

Going Digital with Patients: IT's about Patient Safety

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Outline

- ☞ The “beckoning opportunity” in patient safety
- ☞ EHR systems: prescription for safer care
- ☞ Engaging patients in “personalized health care”
- ☞ Future of “continuous care”

Air Traffic Control Command Center

Information System Infrastructure



Information Systems Support of *Patient Safety*

The Status Quo

Clinician's Information System *In Healthcare*



Result of Information Deprivation on Patient Safety

Adverse Events in Hospitals

Harvard Medical Practice Study

- ☞ 30,195 randomly selected records from 51 NY hospitals in 1984
 - ⌞ Definition of Adverse Events: injuries caused by medical management, and led to prolonged hospitalization or disability at discharge
 - ⌞ 3.7% of hospitalizations had adverse events
 - ⌞ 14% fatal
 - ⌞ Extrapolation ➡ IOM's 98,000 annual deaths
 - ⌞ 58% preventable (=error)

Adverse Events in Hospitals

Harvard Medical Practice Study

☞ Physician errors

⌞ Errors of commission (examples)

- Inappropriate or outmoded therapy
- Technical surgical error
- Inappropriate medication
- Error in dose or use of medications

⌞ Errors of omission (examples)

- Failure to take precautions
- Failure to use indicated tests
- Avoidable delay in diagnosis
- Failure to act on results of tests or findings
- Inadequate follow up of therapy

Institute of Medicine: *The Status Quo is Unacceptable*

“In its current form, habits, and environment,
American health care is incapable of
providing the public with the quality health
care it expects and deserves.”

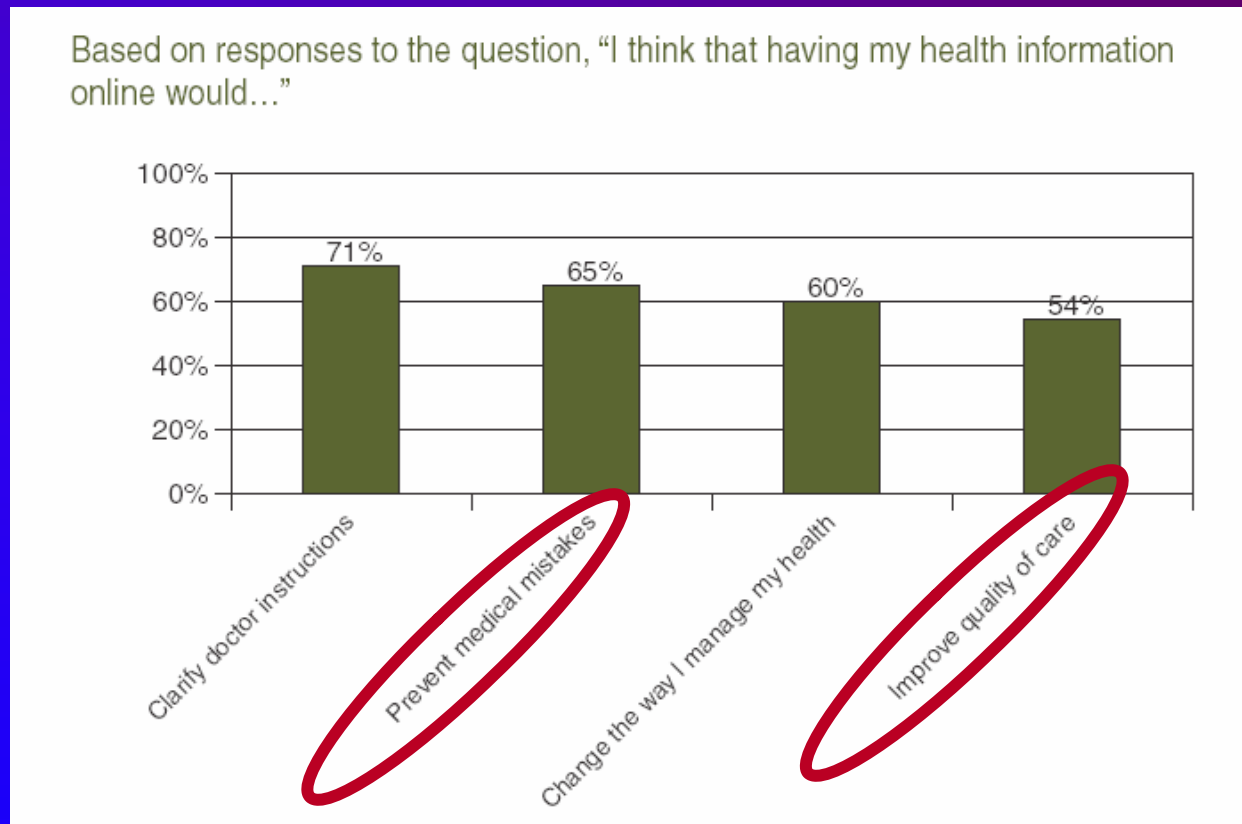
IOM, Quality Chasm report, 2001

Options

Option: Personal Health Records

Patients' Self Defense

40% of survey respondents keep medical records at home



Markle Foundation, Connecting for Health survey
1,246 representative online users, June, 2003

Option: IOM Proposal

2003 Patient Safety Report

“Americans should be able to count on receiving health care that is safe [freedom from errors of commission *and* omission].

To achieve this, a new health care delivery system is needed – a system that both *prevents* errors and learns from them when they occur.

This requires, first, a commitment by all stakeholders to a culture of safety, and, second, improved information systems.”

Electronic Health Record Systems

Sec. Thompson Requests IOM Report

- ☞ Secretary Thompson:
 - ⌵ “Grocery stores are more automated than healthcare.”
- ☞ Wanted HHS to reward providers who use EHR systems to deliver high quality care
- ☞ Requested IOM report defining key capabilities of EHR system that lead to quality improvements and patient safety

EHR System

IOM Key Capabilities

- ☞ Health information and data
- ☞ Results management
- ☞ Order entry / order management
- ☞ **Decision support**
- ☞ Electronic communication and connectivity
- ☞ Patient support
- ☞ Reporting and population management
- ☞ Administrative processes

Benefits of Using an EHR System

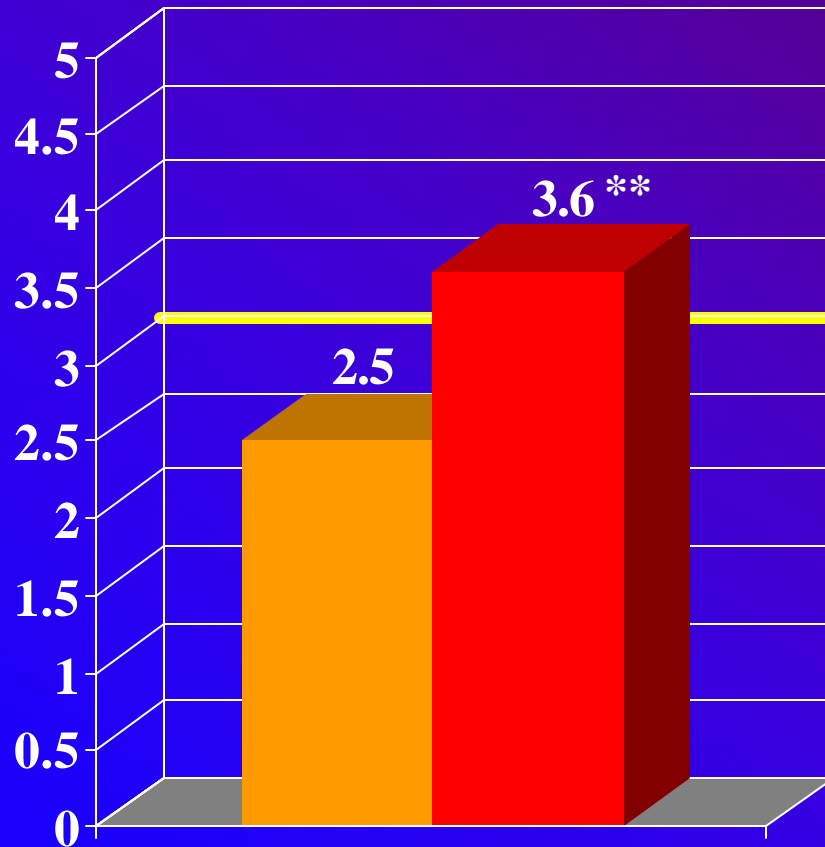
Appropriateness of Decisions

- ☞ Randomly selected records of patients of EMR users and paper-record users
 - ⌞ Created typed mini-record in standard format
 - Face sheet
 - Recent 4 progress notes
 - Intervening labs
 - ⌞ Patients with chronic diseases
- ☞ Blinded expert review panel
 - ⌞ Board-certified internists, ave 28 yrs in practice
 - ⌞ No project affiliation

Tang, et al., JAMIA 6:245-51; 1999.

Appropriateness of Decisions

Assessments and Plans



☞ Scale 0-5

☞ 0 = “completely inappropriate”

☞ 3 = neutral

☞ 5 = “completely appropriate”

☞ Decisions of EMR users were significantly more appropriate

■ Paper users ■ EMR users

** $P < 0.001$

Transforming Healthcare

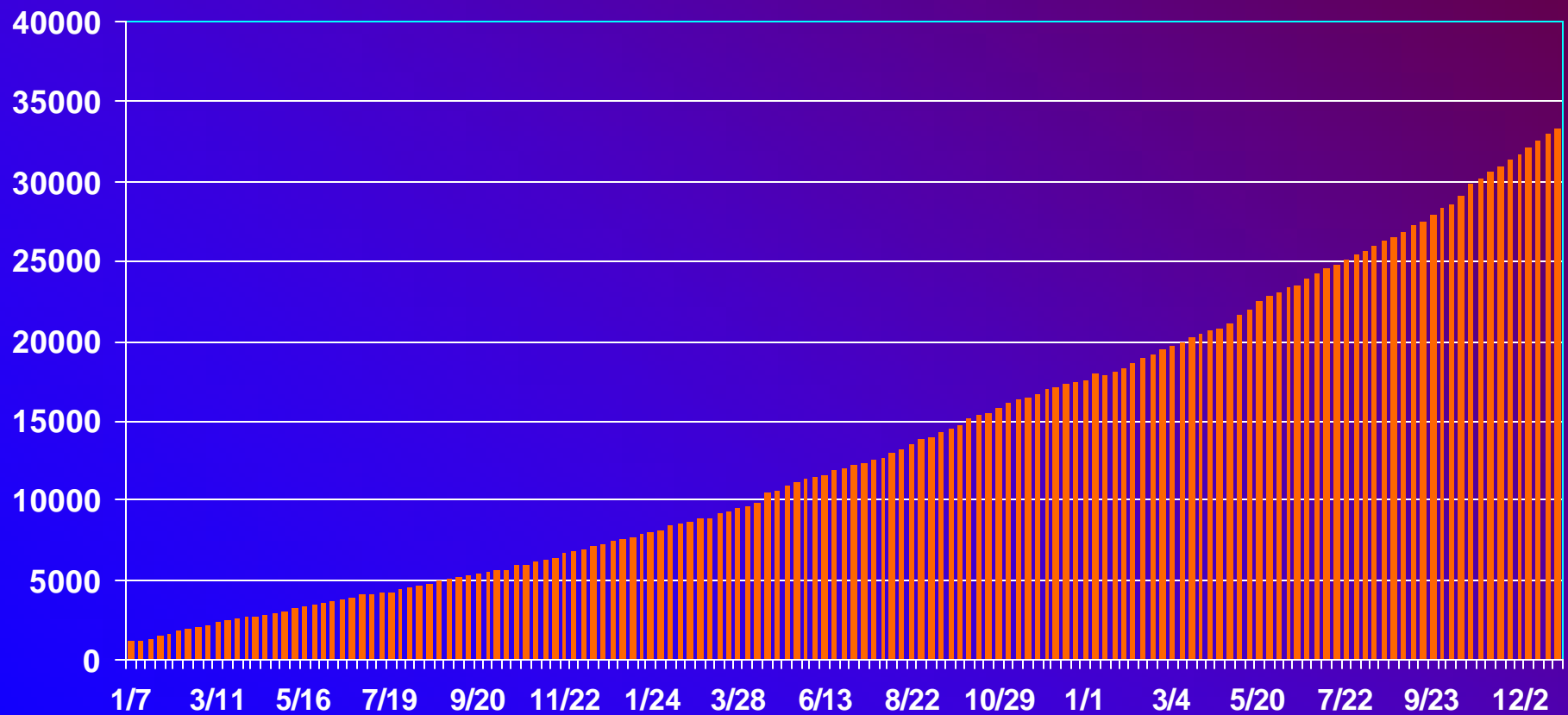
*Personalizing Health Care
Delivery*

Demo of PAMFOnline

<http://www.pamf.org/PAMFOnlineDemo/home.asp>

PAMFOnline

Enrollment



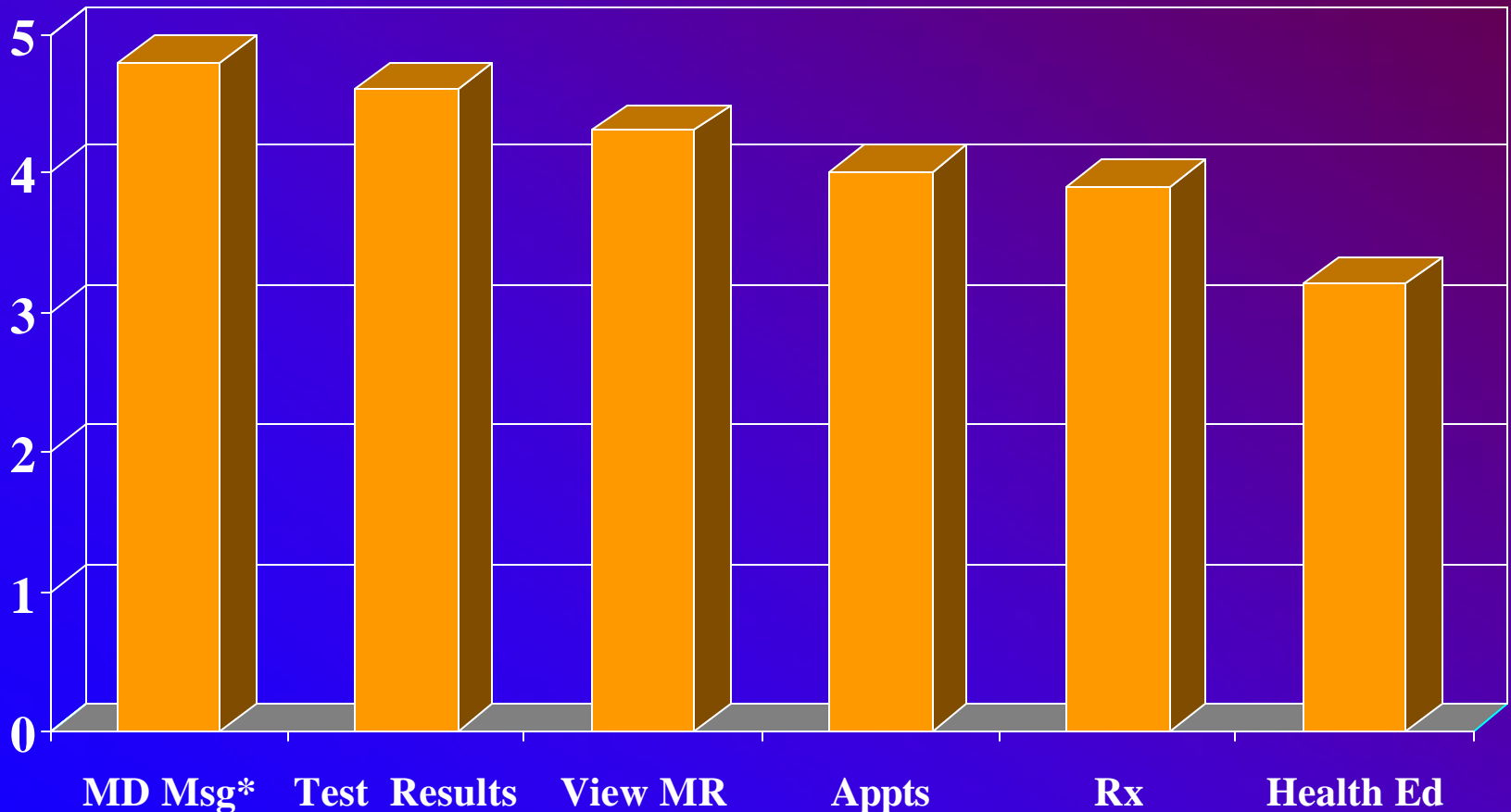
2004 Patient PAMFOnline Survey

“Overall Satisfaction with PAMFOnline”

- ➡ 90% satisfied or very satisfied with PAMFOnline
- ➡ Average rating 4.3/5.0

PAMFOnline Patient Survey

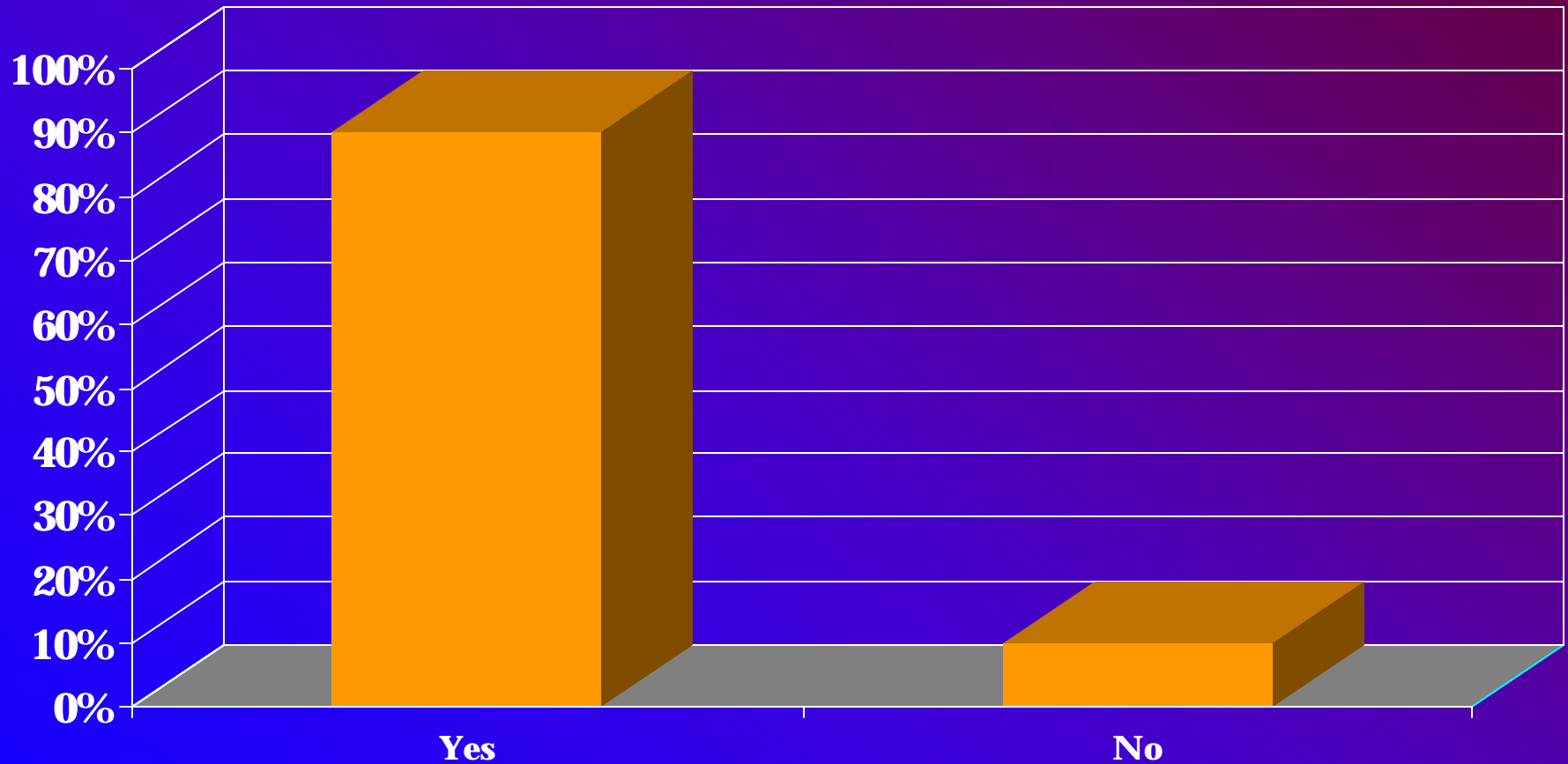
Valued Services



*Subscribers only

2003 Physician PAMFOnline Survey

“Are you satisfied with PAMFOnline?”



Physicians with 100+ PAMFOnline patients

Creating *An Experience of Care*

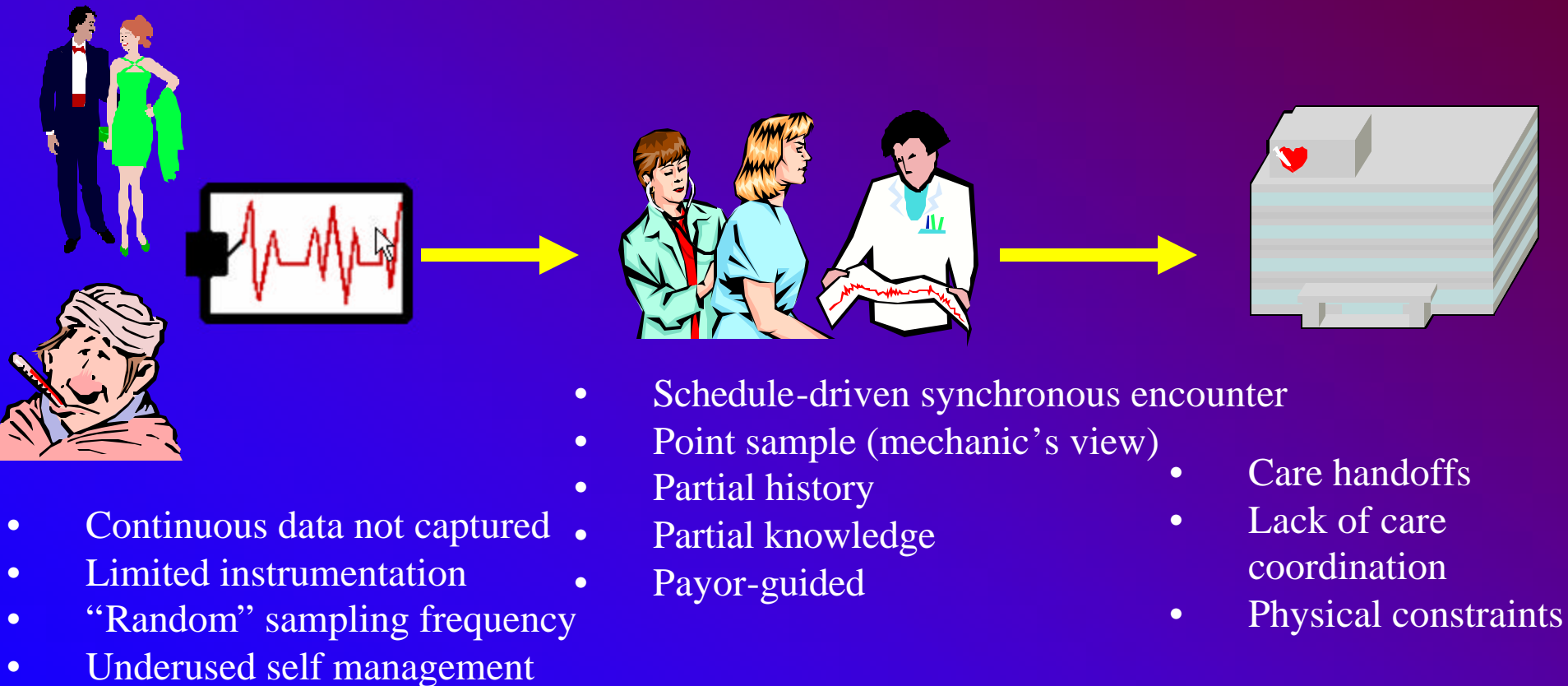
Engaging Patients

Future Goal

“Continuous Healing Relationship”

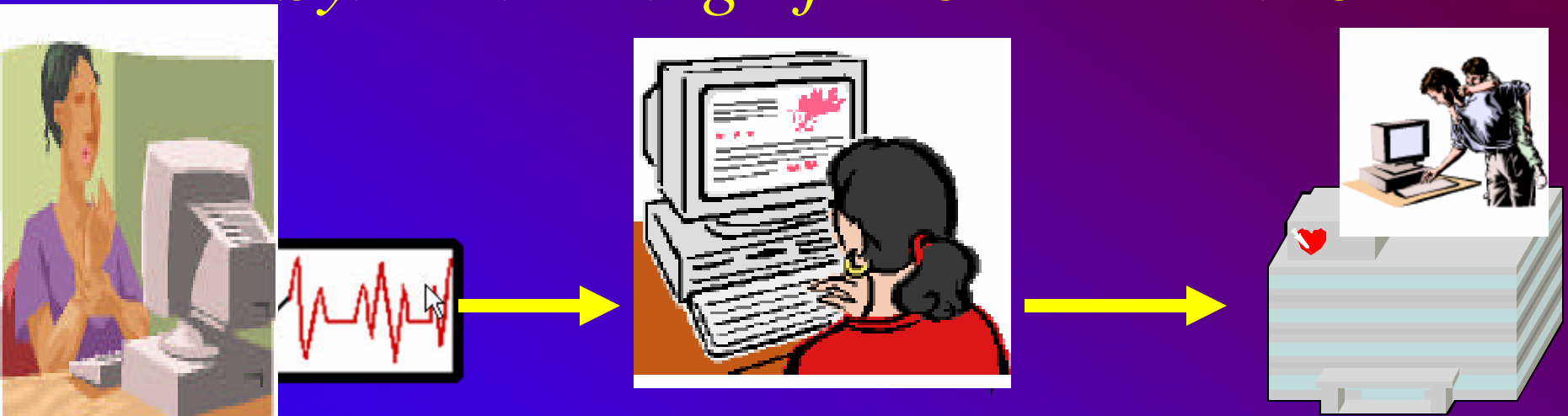
- ☞ Unobtrusive, seamless, continuous monitoring and management of diseases remotely (non-office-based)
 - ⌞ Noninvasive monitoring
 - ⌞ Plugless-and-play interoperability
 - ⌞ Just-in-time information and knowledge
 - ⌞ Care-anywhere

Systems Analysis for Redesign



Engineering Opportunities

Systems Design for Continuous Care



- Continuous data gathered
- Automated triage
- Active self management

- Symptom-triggered contact
- Complete record
- Point-of-care knowledge
- Best practices

- Shared communication
- Joint decision making

Summary

Achieving a New Standard of Care

- ☞ The status quo is unacceptably unsafe
- ☞ Electronic health record systems *essential* to making patient safety the standard of care
- ☞ Need to *engage patients* to be the drivers for new century healthcare
- ☞ Future: seamless, continuous health promotion and health care