective surgery patients

<b>Hospital Characteristics</b>	
<b>Hospital Characteristic</b>	<b>Frequency (%)</b>
<i>Practice Setting</i>	
University-based	96 (37.4)
Community-based	110 (42.8)
Public	28 (10.9)
Other	6 (2.3)
<i>Geographic Location</i>	
Urban	121 (47.1)
Suburban	68 (26.5)
Rural	51 (19.8)
<i>Teaching Status</i>	
Non-teaching	61 (23.7)
Teaching	179 (69.6)
<i>Trauma Center Verification</i>	
Non-designated	85 (33.1)
Level 1	108 (42)
Level 2	22 (8.6)
Level 3	23 (8.9)
<i>Inpatient Bed Capacity</i>	
<100	42 (16.3)
101-200	28 (10.9)
201-300	33 (12.8)
301-400	36 (14)
401-500	25 (9.7)
>500	76 (29.6)
*17 missing responses; UHC = University HealthSystems Consortium	

# Progress on EGS Registry and Risk Stratification Score

- ▶ Institutional EGS registry created
  - 2 years to create
  - 6 week pilot data collection with volunteers demonstrated feasibility
- ▶ Too few resources for on-going data collection
- ▶ Thus, cannot
  - Determine predictors with detailed clinical and socio-demographic data
  - Market nationally



# Successful R01 by year 5

Significa

Investiga

Innovatio

Approach

Environm

Open up the black box  
of grant review by  
soliciting help from  
mentors and friends.

Revision goes to study section February





# So how have I done?

»» What else I did



# Other Research

- ▶ NSTP
  - 2 r
- ▶ C di
  - 1 r
  - 2 r
- ▶ Treas
  - 2 r
- ▶ Surg
  - ICU
  - Tra

If the research is closely aligned, it counts.

# Trauma Research

- ▶ Research

- Implementation

- Practice

- Implementation

- Academic

- Medical

- Implementation

- Medical

- U

- ▶ Leadership

- ▶ In c

trauma center verification application

Applying skills and knowledge to clinical systems goals can still improve a research portfolio.



# Departmental Research Infrastructure

- ▶ Biw  
dep
- Vic
- Tr
- ▶ Pro
- Sch
- Mo
- Op
- clu
- Su

Becoming a leader, though daunting, is an important part of career development and a good networking opportunity.

# Other Interests

## ▶ Old

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- Edu  
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QC
- Pla  
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Forks in the road are opportunities for career development previously not considered.

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Gyn,  
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role

# Summary

## ▶ Benefits

- Early opportunity
- Wealth of resources
  - Classes
  - Mentorship
  - Protected time
- LRP eligibility

## ▶ Risks

- Too soon
- Protected time is a myth in some specialties
- Service to division/department can detract from

[Heena.Santry@umassmemorial.org](mailto:Heena.Santry@umassmemorial.org)

