

**A future
for
mHealth applications
and
services**

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Senior Director, Internet Business Solution Group, Cisco



“Our Mission is to establish an eco-system of interoperable personal health systems that empower people & organizations to better manage their health and wellness”

Infant



Amateur Athlete



Diet/Fitness Focused



Worried Well



Chronic Patient



Acute Recovery



Elderly Living Independently



CONTINUUM of LIFE

Continua Health Alliance enables a personal health eco-system that empowers individuals & families to better manage their own health and wellness across the continuum of life and care methods.

CONTINUUM of CARE GIVERS

New Parents



Fitness Wellness Coach



The Family



Home Nursing Professional



Doctor/NP/Nurse



mHealth - A definition:

The provision of medical services through the use of portable **devices** with the capability to create, store, retrieve, and transmit data via mobile communications, often by use of an **application software programme (app)**

Application software

Third party software, usually designed to run on a smart phone or tablet, available through distribution platforms such as Apple App Store or Android Market

mHealth - Stakeholders:

Citizens/patients

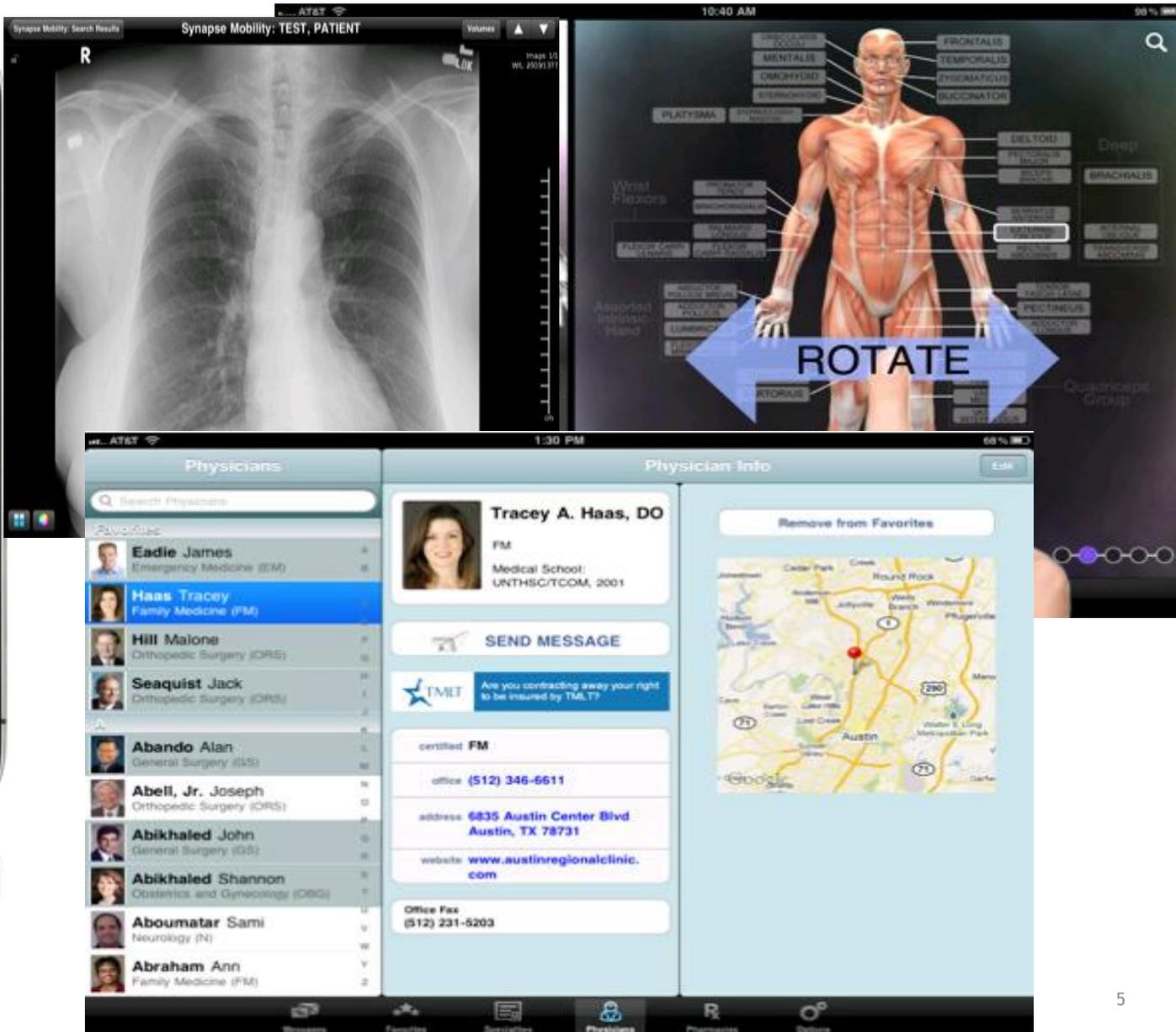
Formal care providers

Third sector/ informal care providers

Commercial partners - pharma, care providers ...

IT and Telecoms industry partners

Applications Developers



Home **Barden, Paul E**
45y M, 04/07/1965 56442
PCP: Drew Walker, M.D.
Addr: 5710 Audubon Circle, Madison WI 53710

Allergies
Penicillins
Ace Inhibitors

Medications
diltiazem (CARDIZEM CD)...
levothyroxine (SYNTHROID)...
simvastatin (ZOCOR) 40 MG...

Active Problems

- Hypercholesterolemia
- Essential Hypertension
- Hypothyroidism

Current Medications

- diltiazem (CARDIZEM CD) 240 MG 24 hr capsule, DAILY
- levothyroxine (SYNTHROID) 100 MCG tablet, DAILY
- simvastatin (ZOCOR) 40 MG tablet, QPM

Allergies

- Penicillins
- Ace Inhibitors

Patient Care Team

- Drew Walker, M.D. Family Practice, Internal Medicine
- Daniel Niedermeier, M.D. Dermatology

Immunizations

History

Demographics

Pharmacy
Walgreen's West
Address: 1120 West Rock Road, Madison WI 53798
Phone: 608-555-0818 Fax: 608-555-2007
Hours: 24hrs Monday - Saturday; 7:30am - 10:00pm Sunday



THE PILL PHONE

My Alerts Dosage Diary Pill Linker

Dosage Diary

Medication	Compliance	November	December
Prezista 600mg 1 Dose/Day	83%	[Calendar grid]	[Calendar grid]
Ritonavir 100mg 1 Dose/Day	83%	[Calendar grid]	[Calendar grid]
Topamax 50mg 1 Dose/Day	88%	[Calendar grid]	[Calendar grid]
Intelleflex 2x 100mg 2 Dose/Day	90%	[Calendar grid]	[Calendar grid]
Concerta 18mg 3 Dose/Week	100%	[Calendar grid]	[Calendar grid]

Legend: ■ Dose Taken ■ Dose Skipped ■ Dose Taken Late ■ Not Scheduled

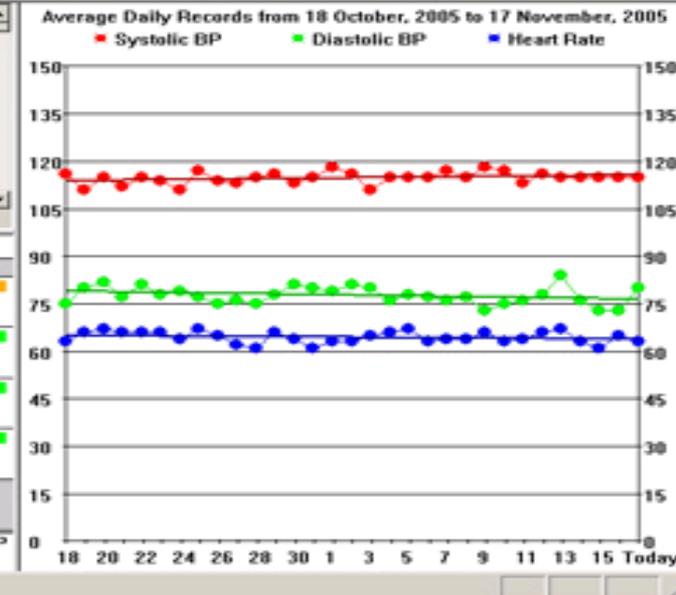
VOCAL

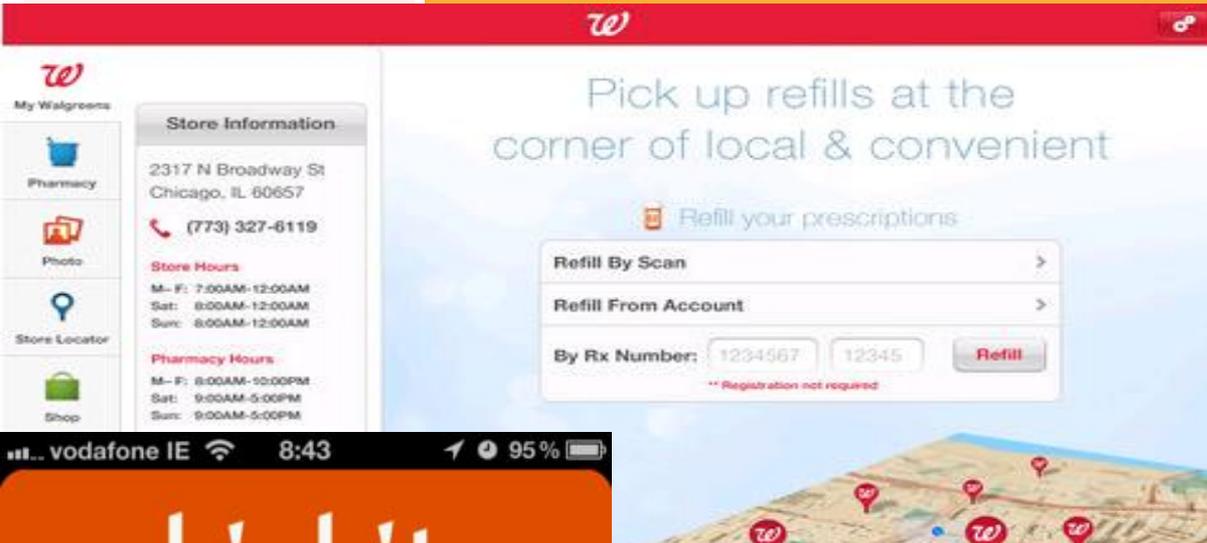
11/27/05, 60bpm, After Lunch, Normal, 16:43 Nov 17, 2005
11/18/04, 63bpm, Bedtime, Normal, 16:43 Nov 17, 2005
11/19/02, 68bpm, After Lunch, Normal, 16:43 Nov 16, 2005
11/3/78, 67bpm, After Dinner, Normal, 16:43 Nov 16, 2005
11/3/71, 60bpm, Bedtime, Normal, 16:43 Nov 16, 2005
12/0/72, 61bpm, After Lunch, Normal, 16:43 Nov 15, 2005
11/0/71, 64bpm, After Dinner, Normal, 16:43 Nov 15, 2005
11/5/76, 60bpm, Bedtime, Normal, 16:43 Nov 15, 2005
11/6/79, 68bpm, After Lunch, Normal, 16:43 Nov 14, 2005
11/8/80, 61bpm, After Dinner, Normal, 16:43 Nov 14, 2005

October 15, 2005 to November 19, 2005

S	M	T	W	T	F	S
17	18	19	20	21	22	
5	114	116	111	115	112	115
	74	75	80	82	77	81
4	24	25	26	27	28	29
	111	117	114	113	115	116
	79	77	75	76	75	78
3	31	1	2	3	4	5
	115	118	116	111	115	115
	80	79	81	80	76	78
5	7	8	9	10	11	12
	117	115	118	117	113	116
	76	77	73	75	76	78
5	14	15	16	17	18	19
	115	115	115	115		
	76	73	73	80		

Normal ■ Prehypertension ■ High BP
Top = Systolic BP Bottom = Diastolic BP





Pick up refills at the corner of local & convenient

Refill your prescriptions

Refill By Scan

Refill From Account

By Rx Number: 1234567 12345 **Refill**

**Registration not required

Store Information
2317 N Broadway St
Chicago, IL 60657
(773) 327-6119

Store Hours
M-F: 7:00AM-12:00AM
Sat: 8:00AM-12:00AM
Sun: 8:00AM-12:00AM

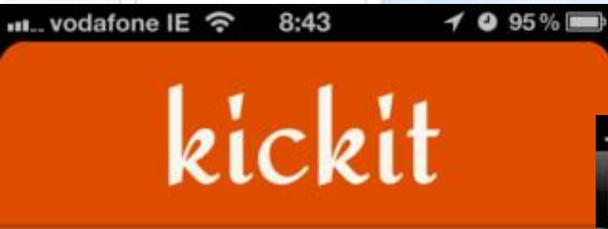
Pharmacy Hours
M-F: 8:00AM-5:00PM
Sat: 9:00AM-5:00PM
Sun: 9:00AM-5:00PM



change background, character and options →

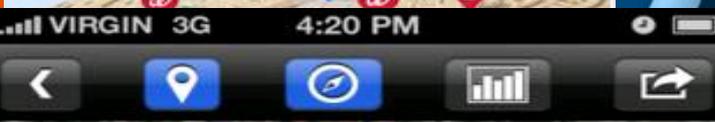
2:56

↳ tip start/pause

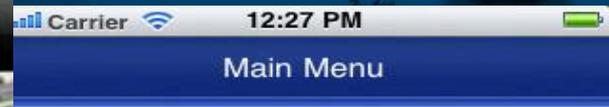


vodafone IE 8:43 95%

kickit



VIRGIN 3G 4:20 PM



Carrier 12:27 PM

Main Menu

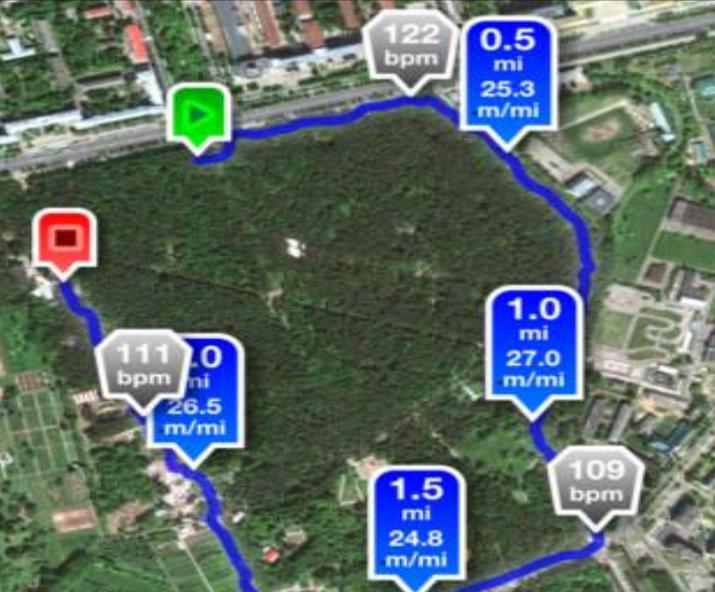


TIME QUIT

5 DAYS

SAVINGS

\$37.31



122 bpm 0.5 mi 25.3 m/mi

111 bpm 1.0 mi 26.5 m/mi

109 bpm 1.5 mi 24.8 m/mi



IASIS HEALTHCARE

ER Wait Times
Physician Directory
Driving Directions
Hospital Information

ER Wait Times

Physician Directories

Driving Directions

Hospital Information

Figure 10- Interest in Health Technology Products

Body weight scales that record weight loss/gain over time	44%
Meters and gauges designed to measure vital signs	40%
Fitness meters designed to record your progress	37%
Devices and services analyzing or tracking the nutritional content of your food	35%
Devices which track and record sleep patterns	31%
Services and devices allowing communication directly with doctor/healthcare provider remotely via video	24%
Devices and services reminding you when to take prescription medications	24%
Products designed to help guide you through an injury rehabilitation	23%
Products designed to monitor/provide communication capabilities to elderly/homebound family members	23%

Base: U.S. Online Adults (n = 1,679)

Q. Thinking about the health issues confronting you and your family, which of the following types of products would be of most interest to you? (Very interested + Interested)

Figure 14- Parties Consumers Will Share Data With

	Government	Health Provider	Doctor	Manufacturers	App/Software Developers
Food allergies	21%	37%	87%	29%	21%
Injury rehabilitation progress	18%	42%	95%	24%	21%
Seasonal allergies	18%	38%	89%	27%	19%
Daily diet/nutrition levels	17%	37%	87%	28%	25%
Sleep patterns	15%	37%	90%	25%	18%
Weight loss/gain	15%	36%	86%	23%	19%
Heart rate	14%	39%	92%	21%	15%
Cholesterol levels	14%	35%	92%	21%	15%
Blood glucose levels	13%	37%	94%	21%	15%
Fitness/exercise performance	13%	35%	82%	30%	24%
Blood pressure	13%	38%	92%	19%	14%

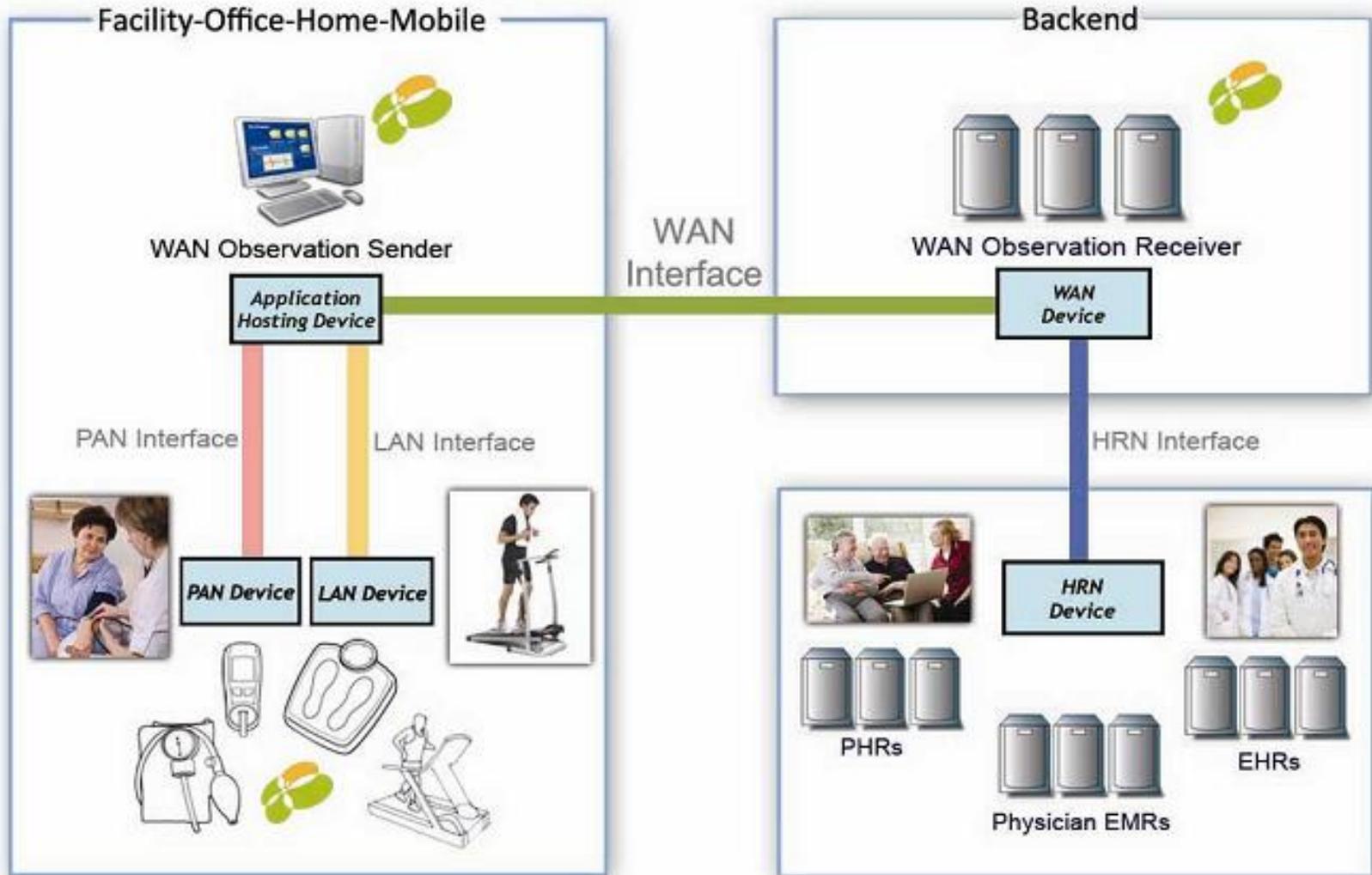
Q. And of the data you are willing to share, would you allow any of the following parties to store and analyze it?

Base: U.S. Online Adults (n = 1,679)

When asked if making the data anonymous would make them more likely to share with a governmental organization, 30% indicated it would increase their likelihood of sharing the information (though a greater number, 42% report it would have no effect).

- mHealth and eHealth represent a paradigm shift in health and care (big opportunities, and big challenges :)
- Interoperability
 - Device to device
 - end-to-end
- Reimbursement and liability
 - clinician payment
 - liability - inc BYOD
- Regulatory Framework
 - Medical Devices - software as a device
 - Data Protection





- Building support of mHealth into public and private insurance schemes
- Developing new frameworks for liability
 - Potential information overload
 - Shared responsibility



- General Data Protection Regulation (GDPR)
- Significant new elements:
 - Explicit consent
 - Data minimisation
 - Transparency
 - Data portability
 - Right to be forgotten
 - Data breach notification
 - Privacy by design, Privacy Impact Assessment
 - DPA co-operation
 - Sanctions - up to 5% annual turnover



- **MDD Guidance issued this week - MEDDEV 2.1/6**

Stand alone software **may** be regulated if it has a direct impact - includes apps

- EHR, PHR, Image retrieval - not a device
- Simple search functions - not a device
- Search + guidance - could be a device
- Tools to interpret data - could be a device
-manufacturers intended purpose is important

- **An example of a regulated app:**

- **Mersey Burns Calculator**

<http://youtu.be/WDdIyu9D5BI>



Focus
on the Individual

Industry
Standards



End to End Architecture



Thank you!

Thank you

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Continua Health Alliance: www.continuaalliance.org