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THE ROLE OF HEALTH INFORMATION TECHNOLOGY IN PATIENT-CENTERED CARE COLLABORATION

2012 Louisiana HIPAA & EHR Conference

Presenter: Chris Williams

Agenda

- **Overview**

- **Impact of HIT on Patient-Centered Care (PCC)**

- **Example of PCC HIT**

- **Drivers and Considerations in Design of PCC HIT**

OVERVIEW

Patient-Centered Care

- "Care that is respectful of and responsive to individual patient preference, needs and values"

- Ensuring that patient values guide all clinical decisions

Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Vol.6. Washington, DC: National Academy Press 2001.
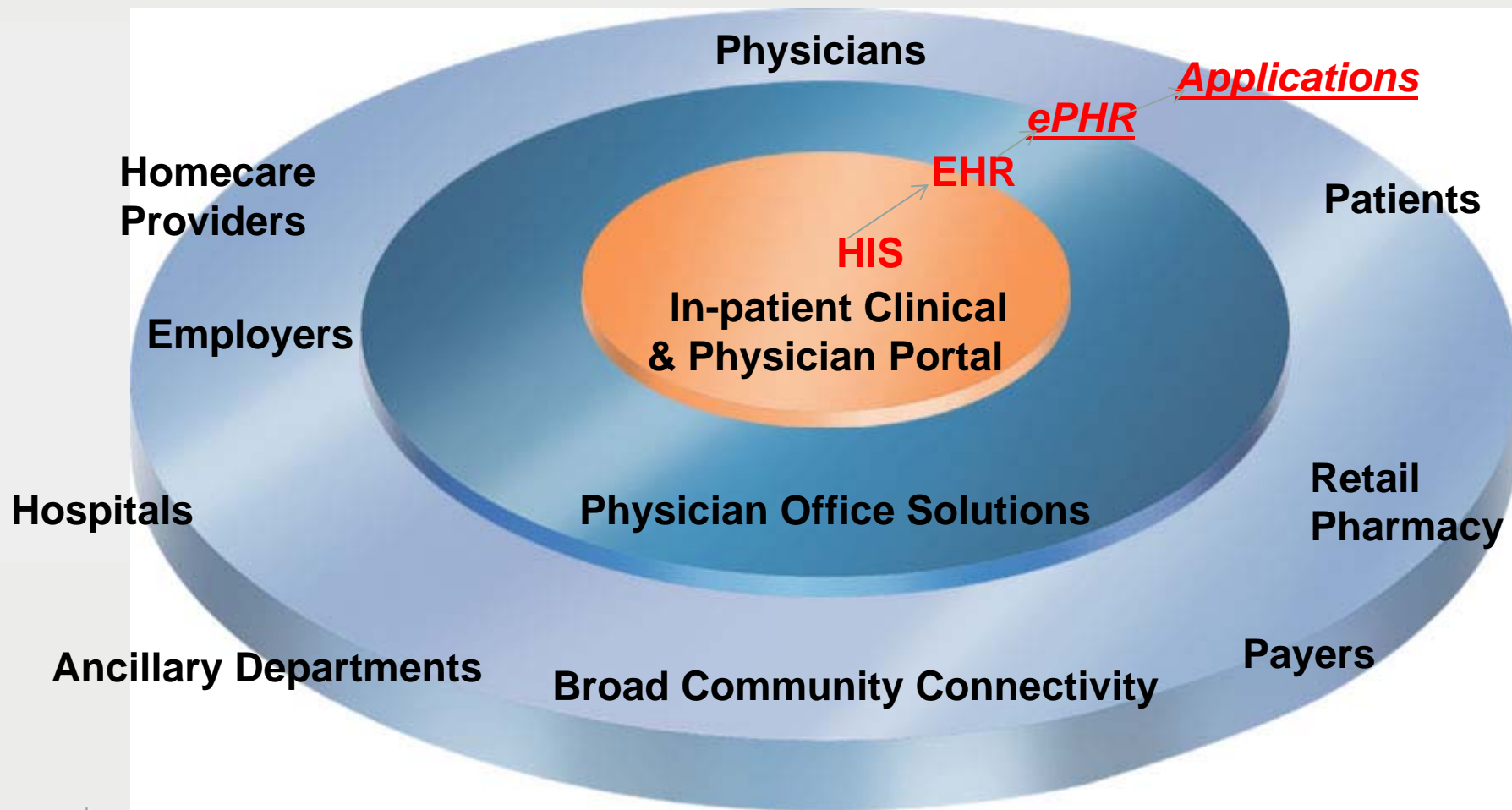
Health Information Technology

- The comprehensive management of health information across computerized systems and its secure exchange between consumers, providers, government and quality entities, and insurers.

- HIT is in general increasingly viewed as the most promising tool for improving the overall quality, safety and efficiency of the health delivery system.

- Broad and consistent utilization of HIT is expected to:
  - Improve health care quality;
  - Prevent medical errors;
  - Reduce health care costs;
  - Increase administrative efficiencies
  - Decrease paperwork; and
  - Expand access to affordable care.

Role for HIT in Patient-Centered Care

- Improve efficiencies in Community Care Coordination
- Lower Cost and Improve Quality
- Improve reporting of health outcomes
- Align with ONC strategy
- Help physician practices and community based health systems move to Meaningful Use
- Promote PCMH model

The Connected Community: HIT Role in Patient-Centered Care (PCC)

Physicians

Applications

ePHR

EHR

Patients

HIS
In-patient Clinical
& Physician Portal

Homecare
Providers

Employers

Hospitals

Ancillary Departments

Physician Office Solutions

Broad Community Connectivity

Retail
Pharmacy

Payers

EMR vs. EHR

Electronic medical records (EMRs)

- Are a digital version of the paper charts in the clinician's office.

- Contains the medical and treatment history of the patients in one practice.

- Have advantages over paper records such as allowing clinicians to:
  - Track data over time
  - Monitor and improve overall quality of care within the practice

However,

- Information in EMRs doesn't travel easily *out* of the practice.

- The patient's record might have to be printed out and delivered by mail to specialists and other members of the care team.

- Not much better than a paper record.

EMR vs. EHR cont'd

Electronic Health Record (EHR)

- An EHR encompasses all the clinical data contained in an EMR and more.
    - Designed securely share patient data across multiple healthcare organizations to improve the continuity of care.
    - Reaches out *beyond* the health organization that originally collects and compiles the information.
    - Built to share information with other health care providers.

- Example: a patient goes to the emergency room for chest pain and follows up with their primary care physician who refers them to a cardiologist, the EHR software record would contain complete clinical summaries of health care from the hospital, primary care physician and the cardiologist.

- EHRs are a key element in Patient-Centered Care Collaboration.

ePHR

Electronic Personal Health Record(ePHR)

- A universally accessible, layperson comprehensible, lifelong tool for managing relevant health information, promoting health maintenance and assisting with chronic disease management via an interactive, common data set of electronic health information and e-health tools.

- The ePHR is owned, managed and shared by the individual or his or her legal proxy and must be secure to protect the privacy and confidentiality of the health information it contains.

HIT Components of Patient-Centered Care

- **Electronic Health Records (EHRs)**

- **Electronic Personal Health Records**

- **Applications in Patient-Centered Care**
  - IT-guided disease management systems
  - Physician, patient and allied health portals
  - Telehealth, telemedicine or telemonitoring systems
  - Online education and medical reference
  - Electronic messaging
  - Social media in healthcare- Health 2.0

IMPACT OF HIT ON PATIENT-CENTERED CARE (PCC)

HIT Enhancing Health and the Patient Experience

Medical Home Model
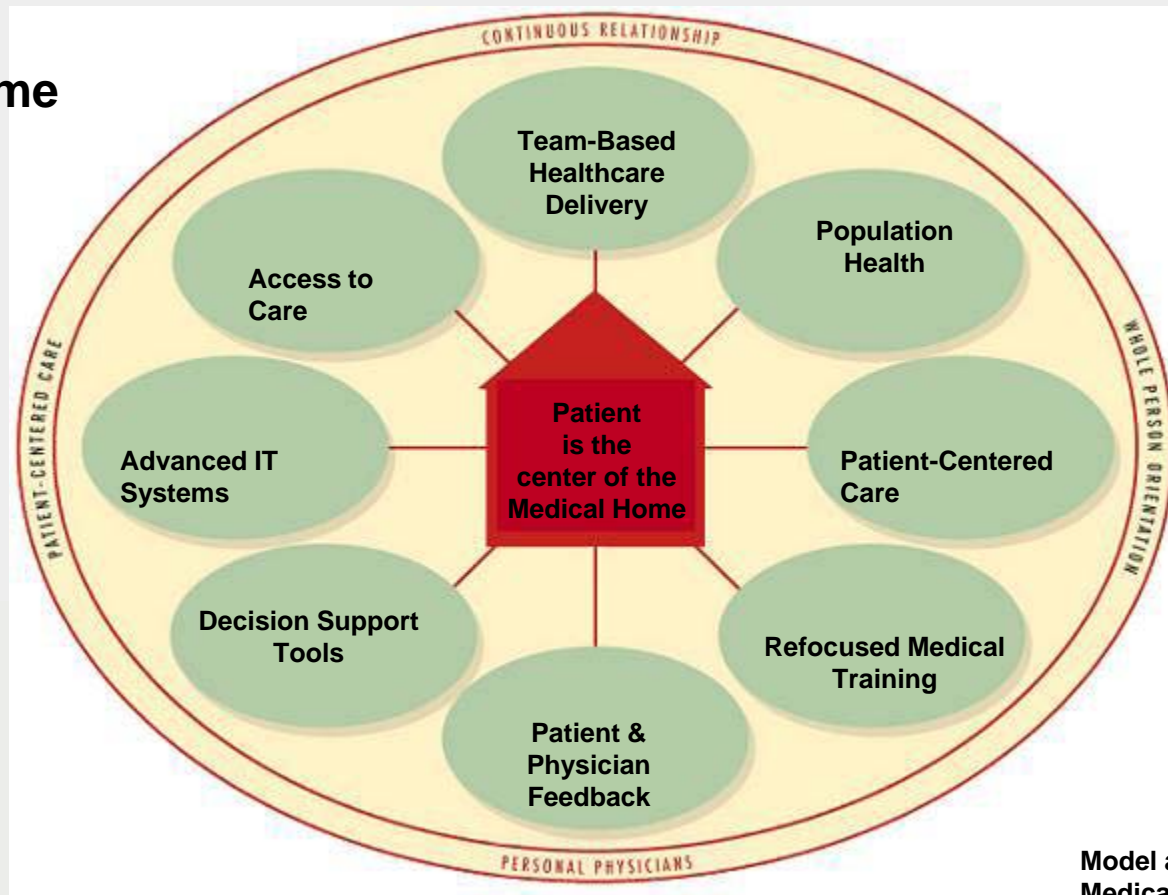
Model adapted from the NNMC Medical Home

Patient-Centered Care HIT and Outcomes

PCC HIT applications used to improve health care process outcomes

- **Applications most frequently used in studies**
  - Clinical decision aids
  - IT-guided disease management
  - Telemedicine or telemonitoring systems

- **Processes most frequently addressed**
  - Coordination of care
  - Enhancement of clinician-patient relationship.

"Enabling Patient-Centered Care Through Health Information Technology", *Evidence Reports/Technology Assessments, No. 206*, Finklestein, J. et. Al. The Johns Hopkins University Evidence-based Practice Center, Rockville (MD):Agency for Healthcare Research and Quality (US): June 2012. Report No.: 12-E005-EF www.effectivehalthcare.ahrq.gov/reports/final.cfm.

Patient-Centered Care HIT and Outcomes

HIT applications improve health care process outcomes.

- The majority of studies show a positive and significant effect on process outcomes

- Telehealth applications and care management tools are most frequently cited

- Most common diseases studied:
  - Heart Disease including hypertension
  - Diabetes
  - Obesity
  - Mental Health
  - Chronic Obstructive Pulmonary Disease (COPD)
  - Chronic lung disorders
  - Cancer

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Smarter Healthcare…

- 36.3% Drop in hospital days
- 32.2% Drop in ER use
- 9.6% Total cost
- 10.5% Inpatient specialty care costs are down
- 18.9% Ancillary costs down
- 15.0% Outpatient specialty down

Outcomes of Implementing Patient Centered Medical Home Interventions: A Review of the Evidence from Prospective Evaluation Studies in the US, K. Grumbach & P. Grundy, November 16th 2010

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Patient-Centered HIT and Responsiveness to Patients' Needs

HIT improves responsiveness to needs and preferences of individual patients.

- Telehealth is most frequently cited as improving responsiveness.

- 50% of studies involving care management tools, personal health records, patient portals, and electronic messaging have a statistically significant positive effect on responsiveness.

Patient-Centered Care HIT and Shared Communications

- **PCC HIT Applications used are:**
  - Shared decision-making
  - Patient-clinician communication
  - Access to medical information

- **Overall PCC HIT improved**
  - Patient-clinician communication
  - Patient knowledge level and access to medical information

- **Applications most frequently cited in these studies**
  - Decision-making and communication

Barriers to PCC HIT Utilization

- **Patient**
  - Poor interface usability
  - Difficulty with access due to older age
  - Low income
  - Education
  - Cognitive impairments
  - Insufficient basic formal training in use of the HIT application

- **Physician**
  - Potential increase work load (most common)
  - Problems with workflow (most common)
  - Lack of funding

Barriers to PCC HIT Utilization

- **Both Patient and Physician**
  - Worry about confidentiality of patient information
  - Low computer literacy by patients and clinicians
  - Depersonalization
  - Incompatibility with current health care systems
  - Concerns over privacy
  - Need for standardization of HIT systems
  - Problems with reimbursement

Facilitators to PCC HIT Utilization

- **Both Patient and Physician**

  - Applications ease of use (most common)

  - Perceived usefulness

  - Efficiency of use

  - Availability of support

  - Comfort in use

  - Site location

Lack of Studies on PCC HIT

Little research has been done on:

- Effect of HIT on responsiveness to the needs, preferences and values of individual patients or on shared decision-making with patients, their families and providers

- Cost or sustainability

- Role of HIT to improve PCC among:
    - Pediatric
    - Elderly

- "No studies were designed to assess how the effectiveness of HIT in promoting PCC may differ by racial and ethnic background, education, or socioeconomic status."

- Few studies on conditions other than diabetes, heart disease, hypertension, or cancer

- Provider efficiency

EXAMPLE OF PCC HIT

Example of Patient Portal

Disease Treatment Plan

Alerts: Provider to Patient

Patient Notes

Communication Tools

Disease Specific Education

General Health Education

Social Networking

PHR Information

Development of Disease Symptoms vs. Time

Symptoms vs. Time Curve for Disease state

SYMPTOMS
BECOME
WORSE THAN
NORMAL

NORMAL SYMPTOM
RANGE

SYMPTOMS _____

COST

TIME

ONE
WEEK

"American Health Care 2008: Opportunities for Disruptive Improvement," William H. Rice, M.D., ISBN: 978-14303-1550-6
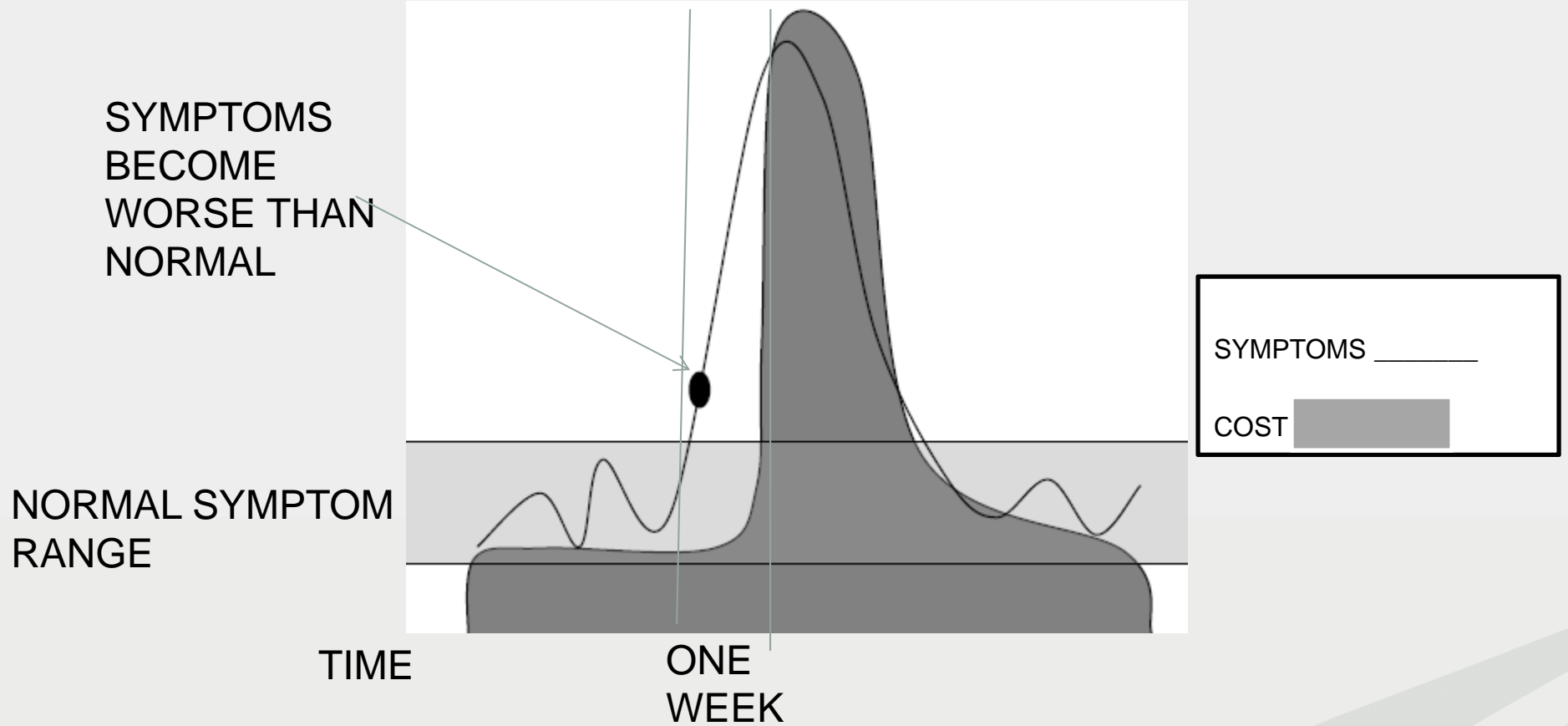
Today: People with Chronic Conditions

Symptoms vs. Time Curve for Chronic
Disease – not self-managed

SYMPTOMS _____

COST

TIME

"American Health Care 2008: Opportunities
for Disruptive Improvement," William H.
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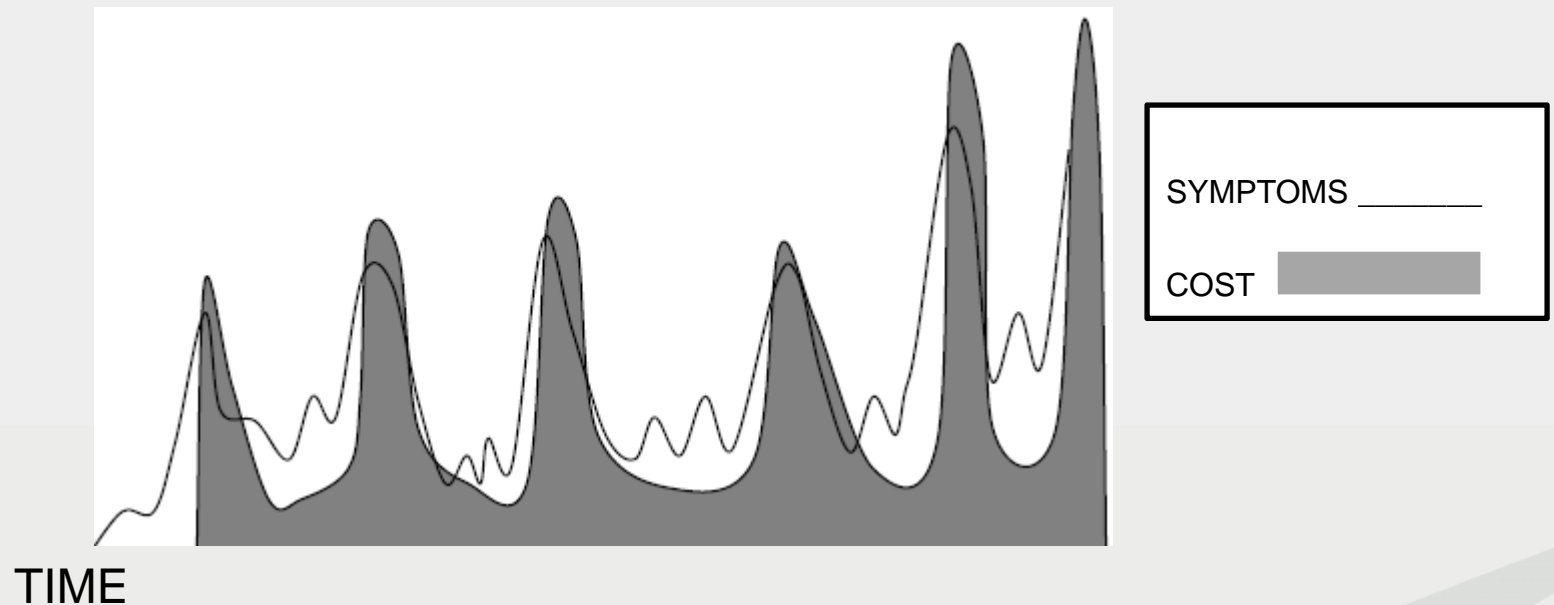
Tomorrow: People with Chronic Diseases

Symptoms vs. Time Curve for Chronic
Disease with self management
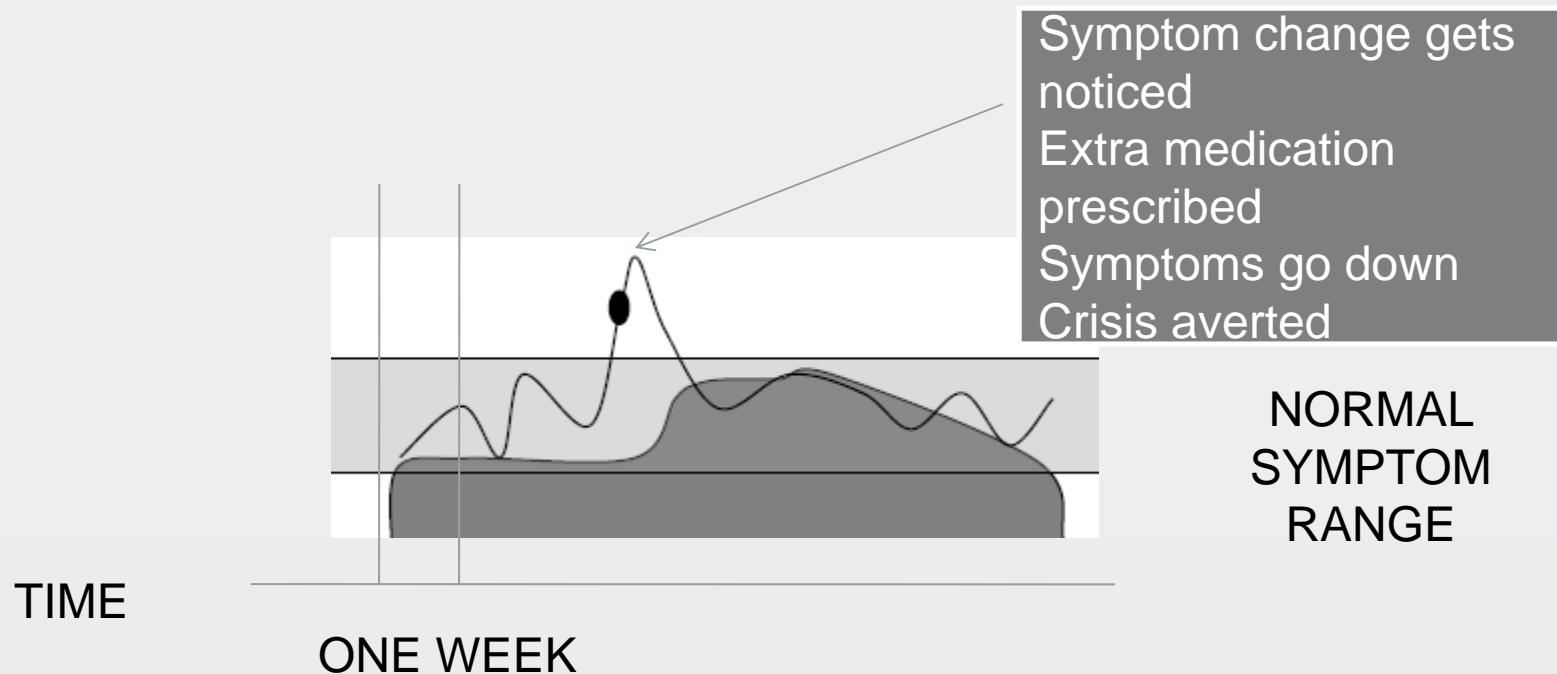
Symptom change gets
noticed
Extra medication
prescribed
Symptoms go down
Crisis averted

NORMAL
SYMPTOM
RANGE

TIME

ONE WEEK

"American Health Care 2008: Opportunities
for Disruptive Improvement," William H.
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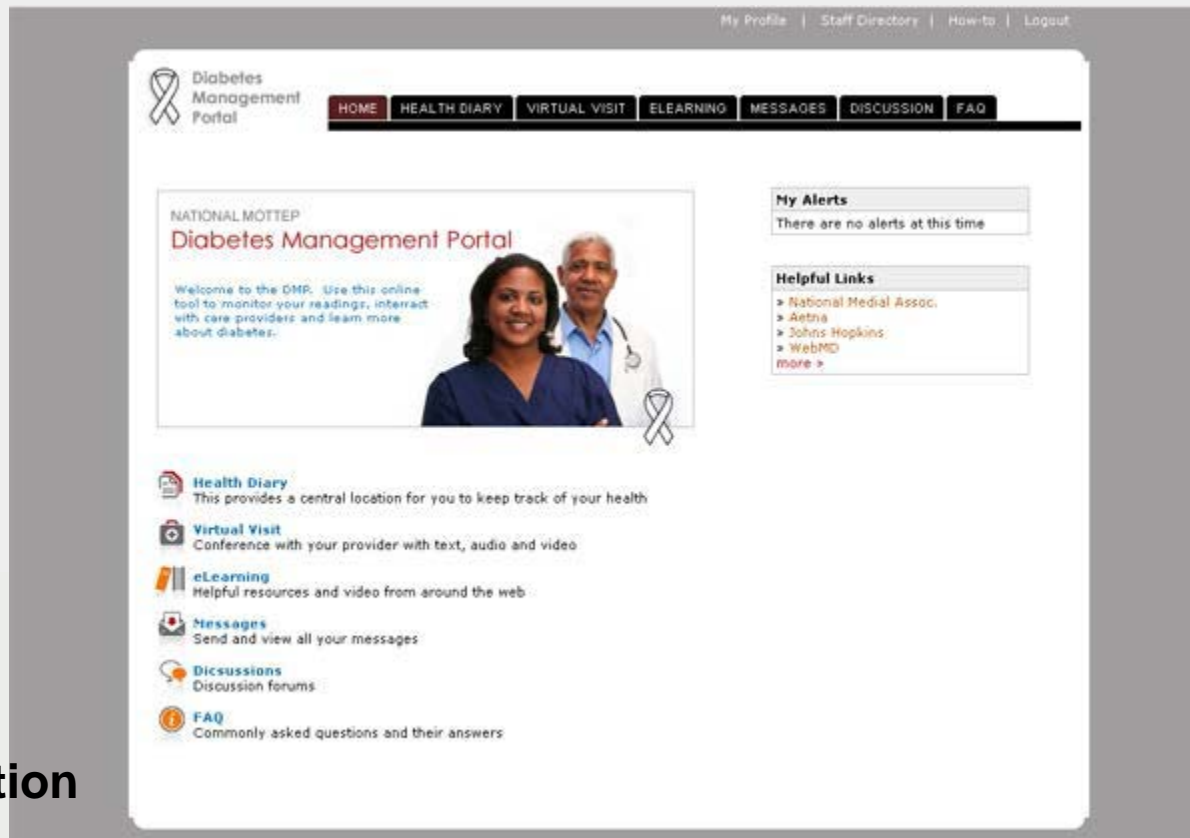
Telehealth Diabetes Study

Disease Treatment Plan

Alerts: Provider to Patient

Patient Notes

Communication Tools

Disease Specific Education

General Health Education

Social Networking

PHR Information

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Telehealth Diabetes Study

Comparison Study (47 Individuals)

Usual Care- Control (21)

- Initial Clinic Visit
- Check Glucose/ Blood Pressure/Weight
- Answer Questionnaire

Intervention (26)

- Complete long Questionnaire
- Check Glucose/Blood Pressure/ Weight
- Access Telehealth Website
- View On-Demand Video
- Speak Live to Certified Diabetes Educator
- Access to online links, printed educational material diabetes, hypertension & other health specialists

Telehealth Diabetes Study

- Results Median Age 56 (36 – 74)

- 66% earned between $25,000 and $50,000

- 60% graduated high school, 25% some high school, 15% graduated from college
  - No significant difference in baseline disease status as measured by A1C (8.9) , BMI (35.8), BP (147/88), diabetes knowledge. self-reported self-management or wellness behaviors

"A Patient-Centric, Provider-Assisted Diabetes Telehealth Self-management Intervention for Urban Minorities", Ernest L. Carter; Gail Nunlee-Bland; and Clive Callender, to be published in Perspectives in Health Information Management. Winter, 2011.

Telehealth Diabetes Study

- Results Patients were 4.6 times more likely to reach the desired hemoglobin A1c target of 7% or below using the Diabetes Portal

- A significant positive relationship was found between participation in the intervention and achieving a healthy BMI

- No association was found between being in the treatment group and maintaining blood pressure at 130/80 or less

"*A Patient-Centric, Provider-Assisted Diabetes Telehealth Self-management Intervention for Urban Minorities*", Ernest L. Carter; Gail Nunlee-Bland; and Clive Callender, to be published in Perspectives in Health Information Management. Winter, 2011.

Telehealth Diabetes Study

- **Results Other benefits of the intervention: Development of a closer relationship with the nurse and primary care physician**

- **Increased positive view of healthcare and physician visits**

- **Convenience of "healthcare at home"**

- **Appreciation of time spent with the online nurse twice a month**
  - Overcoming the initial apprehension about the internet Home visit tutorial by project staff
  - Social networking

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Telehealth Diabetes Study

- **Results Majority with no major difficulty using the intervention**
  - Attitude Changes Increase knowledge of diabetes and improved adherence to sound diabetes management practices
  - Better adherence to keeping appointments
  - Better understanding of the importance of health
  - Increased self-management practices
  - Better overall feeling both physically and mentally
  - Challenge Poor broadband access (dead spots)

"A Patient-Centric, Provider-Assisted Diabetes Telehealth Self-management Intervention for Urban Minorities", Ernest L. Carter; Gail Nunlee-Bland; and Clive Callender, to be published in Perspectives in Health Information Management. Winter, 2011

DRIVERS AND CONSIDERATIONS IN DESIGN OF PCC HIT

Patient-Centered Care Health Information Technology Drivers

- Ubiquitous Internet connectivity among health citizens

- Universal adoption of computers, tablets, mobile phones,

- Increased use of smart phones

- greater access to health information online

- greater social networking online overall; health has followed other consumer verticals

- Greater consumer-directed care

Considerations in the Design of Patient-Centered Care HIT Applications

- Incorporate evidence based prevention and treatment strategies

- Engage all stakeholders patients, their families, clinicians ands developers in the design HIT applications

- Integrate in the local primary care HIT infrastructure (EHR, HIE)

- Promote self management and utilize decision support aids

- Integrate telehealth, telemonitoring or telemedicine into system applications where applicable

- Utilize Health 2.0 social media technology to create supportive communities

Contact Information

Questions???

Additional Resources:

Website: www.eqhealthsolutions.org

Email: busdev@eqhs.org

Toll-free: 888-557-1926