Open Personalized Health Informatics (OpenPHI)

Health 2.1: Mobile Health Informatics

Consumer-owned Health-enhancing Infrastructure

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- Founder and Chair; IEEE2407 Personalized Health Informatics standard

Framing this Talk: Health ≠ Healthcare

"..students of medical economics have long realized that what consumers demand when they purchase medical services are not these services per se but rather better health." [01]

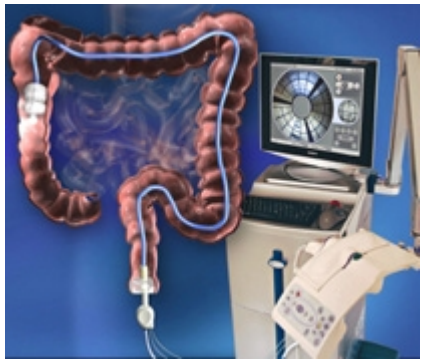
Family as the unit of care.

Live long and prosper; then check out quickly.

More **healthcare** for all is NOT scalable.
More **health** for all is very scalable.

From: "Let's improve the healthcare system for all."
To: "A care system that improves the health of all."

How Would You Like a Colonoscopy?



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Getting Health Care Right.

Posted on Tue, Aug. 01, 2006 email this print this reprint or lice

Plan seeks better health

Pawlenty launches Q-Care to cut state, insurer costs

BY BILL SALISBURY
Pioneer Press

Gov. Tim Pawlenty on Monday announced a new program to provide "performance pay" to doctors and hospitals that meet new quality standards for state-purchased health care. He predicted the plan would save the state and health insurance companies more than $150 million a year.

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How Much More Cost-Sharing Will Health Savings Accounts Bring?

National Guideline Clearinghouse
www.guideline.gov

Federal Diary
Stephen Barr, Columnist

Bill to Promote Electronic Health Records

By Stephen Barr
Thursday, March 2, 2006; Page D04

In an effort to dramatically expand the use of "electronic health records," a key House chairman said yesterday that he will propose legislation to promote their use in the federal employee health insurance program.

Consumers really want to **reduce the odds of needing** the procedure.

Summary of Nationwide Health Information Network (NHIN) Request for Information (RFI) Responses

June 2005

Healthcare-designed Automobiles

Listing of best body shops in your area.

All consumers would pay the same rate, regardless of driving record.

Massive social investments to develop car repair tools, equipment.

Repair shops would be reimbursed even if car is not fixed.

Publish guidelines for evidence-based vehicle repair.

Repair shops will tout their "Electronic Car Record."

Average cost of car repairs across state.

Repair shops will connect to a car-RHIO.

Repair shops open Mon-Fri, 09:00 to 17:00 hr. only.

Engineering-designed Automobiles

Start Bosch

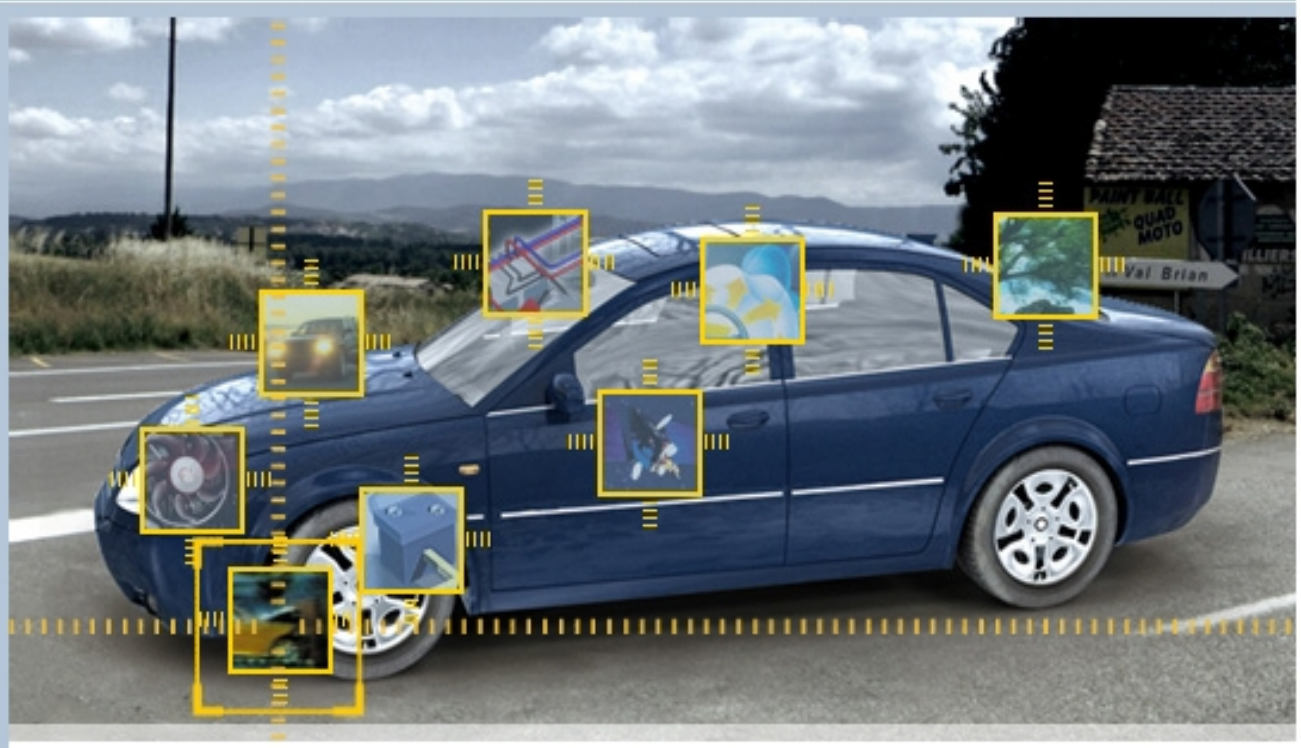
Automotive Technology
- Overview

Fields of application
- Safety
- Emissions
- Fuel consumption
- Driving pleasure

Subjects
- Technical solutions for commercial vehicles
- Innovations yesterday and today

Service
- Trade Fair dates
- Information media
- Glossary
- Search
- Product overview

Company
- Automotive divisions
- Automotive Technology worldwide
- Locations worldwide
- Jobs and careers



Accident-prevention concepts

Steer, accelerate, brake, maintain an adequate distance to the next vehicle - our goal in the active safety sector is to apply pro-active vehicle-intervention technology to prevent accidents from happening. The ultimate objective is to develop a comprehensive assistance system that will provide the driver with the best possible information and support under any and all conditions.

Source: Bosch's website.

Untapped Market: Serve the Healthy

EXHIBIT 1
Concentration Of Medicare Spending By Quintiles, 1995–1999

Quintile	Percent of total	Mean spending ($)
Top quintile	84	24,161
Top 1 percent	17	98,074
Top 5 percent	47	53,538
Top 10 percent	66	37,855
Fourth quintile	12	3,353
Third quintile	3	943
Bottom two quintiles	1	155

SOURCE: Data from a 5 percent random sample of Medicare fee-for-service (FFS) beneficiaries, 1995–1999.
NOTES: Spending is reported in 1999 dollars. Mean total Medicare spending is $5,753.

How do we keep people here?
Health Informatics.

How do we treat people here?
Evidence Based Medicine.

Health 2.1 = Mobile ICT + Open Access + Open Software + Community

From:

- bench to bedside
- houses of healing
- doctor says so
- pharma details doctors
- manage repair bills
- connecting people
- treat the individual

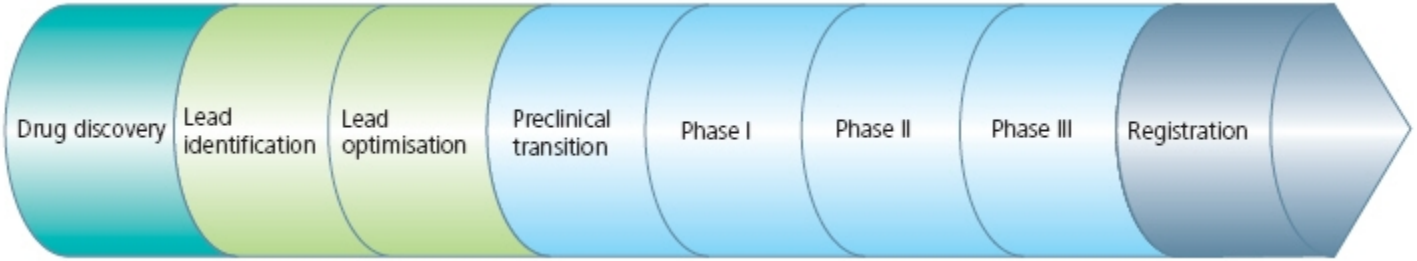
- **To:**
  - bedside to bench
  - healthy homes
  - consumer disagrees
  - pharma details families
  - get paid for protection
  - owning the last inch
  - engage the family

Medical R&D 2.1: Bedside to Bench

Current challenges:

- "..to generate a high quality human cancer interactome map that together with other functional genomic and proteomic information, will serve as a backbone for the drawing of a global functional wiring diagram between both already known and yet to be discovered human cancer gene products." Center for Cancer Systems Biology; Dana-Farber Cancer Ins.

- **New opportunities:**
  - start w/ healthy people, backtrack to markers
  - healthy vs. sick: what lead to end result?
  - retrospective healthy cohort studies
  - pinpoint protective behaviors, compounds



Hospital 2.1: Healthy Homes

Current challenges:

- "come in to get fixed"
- billions in indigent care
- low geo-mobility in low socio-economic groups
- cherry-picking from specialty hospitals
- high costs of building projects (30 yr. bonds)

- **New opportunities:**
  - house calls for health
  - intervene early, often
  - healthy towns become wealthy towns
  - build up "crib loyalty"
  - sell "Public Health Futures" bonds to fund healthy towns work

The San Diego Union-Tribune.

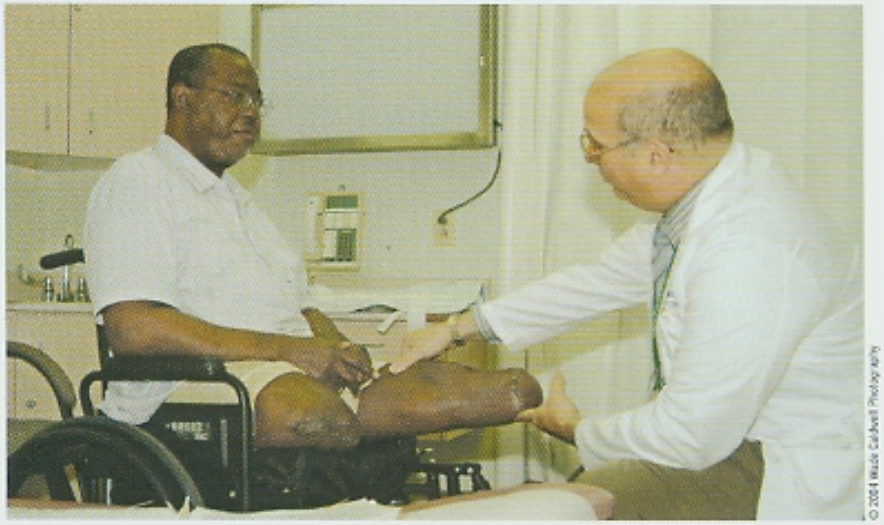
2006 VOTE | PROPOSITION 6

Hospital bond faces challenge from taxpayers

Who Gets Free Care?

Every year SFHHA member hospitals provide $2.3 billion of uncompensated care. Who gets this free care?

Meet Richard Wooden who was kind enough to go public with his story. Mr. Wooden, who is 60 years old, was first diagnosed with diabetes in January of 2001. He has been unable to work for the last three years after working his whole life.



Although he has tried to maintain his diet and insulin treatment, this year has been very bad for Mr. Wooden. He has been in Jackson Memorial Hospital four times. In February, he received vascular bypass surgery to try to save his right leg. It didn't work. In June, his right leg was amputated below the knee and in July amputated above the knee. In August, his left leg was amputated below the knee. Here you see Dr. Mark Mizel examining how well the surgical wounds are healing.

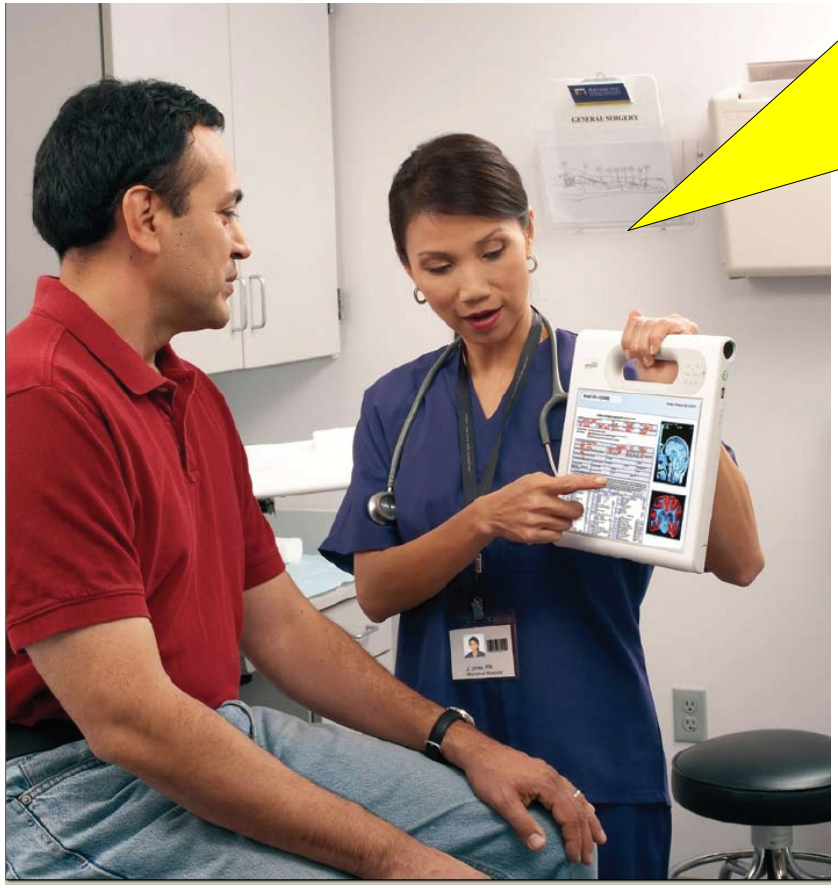
Mr. Wooden has been wheel-chair bound for six months. Because his legs are healing well and no further surgery is contemplated, he will soon be fitted for prosthetic limbs. He looks forward to beginning rehabilitation and learning to walk again.

Mr. Wooden lost his health insurance when he lost his job; he is too young for Medicare and does not qualify for Medicaid. His medical bills are enormous and continuing to grow.

When asked how he viewed his situation, Mr. Wooden responded, "The amputations are a help, not a hindrance. They've prolonged my life—that's the good part. I put myself in the hands of the Lord. I've had very good care here."

Health Consumer: Doctor Says So

Provider's Health IT



I have bad news, Mr. Smith:
You have <Condition_01> and <Condition_02> that require <prescription_01> and <prescription_02>. I recommend that <physician_01> conducts a <treatment_01> over the next few months. Then <surgery_name> in 03 months, and you'll come back to see me in 06 months for <treatment_02>. Based on the EMR data from last year's visit, you will need additional tests and evaluations. And I don't know what the cost will be, or if your insurance company may cover these charges. Do you have any questions?

Patient 2.1: Consumer's HIT Disagrees

Consumer Empowerment

Doctor, I do have some questions:
* According to the latest Metathesaurus in UMLS, <Condition_01> and <Condition_02> mean I have <Plain_text_01>. Is that correct?
* Given my sex, race, and age, the National Guideline Clearinghouse has an EBM-based treatment plan from Harvard / Mass General, will you follow it? If not, why not?
* RxNorm shows a few counter-indications for <prescription_01> and <prescription_02>, given my prescription history I downloaded from my pharmacy's website yesterday.
* PubMed has a recent article on the long-term effects of <surgery_name>. Are there non-surgical alternatives available?
* OrganizedWisdom.com has these comments from patients that suffer from these conditions.
* The <physician_01> you recommended has a few open issues in the <database>.
* I already had those tests and evaluations performed somewhere else, here is my PHR.
* This hospital has a high surgical infection rate.
* My insurance company's website shows that the full costs of all this will be US$xxy, and they will cover xy%. And a couple of medical tourism operator are ready to send me a bid for the entire procedure. Should I consider them?

Pharma 2.1: Detail Families

Current challenges:

- patent expiration
- huge R&D costs
- few new blockbusters
- promotional limitations
- restrictions on DTC
- personalized medicine is still years away
- extensibility of pharma-led DM efforts (Florida)

- **New opportunities:**
  - Deploy salesforce as family health coaches
  - R&D health precursors
  - good health as life-long revenue stream
  - personalized health can be done today
  - leverage IT systems
  - high health-enhancing ROI, low market risk

Insurance 2.1: Pay For Protection

Current challenges:

- decreasing margins handling care bills
- lower negotiating power w/ providers
- disease mgmt. is not scalable nationwide
- conflicting loyalties: payers, employers, providers, consumers
- Election 2008, ***finally!!*** universal coverage

- **New opportunities:**
  - keep consumer healthy
  - guarantee outcomes

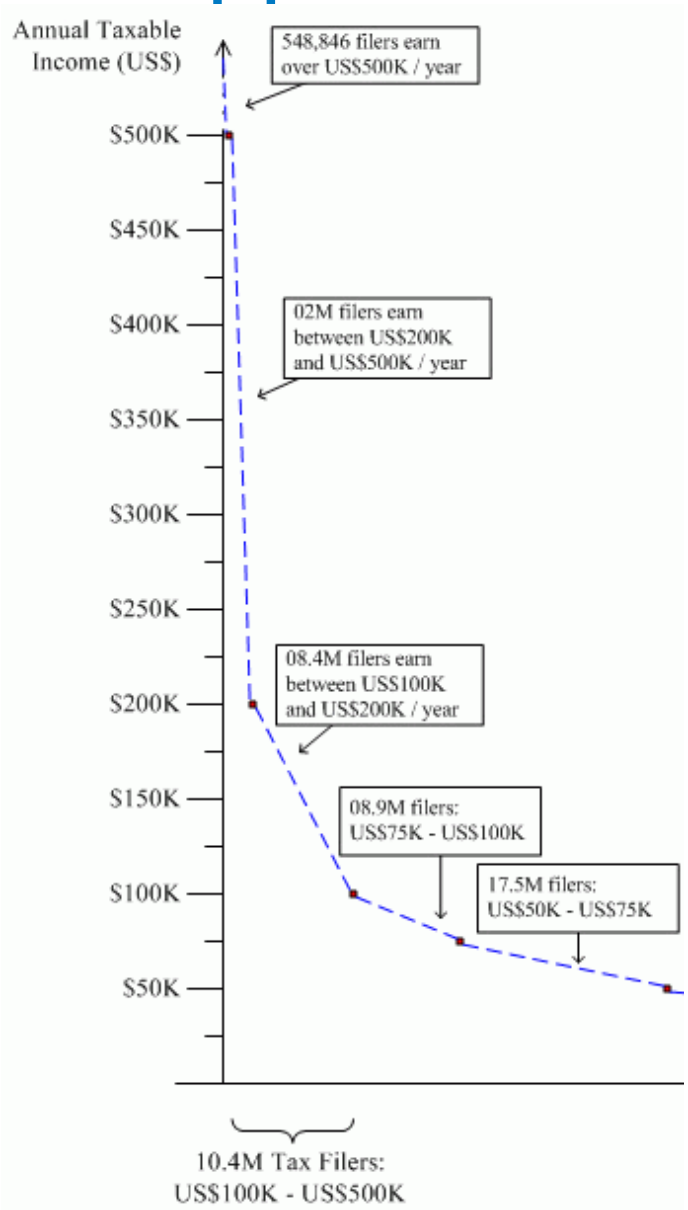
Mobile 2.1: Own The Last Inch

Current challenges:

- commodity hardware
- feature load, under use
- fingers not shrinking
- aging population
- growth area = low cost
- voice still “killer app”
- few upgrade incentives

- **New opportunities:**
  - mobile as companion
  - brain in back: server
  - pervasive monitoring:
    - **self (blood pressure)**
    - **self (thoughts, motion)**
    - **area (pollen, humidity)**
    - **travel (traffic ahead)**
    - **location-based health**
    - **P2P health stations: share data to get data**
  - pervasive health coach

Untapped Market: Engage the Family



- **Personalized Health via Mobile Health Coaches:**
  - 10.4M $100K - $500K
  - 08.9M $75K - $100K
- **Offer families an on-site service to manage and improve health.**
- **Supported via mobile technologies.**

http://lacal.net/files/hs/HealthSmart_M.pdf

Source: IRS data, CY 2001.

