

伍、附錄

附錄一、HIMSS 2016 年會議程

Sunday, February 28	
Registration (Hotels**)	12:00 pm - 8:00 pm
Registration (Convention Center)	3:00 pm - 6:00 pm
CIO Forum Opening Reception* Dal Toro	6:00 pm - 8:00 pm
Monday, February 29	
Registration Hotels** & Convention Center	6:45 am - 8:00 pm
Preconference Symposia*	8:00 am - 4:30 pm
CPHIMS Review Course*	8:00 am - 4:30 pm
CIO Forum*	9:00 am - 4:00 pm
First Timer Orientation	12:30 pm - 1:30 pm
Academic Forum (Hosted by AUPHA)	1:00 pm - 5:00 pm
Chapter Leaders Workshop (by invitation only)	2:00 pm - 4:30 pm
Opening Keynote Presentations HIMSS16 Opening Keynote Sessions - Featuring Two Presentations. Sylvia Mathews Burwell, Secretary of Health & Human Services and Michael Dell, Chairman and Chief Executive Officer, Dell Inc.	5:00 pm - 7:00 pm
Opening Reception - Exhibit Hall, Hall G	7:00 pm - 8:00 pm
Tuesday, March 1	
Registration Hotels** & Convention Center	7:00 am - 6:00 pm
Concurrent Education Sessions	8:30 am - 9:30 am
All About HIMSS: An Orientation to YOUR Organization	8:30 am - 9:30 am
First Timer Orientation	9:00 am - 10:00 am
Exhibition Hall	9:30 am - 6:00 pm
Interoperability Showcase	9:30 am - 6:00 pm
HX360 Innovation Pavilion	9:30 am - 6:00 pm
Exhibit Floor Sessions	10:00 am - 6:00 pm
Concurrent Education Sessions	10:00 am - 11:00 am
Concurrent Education Sessions	11:30 am - 12:30 pm
Concurrent Education Sessions	1:00 pm - 2:00 pm
Concurrent Education Sessions	2:30 pm - 3:30 pm
Concurrent Education Sessions	4:00 pm - 5:00 pm
A Special Session with ONC and CMS	5:30 pm - 6:30 pm
Women in Healthcare IT Reception*	6:30 pm - 8:00 pm

Wednesday, March 2	
Registration (Convention Center only)	7:30 am - 5:00 pm
CAHIMS Exam Session 1* <i>Candidate check-in begins at 7:30 am</i>	8:00 am - 10:00 am
Concurrent Education Sessions	8:30 am - 9:30 am
Exhibition Hall	9:30 am - 6:00 pm
Interoperability Showcase	9:30 am - 6:00 pm
HX360 Innovation Pavilion	9:30 am - 6:00 pm
Exhibit Floor Sessions	10:00 am - 6:00 pm
Concurrent Education Sessions	10:00 am - 11:00 am
CPHIMS Exam Session 1* <i>Candidate check-in begins at 10:30 am</i>	11:00 am - 1:00 pm
All About HIMSS: An Orientation to YOUR Organization	11:30 am - 12:30 pm
Concurrent Education Sessions	11:30 am - 12:30 pm
Concurrent Education Sessions	1:00 pm - 2:00 pm
CPHIMS Exam Session 2* <i>Candidate check-in begins at 2:00 pm</i>	2:30 pm - 4:30 pm
Concurrent Education Sessions	2:30 pm - 3:30 pm
Concurrent Education Sessions	4:00 pm - 5:00 pm
Communities Open House	5:30 pm - 6:30 pm
Millennials on a Mission Reception	6:30 pm - 7:30 pm
Thursday, March 3	
Registration (Convention Center only)	7:30 am - 5:00 pm
CPHIMS Exam Session 3* <i>Candidate check-in begins at 7:30 am</i>	8:00 am - 10:00 am
Concurrent Education Sessions	8:30 am - 9:30 am
Education Workshops*	8:30 am - 5:00 pm
Exhibition Hall	9:30 am - 4:00 pm
HX360 Innovation Pavilion	9:30 am - 4:00 pm
Interoperability Showcase	9:30 am - 4:00 pm
Exhibit Floor Sessions	10:00 am - 4:00 pm
Concurrent Education Sessions	10:00 am - 11:00 am
CPHIMS Exam Session 4* <i>Candidate check-in begins at 10:30 am</i>	11:00 am - 1:00 pm
Concurrent Education Sessions	11:30 am - 12:30 pm
Concurrent Education Sessions	1:00 pm - 2:00 pm
CAHIMS Exam Session 1* <i>Candidate check-in begins at 2:00 pm</i>	2:30 pm - 4:30 pm

Concurrent Education Sessions	2:30 pm - 3:30 pm
Concurrent Education Sessions	4:00 pm - 5:00 pm
Awards Gala* Wynn Hotel & Resort	6:30 pm - 9:00 pm
Friday, March 4	
Registration	7:30 am - 11:00 am
Keynote: Dr. Jonah Berger Author of Best-Selling <i>Contagious: Why Things Catch On</i>	8:30 am - 10:00 am
Concurrent Education Sessions	10:30 am - 11:30 am
Concurrent Education Sessions	12:00 pm - 1:00 pm
Closing Keynote: Peyton Manning Super Bowl Winning Quarterback & Five-Time NFL MVP	1:15 pm - 2:30 pm

附錄二、HIMSS 2016 參與人員統計



The CLINICAL IT EXECUTIVE: A Critical Role in an Evolving Field

The Field



The majority of respondents view **health IT** as a strategically **critical tool** to help healthcare organizations be successful... especially surrounding their **patient care focused efforts**



Top areas where **health IT** is considered to be a **critical tool**:



The perception of IT as a **strategic healthcare tool** varies by the presence of a clinical IT executive



The Role

Many healthcare organizations employ **clinical IT executives**

Clinical IT executives reflect many different titles



Clinical IT executives are **part of the overall executive team** in many healthcare organizations...but this is not universally true



Compared to respondents *without* a clinical IT executive in their organization, respondents *with* a **clinical IT executive** were much more likely to consider IT **critical to the organization's success** in:



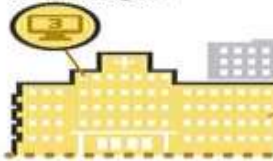
The 27th Annual HIMSS Leadership Survey, published in March 2016, reflects the insights of 282 IT executives and professionals in U.S. hospitals and health systems with regard to their organization's IT environment. This study evaluates a broad scope of topics including role of clinical IT executives, ability of IT to support patient care and operational goals, and key organizational IT priorities. To access the full survey results, please visit <http://www.himss.org/27th-annual-leadership-survey> or follow #HIMSS.



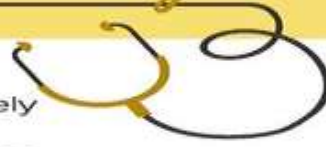
CONNECTING PATIENTS, PROVIDERS & CARE TEAMS:

How Hospitals Currently Use Connected Health Technologies

52%
of hospitals currently use **three or more** connected health technologies



Connected health technologies positively impact a hospital's capability to communicate with patients:



69%
using a **mobile optimized patient portal** indicated this technology **extensively supports** the hospital's secure data exchange strategy

Hospitals use an array of connected health technologies

58%
mobile optimized patient portals

48%
apps for patient education/engagement

37%
remote patient monitoring



34%
telehealth – audio visual fee for service

33%
SMS texting

32%
patient generated health data

26%
telehealth – concierge service

Hospitals are **expected to expand** the array of connected health technologies they use

The **most commonly cited technologies** hospitals plan to add involve:

Patient generated health data solutions



47%
expect to expand their use of connected health technologies in the next few years

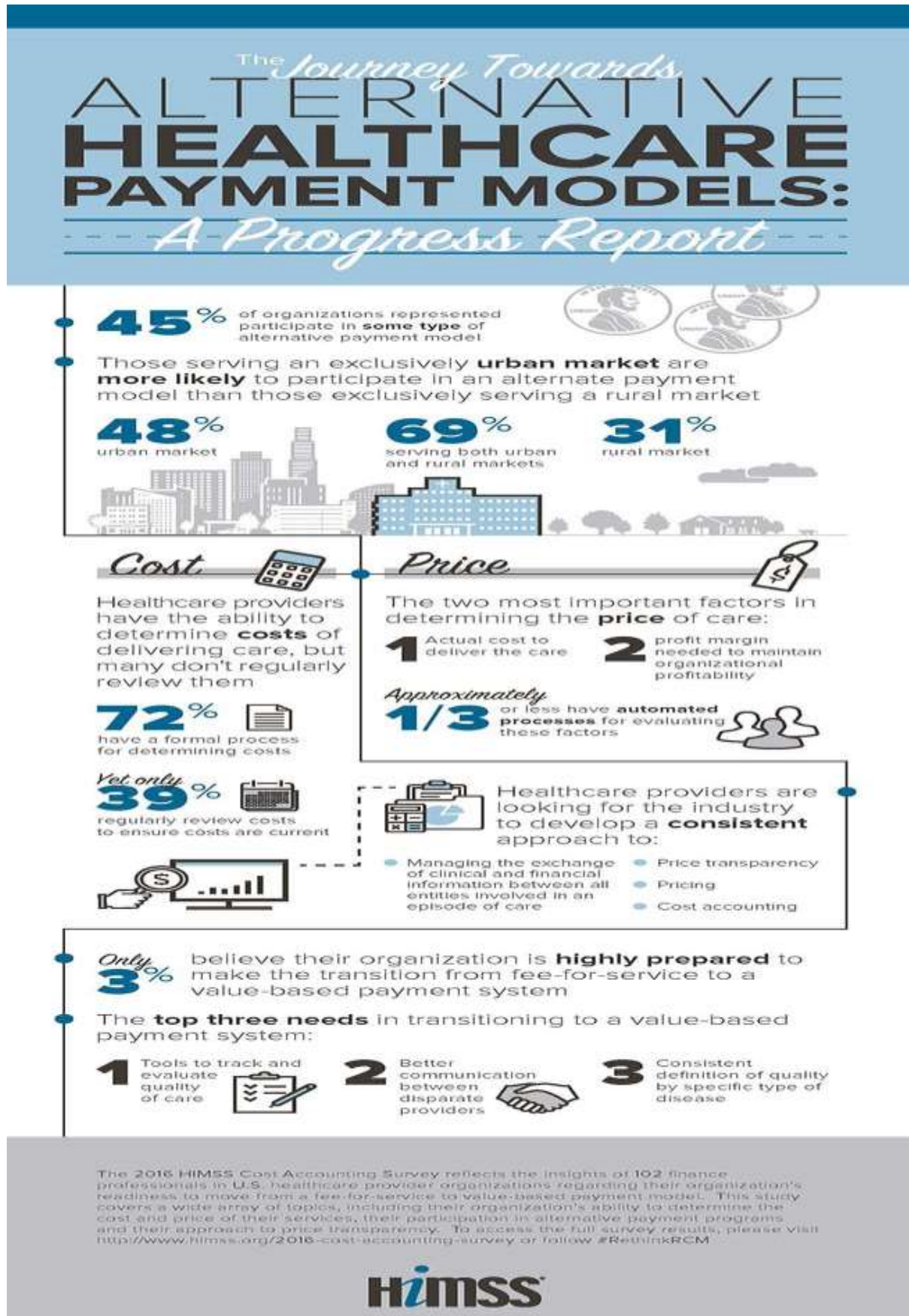


Telehealth – concierge service

SMS texting

The 2016 HIMSS Connected Health Survey – in partnership with the Personal Connected Health Alliance (PCHA) – reflects the insights of 227 IT, informatics and clinical professionals in U.S. hospitals and health systems with regard to their organization's current and future use of connected health technologies. This study evaluates a broad scope of connected health technologies which enables an organization's current and future capability to provide high quality care and to engage patients, anytime and anywhere. To access the full survey results, please visit <http://www.himss.org/2016-connected-health-survey> or follow #Connect2Health







accenture consulting

PATIENTS WANT A HEAVY DOSE OF DIGITAL

High performance. Delivered.

Healthcare consumers in the United States want a digitally enabled care experience, and they are initiating it with greater use of digital tools and electronic health records.

Strategy | Consulting | Digital | Technology | Operations



Healthcare consumers are taking control of their data

The patient experience is going digital, and consumers are leading the way by accessing electronic health records (EHRs) and using digital tools, such as wearables and apps, to manage their health. Patients have firm beliefs about who should access their data—but providers don't always agree.

To improve patient engagement and customer satisfaction, healthcare organizations must close the gap between what patients demand and what providers deliver by investing in digital tools and strategies.

01

Consumers of all ages are accessing their EHR, and they know more about the data that is available to them than two years ago

More US consumers with EHRs are accessing their records, 45% in 2016 vs. 27% in 2014 (see Figure 1). Health technology users age 65-74 are most likely to have turned to their EHRs to manage their health (38% did so in 2016 vs. 22% of those 18-34) (see Figure 2).

FIGURE 1.
More US consumers with electronic health records are accessing their records

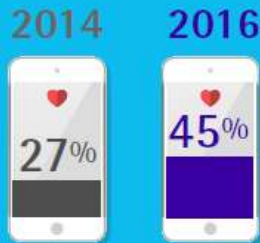
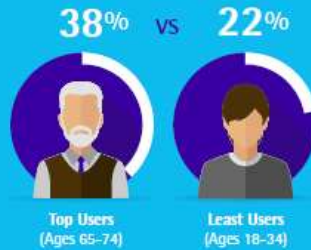


FIGURE 2.
Health technology users age 65-74 are most likely to have turned to their EHRs to manage health



Compared to two years ago, healthcare consumers know more about what data they can access in their EHR. In 2016, 65% with EHRs said they know what data they have access to in their EHR vs. 39% in 2014. However, 35% still don't know what information they can access (see Figure 3).

Interestingly, those patients who have accessed their EHR are doing so to stay informed (41%), but not for help with making medical decisions (6%). Among consumers who know what information they have access to, 41% say accessing lab work and blood test results is most helpful for managing health, while 24% say having physician notes is most helpful (see Figure 4).

Source: Accenture 2016

FIGURE 3.
Consumers know more about what data they can access in their EHR

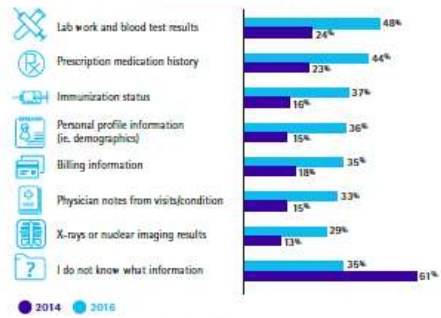
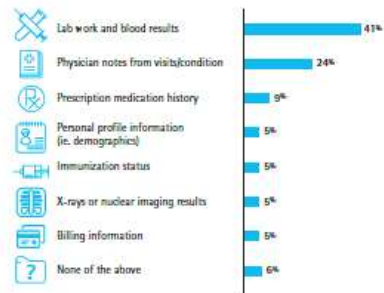


FIGURE 4.
Data that patients with EHRs find most helpful to health management

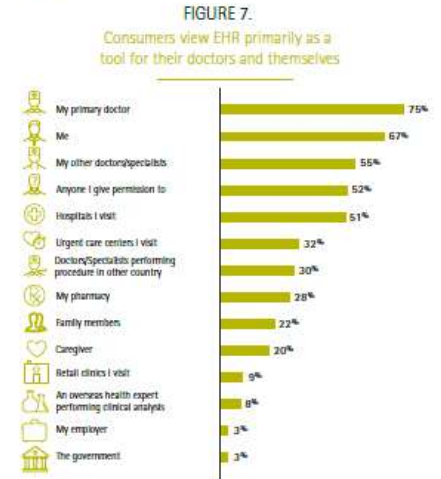
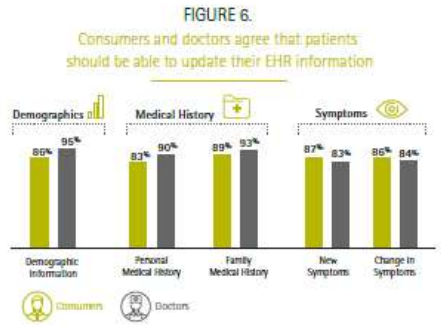
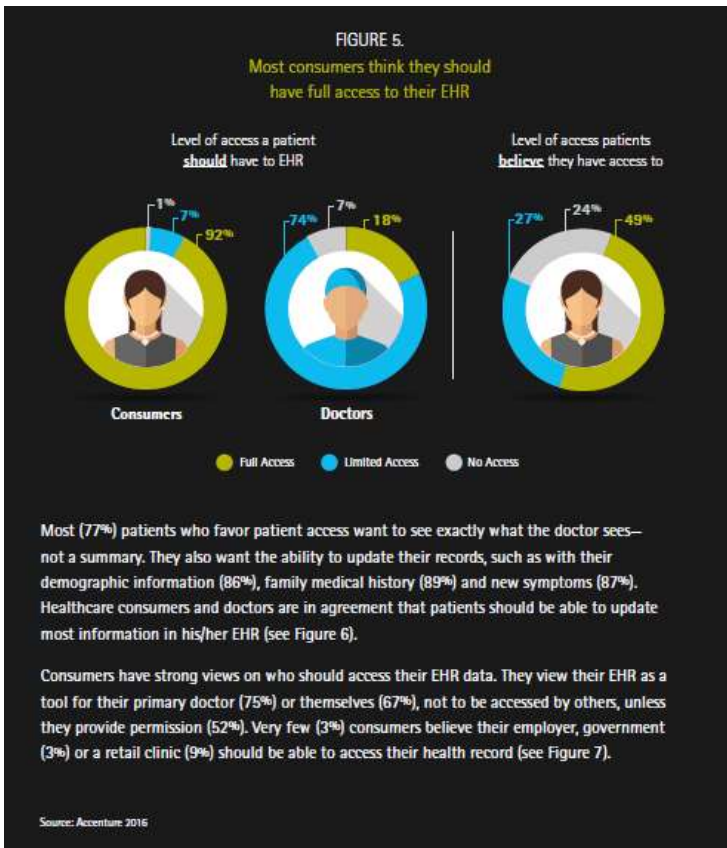


Doctors and consumers don't always agree on what a patient should access in his/her EHR

Most (92%) patients believe they should have full access to their records, while only 18% of physicians share this belief. Interestingly, about half (49%) of patients believe they have full access (see Figure 5). The perception gap about EHR access has widened in the past two years, a 42% decline in physicians and a 10% rise in patients.



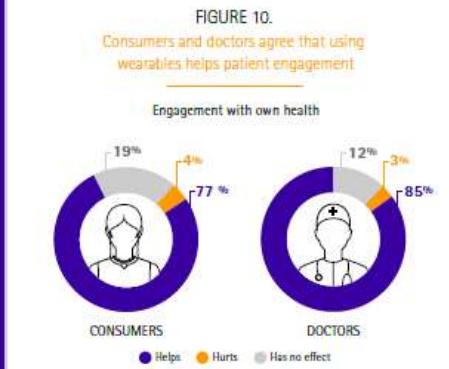
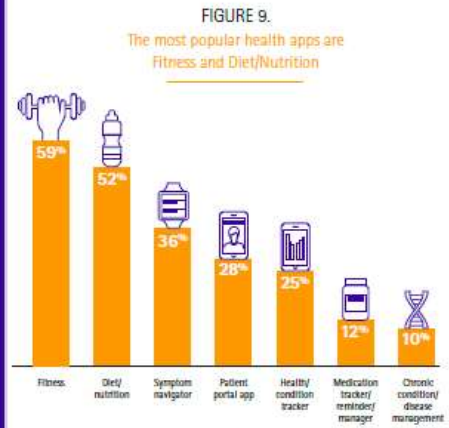
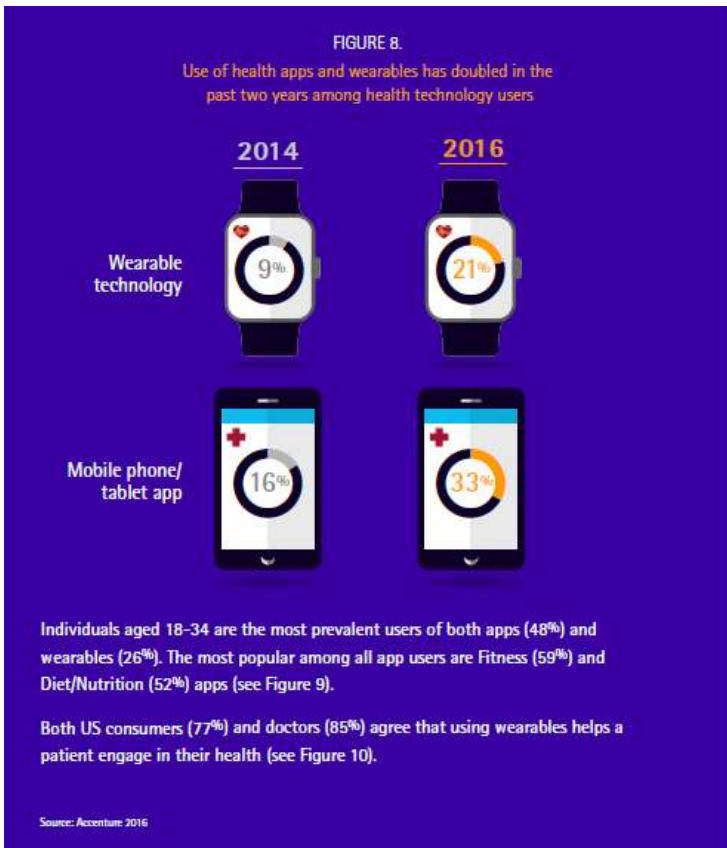
02



Consumers' use of apps and wearables has doubled, and both doctors and patients agree there are benefits

Use of health apps has doubled in the past two years (33% in 2016 vs. 16% in 2014) among consumers who use technology to manage their health. Use of health wearables has also doubled (21% in 2016 vs. 9% in 2014) (see Figure 8). The use of social media has increased from 14% to 21%.

03



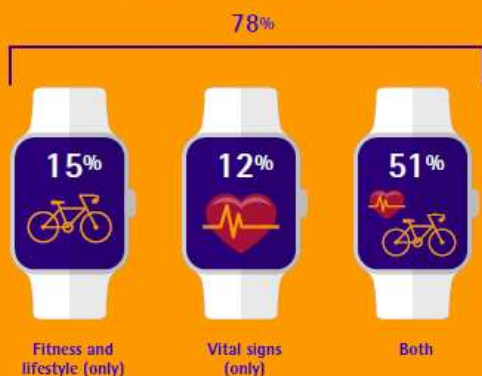
Consumers are willing to track their health using digital tools, and share the data with healthcare professionals

The majority (78%) of healthcare consumers wear or are willing to wear technology to track their lifestyle and/or vital signs (see Figure 11). Of consumers who were asked by a doctor to wear technology to track their fitness and lifestyle (18%) or vital signs (19%), roughly three-fourths (76%) of patients followed the physician's recommendation (see Figure 12).

Most consumers are willing to share wearable or app data with a doctor (90%) or nurse (87%)—and 40% of health app users have already done so. Willingness to share wearable or app data drops when it comes to health plans (63%) or employers (31%) (see Figure 13).



FIGURE 11.
Most US consumers wear, or would be willing to wear, technology for health-tracking



Willingness to wear health technology can also offer data to be used in virtual visits—visits that are increasing in popularity due to convenience and cost advantages

Healthcare consumers and US doctors agree that virtual visits offer lower costs (58% of consumers vs. 62% of doctors) and convenience (52% consumers vs. 80% doctors) for patients, but patients perceive quality of care as a main advantage of in-person visits. Twenty-nine percent of healthcare consumers now say they prefer remote to in-person visits, a small increase from 23% in 2014.

Source: Accenture, 2016

FIGURE 12.
When recommended by a doctor, 3 in 4 consumers followed advice to wear technology to track health

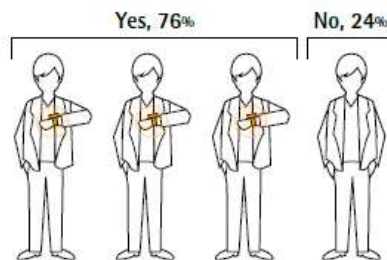
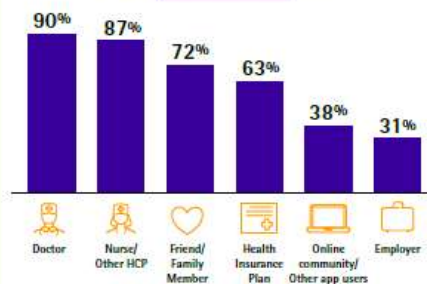


FIGURE 13.
Most consumers are willing to share wearable or app data with a doctor or nurse



PREPARE FOR THE FUTURE BY CLOSING THE GAP

Consumers' speed of digital adoption in the past two years is significant, illustrating that patients are leading the way in using digital tools to manage their health. Access to EHRs is increasing significantly, however there is a gap between physician and patient expectations on the level of access to this information. There is an opportunity for physicians to increase the level of transparency and improve communications with patients.

Providers that invest in digital tools and develop strategies to adapt to consumers' expectations will close the gap between what patients demand, and what providers deliver.



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Accenture 2016 Consumer Survey on Patient Engagement

Accenture commissioned a seven-country survey of 7,840 consumers ages 18+ to assess their attitudes toward health, the healthcare system, electronic health records, healthcare technology and their healthcare providers' electronic capabilities. The online survey included consumers across seven countries: Australia (1013), Brazil (1006), England (1009), Norway (800), Saudi Arabia (852), Singapore (935) and the United States (2225). The survey was conducted by Nielsen on behalf of Accenture between November 2015 and January 2016. The analysis provided comparisons by country, sector, age and use. Where relevant, the survey uses select findings from the [2016 Accenture Doctors Survey](#) to compare the doctor and consumer responses.

* Numbers in the figures may not add to 100% due to rounding.

About Accenture

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network—Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With approximately 373,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com

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Health IT Value STEPS

Feedback from some of the nation's recognized health IT leading healthcare organizations (EMRAMSM Stage 6, Stage 7 and Davies Award hospitals) provides direction on how the HIMSS Value STEPSSM model can help hospitals identify health IT benefits.



Hospitals that have been recognized with a Davies Award or other national EMRAM Stage 6 or 7 award have been able to implement a sophisticated IT environment. This award is given to those hospitals that have demonstrated a high level of patient safety, clinical effectiveness, financial performance, and operational efficiency. The HIMSS Value STEPS model can help hospitals identify health IT benefits.





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TRANSFORMING
HEALTH THROUGH IT

**How Future-Proof HIT Infrastructure
Supports Data Sharing**
March 1, 2016

John D. Halamka, MD, MS
Jonathan Bush

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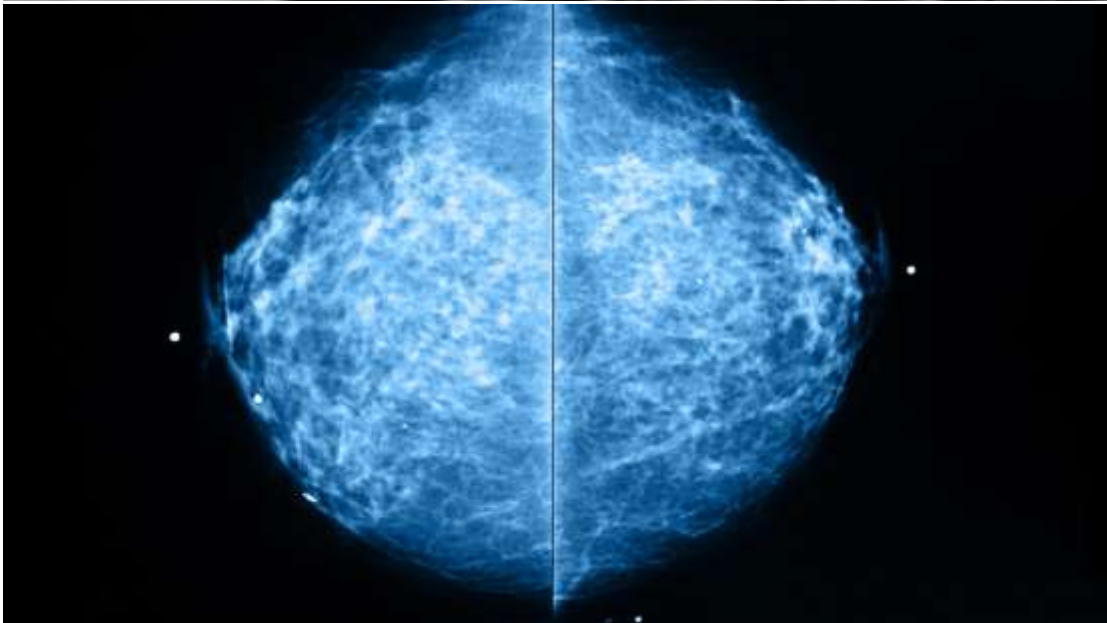
Learning Objectives

- Define the stages of interoperability, and where and how each of them are operating today
- Clarify how a healthcare system that continually “learns” through interoperable data advances accountable care
- Explore the role of record locator services, provider directories, and quality registries in the advancement of interoperability

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THE DISCONNECT




322

RADIOLOGY DEPARTMENT

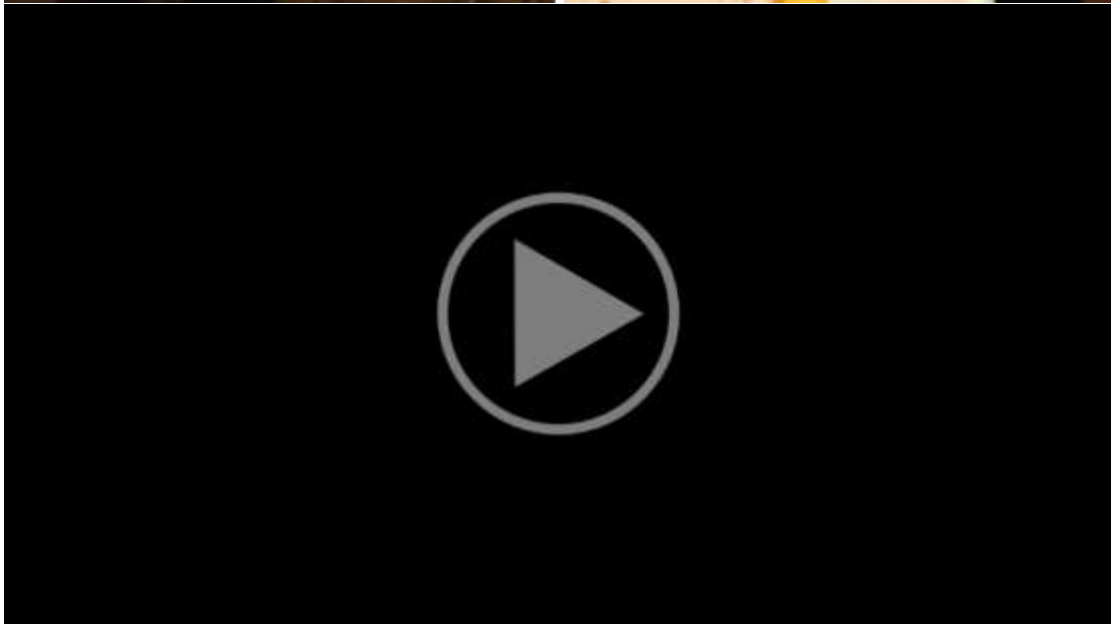
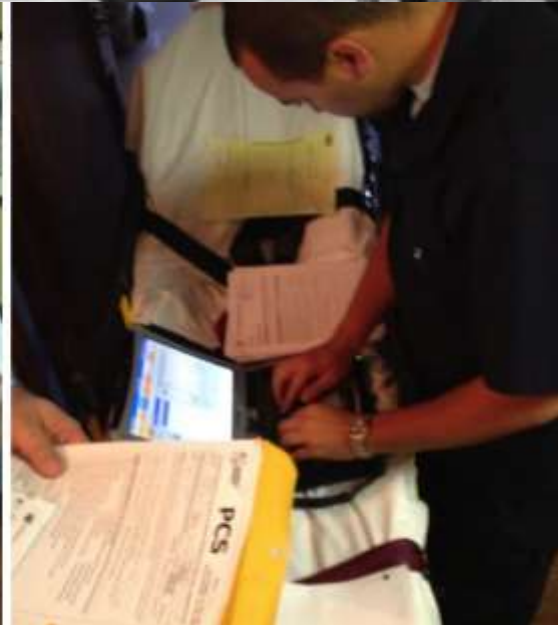
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HENSON, WENDY B., M.D.
GRAVES, MATTHEW R., M.D.
RANDLE, CHARLES B., M.D.
JOHNS, ELLA D., M.D.
WREN, ROSANNA J., M.D.
IBARRA, THOMAS A., PA-C
MADERA, ROBERT S., M.D.
MCDONALD, MICHELE W., PA-C



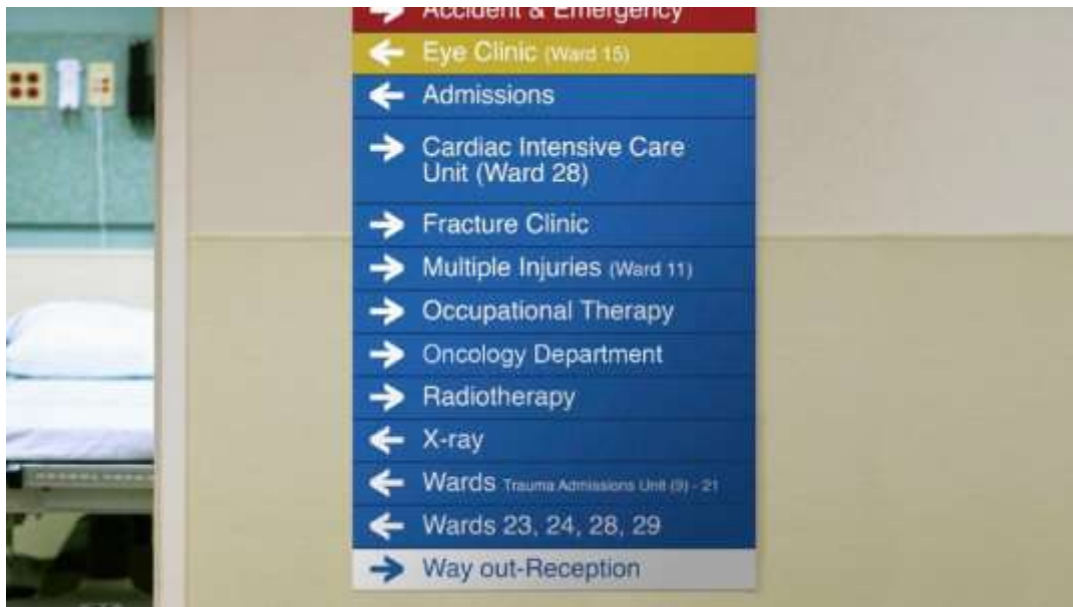


55%
of patients report that
**their medical history
is missing or incomplete**
when they visit their doctor

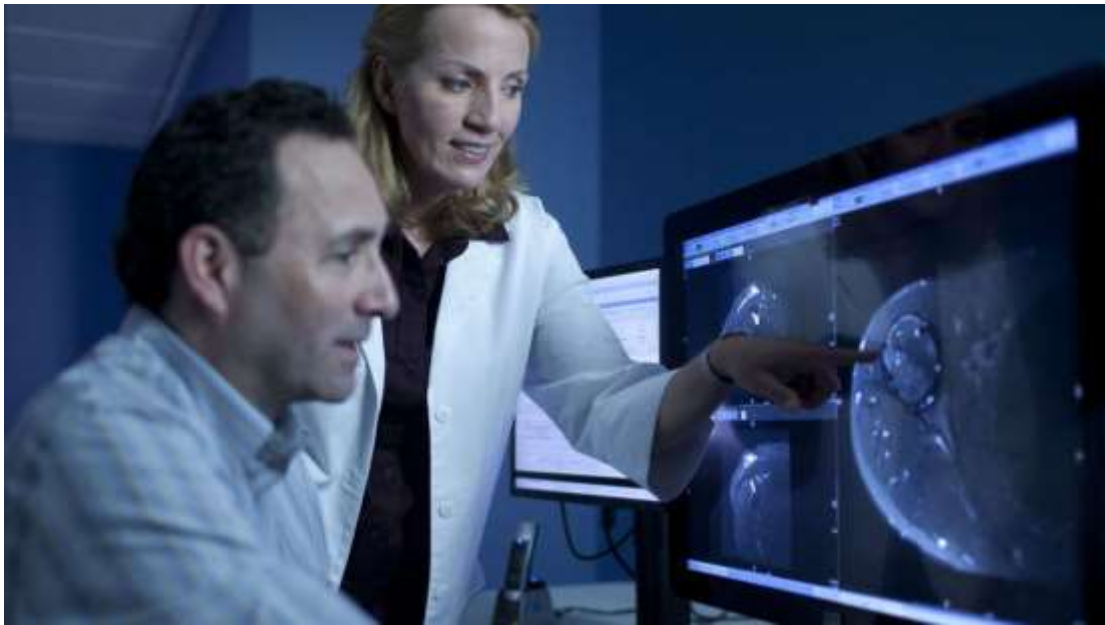
Connected Care and the Patient Experience survey; Surescripts, 2015



HOW WE GOT HERE







WHERE WE ARE NOW

% A1C	HB A1C	HEMOGLOBIN A1C:
% HEMOGLOBIN A1C	HB A1C DIABETIC ASSESSMENT	HEMOGLOBIN A1C:
% HGB A1C	HB A1C, %	HGA1C
% HGBA1C	HBA1C	HGB A
%A1C	HBA1C (HEMOGLOBIN A1C), BLOOD	HGB A %
%HBA1C	HBA1C ESTIMATED AVERAGE GLUCOSE	HGB A1
A1C	HBA1C II	HGB A1C
A1C %	HBA1C-	HGB A1C %
A1C (FOR HGB A1C CALCULATION)	HGB A1C	HGB A1C (GLYCO-HGB)
A1C - LAV	HGB A1C%	HGB A1C GLYCOHB
A1C CALC	HBG A1C	HGBA1
A1C CONCENTRATION	HEMOGLOBIN A1C	HGBA1C
A1C HEMOGLOBIN	HEMA1C	HGBA1C - DIABETES MELLITUS
A1C HPLC	HEMAGLOBIN A1C	HGBA1C - DIABETIC MONITORING
A1C TODAY 5.9	HEMO A1C	HGBA1C - DIABETIC MONITORING -45 YRS OR GREATER
A1C%	HEMOA1C	HGBA1C - PRE-DIABETES MELLITUS
A1C-%HBA1C	HEMOBLOBIN A1C	HGBA1C - SCREENING OR PREDIABETIC MONITORING
A1C-2	HEMOGLOBIN (FOR A1C CALCULATION)	HGBA1C POC
A1C-2*	HEMOGLOBIN (HGB)	HGBA1C-T
A1C2	HEMOGLOBIN (HGB) SOLUBILITY	...
HA1C	HEMOGLOBIN A1C	
HA1C (GLYCOHEMOGLOBIN)	HEMOGLOBIN A1C%	
HA1CB	HEMOGLOBIN A1C, POC	





CONNECTING THE DISCONNECT



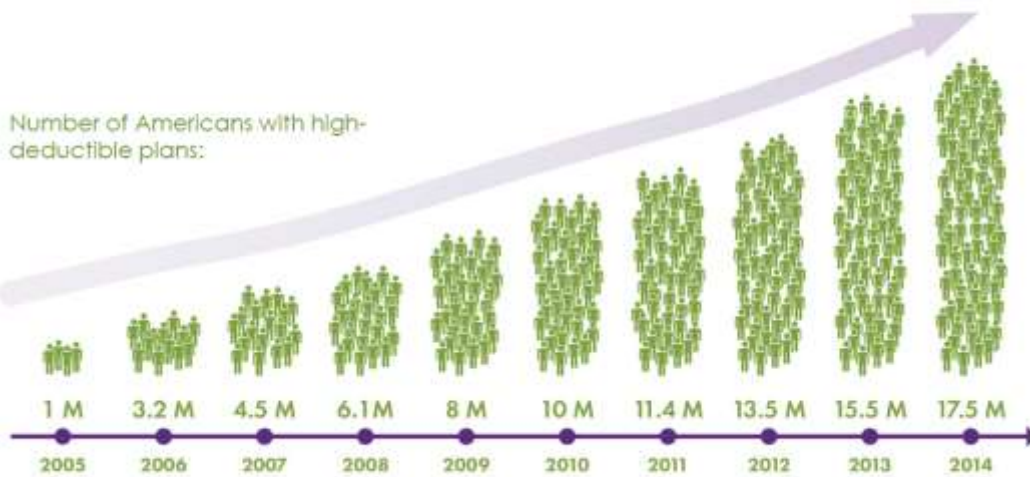
2018:
90% of Medicare
 payments
 tied to quality

2020:
75% of commercial
 plans will be
 value-based



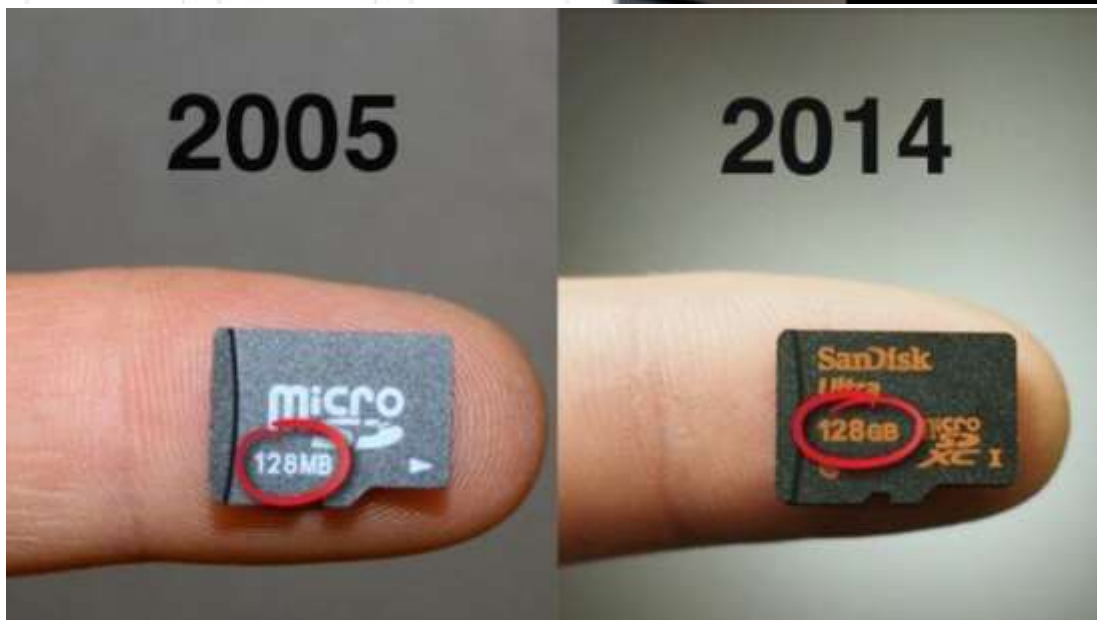
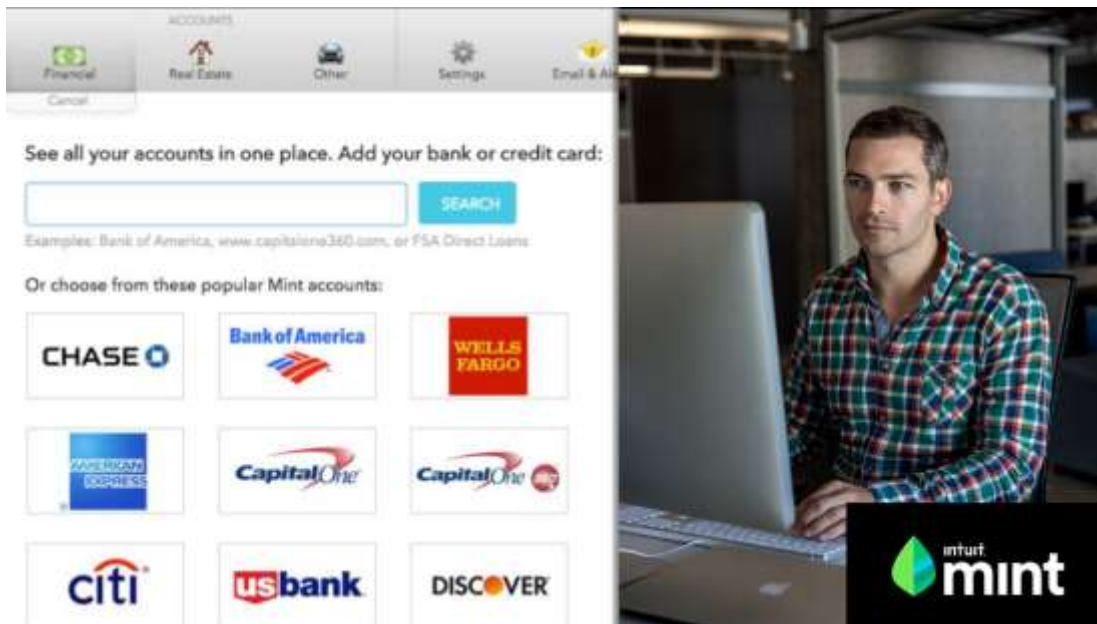
Jan 2015. <http://www.hhs.gov/news/press/2015/spe0120150120a.html>

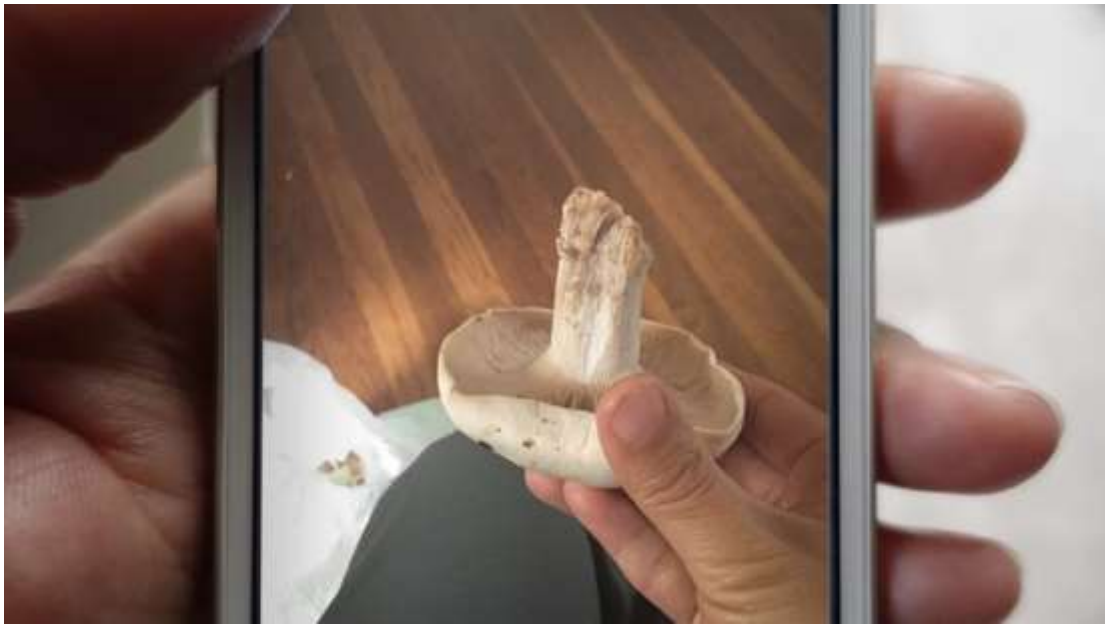
RISING DEDUCTIBLES ARE DRIVING CONSUMERIZATION IN HEALTH CARE



SOURCE: athenaNet data







ONLY
50%
of pediatric
scans are read
by the correct
sub-specialist

A dark blue rectangular block containing a grid of 20 light blue icons of children. The icons are arranged in four rows of five. The first row has five icons, all of which are female figures with pigtails. The second row has five icons, each with a white skeletal structure overlaid on a female figure. The third row has five icons, all of which are female figures with pigtails. The fourth row has five icons, each with a white skeletal structure overlaid on a female figure. To the right of the grid, the text "ONLY 50% of pediatric scans are read by the correct sub-specialist" is displayed in white and light blue.






WHAT IF HEALTH CARE
WORKED AS IT SHOULD?







- 1 It's now possible to **connect the entire health ecosystem**.
- 2 It's **happening...** with or without you!
- 3 It's time to replace **compliance** with **conviction**.



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TRANSFORMING
HEALTH THROUGH IT

**Cybercrime Triage: Managing
Health IT Security Risk**

March 1st, 2015

Stephen Cobb, CISSP
Senior Security Researcher, ESET

DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.

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Conflict of Interest

Stephen Cobb, CISSP

Has no real or apparent conflicts of interest to report.



Agenda

- Learning objectives
- Setting the stage
 - Basic assumptions about the challenges we face
 - An Illustrated Guide to Cybercrime
- Triageing a [healthcare IT] patient
- Sources of knowledge for triage decisions
- Practical examples
- Questions and [hopefully] answers



Learning Objectives

- Discuss the threats to the privacy and security of medical data posed by cybercrime
- Identify what distinguishes the health IT threatscape from that of other industries
- Assess the relative impact and probability of criminal threats to medical data
- Recognize how to prioritize healthcare IT risks and appropriate risk mitigation strategies

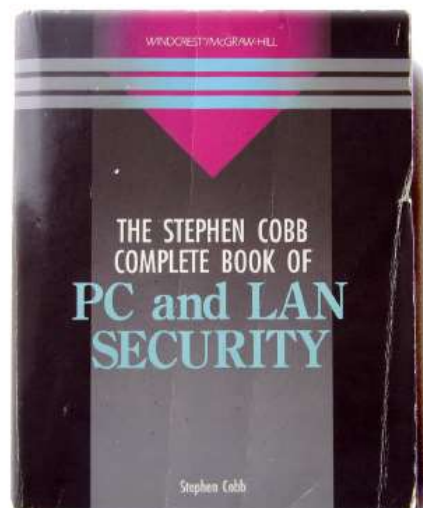
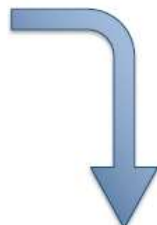
Benefits Realized for the Value of Health IT

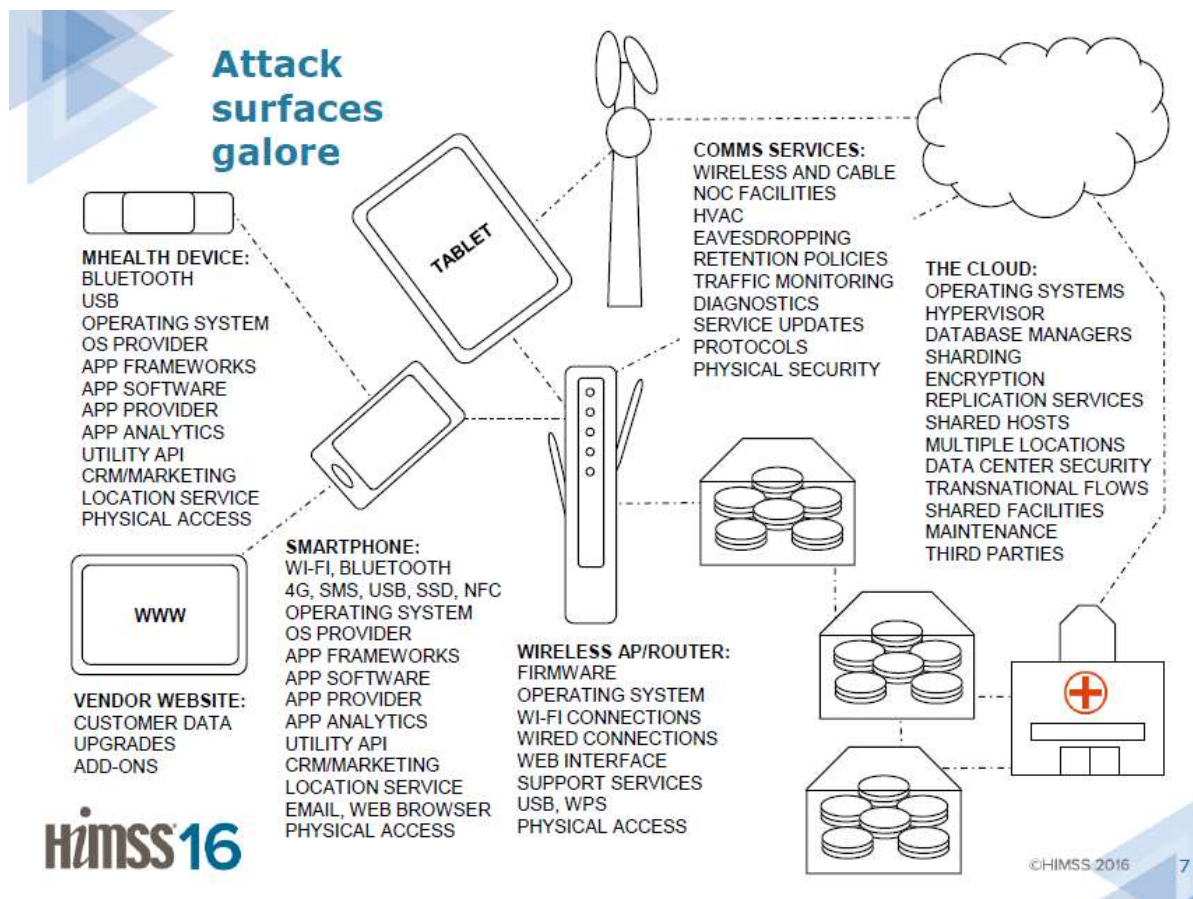
- Significant cost savings can be realized when security posture and security controls are more realistically aligned with threats
- Health IT productivity gains are realized by avoiding breaches and other cybercrime induced damage



In the beginning

- There was pen and paper and the doctor's note
- Then there were mainframes
- Followed by PCs and LANs
- Now this...





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Basic assumptions

- As health-related organizations work to reinforce their security and data privacy protections it is important that they do so in a prudent manner, consistent with the reality of the criminal threats they face.
- Just as medical triage relies upon medical knowledge to prioritize treatment, healthcare IT security needs real world knowledge of the threats most likely to be encountered in order to manage the risks most efficiently, given the economic reality of scarce means that have alternative uses.

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8

Basic assumptions

- Criminals seek Personally Identifiable Information (PII)
- All PII has a dark market value
 - Name and email address
 - Social Security Number
 - Payment card data
 - Bank information
 - Medical records
 - PHI and ePHI



Behind healthcare breach numbers

- Everybody knows that tens of millions of records have been exposed, and million of dollars paid in fines
- And thousands of people have suffered the pain of identity theft
- Less obvious are the countless hours spent solving problems caused by intruders and intrusive code
- Not to mention impacts on patient care when access to data is impeded





What's different in healthcare?

- The biggest security challenge for any information system is to share specific information with specific people but not all information with all people
- Caring for patients requires many more complex forms of “sharing but not sharing” than most other industries
- Caring is not conducive to crime fighting...
- Doctors and nurses go to work every day to help others
- Other people go to work every day to steal information (could be PII, PHI, ePHI, whatever they can find, regardless of the consequences to data subjects and system owners)



Medical systems = life and death

- Cybercrime seeks data, but the side effects are unpredictable
- No way to predict the effect of malware in the wild
- Likewise, the impact of unauthorized access to systems
- Lack of availability of data is bad, lack of system availability could be even worse: DDoS or blackout
- Malware used for both: c.f. KillDisk file deletion component of BlackEnergy detected in Ukrainian power company systems prior to recent power outages (WeLiveSecurity.com)

```
unicode 0, <.crt.bin.exe.db.dbf.pdf.djvu.doc.docx.xls.xlsx.jar.ppt.pp>
unicode 0, <tx.tib.vhd.iso.lib.mdb.accdb.sql.mdf.xml.rtf.ini.cfg.boot>
unicode 0, <.txt.rar.msi.zip.jpg.bmp.jpeg.tiff>,0
```



POLL #1 – Loss of data/service

Has your healthcare organization lost access (for more than a few hours) to important data due to a network intrusion or denial of service attack:

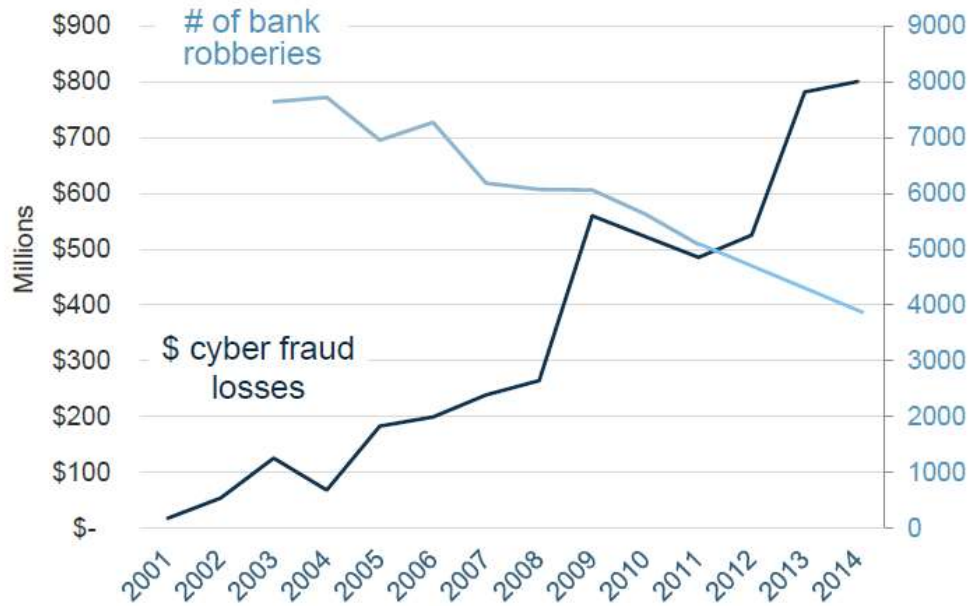
- A. At least once in the last twelve months
- B. More than once in the last twelve months
- C. I don't work for a healthcare organization
- D. I work for a healthcare organization but do not know the answer



The Cybercrime Problem: A global market for stolen PII and the means to steal it



Low risk crime with big rewards



And tools that continue to evolve:





Hacker's view of a victim system infected with a Remote Access Terminal or RAT:

- All files, devices
- Network connections
- Passwords, keystrokes
- Webcam and audio

Dark markets for data are thriving

- Carding sites
- Sold as card "dumps"
- E.g. McDumpals
- Priced by
 - Freshness
 - Balance
 - Type
 - Location



These screenshots depict mcdumpals.com, a website that illegally appropriated and changed imagery and iconography trademarked by McDonald's the foodservice retailer.



WALLET \$0.00 add funds	CART 0 view items
BROWSE DUMPS	
WHOLESALE	
ACCOUNT	
CHECKER	
SUPPORT	

Wholesale

* Dumps from packs are not refundable

<p>1245 for \$10,500.00</p> <p>Reseller McDumpals Base MA-CT Date pre-sale 2014-03-31 Date sale 2014-03-31 Age 1 month and 10 days Details View more</p> <p>asd</p> <p>Quick buy Add to cart</p>	<p>1110 for \$7,500.00</p> <p>Reseller McDumpals Base MA-CT Date pre-sale 2014-03-31 Date sale 2014-03-31 Age 1 month and 2 days Details View more</p> <p>Buyme!</p> <p>Quick buy Add to cart</p>
---	--


September 25, 2013
Price reduction!
Old, non refundable bases reduced in price: Base WestCoast-1 all prices set to 1\$ Base MidWest-1 all prices set to 1\$ Base MidWest-2 all prices set to 1\$ Base SouthEast-1 all prices set to 1\$

December 4, 2013 — February 15, 2014
Holiday Shopping
Update #26
Posted by mcdumpals on 2013-12-04 23:52:16:
The long awaited first hand update is here!
The wait is over and it was worth it!

February 10, 2014 — February 15, 2014
New York, Disneyland
Base US-Disneyland added, 30hrs refund time, owner Euclid One of the largest bases to ever be added on Mcdumpals! Approval ratio could be better and depends strongly on bins you choose. We have lowered starting prices to ~10\$-15\$-22\$ Base also has State and Region for every dump. Most are track as well.

EVERYTHING MUST GO!

hours refund policy
krebsonsecurity.com



Flickr: Sean MacEntee

Way more than just credit cards

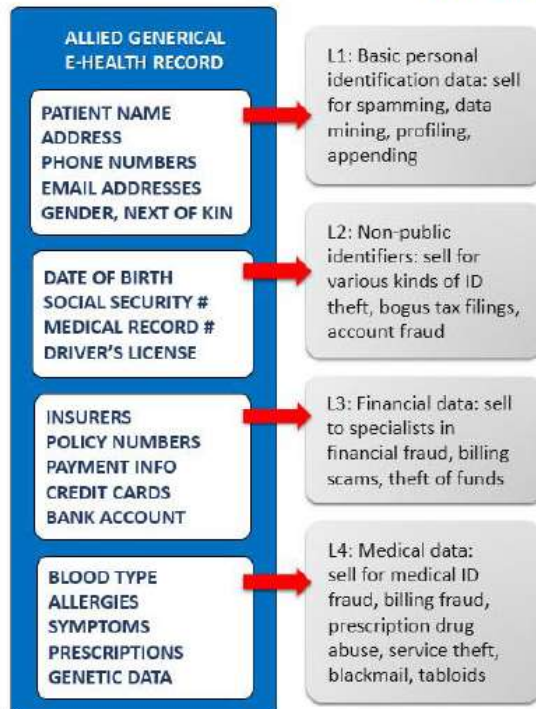
Buying and selling stuff, auction houses, sales forums, gaming.

See also: The separate [Drugs](#) and [Erotica](#) sections for those specific services.

- [Contract Killer](#) - Kill your problem (snitch, paparazzo, rich husband, cop, judge, competition, etc). (Host: FH)
- [BitPoker v1.93](#) - Poker (Bitcoin). (Host: FH)
- [Buttery Bootlegging](#) - Get any expensive item from major stores for a fraction of the price! (Host: FH)
- [Stat ID's](#) - Selling fake ID's.
- [Cheap SWATTING Service](#) - Calls in raids as pranks. (Host: FH)
- [Data-Bay](#) - Buy and sell files using digital currency.
- [The Last Box](#) - Assassination Market (Bitcoin). - DOWN 2011-08-07
- [Pirax Web DDoS](#) - Take out your enemies in seconds. (Host: FH)
- [Hacking Services](#) - Hacks IM and Social Nets, does DDoS, sells bank/credit/paypal accounts.
- [Email Hacker](#) - Hacks emails (Bitcoin). (Host: FH)
- [CC4ALL](#) - Selling valid Credit-Cards. Most from Germany. (Host: FH)
- [Slash'EM online](#) - Super Lots'A Stuff Hack-Extended Magic tournament server (Bitcoin).
- [Rent-a-Hacker](#) - Pay a professional hacker to solve your problem, destroy your enemies. (Host: FH)
- [The Pirates Cove](#) - Classifieds. (Host: FH)
- [BitLotto](#) - A lottery using Bitcoin. (Host: FH)
- [Brimstone Entertainment](#) - Escort Ads, Strippers, Adult Entertainers. (Host: FH)
- [Red Dog Poker](#) - Play a simple game of poker (Bitcoin).
- [CouponaTOR](#) - A service for getting retail coupons created (Bitcoin). (Host: FH)
- [Virtual Things](#) - Buy virtual goodies like premium accounts, usenet access or domains (Bitcoin). (Host: FH)

What about health data?

- Valuable to criminals at multiple layers of penetration
- From paper records at admissions desk
- To full medical records on servers
- Multiple ways to monetize the effort to compromise your security





So let's look at a patient

- Healthcare provider with facilities in three states
- CEO presents with persistent fear of OCR audit despite assurances that entity is HIPAA compliant
- Initial examination reveals false sense of security
- Patient not aware of numerous serious conditions
- Specialist referral requested



Self-assessment v. Expert audit*

- | | |
|--|---|
| • No Windows XP systems | • 2 XP systems connected to devices |
| • Passwords all have expiry date | • All passwords set to never expire |
| • All users deleted on termination | • 50+ former employees still active |
| • All systems patched and updated | • 50+ systems missing >10 patches |
| • All systems have current antimalware protection | • No protection on 10% of systems, including all servers |
| • Firewall in place with Intrusion Prevention System | • No, because somebody forgot to subscribe to IPC updates |



POLL #2 – Outside audit

In the last twelve months, has your healthcare organization used an outside party to conduct at least one security audit or penetration test

- A. Yes
- B. No
- C. I don't work for a healthcare organization
- D. I work for a healthcare organization but do not know the answer

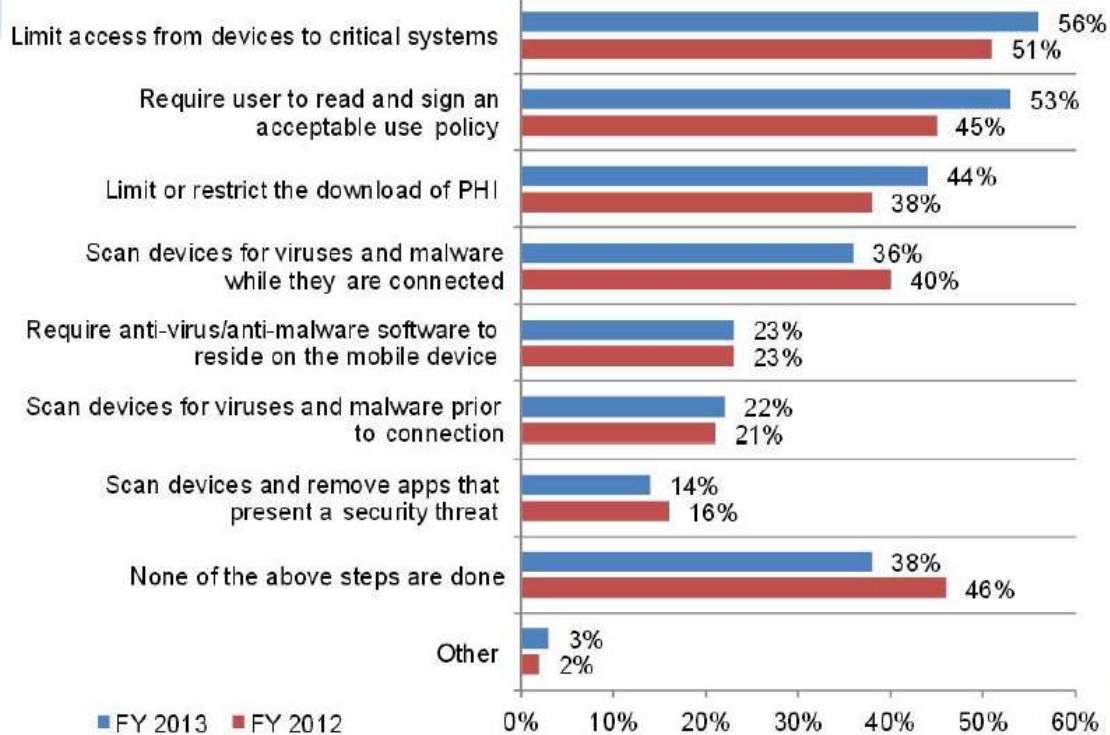


Why suspect all is not well?

- Word on the street, consultants, vendors
- Survey data (use with caution)
- Surveys findings can be helpful when used responsibly
- For example, how might malware get into systems?



Steps taken to protect healthcare network from mobile devices (Ponemon) #HIMSS16



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What do the surveys say?



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Health IT security concerns

KPMG		Ponemon	
Malware infections	67%	Employee negligence	70%
HIPAA violation/patient exposure	57%	Cyber attackers	40%
Employee theft/negligence	40%	Use of public cloud services	33%
Medical device insecurity	32%	Mobile device insecurity	32%

Ponemon: 5th Annual Benchmark Study on Privacy & Security of Healthcare Data

KPMG: Healthcare and Cybersecurity, 2015



Breaches, incidents, actors, actions

Ponemon		HIMSS		Verizon	
Criminal attack	45%	Negligent insider	46%	Physical	35%
Lost or stolen device	43%	Online scam artist	36%	Error	27%
Unintentional employee action	40%	Social engineering	16%	Misuse	18%
Third part snafu	39%	Hacker	16%	Hacking	11%
Technical systems glitch	31%	Malicious insider	12%	Malware	6%
Malicious insider	12%	Nation state	5%	Social	3%

Incidents and causes

Incidents experienced*		Root cause of breaches*	
Lost or stolen devices	96%	Criminal attack	45%
Spear phishing	88%	Lost or stolen device	43%
Web-borne malware attacks	78%	Unintentional employee action	40%
Software vulnerability >3M	54%	Third part snafu	39%
Software vulnerability >3M	45%	Technical systems glitch	31%
SQL injection	38%	Malicious insider	12%

*Ponemon

Defenses in place: above 40%

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Anti-malware	87%	User access controls	55%
Firewalls	85%	Mobile Device Management	51%
Encryption (at rest)	70%	Access control lists	50%
Encryption (in transit)	69%	Network monitoring tools	49%
Audit all access	64%	Web security gateway	47%
Patch and vulnerability management	61%	Single sign on	46%
Intrusion detection systems	55%	Intrusion prevention system	46%
		Data loss prevention	42%

HIMSS: Cybersecurity Survey, June 2015



Look at what's not on the 40% list?

- Physical loss prevention
- Strong authentication
 - Authentication of Public Key/Web of Trust
 - Biometric technologies (static)
 - Digital signature
 - Multi-factor digital identity
 - Biometric technologies (static)



POLL #3 – Relative risk

Which of the following do you think it the biggest threat to your organization:

- A. Theft of a device containing unencrypted PII
- B. Customer privacy complaint leading to an audit
- C. A prolonged denial of service attack
- D. A malware infection



Biggest risks (per Verizon DBIR)

1. Theft leading to loss of physical assets
2. Theft leading to breached medical records
3. Privilege abuse leading to breached medical records
4. Theft leading to breached personal information
5. Privilege abuse leading to breached personal information
6. Disabled physical controls leading to loss of physical assets
7. Disabled physical controls leading to breached medical records
8. Knowledge abuse leading to breached medical records
9. Phishing leading to altered behavior
10. Data mishandling leading to breached medical records

Higher



Lower



Triage in cases of missing laptop (common cause of PHI exposure)

- Step 1: Was it lost or stolen? How long ago?
- Step 2: Can it be remotely tracked/locked/wiped?
- Step 3: Was it encrypted?
- Step 4: Does it have two-factor authentication?
- Step 5: If no to 3 or 4, does that violate policy, or do you have documented reasons for not encrypting?
- Step 6: Do you have backups of the affected data?



Surveys say? Physical loss/theft prevention is the most urgent treatment required to reduce PHI exposure

- First apply liberally:
 - Physical loss prevention
 - Employee education
 - Employee education about loss prevention
 - Employee oversight and understanding
- And if the incident triggers an audit:
 - Prepare to show your risk analysis
 - Document your risk assessment



Unfortunately that's not the only concern in 2016

- A review of the many 2016 cybersecurity trend/threat predictors suggests a need to watch for the following:
 - Denial of service attacks (as cover for system intrusion, malicious code insertion)
 - Very targeted and/or realistic phishing attacks
 - Malware attacks on, and/or spread by, servers
 - Disgruntled employees and insecure partners



Because people ARE concerned

- Percentage of adults surveyed who expressed concern regarding the security of their health data:
 - 70% of adults in their 20s & 30s
 - 80% of adults in their 40s
 - 83% of adults in their 50s



Benefits Realized for the Value of Health IT


- Significant cost savings can be realized when security posture and security controls are more realistically aligned with threats
- Health IT productivity gains are realized by avoiding breaches and other cybercrime induced damage



Questions?

- Stephen.Cobb@eset.com
- www.Linkedin.com/in/stephencobb
- @ESET and @zcobb
- www.WeLiveSecurity.com

附錄十、10 Essential Point-of-Care Applications for Health Providers 演講簡報



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**TRANSFORMING
HEALTH THROUGH IT**

**10 Essential Point-of-Care
Applications for Health Providers
March 1, 2016**

Linda Hogan, PhD
Director, Faculty Development
Family Medicine Residency, UPMC – St. Margaret
Department of Family Medicine, University of Pittsburgh

UPMC LIFE CHANGING MEDICINE

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Conflict of Interest

Linda Hogan, Ph.D

Has no real or apparent conflicts of interest to report.

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Agenda

Welcome and Introduction (1 minute)

Introduction to one representative point-of-care app from each of the following three categories

- 1) Medical Decision Making (3 minutes)
- 2) Drug Information (3 minutes)
- 3) Patient-Centered (3 minutes)

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Group activity-practicing with the apps (15 minutes)

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- 1) Medical Decision Making (3 minutes)
- 2) Drug Information (3 minutes)
- 3) Patient-Centered (3 minutes)

Group activity-practicing with the apps (15 minutes)

Group discussion and feedback (30 minutes)

Summary (5 minutes)

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Learning Objectives

Describe how mobile applications can be used at the point of care

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Learning Objectives

Describe how mobile applications can be used at the point of care

Choose appropriate and effective mobile applications in practice to generate clinical recommendations

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Learning Objectives

Describe how mobile applications can be used at the point of care

Choose appropriate and effective mobile applications in practice to generate clinical recommendations

Demonstrate to patients the use of applications in an effort to improve their health

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Audience response 1

How often do use any type of mobile app?

- 1) At least once a day
- 2) Once a week
- 3) Less often
- 4) Never



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Credit: Shutterstock/Oleksiy Mark



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Audience response 2

Have you used mobile apps in your clinical practice?

- 1) Yes
- 2) No



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<http://www.himss.org/ValueSuite> ©HIMSS 2016



STEPS™ Color-Coded Value Story

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- S
- T
- E
- P
- S



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S = Physician/provider Satisfaction with point of care applications available on their mobile devices



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T = Improved Treatment/Clinical outcomes with up to date, convenient reference information for clinical decision-making



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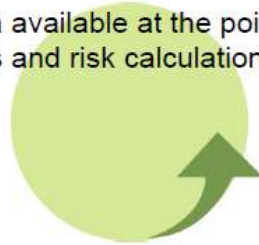
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STEPS™

S



E = Electronic Information/Data available at the point of care for differential diagnosis and risk calculation



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STEPS™

S

T



P = Many of these patient-centric devices are designed to increase Patient Engagement in their own care and facilitate shared decision making with their healthcare team



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STEPS™

- S
- T
- E
- P

S = Savings can be realized by the provider or patient or both. One of the apps shared in this presentation is designed to save patients money on their prescriptions. Most are designed to help healthcare providers and patients save either money or time or both.



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STEPS™

- S
- T
- E
- P
- S



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Audience response 3

A 35 year old male comes to your office for an annual health maintenance exam. He states he is healthy overall and is only here as this physical is mandated by his job.

Which mobile device-based app could you use to identify the preventive screening he needs at this visit?

- 1) Calculate by QxMD
- 2) AHRQ-ePSS
- 3) LactMed
- 4) MedCoach



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Audience response 3

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Medical Decision Making Applications

Shots by STFM
QxCalc
Doctor Derm
Bugs and Drugs
AHRQ ePSS



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AHRQ- ePSS

Agency for Healthcare Research and
Quality- Electronic Preventive Services
Selector



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AHRQ- ePSS

Great for identifying clinical preventive services that are appropriate for your patient

Can be used to search and browse U.S. Preventive Services Task Force (USPSTF) recommendations

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Functions



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Functions



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Impression



Pros

- Great point of care tool
- Gives patient-appropriate, evidence-based, graded screening recommendations from the USPSTF
- Can keep up to date with USPSTF guidelines
- User friendly and easy to follow interface

Cons

- Some tools are PDFs not always easy to read

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Drug Information Applications

LactMed®
Micromedex®
Lexicomp®
UpToDate®
Epocrates®



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Drug Information Applications

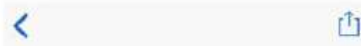
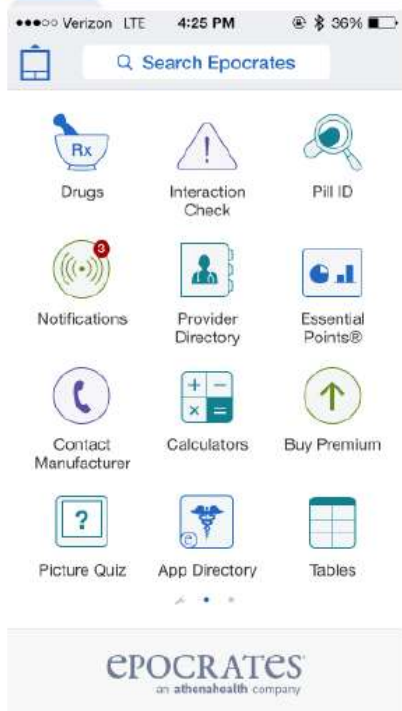
LactMed®
Micromedex®
Lexicomp®
UpToDate®
Epocrates®



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Welcome to Epocrates!

Thank you for downloading Epocrates. You join over 1,000,000 healthcare professionals who are saving time and improving patient care with Epocrates' continually updated clinical information.

You will receive an email shortly that contains detailed information about your new app. Please retain this email for your reference. It includes important feature information and instructions for

[Read More Info](#)



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Impression

Pros

- Easy to use at the point of care
- Useful tool for learners

Cons

- Takes time to get oriented to all the application has to offer
- New information is selective



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Patient-Centered Applications

My Fitness Pal
On Track
MedCoach



informationweek

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Patient-Centered Applications

My Fitness Pal
On Track
MedCoach



informationweek

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MedCoach®



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Organizes medication list,
pharmacy information,
prescriber information

Has drug information

Similar to MyMedSchedule®



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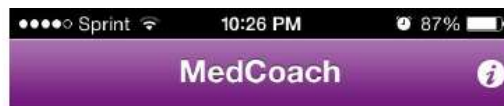
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Reminders



Refills



History



Medications



Doctors



Pharmacies



Settings



About



Share

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Urgent Care – Doctors 24/7



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Impression

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- Pros
 - No data usage
 - Notifications/alerts
 - Ease of use
 - Many features
 - One stop health info organization
- Cons
 - Takes time to understand all features



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Your turn...

Which apps do you use that we did not review?



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<http://www.himss.org/2016/04/06/>

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Today's Case:

SW is a 46 yo WM presents 1/25 for his annual physical, 1 week after getting his routine blood work done. His last physical was 10 years ago.

- PMH: Hypertension, Type 2 diabetes, depression
- SH: Tobacco 20 pack-year hx, alcohol 1 drink/week; no illicit drugs, sexually active with >3 partners
 - Exercise: walks outside during cigarette break, no formal exercise
 - Rarely checks his blood glucose; misses 1 dose of medications/week
- No surgical history, physical unremarkable
- Labs: LDL 102 HDL 44 TC 186 TG 100
- HbA1c: 10.9%
- VS: BP 138/92
- Ht: 5'9" Wt: 235 lbs BMI: 34.7 kg/m²

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Medications

Metformin 1000 mg twice daily
Lisinopril 10 mg daily
Amlodipine 10 mg daily
Tamsulosin 0.4 mg daily
Fluoxetine 40 mg daily
MVI daily
Saw palmetto daily

1. List the grade A USPSTF recommendations for SW
2. Calculate his ACC/AHA CV Risk score (ASCVD)
3. Based on his ASCVD risk score, you decide to prescribe simvastatin 40mg. Are there any drug interactions with his other prescription medications?



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Which mobile apps (if any) would you currently use to find the answers to these questions?



1. List the grade A USPSTF recommendations for SW
2. Calculate his ACC/AHA CV Risk score (ASCVD)
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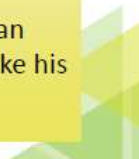
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 - Sexually active with >3 partners
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 - Surgical history: none
 - Labs: LDL 102 HDL 44 TC 186 TG 100
 - VS: BP 138/92
 - Ht: 5'9" Wt: 235 lbs
 - Physical findings: unremarkable
 - **Medications: Misses average of 1 dose per week**
 - Metformin 1000mg twice daily
 - Lisinopril 10mg daily
 - Amlodipine 10mg daily
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 - Fluoxetine 40mg
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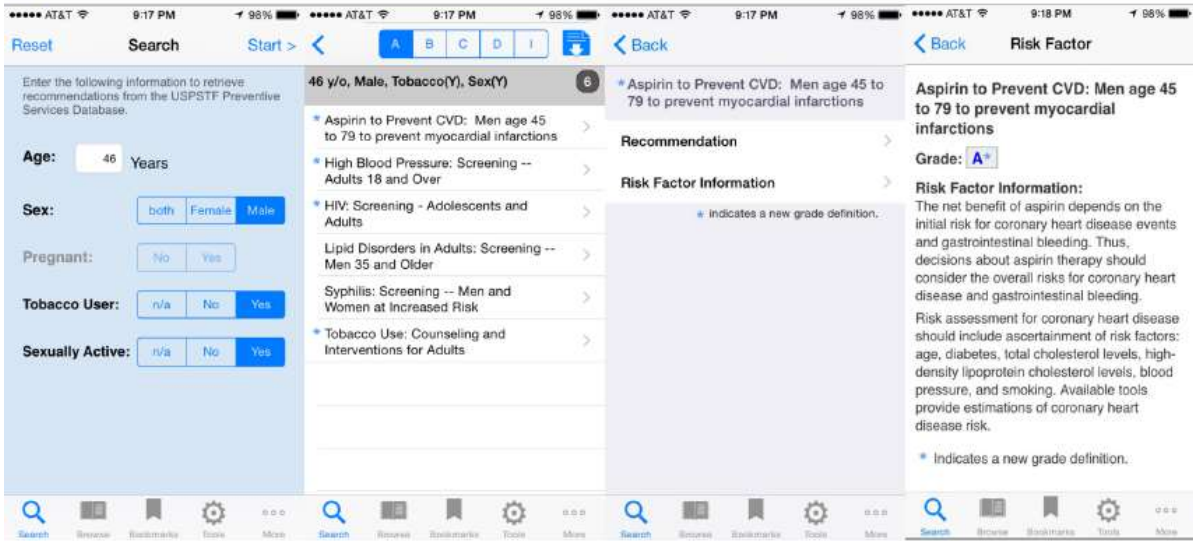
*** Bonus: Demonstrate using an app to help him remember to take his medications





Answers

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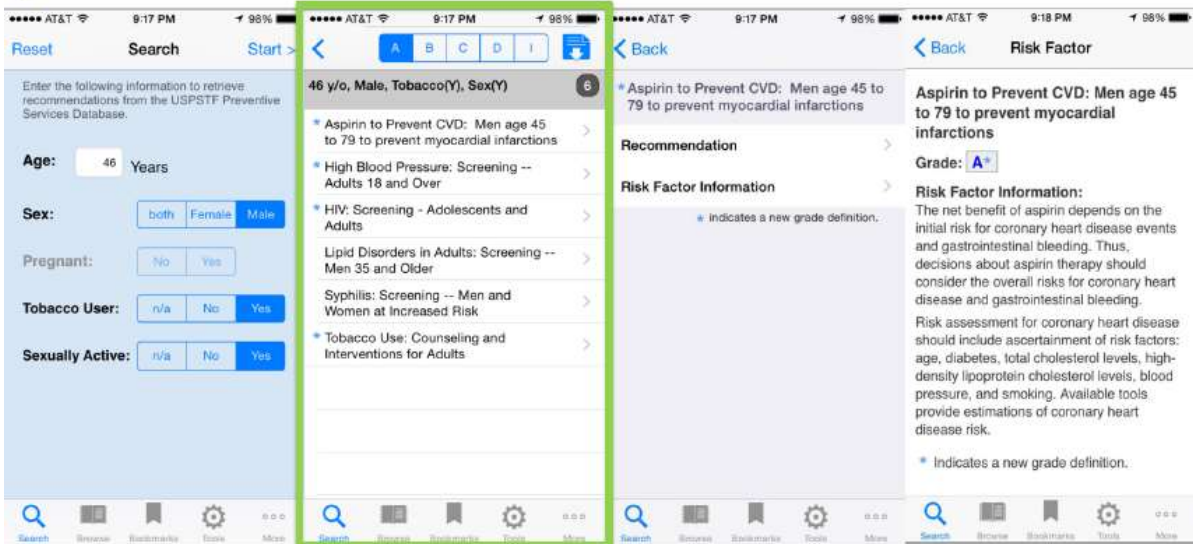
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Answers

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Audience response 4

What did you come up with for SW's 10-year atherosclerotic cardiovascular disease (ASCVD) risk score ?

- 1) 1.3 %
- 2) 9.5 %
- 3) 14.9 %
- 4) 20.5 %



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Answers

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QUESTION	QUESTION	QUESTION
Treatment for High Blood Pressure?	Smoker?	Diabetes?
ANSWER CHOICES	ANSWER CHOICES	ANSWER CHOICES
Yes	Yes	Yes
No	No	No

RESULTS
10-Year Risk of Atherosclerotic Cardiovascular Disease (ASCVD) 14.9 %
10-Year Risk of ASCVD (%) for Someone of Same Age with Optimal Risk Factor Levels 1.3 %

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Answers

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Three screenshots of a questionnaire:

- Question 7/9: Treatment for High Blood Pressure? (Yes/No)
- Question 8/9: Smoker? (Yes/No)
- Question 9/9: Diabetes? (Yes/No)

Results from the ACC/AHA CV Risk Calculator:

- 10-Year Risk of Atherosclerotic Cardiovascular Disease (ASCVD): **14.9 %**
- 10-Year Risk of ASCVD (%) for Someone of Same Age with Optimal Risk Factor Levels: **1.3 %**

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DotAlert Message: Multidrug-Resistant Shigellosis Spreading in the US

Answers

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InteractionCheck

amlodipine
simvastatin

2 Drugs

1 Interaction Found

View All Interactions

Avoid / Use Alternative

amlodipine + simvastatin

View Interactions by C

amlodipine
simvastatin

Edit View

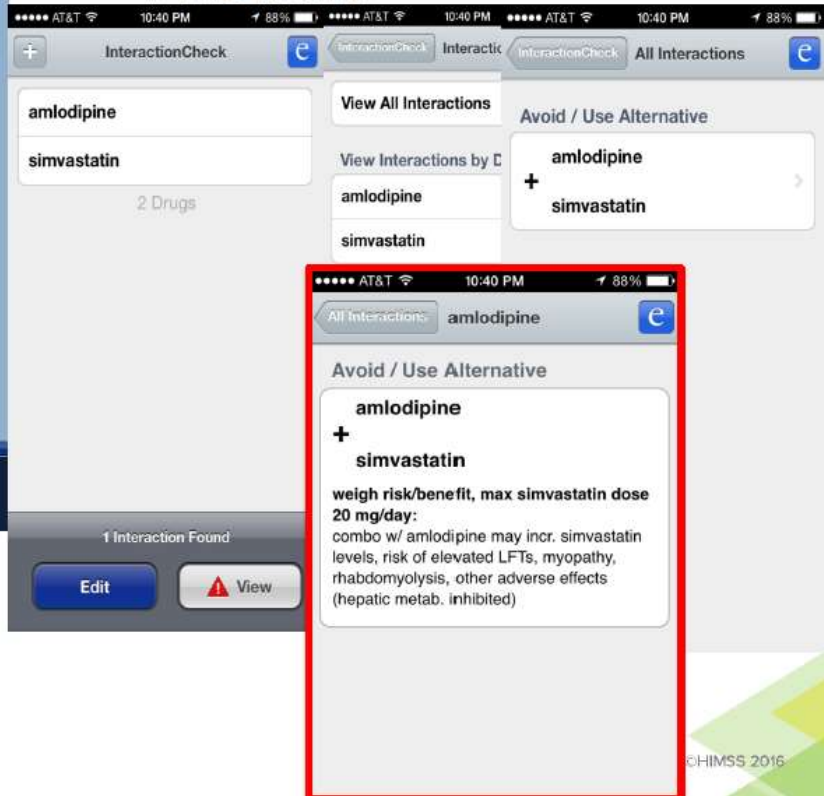
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Answers

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