

Patients' Perceived Value of Using a PHR

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January 6, 2005

Agenda

- The dilemma in health care
- Opportunities afforded by IT
- Field study of PHRs
 - Respondents
 - Usage patterns
 - Perceived value
 - Drivers and outcomes
- On-going studies

IT and Healthcare

- Information intensive industries use IT extensively
 - Operational efficiency
 - Strategic value
- Yet, health care lags in realizing the transformational potential
 - 15% of GDP
 - Computerized records could save 600,000 lives, prevent 50,000 medical errors, and save \$9.7 B annually

IS Research in Healthcare

- Technology use in healthcare is a fruitful area of research
 - Health systems
 - Health insurance providers
 - Employers
 - Individuals/Patients
- Interesting areas for inquiry
 - IT adoption at various levels of analysis
 - Healthcare quality, cost, and efficiency
 - Value of IT

Phenomenon of Interest

● Why study PHRs?

- The National Committee on Vital and Health Statistics and the Institute of Medicine have identified the “personal health record” as a key dimension of a national health information infrastructure

● Adoption of PHRs key to on-going diffusion of electronic health records

The Technology

- Software designed specifically for the individual
- Individual maintains all medical information
- Software resides on the individual's PC, on the Internet (ASP), or a hybrid

The screenshot shows a web-based interface for a Personal Health Record (PHR) system. The title bar at the top reads "PHR - Joshua Doe". Below it is a menu bar with "File", "Functions", "Maintenance", "Tools", "Internet", and "Help". A navigation bar contains tabs for "Information", "Visits & Hospitalizations", "Medical Details", "Medical Summary", and "Communications". The main content area is titled "Personal Information for Active Records" and features a sidebar with icons for "Active Records", "Family History", "Emergency", "Medical Contacts", "Insurance", and "Reminders". The main form is divided into several sections: "Personal Information" (Name: Joshua R. Doe, SSN/ID: 111331111, Address: 123 Any Street, City, State/Province: 12345-6789, ZIP/Postal Code), "Contact Information" (Home: 1231112222, Work, Cell Phone, Pager, Email, Web URL), "Personal Information" (Sex: Male, Blood Type: O-, Organ Donor, Living Will), and "Insurance". The bottom of the interface has a button labeled "Enter Personal Information".

PHR - Joshua Doe

File Functions Maintenance Tools Internet Help

Joshua R. Doe

Personal Health Record

Information Visits & Hospitalizations Medical Details Medical Summary Communications

Personal Information for Active Records

Active Records

Family History

Emergency

Medical Contacts

Insurance

Reminders

Name: Joshua R. Doe

First MI Last

SSN/ID: 111331111

Address:

Street: 123 Any Street

City State/Province

12345-6789

ZIP/Postal Code

Country

Personal Information:

Sex: Male Female

Blood Type: O-

Organ Donor

Living Will

Contact Information:

Home: 1231112222 Work:

Cell Phone: Pager:

Email: Web URL:

Enter Personal Information

Some Issues with PHRs

The average American Internet users:

- Do not want their health information shared with anyone else without their consent
- Have a high level of concern about someone hacking into the site and gaining access to their information
- Have a high level of concern about access to personal health information by insurers and employers who might use the information against them
- Online medical record keeping, even though a desired feature, is perceived as the greatest threat to individual privacy on the Internet

Ethics Survey of Consumer Attitudes about Health Web Sites (Grimes-Gruczka & Gratzer, 2000),

Goal of this Research

- Accelerate adoption of PHRs
- Understand barriers and facilitators
 - What value do patients perceive in a PHR?
 - What do they use it for? How much do they use?
 - What drives people to use PHRs?
 - Behavioral characteristics?
 - Demographic characteristics?

Methodology

- Conduct preliminary study
 - Task characteristics: Interview users of healthcare services
 - Technology characteristics: Interview PHR developer
- Survey approximately 875 users of the PHR
 - Value
 - Demographic
 - Tasks Technology features
 - Usage
 - Usefulness, Ease of Use, Intention for Future Use

Descriptive Statistics

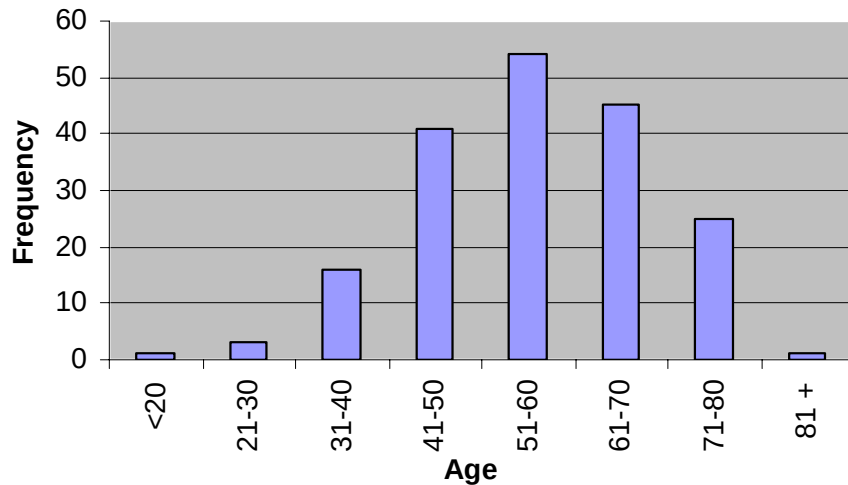
Description	Value
Surveys sent	875
Unusable or undeliverable	52
Usable surveys	199
Response Rate	24.2 ⁰ %
Male/Female	69/31%
% of users with chronic illness	60%
% taking multiple medications daily	76.8%
Average number of visits to doctor per year	7.2
Average number of doctors seen per year	5-10

Non-response bias¹ test yielded no significant differences between several key indicators.

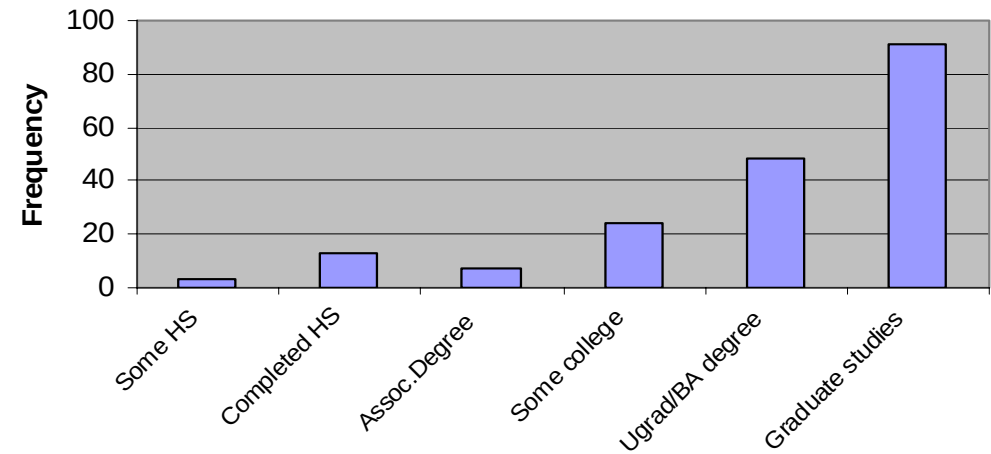
¹Time trend extrapolation method by Armstrong and Overton (1977)

The Respondents

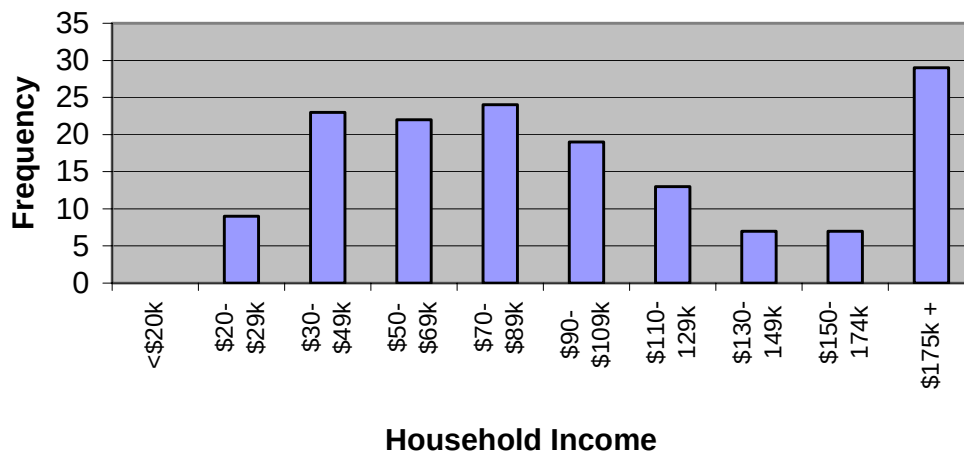
Age Distribution of PHR Users



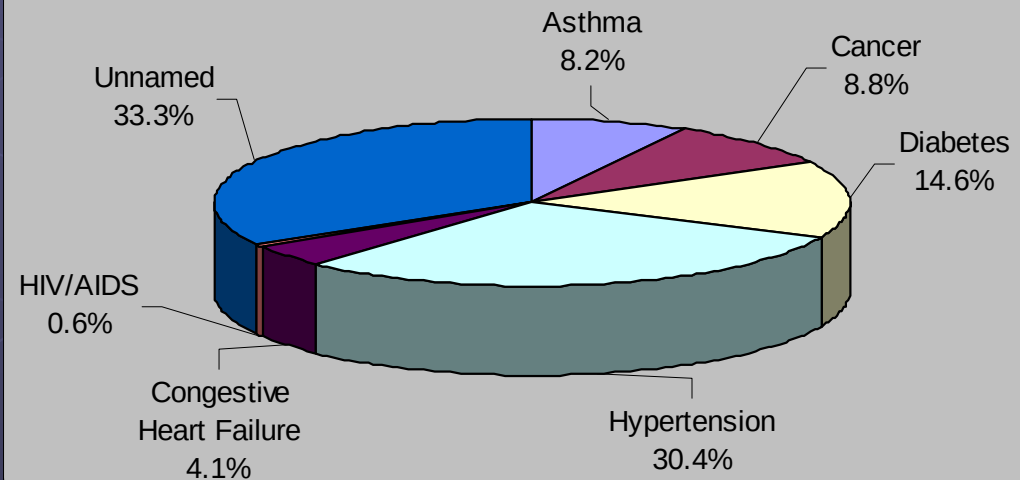
Education Level of PHR Users



Income Distribution of PHR Users

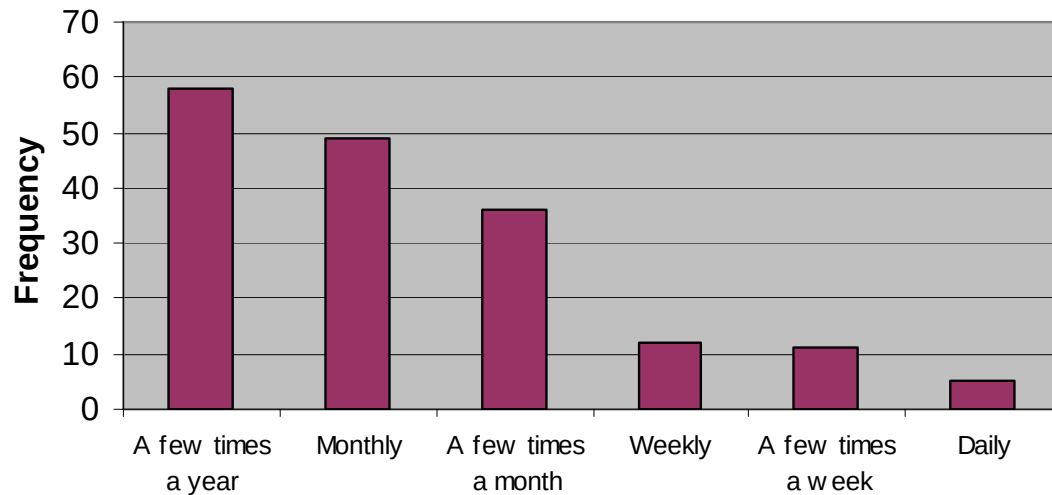


Breakdown of Users by Chronic Illness



Usage Patterns

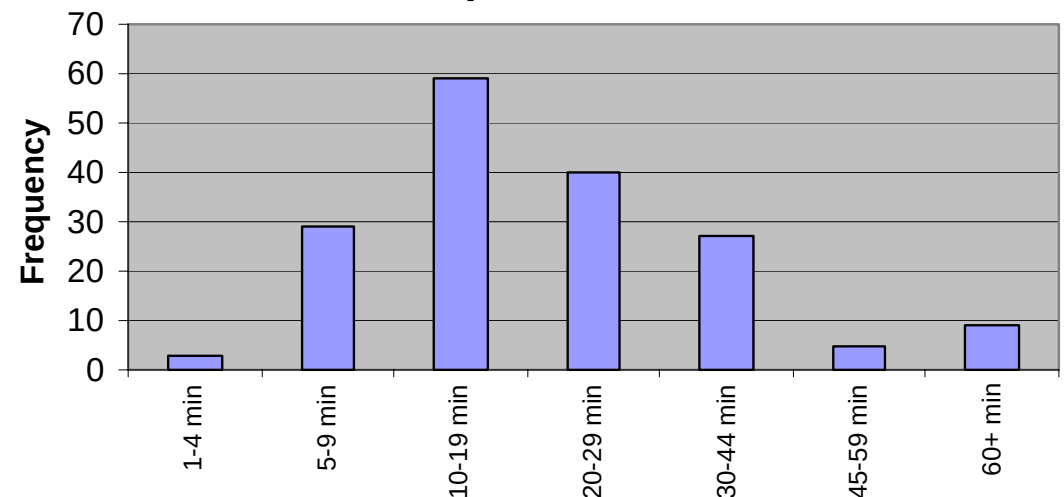
How Often Respondents Use PHR



Frequency of use

Duration of use

How Long Respondents Use PHR per Session



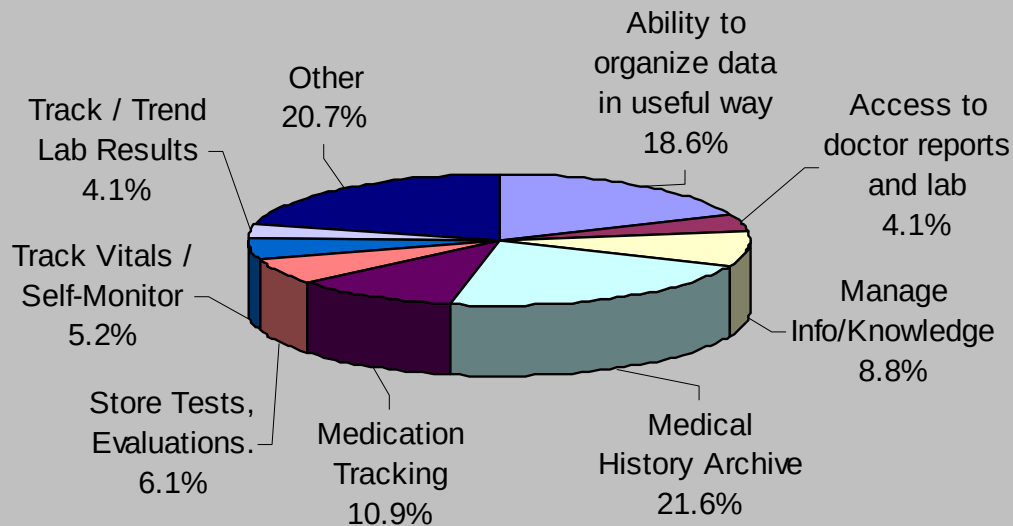
Who Uses the PHR?

● The typical user is

- Male
- Age 51-60
- Has a chronic illness (hypertension most prevalent)
- Takes multiple medications daily
- Goes to the doctor 7.2 times annually
- Completed graduate studies
- Household income is \$175k+ (2nd highest \$70-89k)
- Typical usage – “Monthly for 30-44 min” or “A few times/week for 5-9 min”

Descriptive Statistics

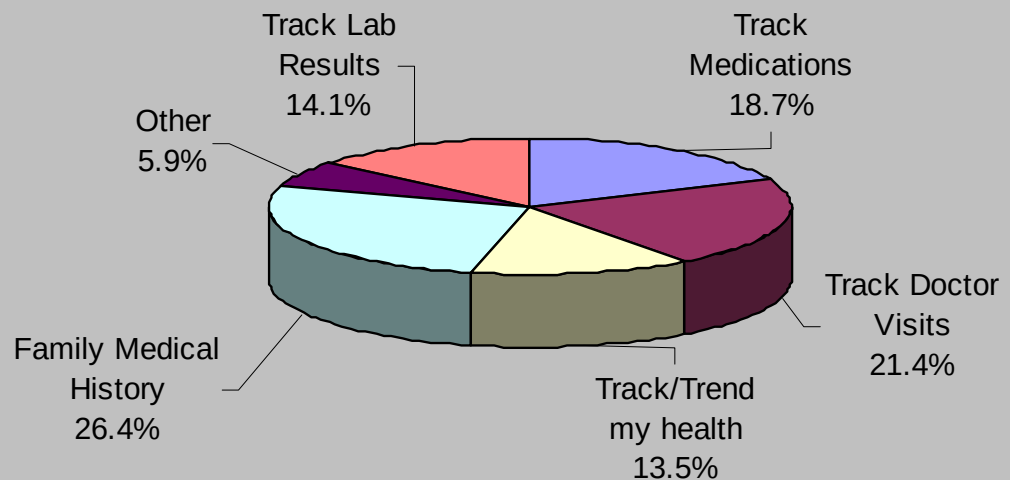
Most Important Health Care Tasks



Tasks

Technologies

Primary Uses for PHR



Perceived Value

Using a data reduction method known as principal components analysis, the 18 items that make up perceived value were reclassified into three latent constructs:

1. Structure, organization, and compliance
2. Relationship and connectedness with healthcare provider
3. Convenience and empowerment

Note: Six items were removed due to poor loadings

Structure, Organization and Compliance

- Using the PHR helps me to perform my healthcare activities (by reminding me to make and keep my appointments, etc.)
- Using the PHR helps me to stay on schedule with my healthcare activities (such as getting my regular checkup)
- Using the PHR helps me perform my healthcare activities at the appropriate times (such as refilling prescriptions)
- Using the PHR helps me remember to perform my healthcare activities (like testing my blood sugar)
- Using the PHR allows me to accomplish more of my healthcare objectives (such as losing weight)

Relationship & Connectedness

- Using the PHR improves communications between my care providers and me
- Using the PHR improves my relationship with my care providers
- Reducing the number of forms to fill-out during registration by having the information available on my PHR is valuable to me

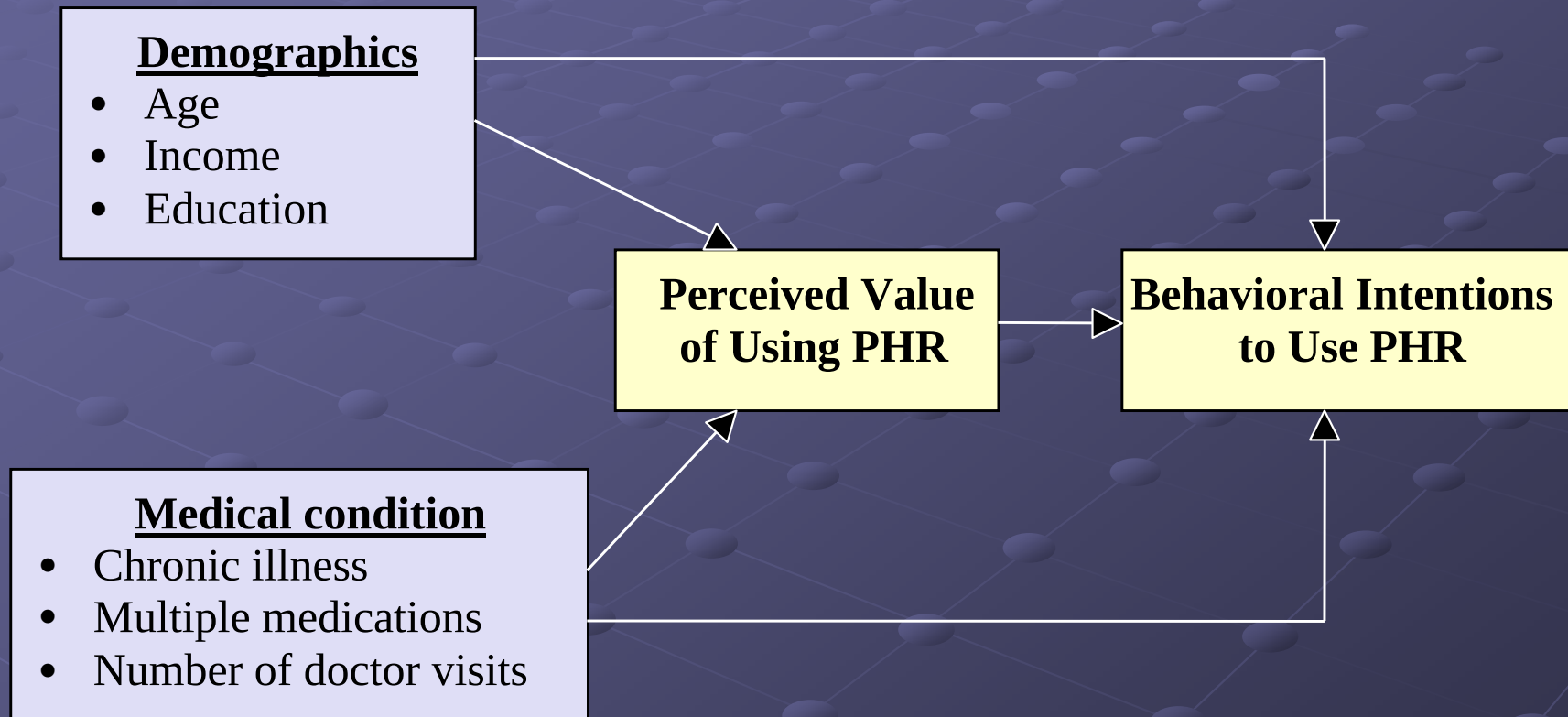
Convenience & Empowerment

- It would be valuable to have my health information available at all times
- It would be valuable to have my complete medical record with me at all times
- It is critical to have my emergency medical information with me at all times
- It would be valuable to have all of my healthcare information located in one place

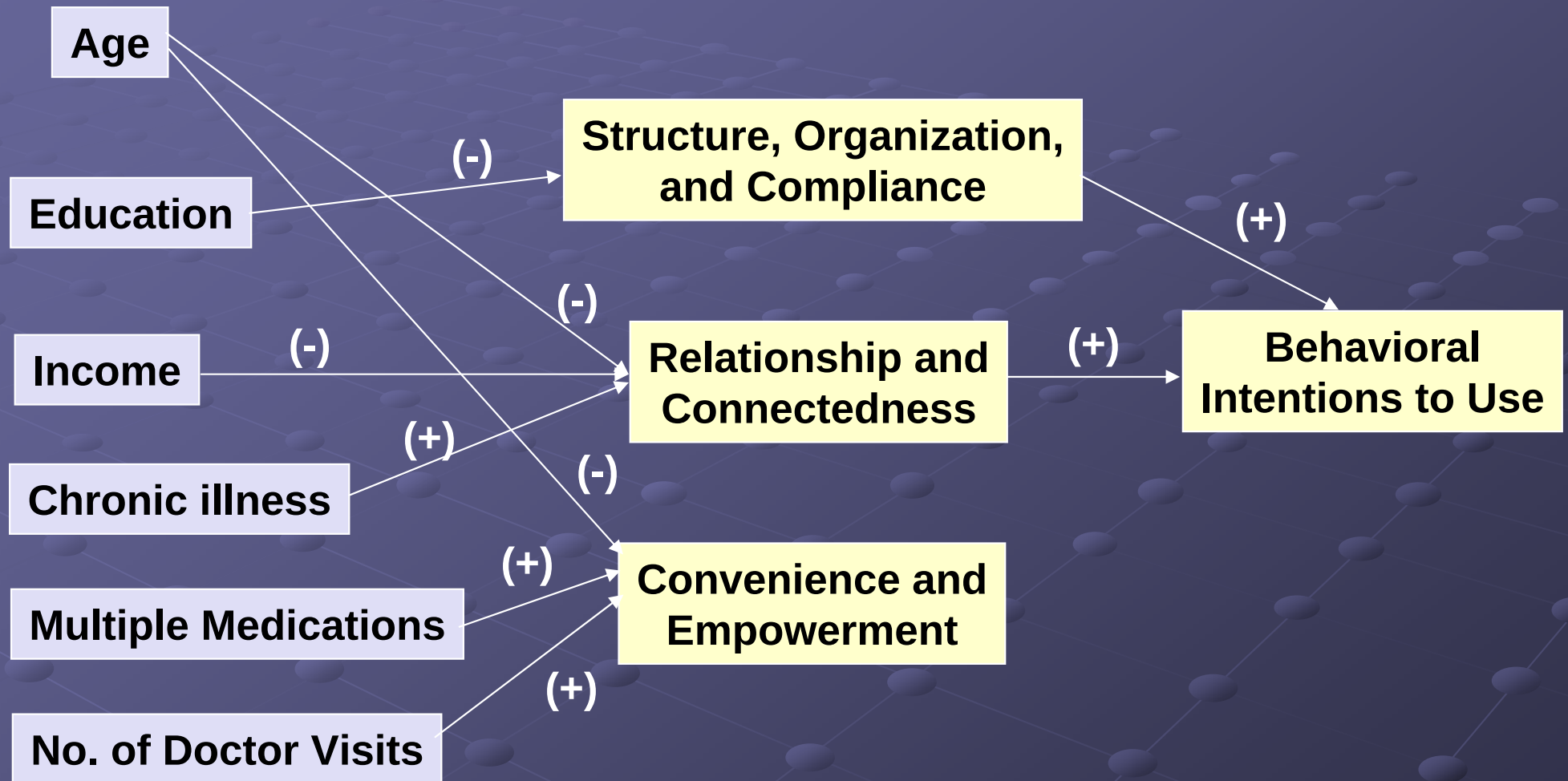
Reliability of Constructs

Construct	# Items	Cronbach's α
Structure, Organization and Compliance (PV ₁)	5	0.93
Relationship and Connectedness (PV ₂)	3	0.82
Convenience and Empowerment (PV ₃)	4	0.75

Drivers and Outcomes



Results



Overall Findings

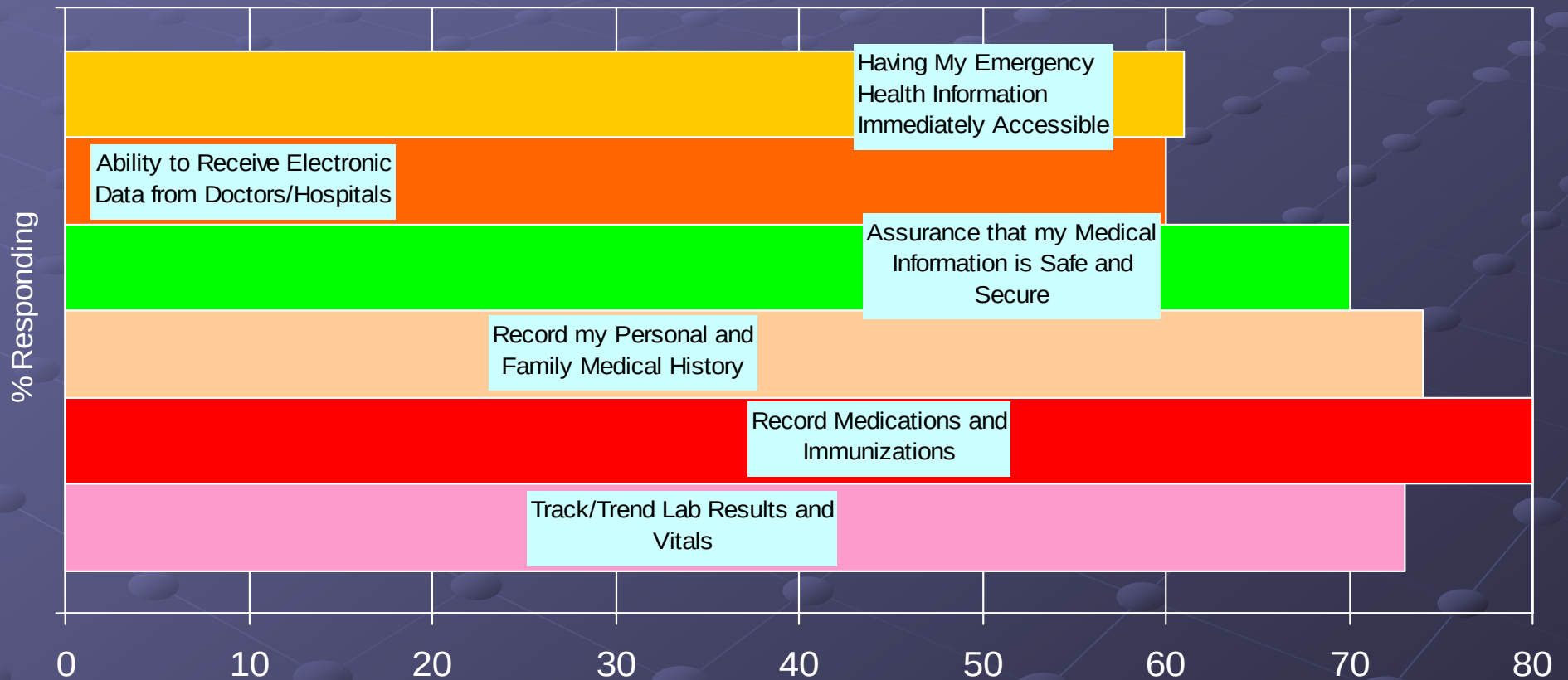
- Patients believe that PHRs deliver multi-faceted value
- Perceived value is a strong driver of usage intentions
 - Strategies to amplify perceived value
- Value perceptions differ across patient populations
 - Target “opinion leaders” and champions

On-Going Research

- Privacy concerns related to PHRs
 - Desired features and capabilities
 - Adoption barriers
 - Influence on choices
- Adoption of mobile technologies by doctors
 - Work pattern changes

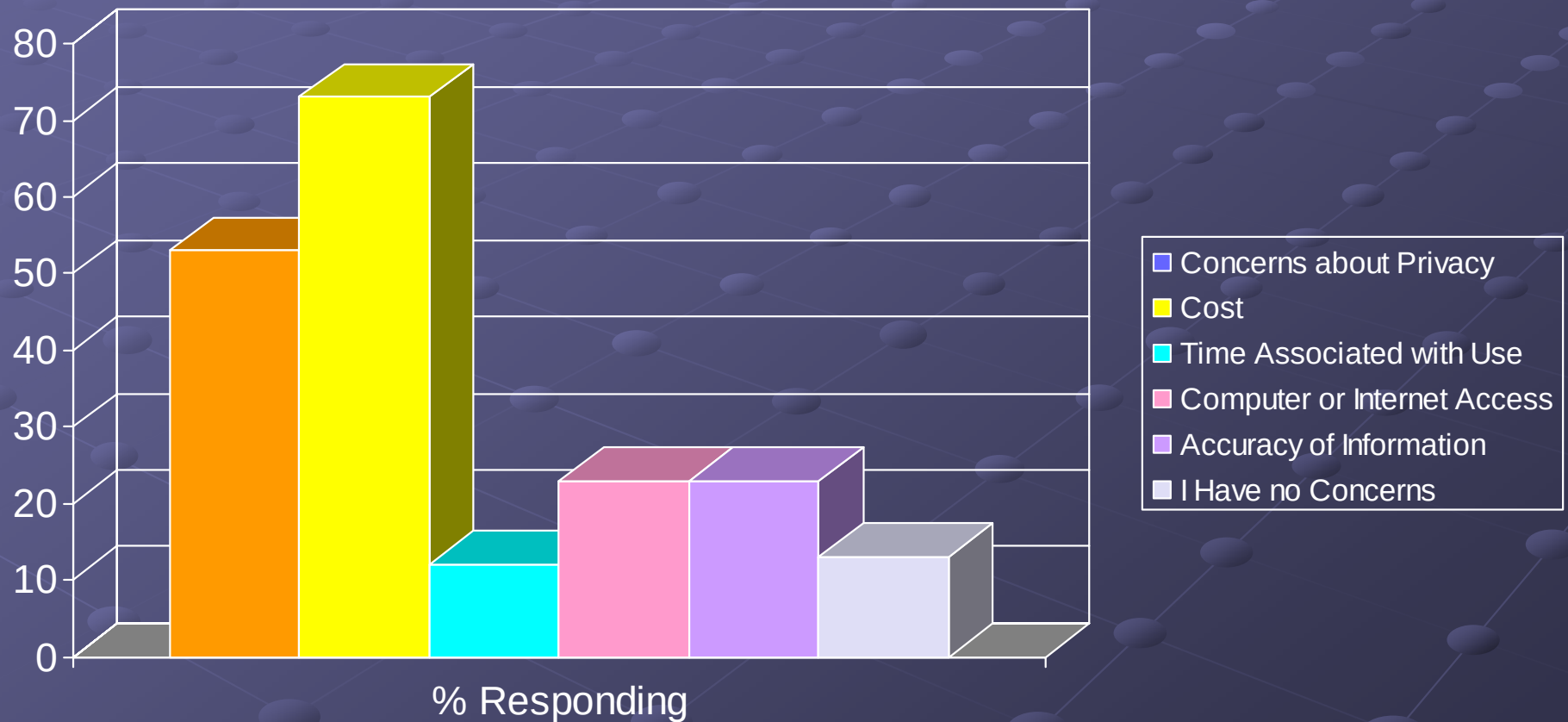
What Patients Desire

What Features of PHR are Most Important?



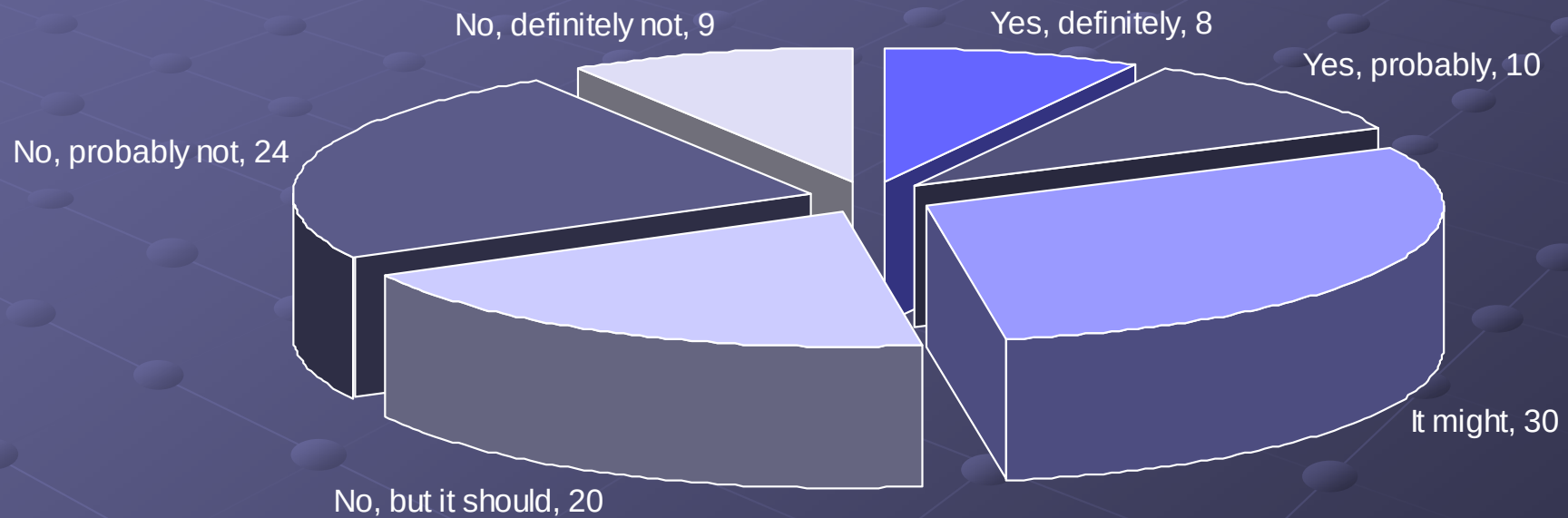
Adoption Barriers

Concerns that Keep Me From Using/Endorsing PHRs



Influence on Choices

Does IT Adoption by Doctors/Hospitals Influence Your Choice?



Conclusion

- HIT, particularly electronic records offer an opportunity to transform health care
 - Business case is compelling, but need more targeted studies!
- PHR adoption is a critical prerequisite
- Patients see value but.....
 - Information dissemination
 - Giving the technology “away”
 - Training and empowerment

