ENGAGED PATIENTS

Improving Outcomes & Lowering Costs!!!!
Engaged Patients

Statistically, patients who are actively involved in their healthcare see improved outcomes and incur lower costs.
Leaning Objectives

- Discuss methods of increasing patient engagement.
- Identify the role of technology in disease management.
- Outline the risks associated with common patient engagement programs.
- Discuss current trends in electronic healthcare initiatives.
- Identify the benefits of pursuing new patient engagement initiatives.
An “engaged patient” expects a similar level of transparency and convenience in their healthcare that they receive from their bank or preferred retailer.
• This space is enormous and includes email, chat, games, video, cell phones, Smartphone’s and tablets, as well as personal computers.
A quantum leap in digital initiatives has made engaging patients significantly easier.

These initiatives include:

- Wearable technology
- Concierge telehealth services
- Health information websites
- Personal health records
Mental Health Sensors

Safelet®

Google ® Glass

Apple Watch®
• When equipment or software is intended for use in the diagnosis or treatment of a disease or other condition, it is considered to be a medical device.

• As of September 25, 2013, the FDA regulates mobile medical apps that:
  - Are used as an accessory to an FDA-regulated medical device
  - Transform a mobile platform into a regulated medical device

• FDA applies the same risk-based approach used to assure safety and effectiveness for other regulated medical devices.
The current trend in smartphone app development has also led to an increase of users with active, personally kept health information.

Many models of both Android and Apple smartphones come with built-in heart rate monitors, accelerometers, health tracking applications and 3rd party health accessory support.
Wearable Technology

• Combines form and function
  – wearable gear in the form of watches, eyeglasses and more.
A common basic template for how they work

- sensors capture impulses and translate them into actionable data,
- then, microprocessors extract, transform and load data to a transmittable format, and
- finally, transmitters wirelessly send data to cloud storage for further processing and reporting.
Modern smartphones support third party devices that expand the ability of healthcare providers and patients to access and administer health-related information.
A 2015 report from the Institute for Healthcare Informatics found that the number of mobile health applications available to consumers had surpassed 165,000.

Out of those applications, one in ten apps had the capability to connect to an external device or sensor.

Telehealth and mHealth, medication and disease management tools and fitness products.

- mHealth and eHealth
  - Technology – Smartphone’s, tablets, watches, Fit Bits,
  - Apps – glucose meter, blood pressure monitor
    (https://www.youtube.com/watch?v=xp1x82lakBc),
    ECG/EKG device
    (https://www.youtube.com/watch?v=X0NiQWFqZYI)
  - The Google Glass IntelliVue Solutions
Digital Stethoscope and Smartphones

The new-generation stethoscope wirelessly streams heart sounds to a Smartphone app, which, in turn, saves those recorded beats to the patient's electronic medical record. The recorded heartbeat can be viewed as a heart-sound wave form and shared via a secure link with a cardiologist or provider offering a second opinion.
Home Health and Wellness

• TeleHealth and Remote Patient Monitoring
Wearable technology risks fall into three main categories for the *manufacturer*:

- **Cyber Risks.** If data transmitted via “wearables” is not properly secured, companies can face class action lawsuits, costly fines and damage to their reputation.

- **Bodily Injury Risks.** Malfunctioning devices can cause injuries, illnesses and even death of wearers or patients. Device manufacturers may face a product liability lawsuit.

- **Technology Errors and Omissions Risks.** Companies can be held liable for an economic loss from the failure of a device to work as intended.
Americans are looking to the internet for basic medical information and advice at increasingly larger rates.

Websites like WebMD, MedicineNet and Healthline provide patients with knowledge that may effect whether or not they seek professional care, where they seek professional care and the types of preventative measures they have at their disposal.
Nih.gov(PubMed) is the 129th most visited website in the United States (238th in the world).

PubMed is viewed more frequently than:

- Verizon.com,
- Accuweather.com,
- Npr.org,
- Espn.com, or
- Fandango.
Many websites are now more than mere information portals. Many providers now offer interactive services for patients willing to take an active role in the management of their health.
Interactive Health Websites

• Some of these services include:
  - Health-based social media sites that connect patients to other individuals suffering from similar diseases
  - Electronic access to hospital-owned health records
  - Patient self-managed health records
  - Pregnancy guides/tracking services
  - Medication tracking services
Home caretakers have become a significant part of modern disease management. Websites provide these home caretakers with access to basic medical equipment and supplies.

Websites can specifically target caretakers involved in the management of specific diseases to ensure the disease is effectively managed outside of a hospital setting.

Sites currently exist that focus on the management of Alzheimers, Diabetes, Muscular Dystrophy, Parkinsons Disease and Sleep Apnea.
• More than 65 million people provide care for a chronically ill, disabled or aged family member or friend during any given year.

• Roughly 1.4 million children ages 8 to 18 provide care for an adult relative.

• Family caregivers spend 20 hours each week on average caring for their loved ones.

• 22% of the family caregivers polled by the National Alliance for Caregiving and AARP expressed that they needed help communicating with physicians.
Personal Health Records (PHR) are records that are kept and maintained by patients. Many PHR services are designed to integrate and communicate with healthcare providers to insure an easy exchange of information.

Several large software companies currently provide electronic PHR applications.

- Microsoft Healthvault, RelayHealth, Google Health, Dossia.
• PHRs have been shown to improve the care of patients with chronic diseases like diabetes.
• Intelligent records can integrate with computerized support systems to evaluate patient education levels and recommend tailored care protocols to their healthcare providers.
• Patients with diabetes can look to their PHRs to review glucose monitoring results, their glucose diary, automated feedback based on their risk factors, education material and secure communication channels with their providers.

Common challenges with the implementation of engaged patient programs include:

- The inability to share data
- Threats to cyber security
- Data breaches
- Increased liability
- HIPAA compliance concerns
Liability Issues: PHRs

- PHRs can be used to provide physicians with their patients vital statistics, but they also provide a number of risks.
- Patient overreporting may “drown out” otherwise critical health information.
- Improper and incomplete patient education may lead to inaccurate results reported in patients’ records.
- Misuse of testing devices could result in abnormal readings that physicians rely on while treating or diagnosing patients.
Liability Issues: PHRs

• Problems due to patient confirmation biases may develop if patients choose to report only favorable testing and data related to their diagnoses.

• Providers may be less inclined to enter unflattering information (alcoholism or drug abuse) if they think a patient may read them.

• Patients may enter critical information in their records that may not be viewed for a significant period of time (intends to commit suicide).
Data Breaches

• Loss of information due to hacking and unauthorized access to healthcare data poses a significant risk to providers looking to establish electronic patient initiatives.

• 47 breaches of protected health information affecting 500 or more individuals were reported to the Department of Health and Human Services between January 1, 2016, and June 1, 2016.
Response

Investigate
• Retain outside counsel with privacy expertise
• Determine who and what caused the breach
• Document investigation and findings in a legally defensible manner

Respond
• Determine scope of breach and potential notification duty
• Appropriate parties contacted in a timely and professional manner
• Provide mitigation or remediation
• Retain crisis and reputational advisory

Defend
• Regulatory defense
• Civil liability defense
Future development and implementation of health information exchange standards are expected to lighten liability concerns related to malicious data breaches.

The Office of the National Coordinator for Health Information Technology actively oversees several projects aimed at developing uniform security standards for electronic transmission of health information.
Safeguarding the Data

- Secure Data Centers
- Encryption
- Recipient Authentication
- Audit Controls
- Individual Device Security
- Access Security
- Vet mHealth apps and software vendors!
• The Equipment

- Technology malfunction/failure
- Display limitations, i.e. small screens, difficult to read
- Upgrades
- Costs
- Operations/Logistics
- Poor connection
- Continuity of care
- Embedding collected data into medical record
- The “fine” print (terms and conditions)
HIPAA compliance is an important consideration for healthcare providers looking to establish electronic patient initiatives.
HIPAA Security Rule

Administrative Safeguards
- Security Management Process
- Security Personnel
- Information Access Management
- Workforce Training & Management
- Evaluation

Physical Safeguards
- Facility Access & Control
- Workstation & Device Security

Technical Safeguards
- Access Control
- Audit Controls
- Integrity Controls
- Transmission Security

http://www.hhs.gov/ocr/privacy/hipaa/administrative/securityrule/securityruleguidance.html
• Regulatory Considerations
• Varying state privacy laws makes electronic HIPAA compliance a complex issue.

• An estranged parent in one state may have a legal right to access information about their child’s specific condition while a parent in another state has no legal right to that information.
Interoperability Issues

- Patients want complete access to information.
- Patients receiving treatment at different healthcare systems may find access to all of their health records to be a tremendous challenge.
- Hospitals that develop electronic services independently from one another may store and transmit information in incompatible formats.
Disparate Patient Adoption Rates: Equal Access to Healthcare

Geographic and economic factors will limit some patients’ access to electronic healthcare services.

Overreliance on electronic services and devices could detrimentally impact various patients.
Elderly patients may be less inclined to adopt and utilize electronic healthcare services.

Electronic services must be designed to accommodate users with varying levels of technological aptitude. Intelligent user interfaces and in-depth training and educational materials may be necessary for elderly patients.

Programs and devices that rely on physical activity may also overlook the needs of elderly or disabled patients.
Emerging Technology

- The maintenance and liability costs associated with creating patient engagement initiatives may significantly change as future technologies become more complex.
- As the cost of technology increases, higher levels of healthcare disparity may develop between patients of different income and age brackets.
Engaged patient programs benefit Accountable Care Organizations by reducing patient readmission rates:
- Improved education
- Remote access to physicians
- Disease/symptom self-management

Effective patient management can lead to more effective preventive health maintenance.
• Comply with FDA, FCC and HIPPA regulations anytime a wearable device or app is utilized for use in the diagnosis or treatment of a disease or other condition.

• Address all key challenges before implementing the use of technology in disease management.

• Wearable devices + Telemedicine + Telehealth + mHealth = the future of healthcare – understand the benefits and risks before implementation!!!!
Questions / Comments

Thank you for your time and attention!