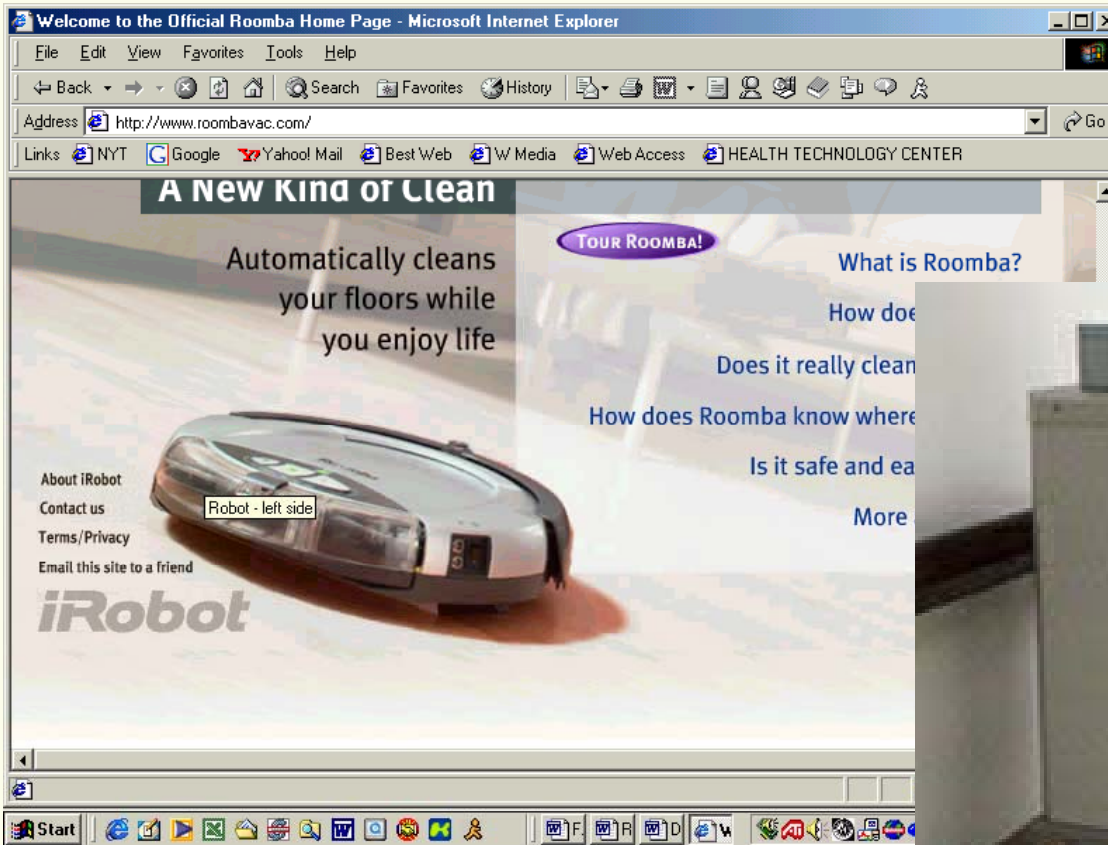


The Role of Technology in Healthcare: Patient Safety, Quality Enhancement and Medical Error Reduction

Molly Joel Coye MD, MPH
Founder and CEO
Health Technology Center
www.healthtech.org

Disrupting Like a Roomba...



“Mrs. Marshall, get on the scale...”



Innovation Is An Unnatural Act...



Better, Cheaper Care



Home-based Telemedicine for Uninsured, High-risk Diabetic Population

| | |
|---------------------------|-------|
| Inpatient Admissions | ▼ 32% |
| Emergency Room Encounters | ▼ 34% |
| Outpatient Visits | ▼ 49% |

(Diabetes Technology & Therapeutics Journal, 2002)

Asthma Self-management for High-risk Pediatric Population*

| | |
|--------------------------|-------------|
| Activity Limitation | ▼ (p = .03) |
| High Peak Flow Readings | ▲ (p = .01) |
| Urgent Calls to Hospital | ▼ (p = .05) |

(Arch Pediatr Adolesc Med. 2002)

Care Coordination: Hypertension, Heart Failure, COPD, and Diabetes*

| | |
|-------------------------------|-------|
| Emergency Room Visits | ▼ 40% |
| Hospital Admissions | ▼ 63% |
| Hospital Bed Days of Care | ▼ 60% |
| Nursing Home Admissions | ▼ 64% |
| Nursing Home Bed Days of Care | ▼ 88% |

(Disease Management, 2002)

268 Years Later... Innovation Adopted



The Vision

Advancing the use of new technologies to make people healthier.

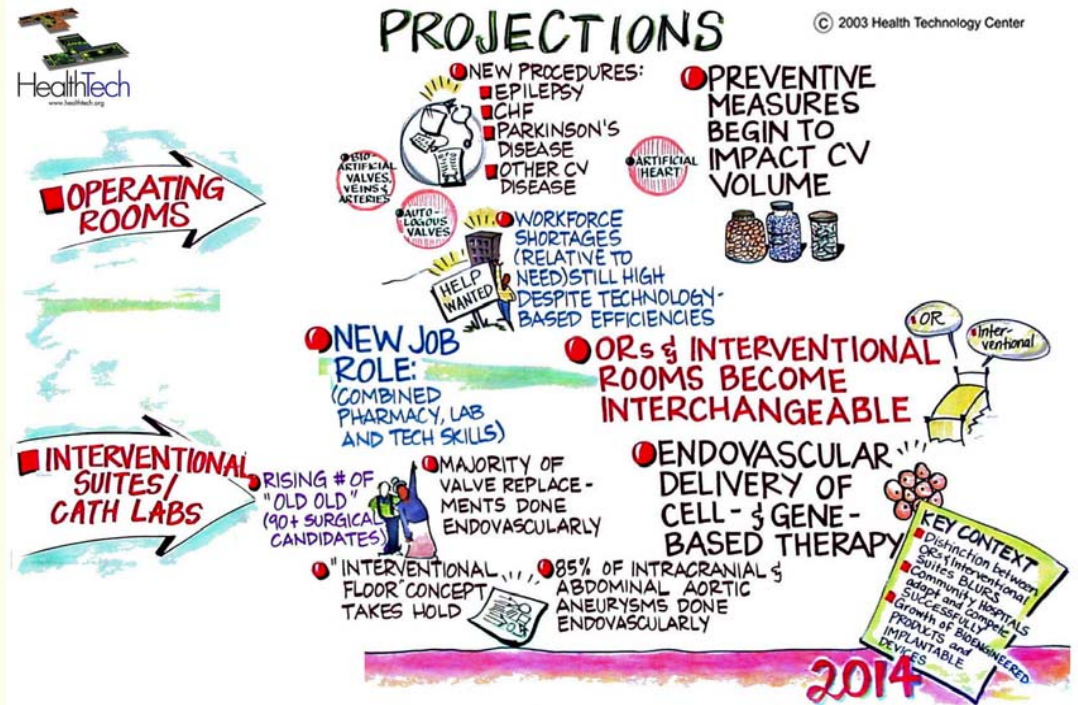
The Mission

To create a trusted source of expert information about the future of healthcare technologies.

The Means

A nonprofit pooled research center for delivery systems and health plans.

Funding independent of developers and vendors of technology.



HealthTech Partners

Baylor Health Care System
Bon Secours Health System
Carolinas HealthCare System
Catholic Healthcare West
Centers for Medicare and Medicaid Services (CMS) Federal Liaison
CHRISTUS Health
Medisys Healthcare System
Methodist Health System
Parkview Health
Partners HealthCare System
Presbyterian Medical Services
The Queen's Medical Center
Ryan Community Health
Veterans' Health Administration
Lenox Hill Hospital
Overlake Hospital
UC Davis Health System
Greenville Health System

Ascension Health
CAPH
Group Health Cooperative
Kaiser Permanente
Mills-Peninsula Health Services
PeaceHealth
Premier, Inc.
Providence Health System
Sequoia Healthcare District
Sutter Health
VHA Inc.
WellPoint Health Networks
Texas Health Resources
Lumetra
El Camino Hospital
Hudson Health System
Banner Health System
John Muir/Mt. Diablo Health System

New in 2004

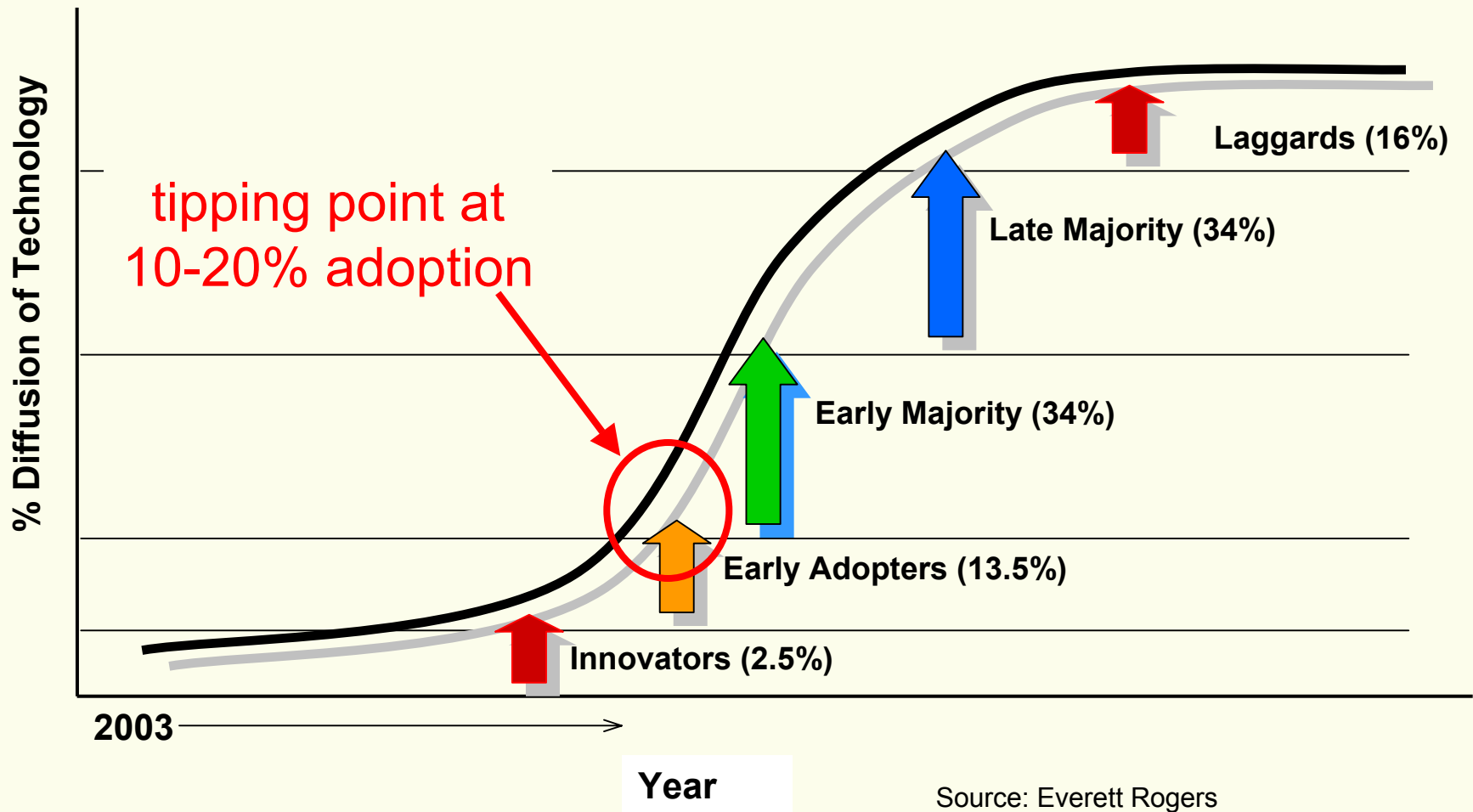
Lucile Packard Medical Center
Chinese Hospital and HealthPlan
Greenville Medical Center
Stanford Hospital
Health Alliance of Greater Cincinnati
Blue Shield of California Foundation
HCA
University HealthSystem Consortium
Catholic Health Initiatives

Purchasers Demand Better, Cheaper Care

- *Projected net annual benefit for the State of Massachusetts = \$2.48 billion*
 - ✓ **Electronic communication between patients and their physicians**
 - ✓ **Electronic prescribing**
 - ✓ **Ambulatory computerized physician order entry**
 - ✓ **Inpatient CPOE**
 - ✓ **Regional data sharing**
 - ✓ **Intensivist onsite 24x7 in ICUs**
 - ✓ **Disease management**

Joint findings of the New England Healthcare Institute (NEHI) and Massachusetts Technology Collaborative, November 2003.
Nehi.net

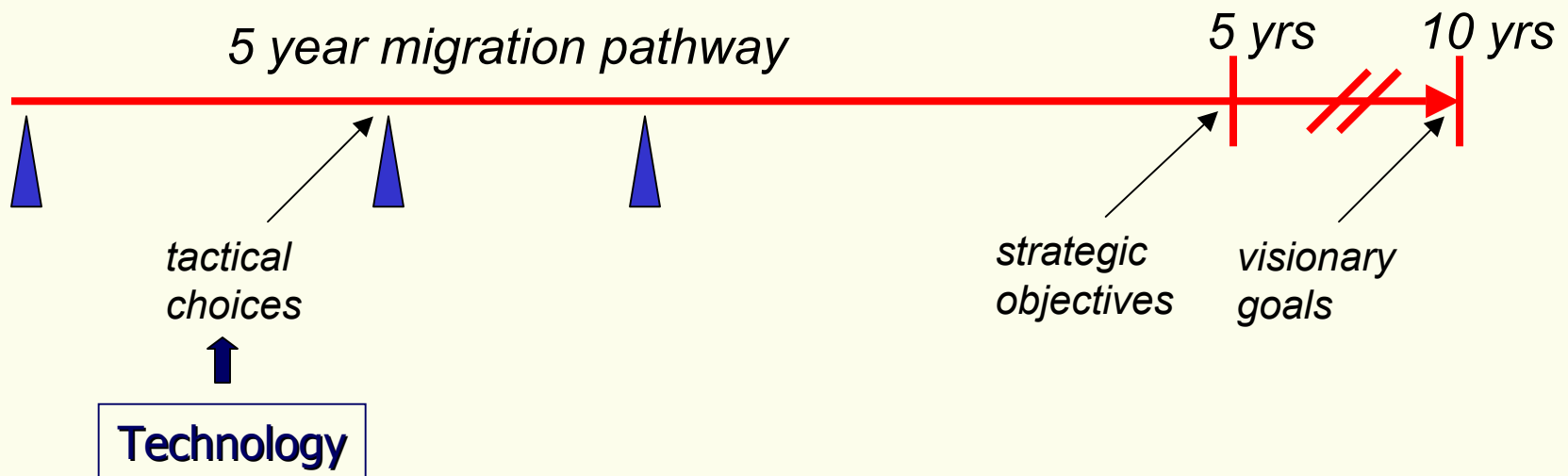
Diffusion Curve



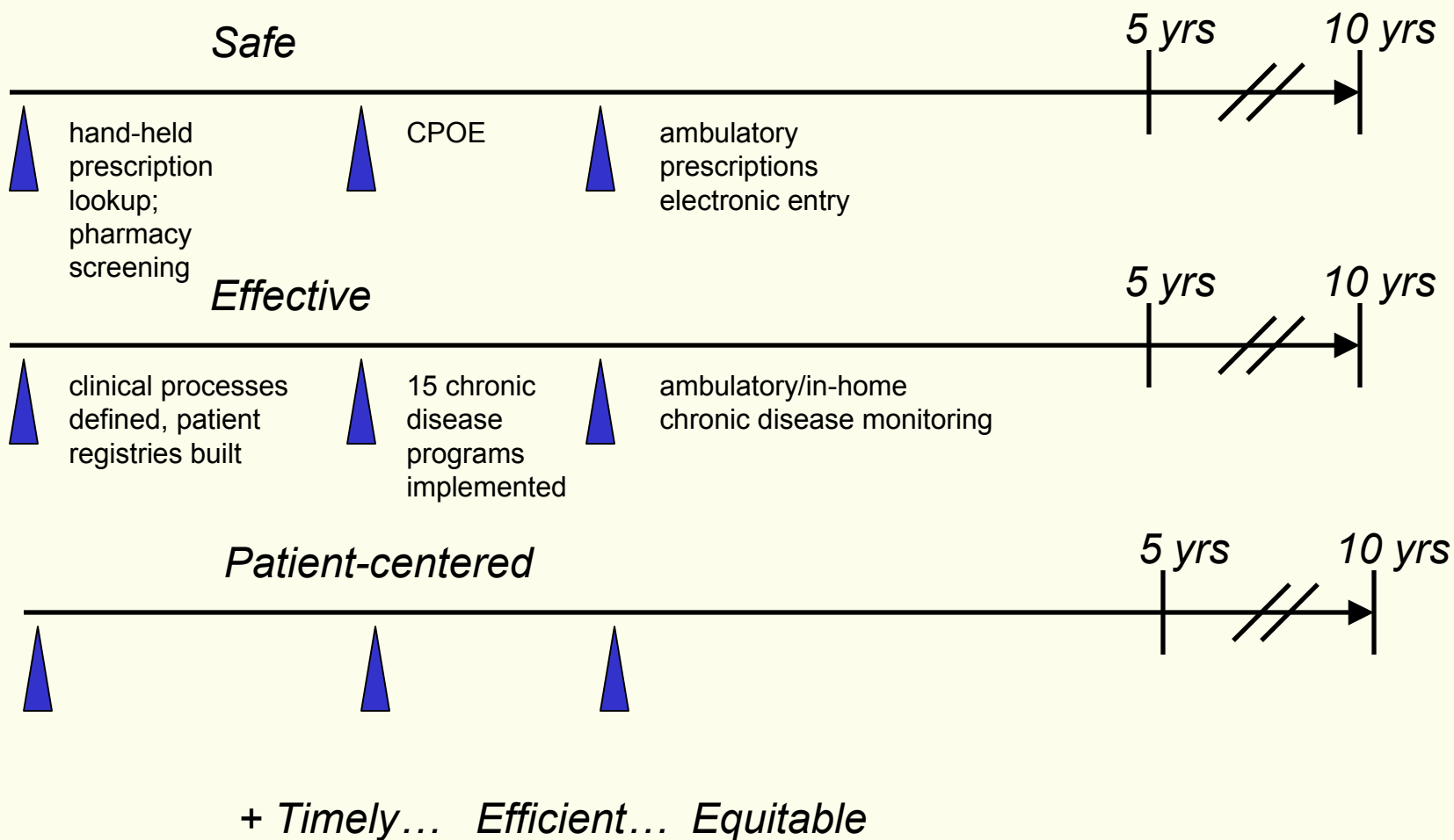
Source: Everett Rogers
Diffusion of Innovations, 1995

Let Mission and Vision Drive Adoption

Technology is a driving force creating future possibilities –
Technology is a set of tactics to select among –
Technology should never substitute for mission and vision,
or even for strategy.



Vision: The IOM Six Aims for Quality



Sensors – Ubiquitous Monitoring

- Point of care laboratory testing
 - Near-continuous bedside reading of blood gasses and chemistries
 - Reduction or elimination of many central laboratories
 - Early identification of changes, faster intervention
 - Shift to SNF, home care settings
- Clinical monitoring devices
 - Continuous glucose
 - LifeShirt for cardiac function
- Clinical management devices
 - Hemofiltration for CHF



Imaging and PACs

- More rapid and accurate diagnoses
- Earlier and less invasive procedures
- New modalities in ORs and procedure rooms
- Increased portability
- Image acquisition and interpretation **decentralized** to create **virtual specialist reading centers**



Key Technologies – Med/Surg and ICU

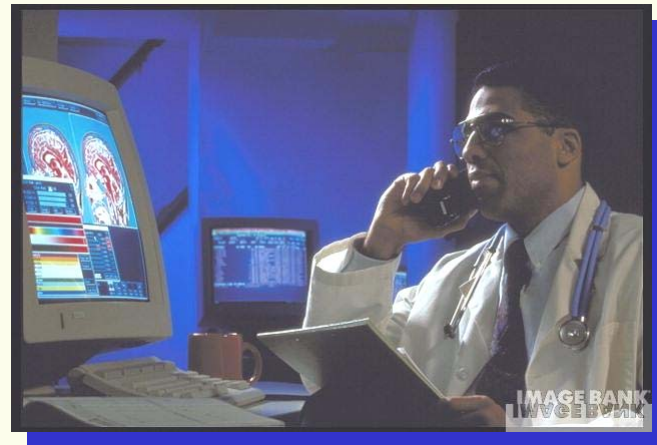
- Remote patient management (VISICU)
- Patient, staff, and asset tracking (RFID)
- Implantable devices
- POC pathogen identification



Remote Management of Acute Care

'Electronic ICU'

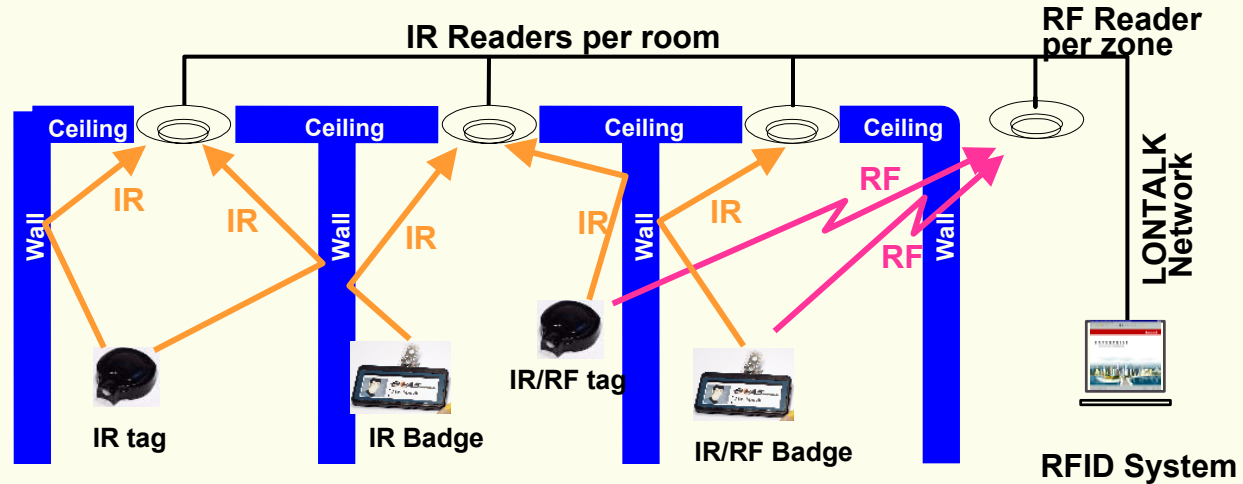
- Enables 24x7 intensivist coverage of ICUs
- Direct impact on:
 - Mortality and morbidity
 - Cost, LOS
- National priority for quality improvement
- Now extending into remote management of acute care
 - Rural networks
 - Workforce impact
- Potential for SNF and home care applications



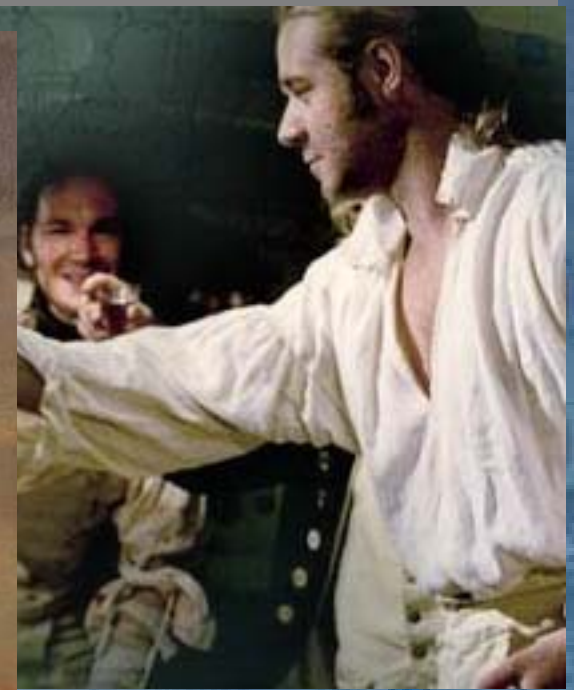
Patient, Staff and Asset Tracking

Radio Frequency Identification (RFID)

- Real-time display of patient, staff and equipment location
- Alarming
- Event archiving
- Integration and pattern analysis



The Early Adopter Unmasked





*- HealthTech -
Translating Research Into Action*

*An independent, non-profit research organization
supporting leading health delivery systems and plans*

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