User Perceptions of Patient Portals in an Academic Medical Center

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OBJECTIVES

- Describe key issues to consider in implementing secure, web-based, patient-provider communication systems
- Discuss design of surveys to assess patient preferences for features in communication systems
- Discuss analysis of surveys conducted assessing patient preferences for communication system features

Using HIT to Improve Ambulatory Chronic Disease Care
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Patient-Provider Secure Communication Portals (Portal)

- Patient portals are healthcare-related online applications enabling patients to interact and communicate with their physicians and hospitals
- Growing expectations for availability of portals to improve patient access
- Secure communication is a vital concern
  - 1996 Health Insurance Portability and Accountability Act (HIPAA)
  - Patient expectations
  - Common sense!

Potential Portal Functionalities

- Patient-Provider Communication: Email, Send & Receive Data
- Make Orders & Requests: Rx Refills, Appointments, Referrals…
- Patient & Surrogate Viewing: Some/All of Patient's EMR, Meds
- Electronic Updates & Inputs From Patient: In-home clinical data
- Read & Learn About Condition(s): "Information Prescriptions"
- Patient Reminders & Alerts: Pre-visit up-dates, health history, health risk appraisals / screenings
- Personal Health Record: platform / EMR linkage

Why Portals may not be Simple "Plug & Play" Applications

- Incompatibility between expectations of patients, providers, regulators, and the organization
- Expectations for:
  - Why do it?
  - What will it do?
  - Who will use it?
  - When will it be used?
  - How will it be used?
  - Costs vs. revenues?

Presentation Overview

- Survey data: Differences in patients' perceptions when asked:
  - Hypothetically
  - Enrollment
  - After using the portal
- Issues and questions when <u>implementing</u> secure patient portals

Methods

- Data collected December 2008 to March 2010
- Survey items
  - Literature review
  - Portal functions offered by EHR vendor
  - Research team experience
- Likert-type scale response options
- Paper survey; Survey Monkey

Study Setting

Health Care
University of Missouri Health System

University Hospital
University of Missouri Health Care

University Physicians
University of Missouri Health Care

Women's and Children's Hospital
University of Missouri Health Care

Children's Hospital
University of Missouri Health Care

Ellis Fischel Cancer Center
University of Missouri Health Care

Missouri Psychiatric Center
University of Missouri Health Care

Missouri Rehabilitation Center
University of Missouri Health Care

Missouri Orthopaedic Institute
University of Missouri Health Care

School of Medicine
University of Missouri Health System

Sinclair School of Nursing
University of Missouri Health System

School of Health Professions
University of Missouri Health System

@5,300 Staff; 720 Physicians & Residents; 560 beds;
19,000+ admissions and 520,000+ Outpatient Visits per year.

<u>Study Sites</u>: Family & Community Medicine Clinics,
Internal Medicine Primary Care Clinics

Patient Perceptions Surveys

- **Waiting Room** ***Hypothetical Interest (N=499 Internet users)***

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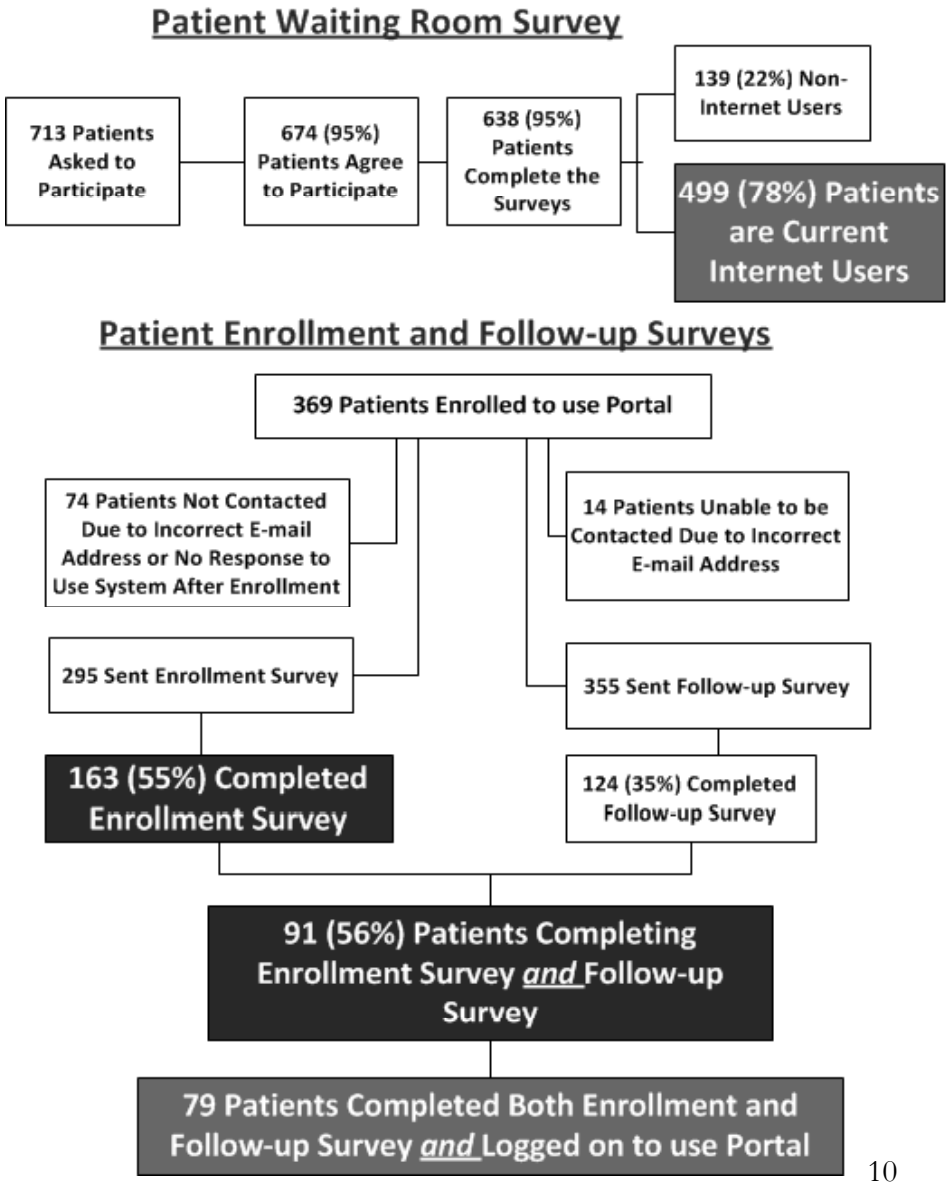
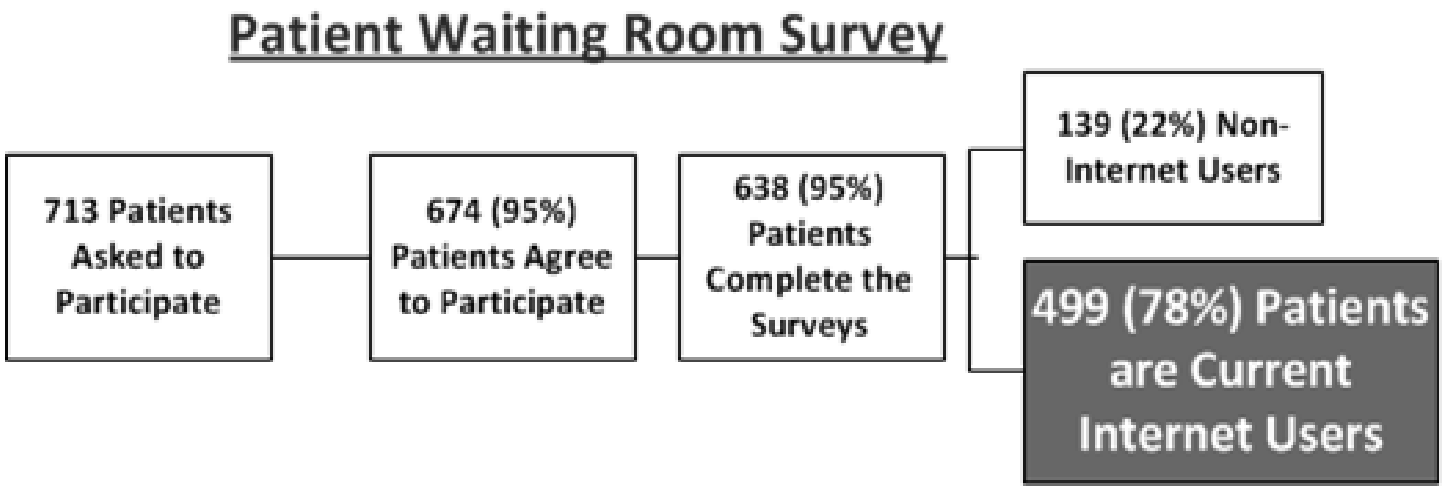
- **Enrollment** ***in 3 pilot clinics (N=163)***
- **Matched Follow-up** ***in 3 pilot clinics (N=91 matched Enrollment & Follow-up surveys)***
- **Matched Follow-up** ***Users (N=79)***



Waiting Room Hypothetical Interest
(N=499 Internet users)

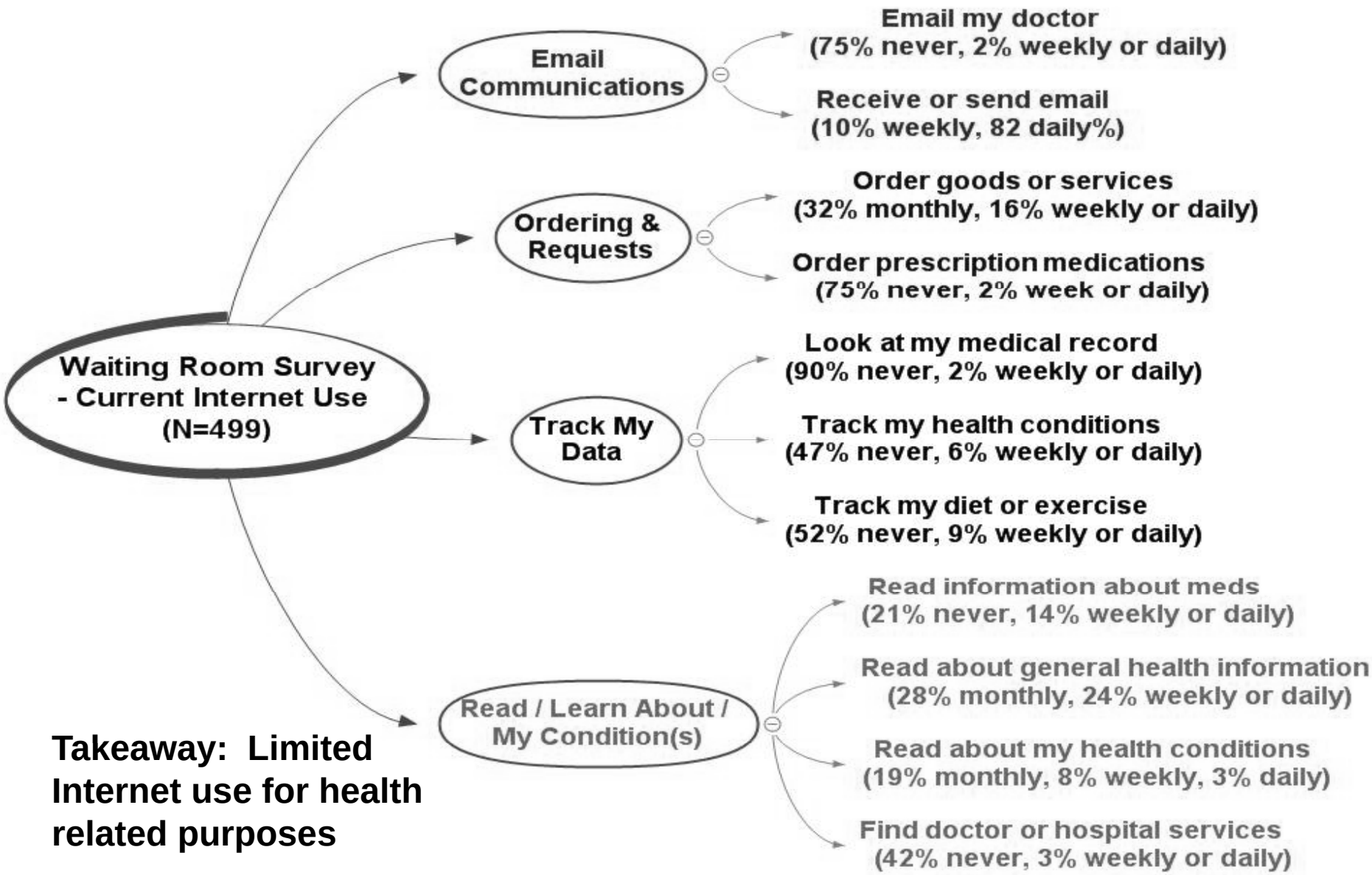


Waiting Room Survey Demographics (n=499)

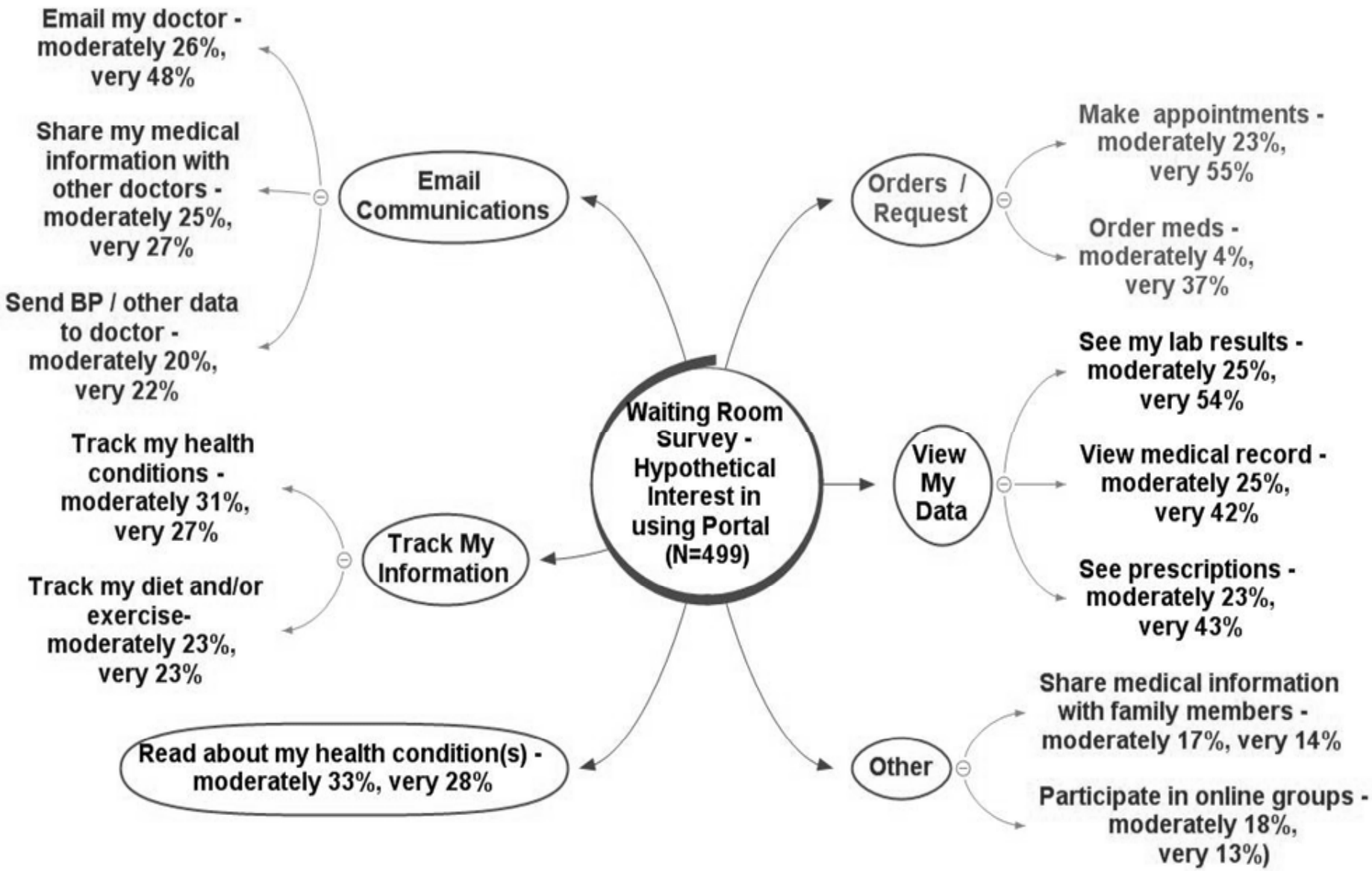
	Percent
Female	71%
Age	
> 60 years old	17%
46-60 years old	28%
18-45 years old	55%
Annual household income	
< $40k	38%
$40k – $59k	18%
$60k or higher	45%

Waiting Room Survey Demographics (n=499)

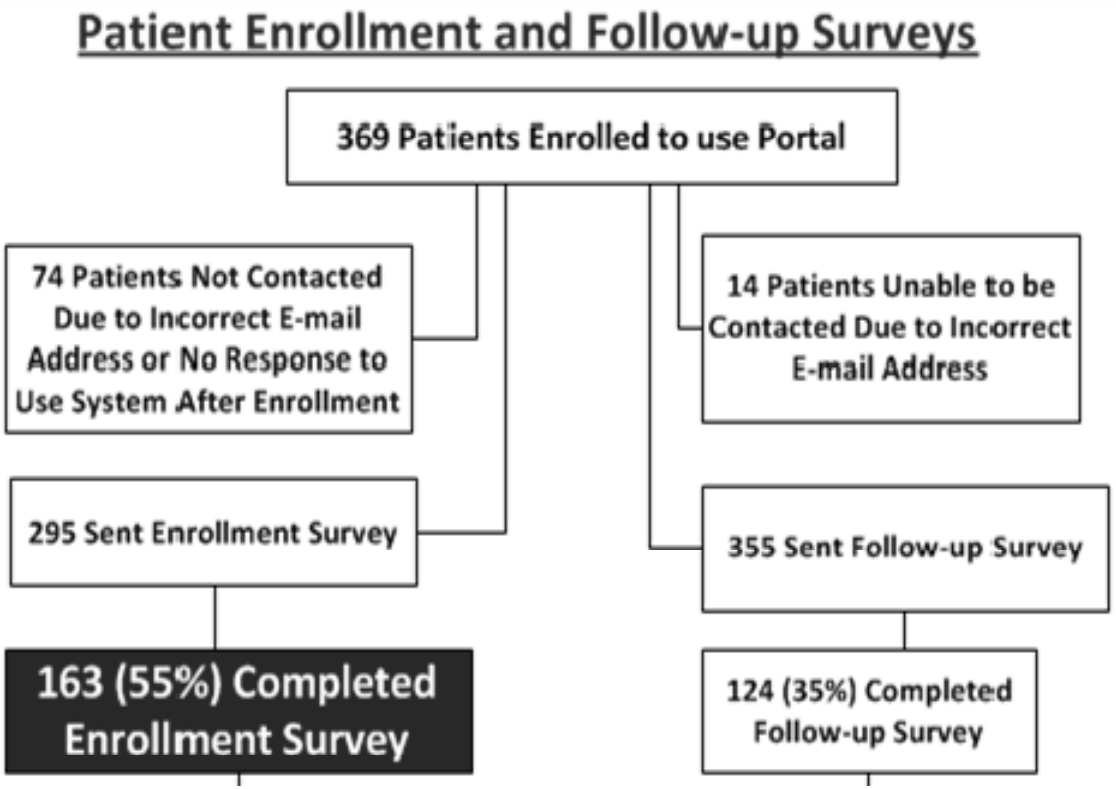
	Percent
Education	
High school / GED or less	16%
Trade / Some college	25%
College graduate	31%
Post-graduate degree	28%
Chronic Illness	39%
Self-reported health status	
Very good / excellent	47%
Good	37%
Fair / Poor	16%



Takeaway: Limited Internet use for health related purposes


Waiting Room Survey - Hypothetical Interest in using Portal (N=499)
Email Communications
Email my doctor - moderately 26%, very 48%
Share my medical information with other doctors - moderately 25%, very 27%
Send BP / other data to doctor - moderately 20%, very 22%
Track My Information
Track my health conditions - moderately 31%, very 27%
Track my diet and/or exercise- moderately 23%, very 23%
Read about my health condition(s) - moderately 33%, very 28%
Orders / Request
Make appointments - moderately 23%, very 55%
Order meds - moderately 4%, very 37%
View My Data
See my lab results - moderately 25%, very 54%
View medical record - moderately 25%, very 42%
See prescriptions - moderately 23%, very 43%
Other
Share medical information with family members - moderately 17%, very 14%
Participate in online groups - moderately 18%, very 13%)

Patients' Enrollment Experience:
Enrollment Survey in 3 Clinics (N=163)

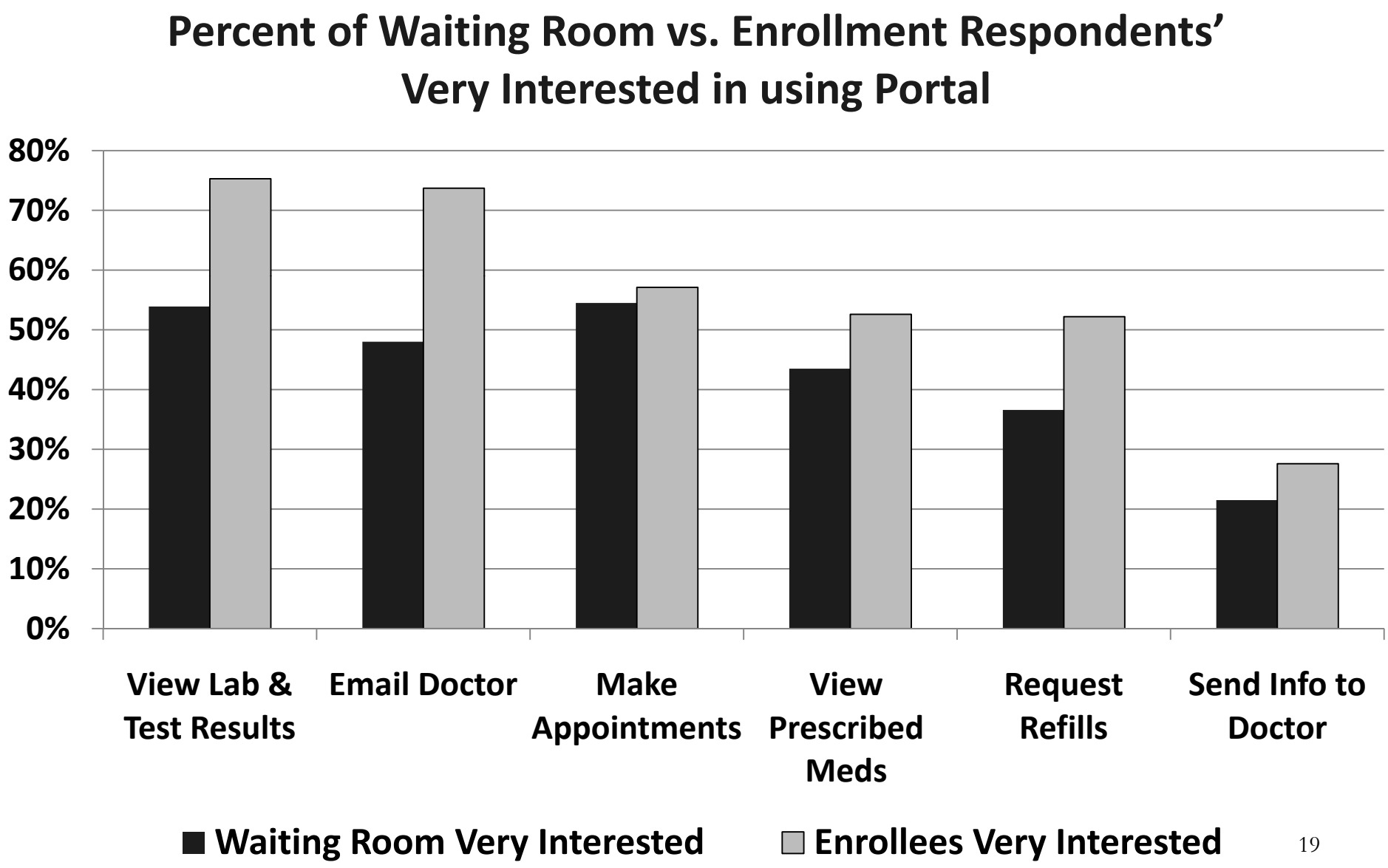


Enrollment Survey Demographics (n=163)

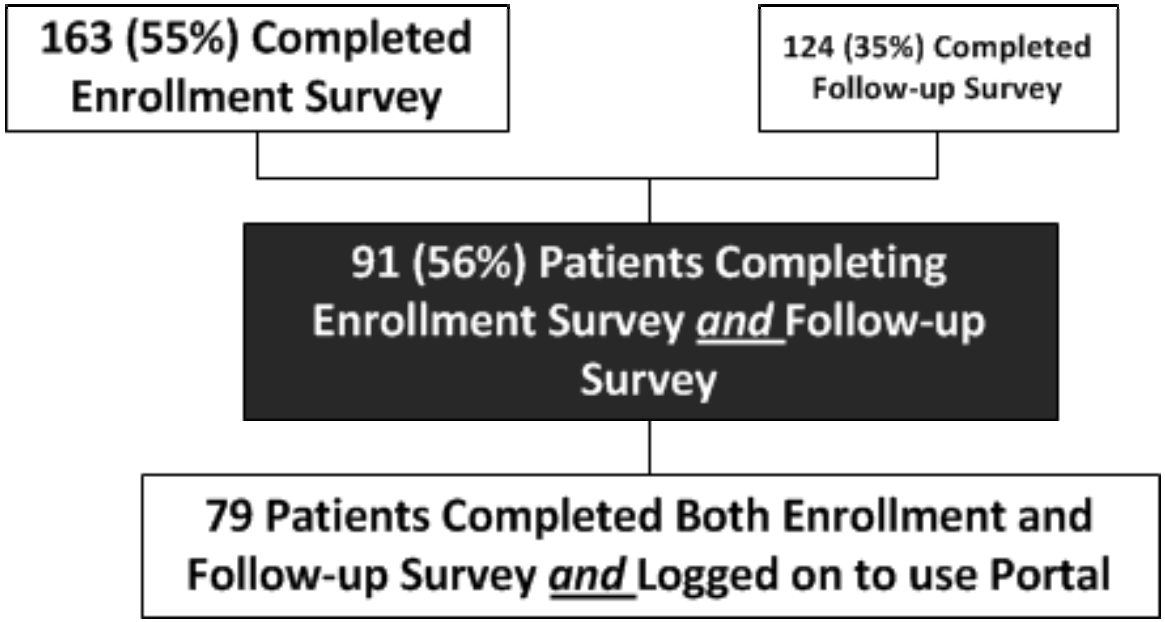
	Percent
Female	62%
Age	
> 60 years old	26%
46-60 years old	44%
18-45 years old	31%
Annual household income	
< $40k	22%
$40k – $59k	26%
$60k or higher	53%

Enrollment Survey Demographics (n=163)

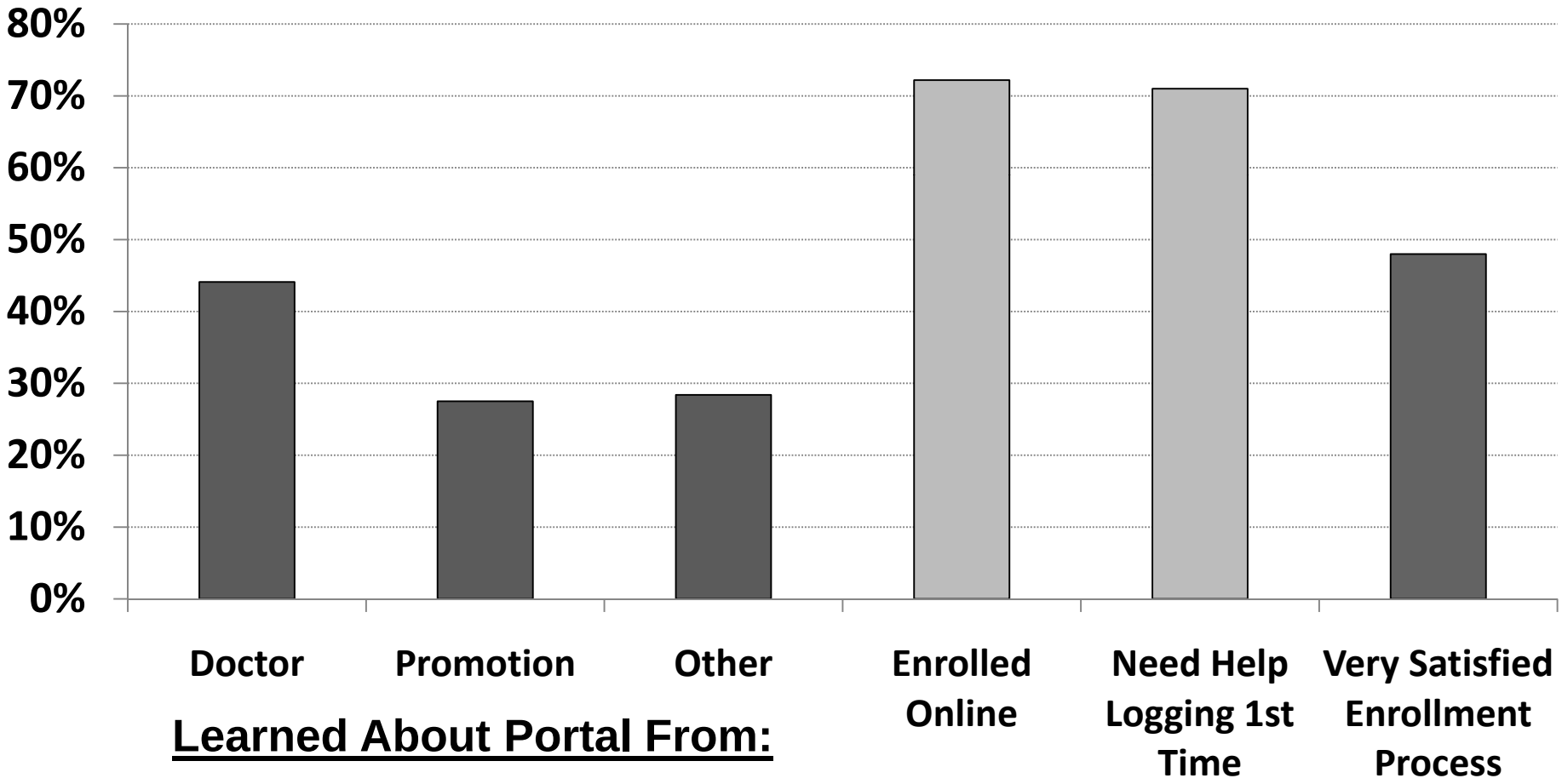
	Percent
Education	
High school / GED or less	10%
Trade / Some college	17%
College graduate	37%
Post-graduate degree	36%
Chronic Illness	58%
Self-reported health status	
Very good / excellent	53%
Good	32%
Fair / Poor	15%


Percent of Waiting Room vs. Enrollment Respondents' Very Interested in using Portal
80%
70%
60%
50%
40%
30%
20%
10%
0%
View Lab & Test Results
Email Doctor
Make Appointments
View Prescribed Meds
Request Refills
Send Info to Doctor
Waiting Room Very Interested
Enrollees Very Interested

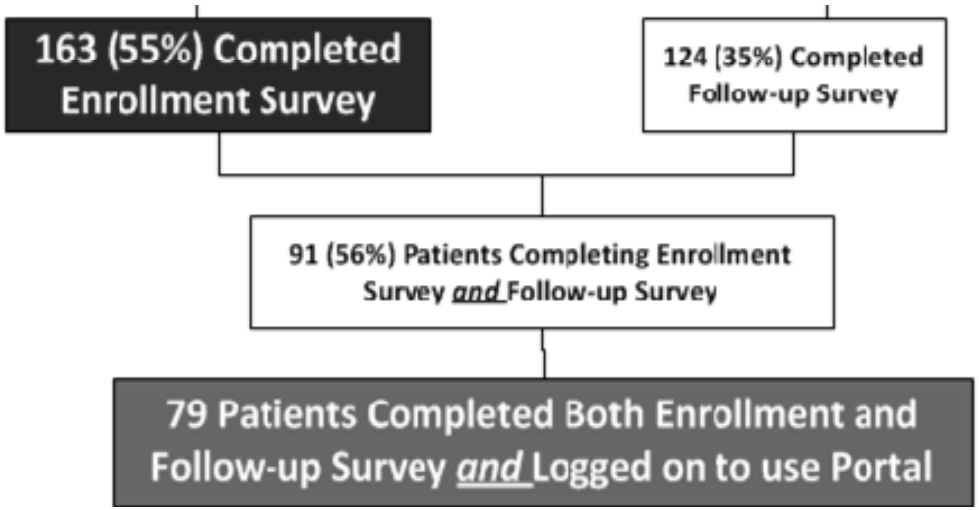
Patients' Matched Enrollment & Follow-up Survey in 3 Clinics *(N=91)*



Enrollment Experience (N=91)



Patients' Portal Use Experiences: *Matched Enrollment & Follow-up Use Survey (n=79)*



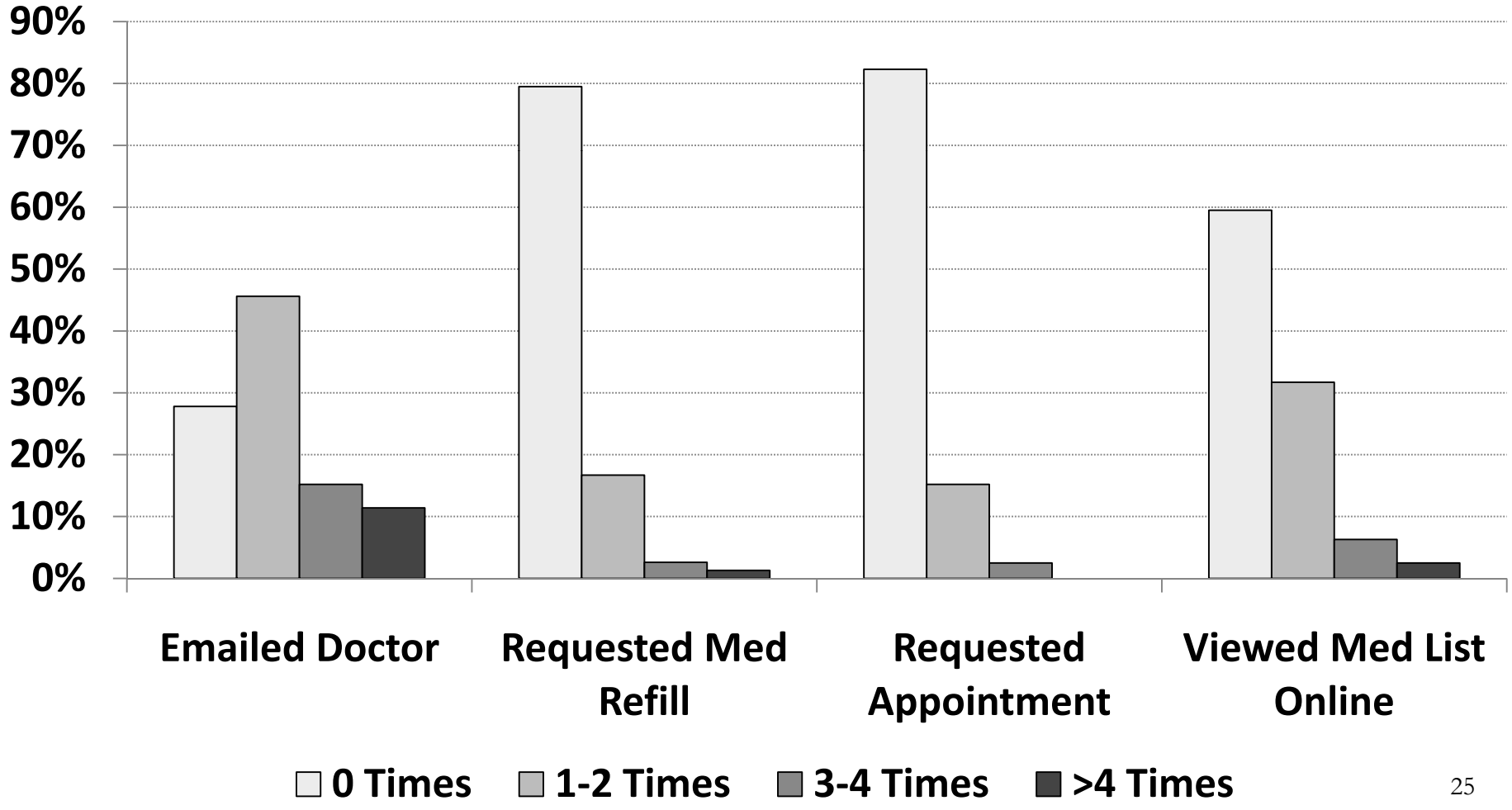
User Demographics (n=79)

	Percent
Female	71%
Age	
> 60 years old	30%
46-60 years old	44%
18-45 years old	26%
Annual household income	
< $40k	194%
$40k – $59k	31%
$60k or higher	50%

User Demographics (n=79)

	Percent
Education	
High school / GED or less	12%
Trade / Some college	17%
College graduate	42%
Post-graduate degree	30%
Chronic Illness	65%
Self-reported health status	
Very good / excellent	56%
Good	30%
Fair / Poor	14%

Self-Reported Portal Use for Initial 3 Months (N=79)



User Experience with Portal (n=79)

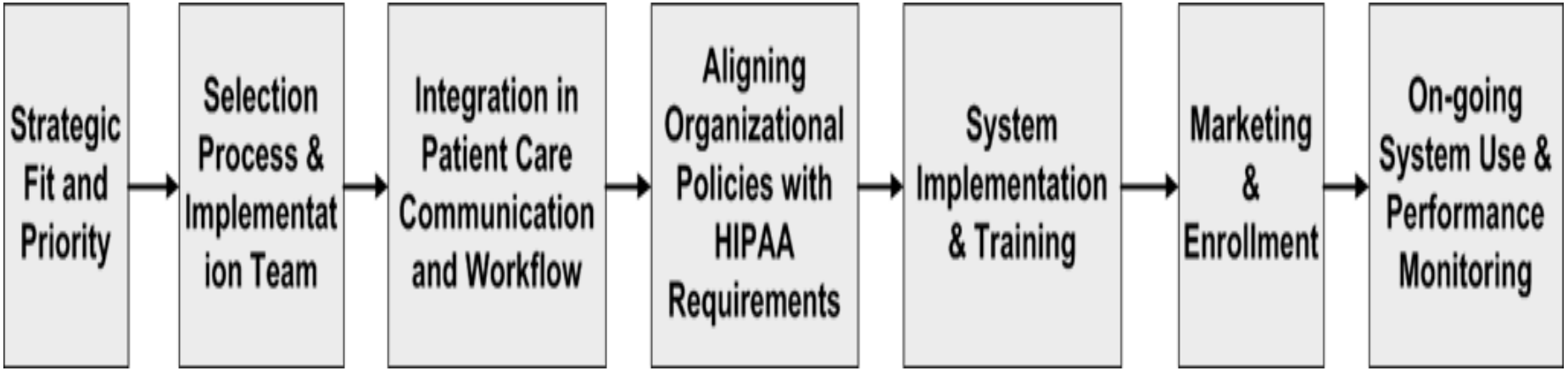
	Agree/Strongly Agree
Sent an email (N=57; 72%)	
Layout of the messaging function was easy to navigate	86%
I received a timely response after using the messaging function	76%
Viewed their medication list online (N=31; 39%)	
Layout of the medication list was *confusing*	16%
Medication list was accurate	71%
It was easy to access information about my medications	58%
Feel confident that my medication list is more accurate after using the portal	36%

Study Limitations

- Study in only one academic medical center
- Only one vendor's portal used
- Limited to primary care patients
- Implementation part of pilot Study … limited numbers of clinics, physicians, and patients

Part 2
What we learned along the way…..

Framework of Issues and Questions to Consider in Implementing Patient Portals*



**Wakefield DS, Mehr D, Keplinger L, Canfield S, Gopidi R, Wakefield BJ, Koopman RJ, Belden JL, Kruse R, Kochendorfer K, Issues and Questions to Consider in Implementing Secure Electronic Patient-Provider Web Portal Communications. International Journal of Medical Informatics, 2010, 79, 469-477 doi.org/10.1016/j.ijmedinf.2010.04.005*

Strategic Fit and Priority

- How does a portal fit overall organizational and HIT strategic plans and priorities?
  - *Market Share; Patient Satisfaction; Physician Satisfaction; Employee Satisfaction; Patient Care Quality & Safety; Regulatory Compliance; and/or Workflow Efficiency*
- What type of portal functionalities are desired?
  - *Email; Passive Viewing of Electronic Health Record (EHR) by patient; EHR Data Entry by Patient; Scheduling Visits and Tests; Medication Refills; Patients' Personal Health Records, e-visits, and/or, Reviewing and Paying Bills*
- Who will be the primary users?
  - *All vs. Selected Patient Categories, Physicians, Midlevel Providers, Assistants, …*

Selection Process & Implementation Team

- Executive owner(s) (CIO, COO, CFO, CMO, …)
- Key Stakeholders on Selection and Implementation Teams
- *Knowledge about patients' current use of and expectations for using Internet for health related purposes*

Integration in Clinic / Hospital Communications and Workflow

- How will implementation of a portal affect provider/ clinic / hospital work flow?
- In a multi-specialty group practice setting will patients have email access to only their primary care provider or any medical or surgical providers that they are being seen by?
- What are our providers' concerns about implementing a portal?

HIPAA Issues and Organizational Policies

- Will all providers and patients be required to only use the dedicated email function within the portal to communicate clinical related information?

- Do current organizational policies and procedures related to who has access to a minor's health record (i.e., married / divorced parents, step parents, etc.) need modification to allow electronic viewing of the minor's medical record? Will all portions of a teenager's electronic health record be accessible by the parents or adult guardian?

- Will all clinically-related email exchanges between patients and providers be retained, and if so for how long?

System Implementation & Training

- Will management of the implementation be internally led / controlled or outsourced?

- Who are the key personnel from the organization's information technology, clinical care, clerical and support services, and administrative staff needed for implementation & training?

- Is there a project management plan detailing specific project tasks, performance dates, and personnel responsible for the pre-go-live (i.e., build, system testing, and training), go-live (i.e., system turn on, super-user support), and post-go-live (i.e., trouble shooting, system monitoring and modification) phases of the project?

- What types, intensities of training, and modalities for delivering training will be needed for staff enrolling patients, clinicians interacting with patients using the system, and enrolled patients?

Marketing & Enrollment

- How will the portal be presented / promoted to potential users (i.e., during scheduled visits, special promotions, etc.) ?

- What will be the physicians' and other providers' role in recruiting patients to use the portal?

- Who will explain features and answer potential enrollees' questions? Who is responsible / authorized to enroll patients?

- How will enrollment be carried out (i.e., in-person, via the web, by telephone, etc.,), and enrollee identity be verified?

On-going Monitoring and Management

- Who has responsibility for tracking / monitoring use of the portal?
- What monitoring mechanism will be used to ensure that patient-generated emails sent to providers are responded to in a timely manner?
- How will patient and provider satisfaction with the system be monitored on an ongoing basis?
- What are the ongoing post-implementation costs associated with marketing, enrollment and daily operations?

Implications

- Pre-implementation and post-implementation Stakeholders' perspectives essential
  - Pre-implementation: planning & building
  - Post-implementation: monitoring & improving
- Differences in patients' perceptions exist between hypothetical interest vs. enrollment interest
  - Who is portal being built for?
  - Who will actually use the portal?
  - What measures of patient satisfaction or acceptance, ROI or success will be used?
  - Will healthcare portal functioning be judged against other commercial portal functioning?

Implications

Implementation is the beginning of a continuing process of portal functioning improvement

- Technology will continue to change
- Expectations will continue to change

Questions?

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