

**Edgar Mounib, MBA, MPH**

Global Healthcare Leader, IBM Institute for Business Value

[ed.mounib@us.ibm.com](mailto:ed.mounib@us.ibm.com)

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# Healthcare 2015: What the future holds



## Forces at work across healthcare systems are impacting us all.

- Growing expectations for value from increasingly costly health systems.
- Broad global awareness of quality and patient safety challenges.
- Increasing need for citizens to make better health and wellness choices.
- Emerging approaches to promoting health and delivering care such as e-health and medical tourism.
- Expanding resource challenges.
- Increasing cost sharing among public and private health insurers and individuals.

The world is connected:  
economically, socially and technically.

## The need for progress is clear.

**100  
million**

People worldwide pushed below the poverty line by personal healthcare expenditures each year.<sup>1</sup>

**2 times**

In many parts of the world, healthcare costs are rising two times faster than economic growth.<sup>2</sup>

**1.5  
million**

Errors in the way medications are prescribed, delivered and taken harm 1.5 million U.S. citizens every year.<sup>3</sup>

**1 in 10**

The estimated number of patients affected by healthcare-related infections in the EU.<sup>4</sup>

**50 percent**

The number of developed countries where people with higher incomes have better access to physicians than those with lower incomes.<sup>5</sup>

**35 years**

With poor urban governance, life expectancy within developing countries can be as low as 35 years.<sup>6</sup>

## The opportunity for progress is clear.

**\$30 million**  
in cost  
savings

**Smarter healthcare:**  
University of Pittsburgh  
Medical Center

This renowned academic medical center projects a \$30 million reduction in capital and operating cost reductions over eight years, enabling it to meet an ambitious clinical agenda.

**10 years**  
experience

**Smarter healthcare:**  
Geisinger Health System

This leading, fully-integrated provider in Pennsylvania leveraged its ten years experience with advanced EHR systems to build a comprehensive storehouse of clinical information to assist doctors in providing best practices patient care and to support medical research.

**1 million**  
individuals

**Smarter healthcare:**  
Servicio Extremeño de Salud  
(SES)

SES deployed a regionally integrated healthcare system that manages all medical records, enabling access for over one million people in any health center in the region. When fully implemented, more than 5,000 clinicians will be able to use the system simultaneously.

For healthcare organizations, this means leading in the face of global challenges brought on by five key drivers while overcoming five key inhibitors.

## DRIVERS

### GLOBALIZATION

Global competition limiting healthcare spend

### CONSUMERISM

More knowledgeable, demanding citizens

### CHANGING DEMOGRAPHICS AND LIFESTYLES

Aging and overweight populations

### DISEASES THAT ARE MORE EXPENSIVE TO TREAT

Increased prevalence of chronic conditions around the world

### NEW TECHNOLOGIES AND TREATMENTS

Advances revolutionizing risk assessment, diagnosis, and treatments

## INHIBITORS

### FINANCIAL CONSTRAINTS

Pool of funds for healthcare is not limitless

### SOCIETAL EXPECTATIONS AND NORMS

Is a service a “societal right” or market service?

### LACK OF ALIGNED INCENTIVES

No or little incentives to collaborate, transform

### INABILITY TO BALANCE SHORT- AND LONG-TERM PERSPECTIVES

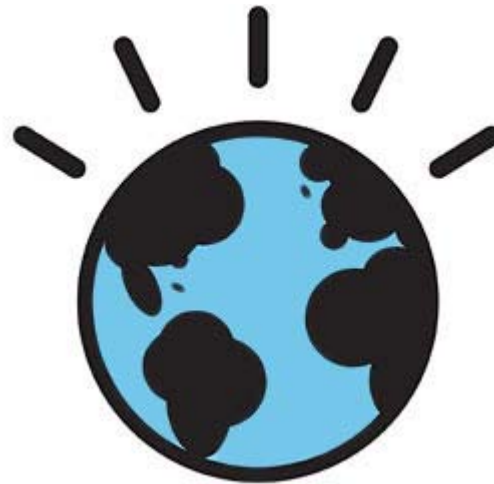
Common focus on “urgent” short-term needs and wants rather than long-term

### INABILITY TO ACCESS AND SHARE INFORMATION

Non-digital/digital data is being generated at unprecedented rates, causing information glut

This mandate for change is a mandate for smart.

A smarter health system  
forges collaborative partnerships  
to deliver better acute, chronic and preventive care,  
while activating individuals to make smarter choices.



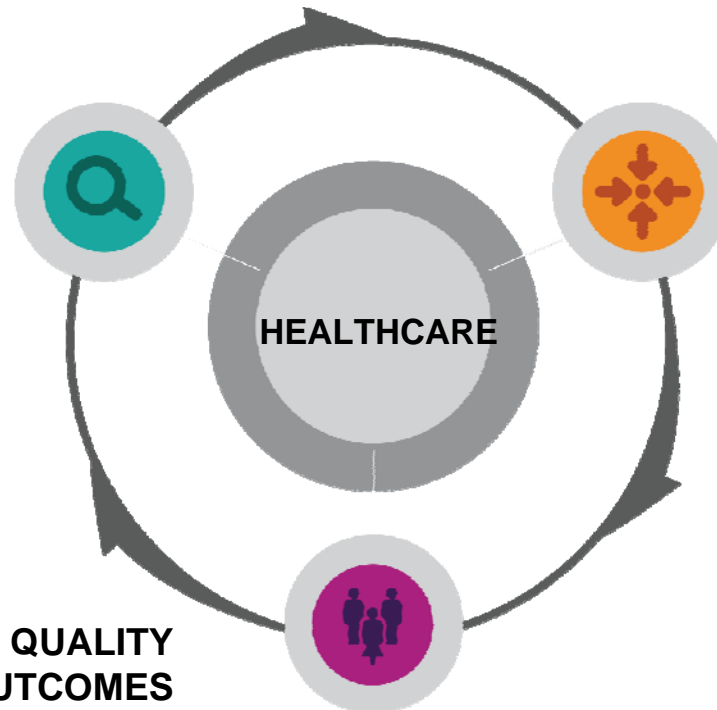
To meet expectations for improved outcomes, increased value and more accountable, sustainable health systems, healthcare organizations are working to ...

**IMPROVE OPERATIONAL EFFECTIVENESS**

Building flexibility into operations to support cost reduction and excellence in clinical and business performance and practices.

**ACHIEVE BETTER QUALITY AND OUTCOMES**

Applying insights to improve quality of care, clinical outcomes and services and deliver personalized healthcare value, while improving financial results.



**DELIVER COLLABORATIVE CARE**

Collaborating across care settings to deliver integrated, personalized care experiences, prevent disease, promote wellness and manage care.

## Smart healthcare: Improve operational effectiveness.

### SMART IS

Fueling clinical innovation with much more processing power while decreasing operating costs.

### SMART IS

Modernizing legacy processes and applications to gain the flexibility needed to compete in a consumer-driven health insurance market.



**University of Pittsburgh Medical Center:** Used virtualization to increase its processing capacity by 150% while reducing its number of physical servers by 67% and saving \$30 million in capital and operating costs.



**Highmark:** Established initiatives to realize more value from SOA investments by fostering new ideas to accelerate adoption, improving ability to differentiate based on personalized insurance offerings and enabling faster, lower-cost integration of acquired companies.

## Smart healthcare: Achieve better quality and outcomes.

### **SMART IS**

Monitoring patients and analyzing data in real time, enabling proactive responses to medically significant events or abnormal clinical values.



**IBM Research Artemis Project:** Is integrating real-time monitoring, data analysis and decision support for a major hospital's neonatal intensive care unit, enabling proactive responses to significant events.

### **SMART IS**

Having access to a person's full medical and familial history and coaching them on care provider selection and health.



**Geisinger Health System:** Integrates real-time clinical, financial, operational, claims, genomic and other medical information in a massive clinical decision intelligence system, assisting doctors to provide best practice care and supporting innovative medical research and treatments.

## Smart healthcare: Deliver collaborative care

### SMART IS

Being able to access an individual's full medical history with a single trusted view.



**Shanghai First People's Hospital:** Developed a reliable, large-scale identity repository that aggregates a patient's historical care information while eliminating duplicate and erroneous data, improving care through the sharing of trusted patient information and reducing costs through efficiency improvements.

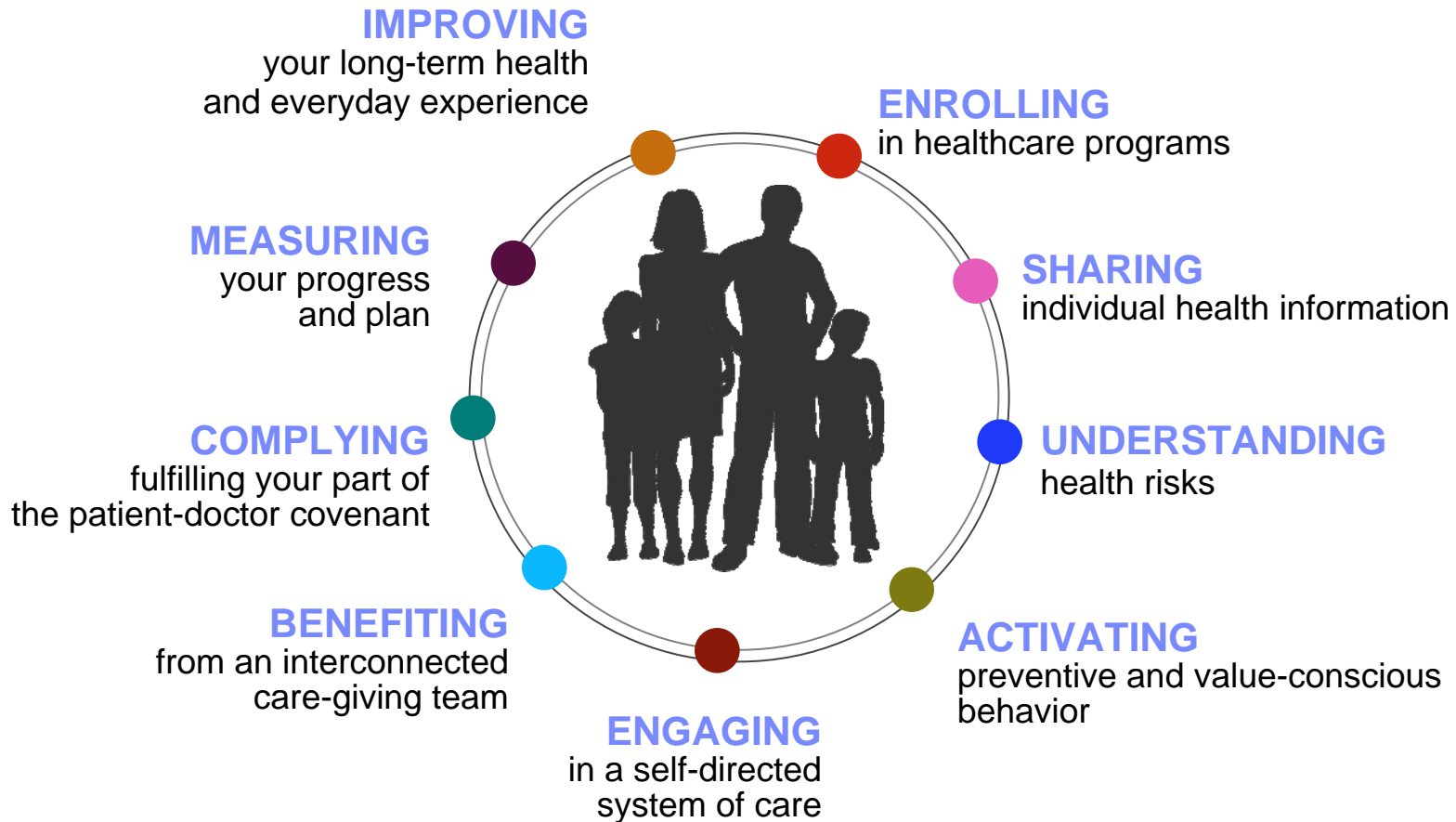
### SMART IS

Proactively driving the integration of technology, process and people changes back into the organization.



**American Hospital Dubai:** Deployed an integrated healthcare information system for the community of Dubai and surrounding Gulf States, providing secure, real time access to patient information and changing the way medical, nursing and healthcare staffs perform their jobs when utilizing technology.

At the center of smarter healthcare is an increasingly more personalized experience, focused on the wellness of the individual.



One result is higher satisfaction for consumers and service providers.

## Individuals will be served by collaborative, coordinated health systems.

### GOVERNMENTS

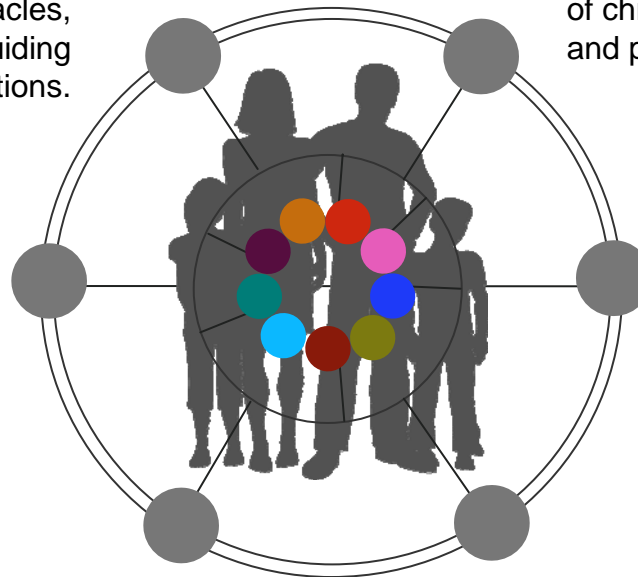
Address the current lack of sustainability by providing leadership and political willpower, removing obstacles, encouraging innovation and guiding countries to sustainable solutions.

### CARE DELIVERY ORGANIZATIONS

Expand the current focus on episodic, acute care to encompass the enhanced management of chronic diseases and the life-long prediction and prevention of illness.

### COMMUNITIES

Make realistic, rational decisions regarding lifestyle expectations, acceptable behaviors, and healthcare rights and economies.



### DOCTORS, NURSES AND OTHER CAREGIVERS

Develop partnerships with individuals, payers/health plans and other stakeholders, collaborating to promote and deliver more evidence-based and more personalized healthcare.

### PHARMACEUTICALS AND DEVICE MANUFACTURERS

Work collaboratively with care delivery organizations, clinicians and individuals to create products that improve outcomes and lower costs.

### PAYERS AND HEALTH PLANS

Help individuals remain healthy and get more value from the healthcare system while assisting care delivery organizations and clinicians in delivering higher-value healthcare.

# Patient-Centered Medical Home (PCMH) is an approach to deliver comprehensive care, coordinated by a PCP-led extended care team

Personal Relationship with a PCP and Care Team



Proactive Focus on Health, Care Intervention and Chronic Disease Management



Technology, Services & Applications to Support the New Collaborative Care Model

## ▪ Brief history of the evolution of the PCMH

- **1967:** American Academy of Pediatrics defined medical home concepts related to children with special needs
- **2000-present:** AAFP and ACP developed and extended the concept to include care for all patients with chronic illness and patient centeredness
- **2006-07:** AAFP, AAP, ACP and AOA develop a common definition of “patient-centered medical home” and link PCMH to reform of payment for physicians

## Principles of PCMH

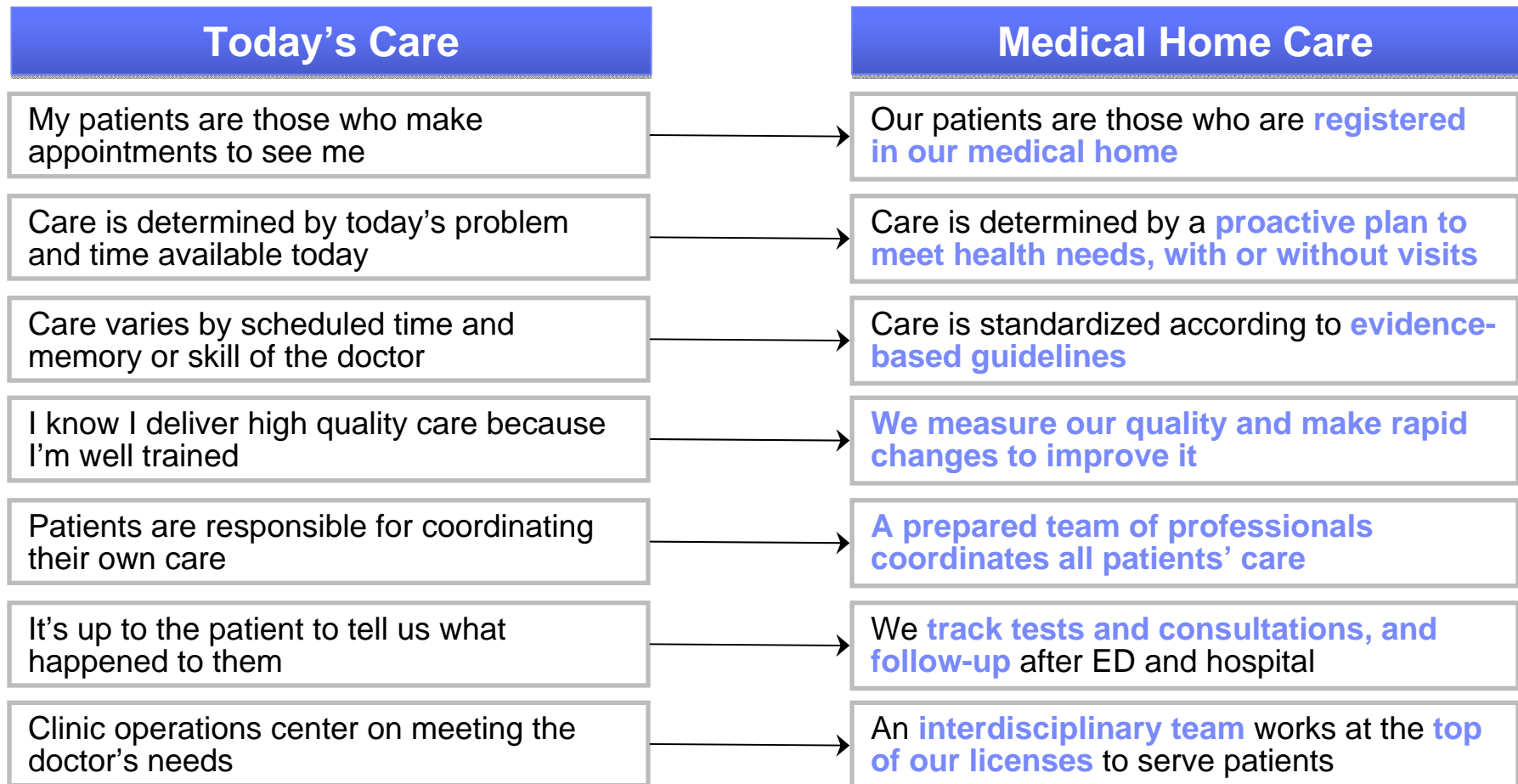
- Patient-centric/Personal PCP
- PCP-directed medical “team”
- Whole person orientation
- Care is coordinated and/or integrated
- Emphasis on quality and safety
- Enhanced access
- Appropriate reimbursement

❖ *“The Patient-Centered Medical Home (PCMH) provides care that is “accessible, continuous, comprehensive and coordinated and delivered in the context of family and community.”<sup>1</sup>*



Source: 1) [www.medicalhomeinfo.org/join%20statementpdf](http://www.medicalhomeinfo.org/join%20statementpdf)

## The PCMH concept advocates enhanced access to comprehensive, coordinated, evidence-based, interdisciplinary care



Source: Adapted with permission from F. Daniel Duffy, MD, MACP, Senior Associate Dean for Academics, University of Oklahoma School of Community Medicine

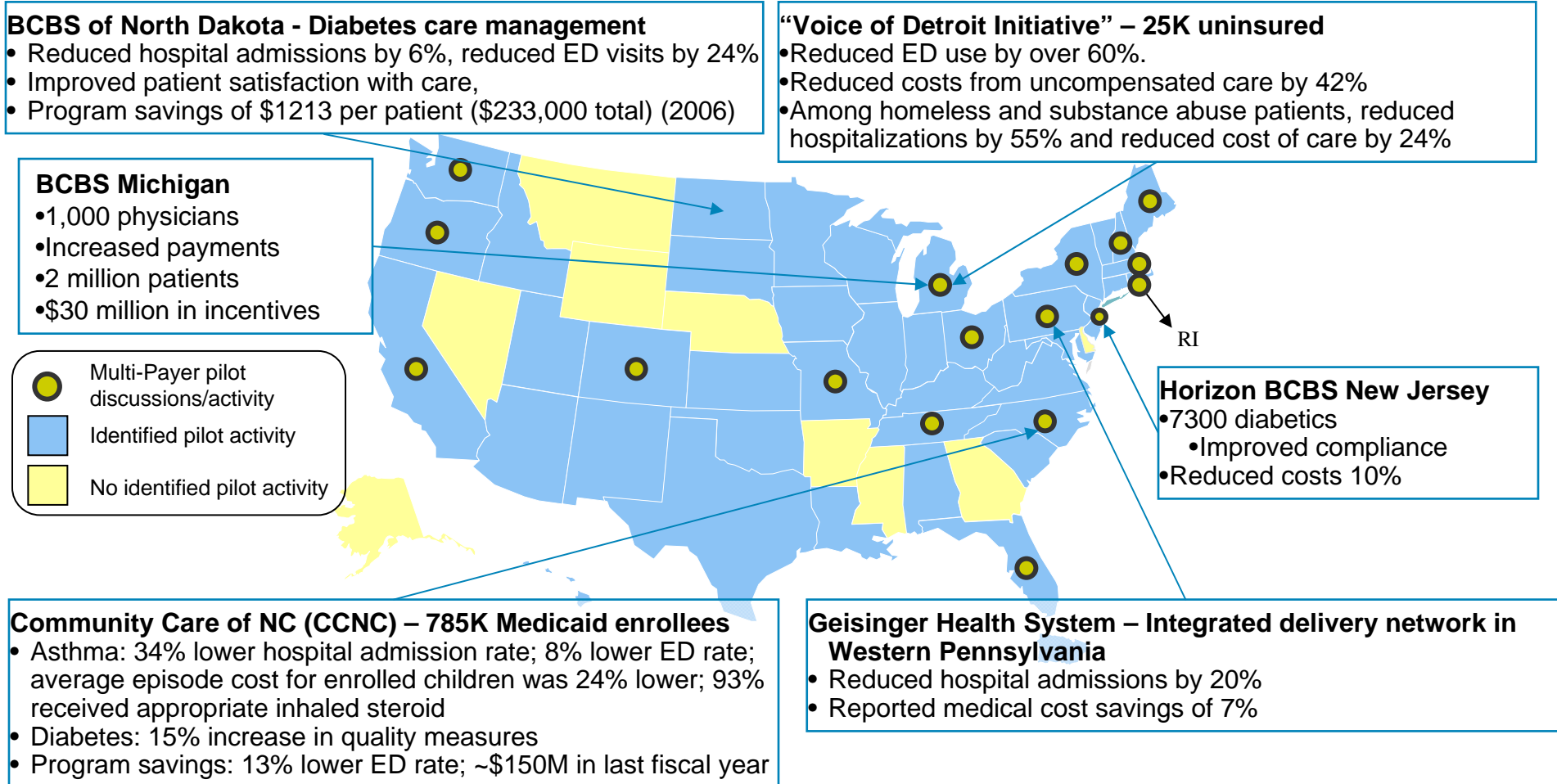
## While other approaches have addressed some PCMH Principles, none have addressed them all

| Factor/<br>Principle                             | PCMH                                                              | Non-integrated<br>managed care                           | Pay for<br>performance                               | Disease<br>management                                  | Chronic care<br>model                                        |
|--------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------|
| <b>Purpose/focus</b>                             | Facilitate partnership between PCP and patient                    | Ideally: cost, quality;<br>Actually: control utilization | Meet operational goals with financial incentives     | Meet specific management targets for chronic disease   | Org. framework for chronic care mgt and practice improvement |
| <b>Patient centric/<br/>personal physician</b>   | Yes                                                               | No                                                       | No                                                   | Maybe, often led by actors independent of primary care | Yes, for chronic illness                                     |
| <b>Physician directed<br/>medical "team"</b>     | Yes                                                               | No                                                       | No                                                   | No                                                     | Yes                                                          |
| <b>Whole person<br/>orientation</b>              | Yes                                                               | No                                                       | No                                                   | No                                                     | Yes                                                          |
| <b>Care is coordinated<br/>and/or integrated</b> | Yes                                                               | No incentive for coordination                            | No incentive for coordination                        | Maybe                                                  | Yes                                                          |
| <b>Emphasis on<br/>quality and safety</b>        | Yes, evidence-based and best practice; improved outcomes rewarded | No, reduced utilization rewarded                         | Indirectly; process targets rather than outcome ones | Yes, particularly for diseases                         | Yes, for chronic illnesses                                   |
| <b>Enhanced access</b>                           | Yes                                                               | No, reduced access                                       | No                                                   | Maybe                                                  | No                                                           |
| <b>Appropriate<br/>reimbursement</b>             | Yes for PCPs, unclear for others                                  | Potential conflict in motivation                         | No, still volume driven                              | Partially, if evidence-base used                       | No                                                           |

**Alignment with PCMH Principle:**  Aligned  Mixed alignment  Not aligned

Source: IBM Healthcare and Life Sciences, IBM Institute for Business Value

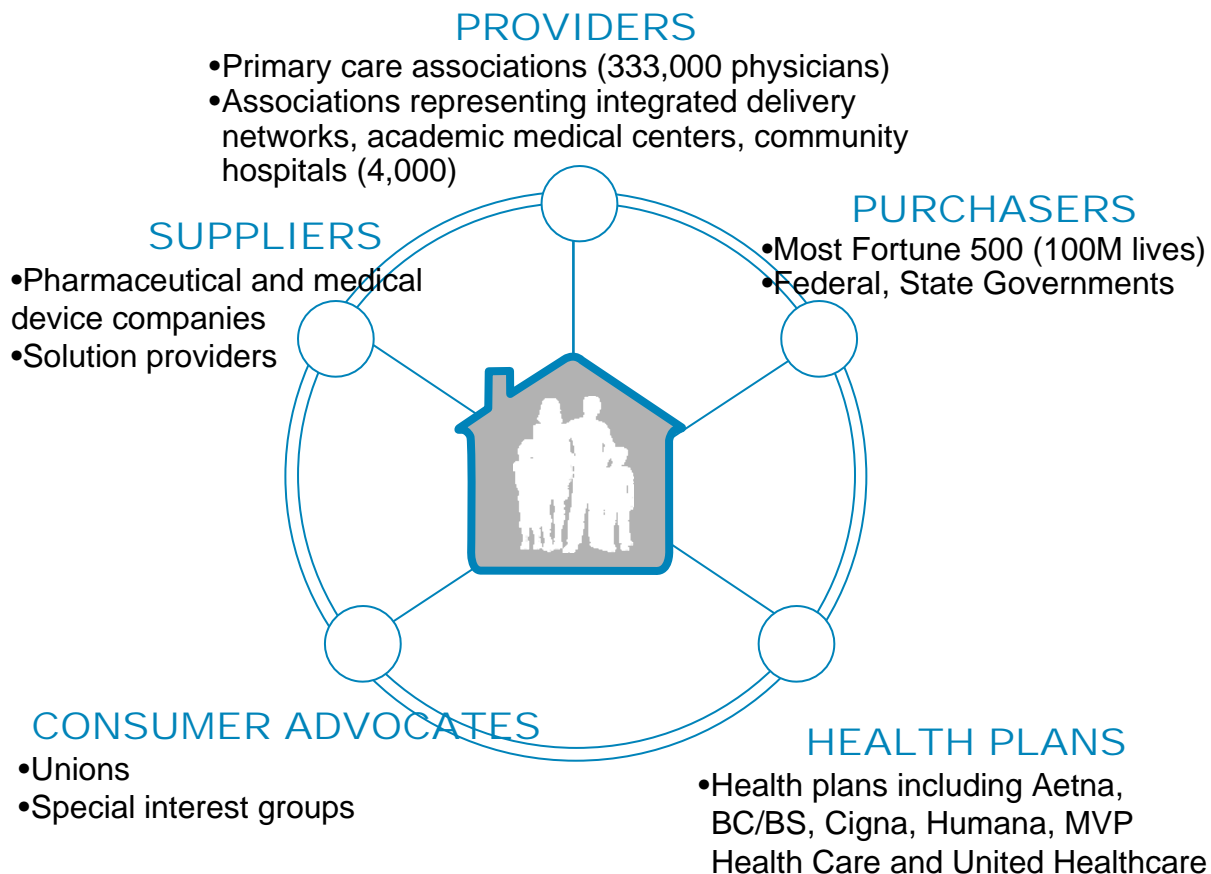
## To date, more than 30 PCMH pilots have been initiated and many are demonstrating cost, quality and access improvements



Source: Patient Centered Primary Care Collaborative (<http://pccpc.net/>), IBM Healthcare and Life Sciences, IBM Institute for Business Value

## PCMH is also drawing support from key stakeholder groups and is being bolstered by lawmakers

### Supporters of the Patient Centered Primary Care Collaborative



### Legislation Highlights

- **Medicare:** Demonstrations from H.R. 6111 – “Tax Relief and Health Care Act”; more Medicare implementations
- **Medicaid:** NC, MO, LA already planning and implementing; Transformation Grants
- **S-CHIP:** Language to encourage transition to medical home model
- **Health IT Legislation and SGR Reform:** Medical home language, encouragement for PCPs to adopt support systems
- **Quality Improvement Organization 9th Scope of Work Language**
- **Medicaid Transformation Grants**

Source: Patient Centered Primary Care Collaborative (<http://pcpcc.net/>), IBM Healthcare and Life Sciences, IBM Institute for Business Value

Healthcare leaders face challenges exacerbated by the economic environment, as well as opportunities to create new business value.

|                                                                                                                                                         |                                                                                                                       |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <p><b>Growing Expectations for Value</b></p> <p>From increasingly costly health systems</p>                                                             | <p><b>Mounting Quality and Patient Safety Scrutiny</b></p> <p>From increasingly active and demanding stakeholders</p> | <p><b>Increasing Consumer Responsibility</b></p> <p>To make better health and wellness choices</p>    |
| <p><b>New Health Promotion and Care Delivery Approaches</b></p> <p>Driven by changing needs combined with new treatment approaches and technologies</p> | <p><b>Expanding Resource Challenges</b></p> <p>From increasingly costly health systems</p>                            | <p><b>Increasing Cost Sharing</b></p> <p>Among public and private health insurers and individuals</p> |

We must recognize the need for and help to shape a more *patient-centric, value-based* health system.

Smarter healthcare organizations will look beyond the current financial crisis and ask how they can *thrive* in the world ahead.

To realize the potential of a smarter planet, organizations need to:

# 1

## FOCUS ON VALUE

### Do more with less

- Cash/capital focus
- Flexibility

### Focus on the core

- Streamline clinical and business processes
- Optimize core operations

### Collaborate

- Clinicians, caregivers, patients, insurers

# 2

## EXPLOIT OPPORTUNITIES

### Improve quality and safety

- Aggregate and analyze information

### Grow stakeholder collaboration

- Bold moves
- New partnerships

### Build future capabilities

- Explore new care models and build competencies

# 3

## ACT WITH SPEED

### Manage change

- Establish change management
- Seek and leverage experience

### Leadership

- Set the agenda
- Get the information to act

### Risk and transparency

- Performance management and analytics
- Risk management

## IBM solutions align well with economic challenges and support value creation opportunities for healthcare organizations.

### HEALTHCARE ORGANIZATIONS ARE FOCUSED ON ...

### IBM IS DELIVERING ...



#### Delivering collaborative care

- Patient-centered collaborative primary care
- Health Information Exchanges
- National, care team, patient and member health portals
- Electronic health cards
- Mobility and converged communications



#### Achieving better quality and outcomes

- Health analytics
- Health plan member analytics
- Performance management
- Public Health, disease surveillance and modeling



#### Improving operational effectiveness

- Electronic Medical Records Integration
- Claims optimization, ICD-10 and HIPAA 5010
- SOA for flexible business processes
- Enterprise asset and service management
- Privacy, security and business resilience
- Application management and hosting
- Enterprise medical image archival solutions
- Server, storage and desktop virtualization
- Energy efficient technologies
- Data center automation and optimization solutions



We've only just begun to uncover what is possible on a smarter planet.

- The world will continue to become smaller, flatter and smarter. We are moving into the age of the globally integrated and intelligent economy, society and planet.
- To thrive in a smarter planet, we need smarter health systems that support a healthier and more productive citizenry. There's no better time to start building smarter health systems. And there's no better time to invest in creating the kind of society we all desire.

Let's work together to drive real progress in our world.

APPENDIX: Table of Contents  
Additional IBM Focus in Healthcare  
Presentation Footnotes  
Alternative Slides and References

## Where is IBM applying its expertise today?

### WE ARE...

Holding leadership positions in healthcare industry standards organizations and technology demonstrations.

Exploring cloud computing for managing and sharing medical images, clinical trials data and Electronic Health/Patient Records.

Exploring how to integrate and aggregate huge, dispersed volumes of data for analytics and sharing.

Exploring how to more intuitively access diverse, complex medical information.

Leading the World Community Grid, a network of people and computers that works together on important humanitarian problems.

Initiating a key First-of-a-Kind program for health benefits companies on business integrity.

## Sources

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### Page 3

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- <sup>4</sup> [Health First Europe](#)
- <sup>5</sup> [Inequalities in access to medical care by income in developed countries](#), Canadian Medical Association Journal, Jan. 17, 2006.
- <sup>6</sup> [The World Health Report 2008, Primary Health Care: Now More than Ever](#), page 7, World Health Organization

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- <sup>10</sup> Sam Palmisano, ["Smarter Planet: The Next Leadership Agenda"](#), The Council on Foreign Relations, Nov. 6, 2008
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## Contacts

### **Edgar Mounib**

Global Business Services, Healthcare Leader, Institute for Business Value  
[ed.mounib@us.ibm.com](mailto:ed.mounib@us.ibm.com)

### **Andrea Cotter**

IBM Sales & Distribution, Director, Global Healthcare/Life Sciences Marketing  
[andreac@us.ibm.com](mailto:andreac@us.ibm.com)

### **Anna Fredricks**

IBM Sales & Distribution, Senior Marketing Manager, Global Healthcare Marketing  
[afredric@us.ibm.com](mailto:afredric@us.ibm.com)