

The Impact of Information Technologies on Disease Management

**Providing More Efficient and
Effective Patient Care via
Seamless Information and
Knowledge Exchange**

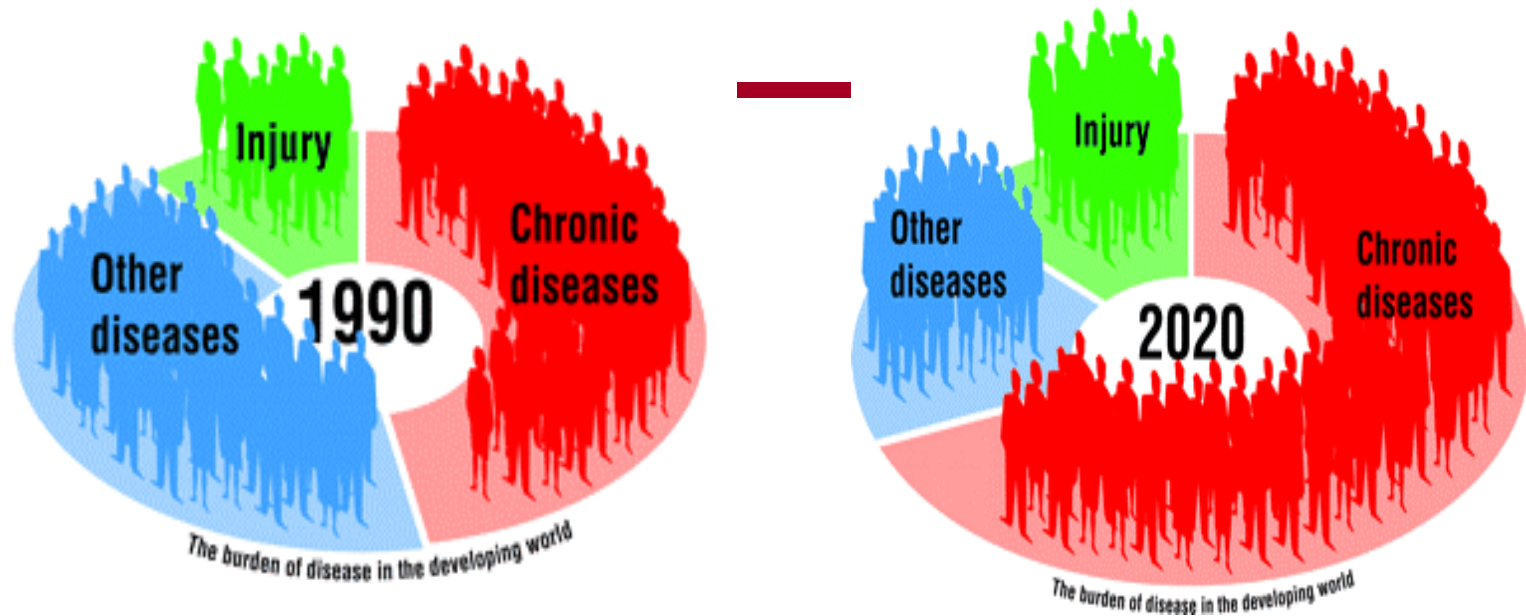
**DMAA &
Thomas Jefferson University
June 22, 2005
Philadelphia, PA**



Today's Educational Agenda

- Setting the Stage: Urgency and Opportunity
- What are the "Moving Pieces" of Disease Management Programs
- Personal Health Records and the Care Information Exchange Concept
- A Few Players to Watch and Why
- When Does it All Turn Real?

The Impact of Chronic Disease Cost



Data from: Harvard Public School of Health's project on the global burden of disease

Growth in chronic diseases will continue to put increased pressure on ALL healthcare systems, worldwide.

Source: WSJ WALDHOLZ ON HEALTH By MICHAEL WALDHOLZ: November 20, 2002

Despite Enormous Expenditures, We're Simply Not Getting the Job Done



*Catherine Cowie,
Researcher at the
National Institute of
Diabetes and
Digestive and
Kidney Diseases*

Diabetics not meeting health guidelines

Study: Over half are obese, have high blood pressure

The Associated Press

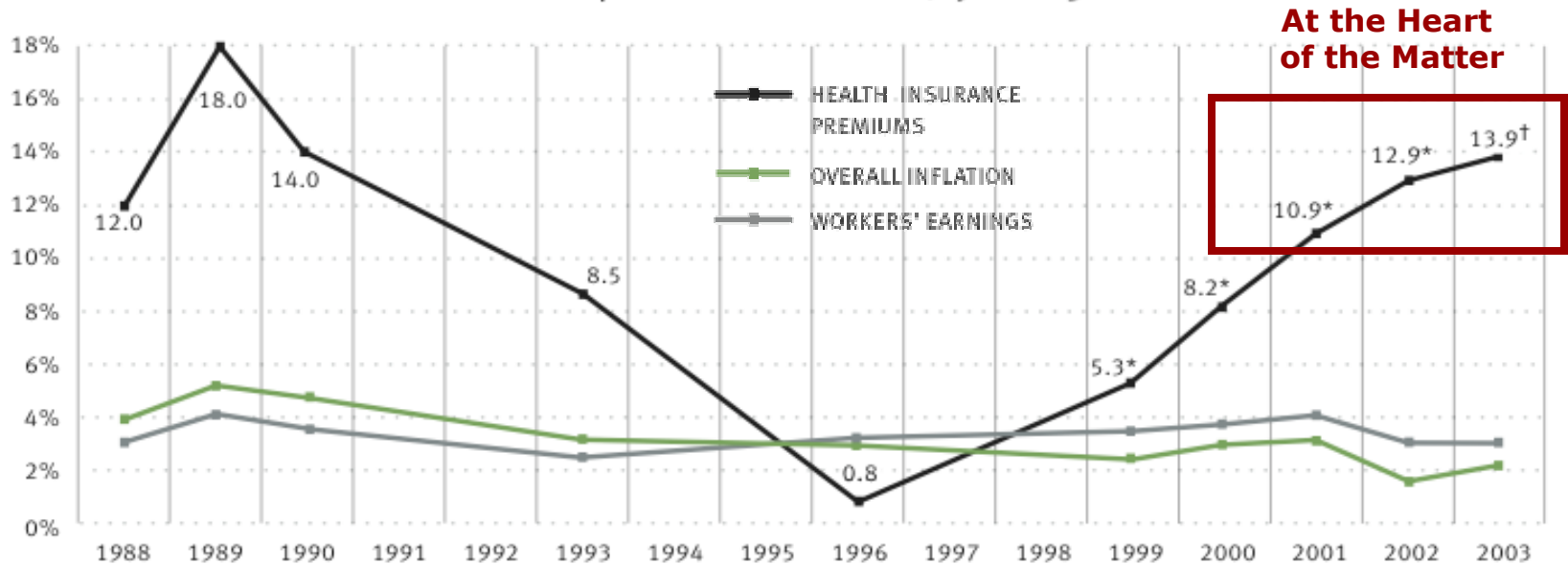
Updated: 2:31 p.m. ET Jan. 20, 2004

More than half of adult diabetics in the United States are obese and many more have higher-than-recommended blood pressure, cholesterol levels and blood sugar — all factors that raise their risk of complications and death, a government study found.

It's No News What the Issue Is...

- Increases in costs are fundamentally driving:
 - Plan design and benefit strategies (What's covered)
 - New consumer financial incentives
 - New physician financial incentives
- Accelerating interest in IT as a facilitating infrastructure

Increases in Health Insurance Premiums Compared to Other Indicators, 1988-2003



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Acceleration of Applied Medical Informatics as Healthcare and Business Strategy

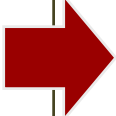
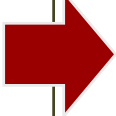

- The White House
 - April 2004, President Bush places EHRs on the national health care policy agenda
- DHHS
 - Dr. David Brailer leads ONCHIT, HHS allocates \$87MM of funding in 2005; \$125MM in 2006
- CMS
 - Launches CCIP and other demo projects with IT aspects
- VA
 - Documented quality improvement through IT use
- AHRQ
 - Provides \$137MM in HIT grants in 2004, 2005
- Major Payers
 - William C. Van Faasen, Chairman, CEO & President of BCBSMA commits \$50 MM to build IT infrastructure

What's Relevant to IT In Today's HC Environment...

- **Purchaser interest** in managing health care cost and quality are leading them to adopt new benefit designs (e.g. tiered pricing), but also **pushing hard for better DM, Pop Health Mgt & P4P.**
- Creation of **specific incentives to provide** motivation for managing discretionary costs and incentives **for improving health behaviors.**
- **CMS** (Medicare) is **looking hard at IT leveraged care management** and financing reforms that will offer similar benefits; CCIP and beyond.
- **Consumers** will **need** various information management **tools** to manage these new “opportunities” successfully.
- Accelerating interest in **IT as a facilitating infrastructure** to support reforms.

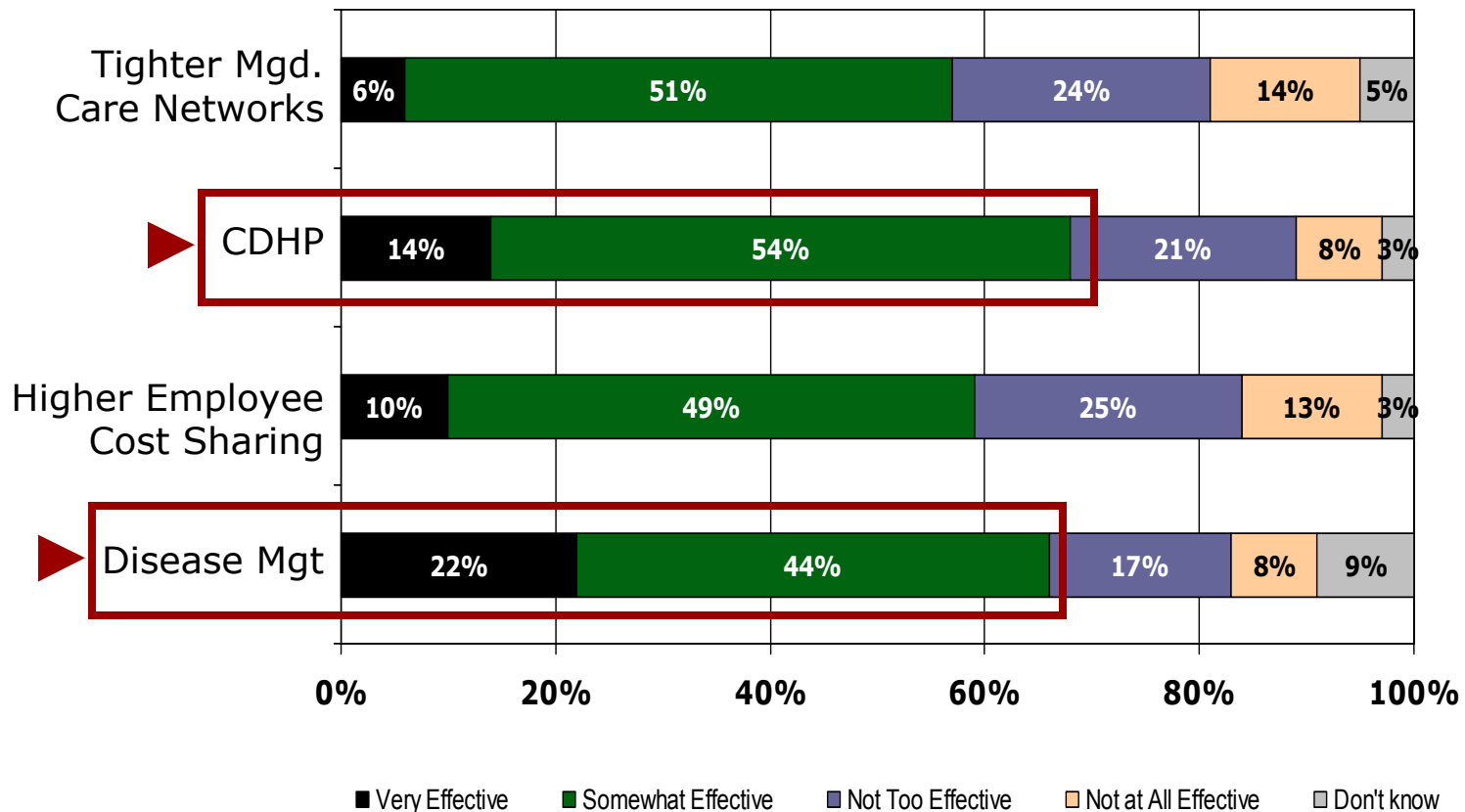
What Else is Changing...?

Consumerism is re-defining the healthcare landscape

Increasing consumer expectations		Transformation of doctor-patient relationship
Demands for a greater quantity of in-depth information		Members seeking out health and wellness information
Willingness to manage/control greater portion of activities		Increased interest in understanding and monitoring health conditions

The Purchaser View

- Employers reporting their opinions...



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You Heard It Here First!

- Future DM initiatives will integrate **new benefit designs** (e.g. CDHP, tiered co-pays) with **new provider engagement strategies** (e.g. P4P)

Why?

- The ability to **target specific opportunities** for intervention, coordinate the activity of patients and providers, and tie the motivation for **sustained behavior change** into reward and incentive programs

New IT Capabilities Will Drive This!

Information Management Challenges in DM

- Information gathering
 - “Reality” is reflected from multiple sources
- Information integration and analysis
 - Converting information into knowledge & opportunity
- Deploying knowledge effectively
 - Bridging the knowledge-action gap
- Maximizing and measuring benefit
 - Closing the loop on the action, result, analysis, re-action, cycle

Limitations of Traditional DM

- Hard to target either specific individuals or conditions; multiple overlaps & gaps
- Distance and time work against you
- Standardized vs. customized care
- Hard to capture the “golden moment”
- Hard to target and deliver incentives
- Person-to-person connectivity, without technology “leverage”, is expensive
- Communications “silos” prevent fully integrated care among all stakeholders

Convergence of IT Approaches: Hi Tech - Hi Touch

Emergence of:

- Adv. Telephony
- Linked Networks
- "Smart" Devices
- Internet & Web



Advantages:

- Seamless Information Exchange
- Build & Maintains Relationships
- Coordinate Effective Action



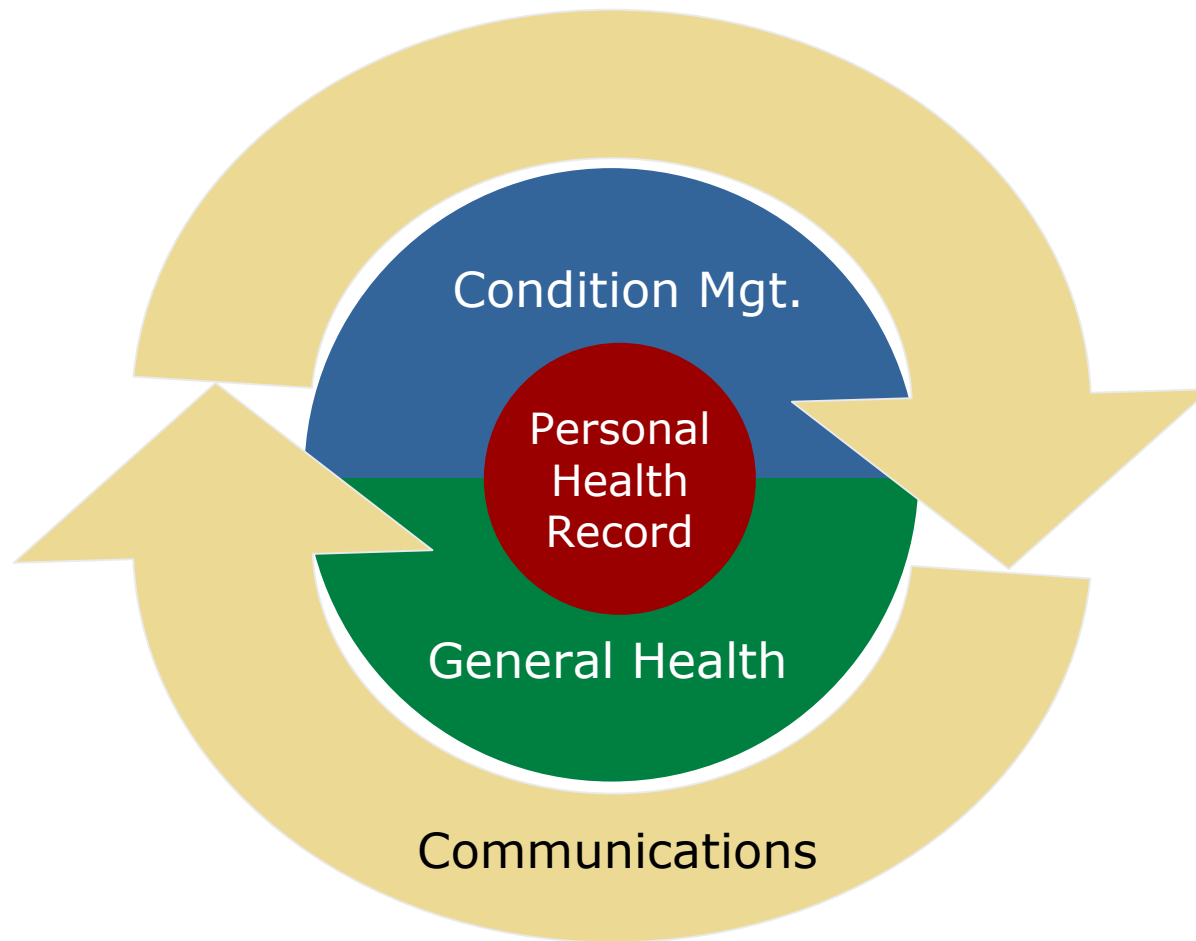
"High Tech - High Touch"



What IT Strategies Will Help?

- Web-based Personal Health Record
 - Situation analysis, decision support, workflow and transaction management
- Home-based Biometric Devices
 - Digital devices for clinical data feeds but *also*, changing patients sense of being cared for
- Collaborative Connectivity
 - Linking patients and their care team 24X7

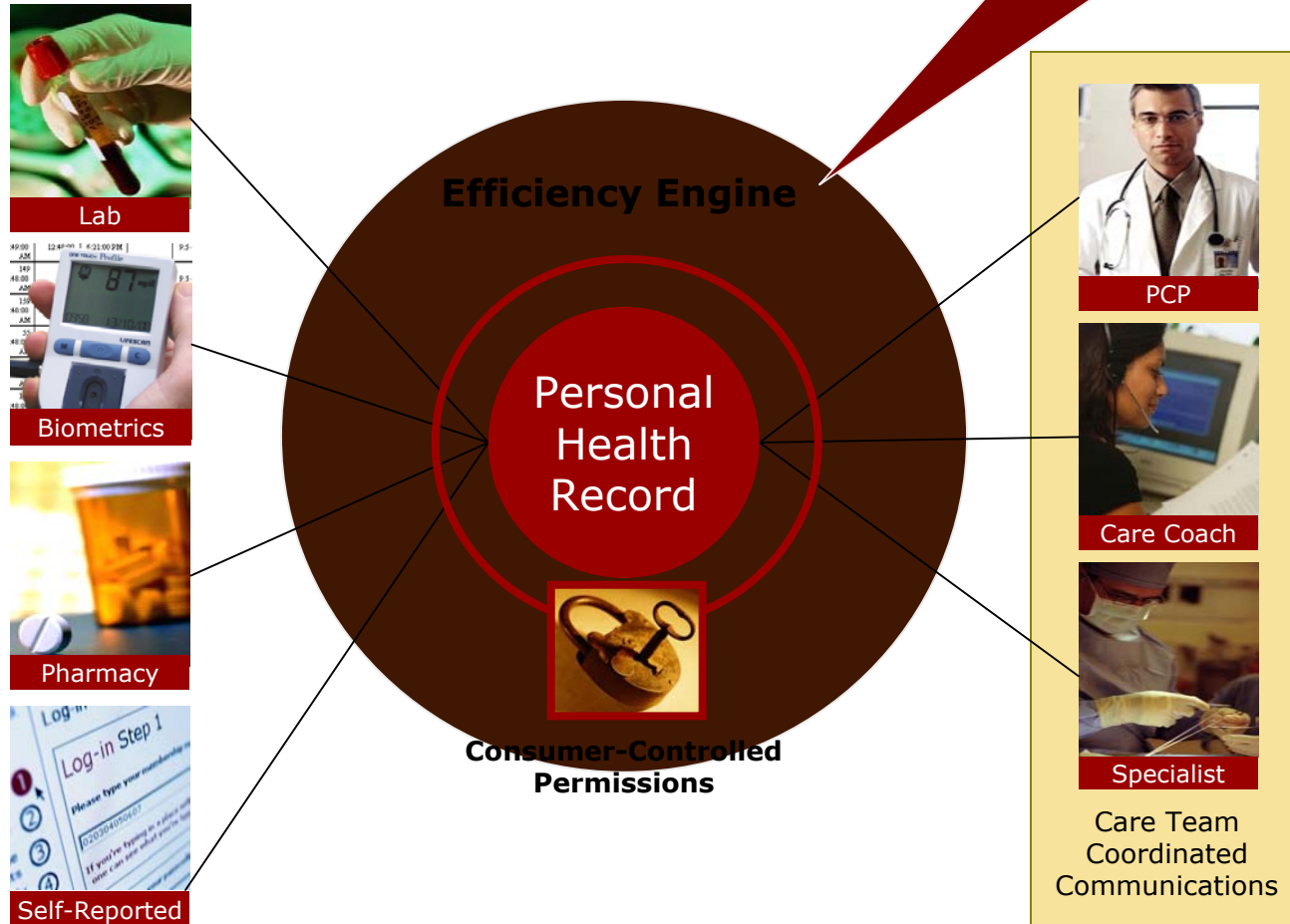
A Personal Health Management Model as a Foundation for DM



Introducing the CareExchange Model

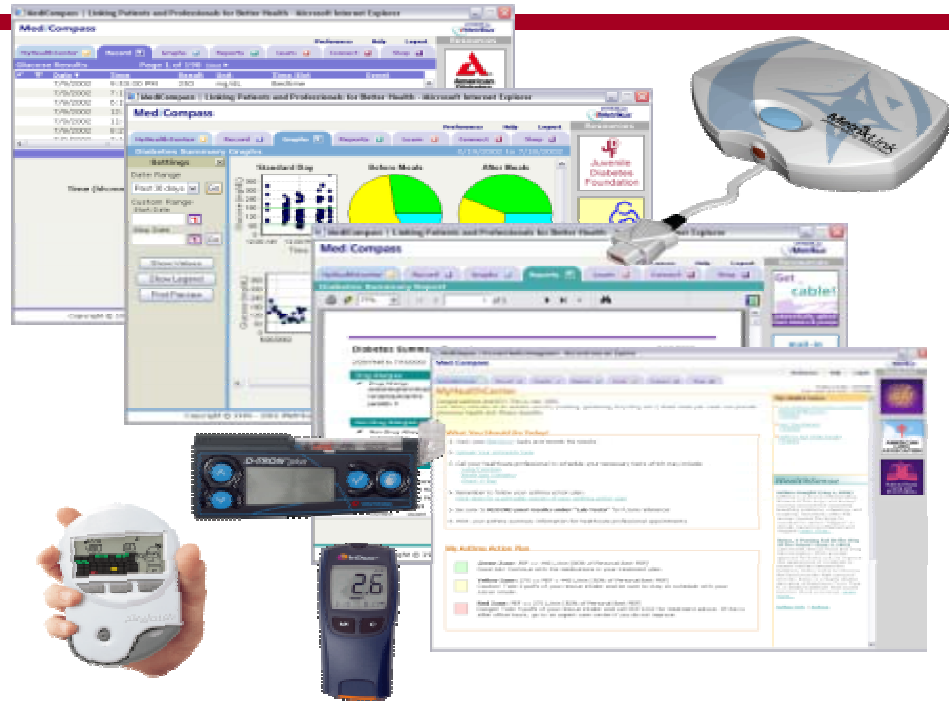
Real-time information flow to support decision making for:

- Providers
- Payors
- Patients
- Network P4P



Biometric Tools For Patients and Health Care Professionals

- Greatly enhances the quality of data populating personal health records
- Easy-to-use, Web-enabled facilitates utilization
- Dramatic price drops enable cost-effective deployment of devices



- **Connect** – with the healthcare team between encounters
- **Record** – daily tasks and healthcare information in an easy to use journal
- **Review** - health status and chart progress toward goal
- **Report** - generate progress reports and action plans
- **Remind** – stay on track with targeted tasks and reminders
- **Reward** – provide positive feedback for compliance

Consumer Interface

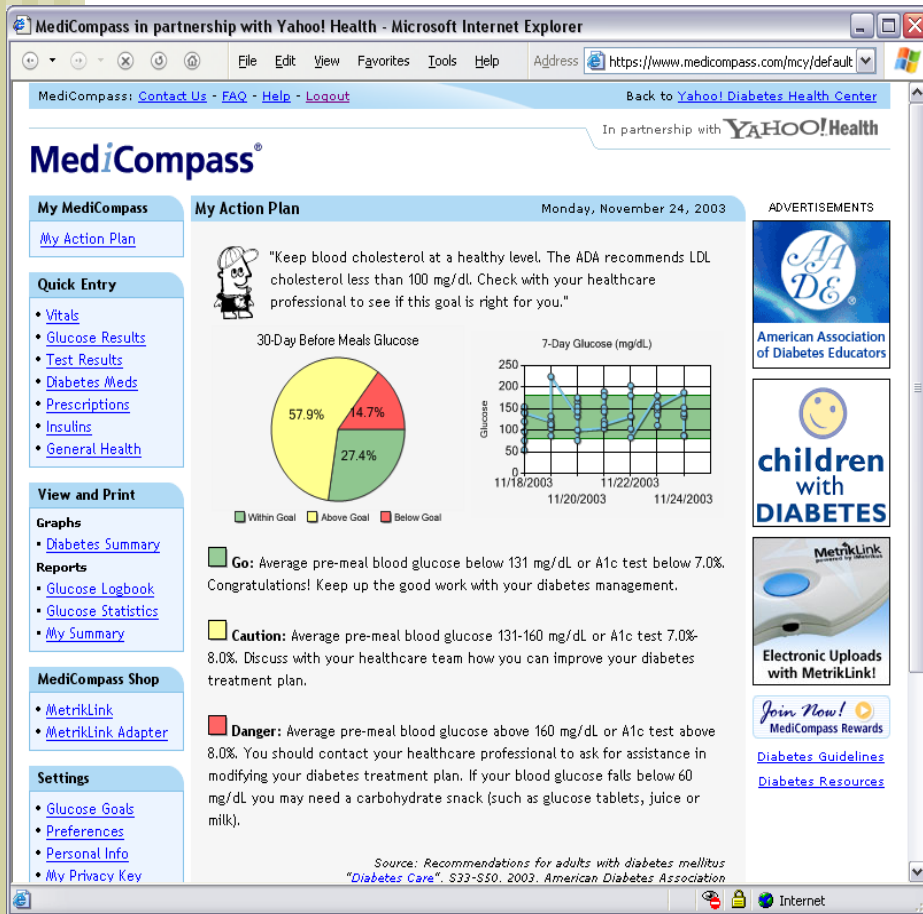
- Simple and intuitive to use
- Comprehensive source of all health-related information
 - Health records
 - Financial positions and status
 - Health information
 - Rewards and incentive programs
- Portable
- Secure and HIPAA compliant communications

Why This Approach is Appealing

- Identification of intervention opportunities is multi-sourced and automatic
- Enrollee engagement and program deployment is immediate and personalized
- Coordination across the care continuum can be seamless and multi-directional
- Cost of timely intervention and follow up decreases significantly
- Ability to measure and monitor “performance” is “baked-in” at the program level and not an add on or an after thought.

A Few Players to Watch and Why

IMetrikus



- Consumer-directed healthcare
- Chronic care focus
 - DM, Asthma, CV
 - Population management tools
- Web-based architecture
 - no installation / browser access
- Ability to share information with healthcare team
 - Privacy key
 - Permission based access
- Low cost solution
- HIPAA compliant platform

WellMed/WebMD



- Acquisition by WebMD
- Consumer directed healthcare
- General health focus / HRA
 - Population management tools
- Web-based architecture
 - no installation / browser access
- Limited ability to share information with healthcare team
 - requires WebMD Medical Manager SW
- Low cost solution
 - \$29.95 per yr
- HIPAA status unknown

RelayHealth

The screenshot shows the RelayHealth patient portal for Robert M Jones. The top navigation bar includes links for Privacy Info, Help, Contact Support, and Sign Out. The main navigation menu has tabs for Home, Your Doctors, Message Center, Health Records, and Account. The left sidebar contains several utility links: Send a Message, Consult Your Doctor webVisit, Request/Cancel Appointments, Request a Lab/Test Result, Request Medication Refills, Request a Referral, and Contact Your Doctor's Office. Below these are sections for View Your Doctor's Web Page (Dr. KAREN Y. SUN), Browse Health Resources, Quick Links (Update your e-mail address, Change your password), and a feedback section (Do You Like this Service?). The main content area is titled 'Hello Robert M' and provides an overview of the service. It features sections for New Messages (a welcome message from RelayHealth Customer Support dated Nov 24, 2003), Reminders (to update Health Records, add a Doctor, or add a family member), and Health Records (last updated for Robert M Jones, email borishse@aol.com).

- Successful pilot with BSCAL
- Physician directed healthcare
 - Reimbursement options
- Secure messaging tools for patient and provider
 - Online consults
 - Secure email
- Cost unknown
- HIPAA compliant platform

Potential Barriers and Obstacles

■ **Consumer receptivity**

- How do we foster trust and participation?

■ **Linking various data sources**

- How do we build and manage cooperation among various 3rd -party vendors?

■ **Participation among providers**

- How do we gain adoption and utilization?

■ **Return on investment**

- How do we measure and demonstrate success?

Forcing Functions and Wild Cards

- How quickly will the CDHP and other new benefit designs take hold?
- Will the Boomers “speak” and engage?
- Will new entrants into the health care services market drive innovation?
 - e.g. Fidelity, Wal-Mart, Yahoo!
- How quickly will the economy rebound?

We Have Met the Enemy and They Are Us!

“The intricate machinery of our health care system can no longer grasp the threads of experience.... Too often, payers, physicians, and health care executives do not share common insights into the life of the patient...

The health care system has become an organism guided by misguided choices; it is unstable, confused, and desperately in need of a central nervous system that can help it cope with the complexities of modern medicine.”

Paul Ellwood, M.D.

The Future! Care Exchange for DM...

Real-time information flow to support decision making for:

- Providers
- Payors
- Patients
- Network P4P

