



Personal Health Platforms

Chronic Disease Management for the Masses



Intel's Digital Health Focus Areas

Chronic Disease Management



Independent Living



Connected Healthcare



Research & Innovation
Policy & Standards

Research and Innovation

Study

Observe people in their own environments to assess unmet needs--on top of market research

Understand

Explore how people deal with specific healthcare problems

Develop

Design prototypes of new technology solutions

Pilot

Field-test prototypes in everyday settings, everyday lives

Deliver

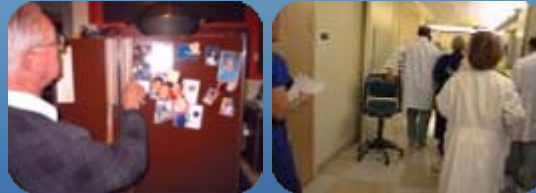
Turn prototypes into new platforms that meet people's needs

Intel social science fieldwork in more than 1000 homes, 100 clinics, 20 countries, 12 pilots

Studying People and Practices Worldwide

Ethnographic

Understand needs, motivations and experiences through anthropological fieldwork by living with, interviewing and observing everyday lives of people.



Studies done in the home, in the hospital, and in the community

Examples:

- Alzheimer's Study
- Nurse Study
- New Orleans's Health Fair
- Global Ageing Experience

Evidence-Based

Deploy and test prototypes in real settings—not in a lab; drive long-term product roadmap and publish.



Intel researchers are currently testing the effectiveness of various proactive health technologies with seniors in their own homes.

Examples:

- Context Aware Meds Prompting
- Social Health Monitoring

Ecosystem

Drive industry-academic collaboration and funding of health tech R&D; promote sharing of research platforms and data.



Intel co-funds consortium's to drive awareness and advancement of "ageing-in-place" technologies.

Examples:

- ETAC*, CAST*, ORCATECH*
- BAIC*, TRIL*

Intel Collaborations



Technology Research for Independent Living Centre (TRIL*)

A collaboration with the Industrial Development Agency of Ireland and Irish Universities which will bring resources and attention to the field of Social Connection, Cognitive Function and Falls Prevention research.



Center for Aging Services Technologies (CAST*)

Researching new technologies to give seniors more quality, choice, dignity, independence and personal responsibility for their care.



Everyday Technologies for Alzheimer's Care (ETAC*)

A unique consortium to address the needs of the millions of people worldwide who are living with Alzheimer's disease.



Behavioral Assessment and Intervention Commons (BAIC*)

An academic-industrial collaboration with the Oregon Health & Science University that constructs a research commons—a shared pool of tools, technology & thinking—around behavioral markers & health outcomes.

Driving Standards

Intel works with a number of medical standards organizations to promote open, standards-based healthcare solutions that will make possible new models of care:



Bluetooth SIG Medical Devices Working Group

Intel chairs the Bluetooth SIG Medical Devices Working Group, which will create a profile to ensure optimized interoperability between health-related devices and personal consumer electronics products, such as mobile phones, PCs and PDAs.



Continua

A non-profit, open industry alliance of the finest healthcare and technology companies in the world joining together in collaboration to improve the quality of personal healthcare. Continua's mission is to establish an eco-system of interoperable personal health systems that empower people & organizations to better manage their health and wellness.



Dossia

Employers are creating the Dossia Network to provide consumers with an important new health benefit: a lifelong personal health record that they own and control. Founding members are Applied Materials, BP, Cardinal Health, Intel, Pitney-Bowes and Wal-mart with more to come.



Health Level Seven

Focuses on specifying international standards that enable disparate healthcare applications to exchange key sets of clinical and administrative data. Our solution architects help lead a number of committees, and Charles Jaffe, MD, PhD, of Intel's Digital Health Group, is HL7's CEO.

*Other names and brands may be claimed as the property of others.

Intel Confidential



Why Focus on Chronic Conditions?

As of 2001, patients with chronic conditions accounted for:



83% of US healthcare spending



81% of inpatient stays



91% of prescriptions



76% of physician visits



98% of home healthcare visits

Global Nursing Shortage is Worsening

Shortage of nurses is expected to reach 340,000 by 2020 in the US.¹

In 2004, 28% of the nurses were over 50 years old.²

In 2003, the annual outflow of Filipino nurses was three times greater than the annual production of licensed nurses of 6,500 to 7,000 year.³

Sub-Saharan African countries have a shortfall of more than 600,000 nurses needed to meet the Millennium Development Goals.⁴

Sources: ¹ ANSR May 2007 Consensus Document

² HHNMAG, November 17, 2005 – Retirement Boom?

³ Inter Press Service News Agency, Nurses' Exodus Making Health System Sick, May 15, 2003

⁴ The Global Shortage of Registered Nurses: An Overview of Issues and Actions, 2004, International Council of Nurses

The Perfect Storm is Here and Growing



Disruptive
Demographics



Disruptive
Economies



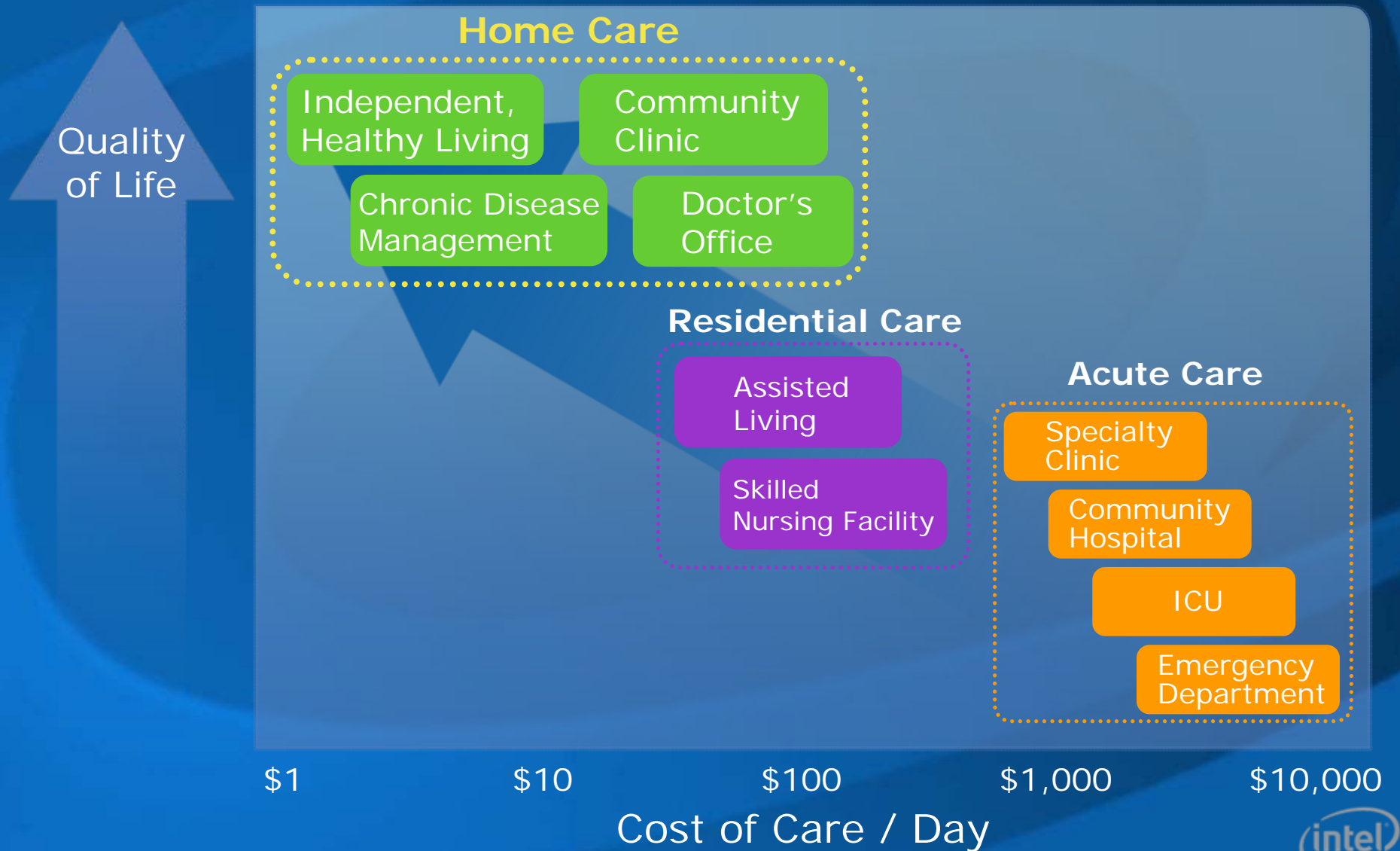
Disruptive
Technologies



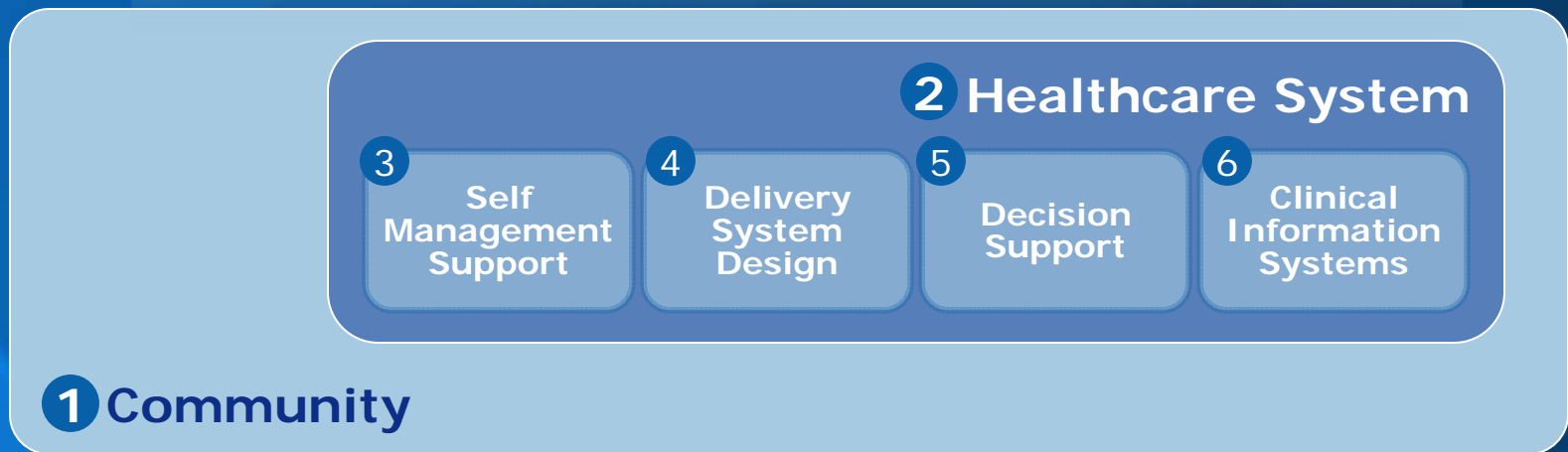
New models
of care forced
to emerge

How do we weather the storm?

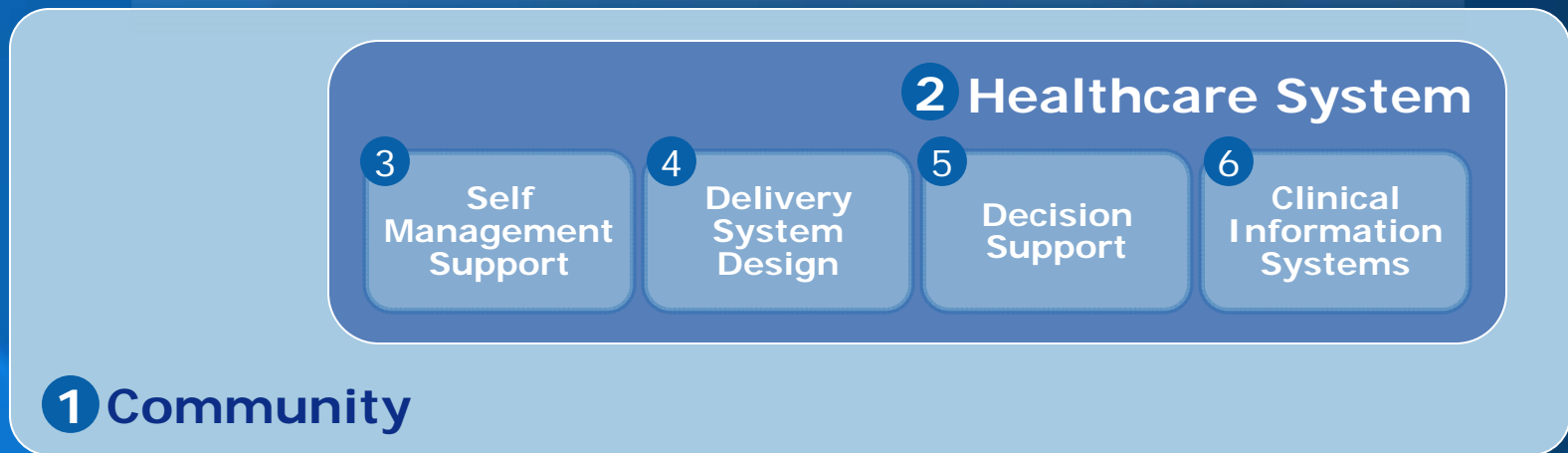
The Continuum of Care



Overview of the Wagner Chronic Care Model



Telehealth Technologies Support a Proactive Chronic Care Model



Telehealth Technologies help accelerate the productive interactions between patients and healthcare team

Features for Success

Telehealth and Telecare Technologies

- Deliver accurate, relevant, and timely information to all members of the care team
- Give patients an intuitive, enjoyable, and educational means of communication with their care team
- Provide self-management tools for patients to take a more active role in their own care
- Offer communication tools that connect the patient's entire care team for better coordination of care

Benefits ¹

Better information leads to targeted care

Engaging experience improves compliance

Patient education leads to positive behavior change

Easy access to information for all leads to better outcomes

Goals

Patient Active Involvement

Improve Chronic Disease Management

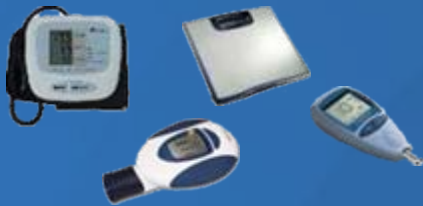
Reduce Costly Complications

Integrated Systems Technologies

Telehealth Technologies Today

Vitals Collection

Monitors



Personal Diaries

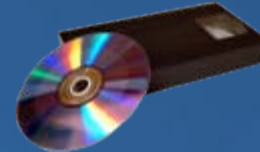


Educational Content and Tools

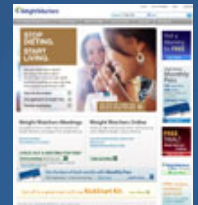
Self Mgmt Tool



Videos



Lifestyle Guidance



Communication

IVR



Video Conferencing



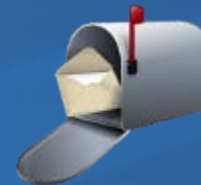
Messaging



Telephone



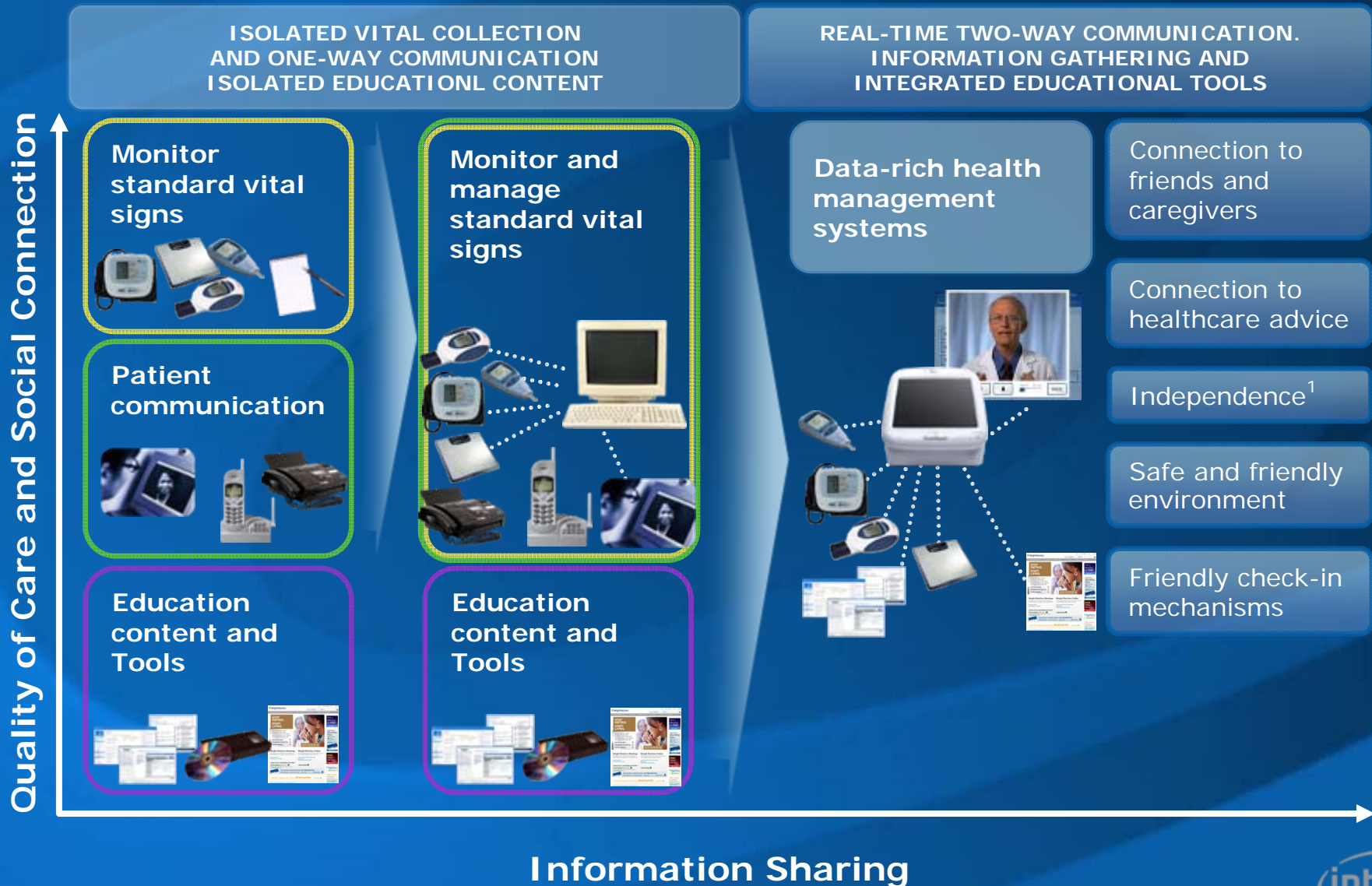
Mail



Fax



Evolution Toward Personal Health Systems



Bringing the Best to the Home

Acute Care

- + Patient monitored 24x7
- + Centralized information
- Patient is passive
- Expensive

Home Care

- + Independent
- + Less expensive
- + Where patient wants to be
- + Patient empowerment
- + Proactive
- No real-time feedback
- Compliance drops

Intel® Health Guide

The Intel® Health Guide connects patients and their care teams for personalized care management at home



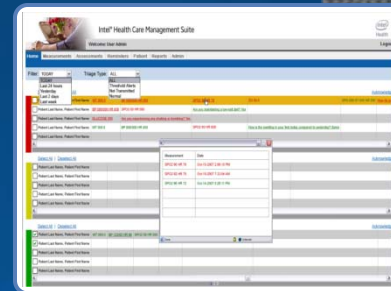
Intel® Health Guide



Intel® Health Care Management Suite



Medical Peripherals



Patient Educational Content

Measuring Business Value: Telehealth

Value Dials	Key Performance Indicator
Quality of Care	Adherence Rates to Guidelines / Protocols
	Use Data to Improve Guidelines
	Health Improvement Rate
	Quality of Life Survey Results
	Mortality Rates
Patient Safety	Adverse Events Rate
	Adverse Event Related Admission Rates
	Hospital Acquired Infection Rate
Patient Satisfaction	Patient Satisfaction Survey Results
	Self Health Assessment Results
Clinical Staff Satisfaction	Clinician Satisfaction Survey Results
Medical Cost Reduction	Hospitalization Rate
	Emergency Room Visit Rate
	Length of Stay in Hospital
	Nursing Home Bed Days of Care
	Office Visit Rate
	Home Visit Rate
Staff Productivity	Nurse-Patient Ratio
	Call Rate
	Nurse Time per Patient Call
	Nurse Time per Patient Visit
	Clinical to Administrative Time Ratio
Public Health Outcomes	First Time Visit Success Rate
	Public Opinion Survey Results
	Spending on Chronic Disease
	Disease Prevalence
	Absentee Rate
	Healthcare Commission Results
	Cost to Regulate

Impact of
technology
solutions

Develop
tangible
and
intangible
metrics

ROI of
Telehealth

VA Case Study Summary

Care Coordination/Home Health: The Systematic Implementation of Health Informatics, Home Telehealth, and DM to Support the Care of Veteran Patients w Chronic Conditions

Timeline: July 2003 – Dec. 2007

Results:

- 25% reduction in bed days of care
- 19% reduction in hospital admissions
- 86% patient satisfaction score

Conclusion: an enterprise-wide home telehealth implementation is an appropriate & cost-effective way of managing chronic care patients in both urban & rural settings.

The Intel Health Guide was not used in this study



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