

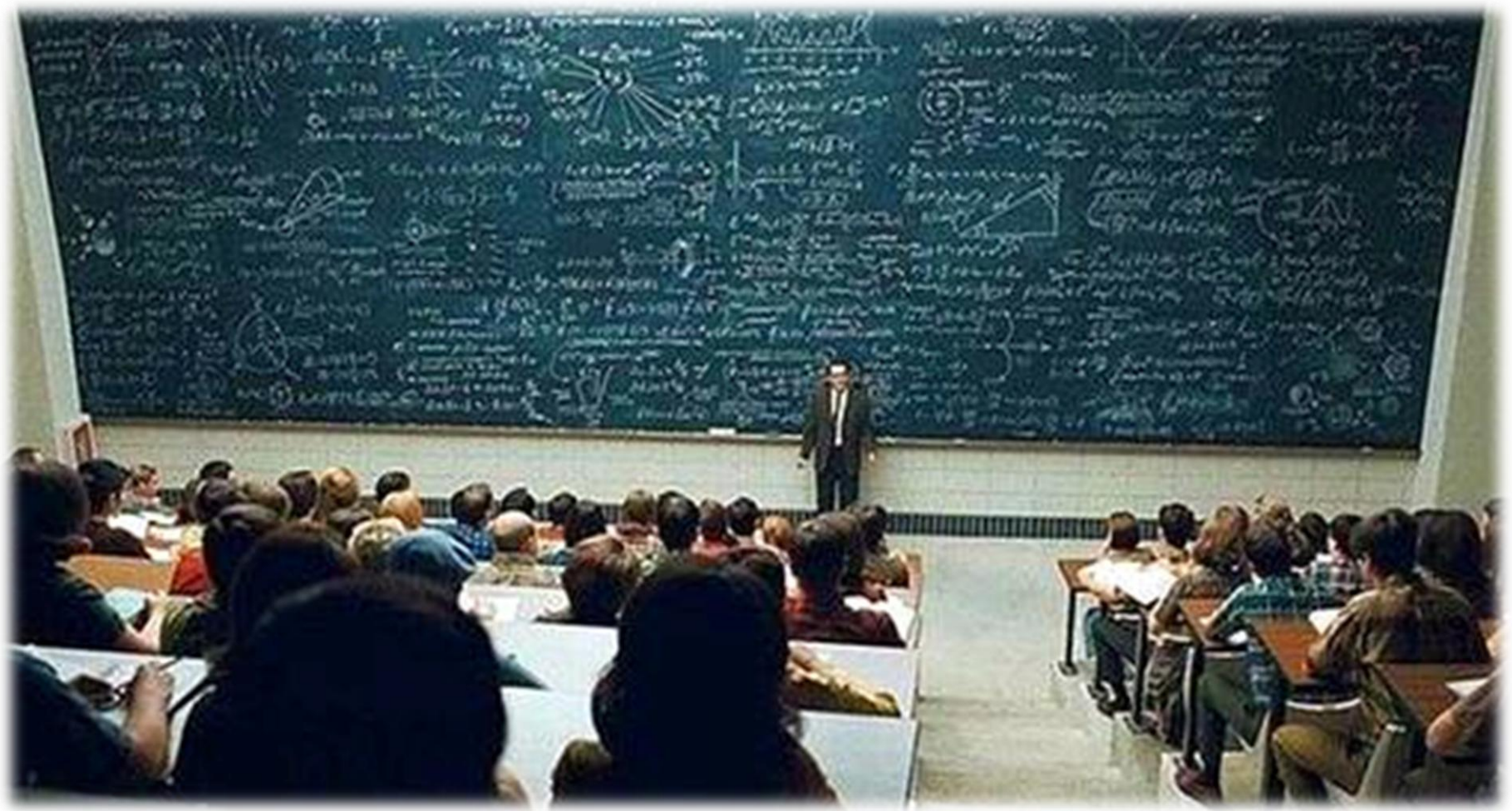


Where does healthcare take place?

Andrew R. Watson, MD, MLitt, FACS
University of Pittsburgh Medical Center

European Telemedicine Conference 2014
October 7th, 2014

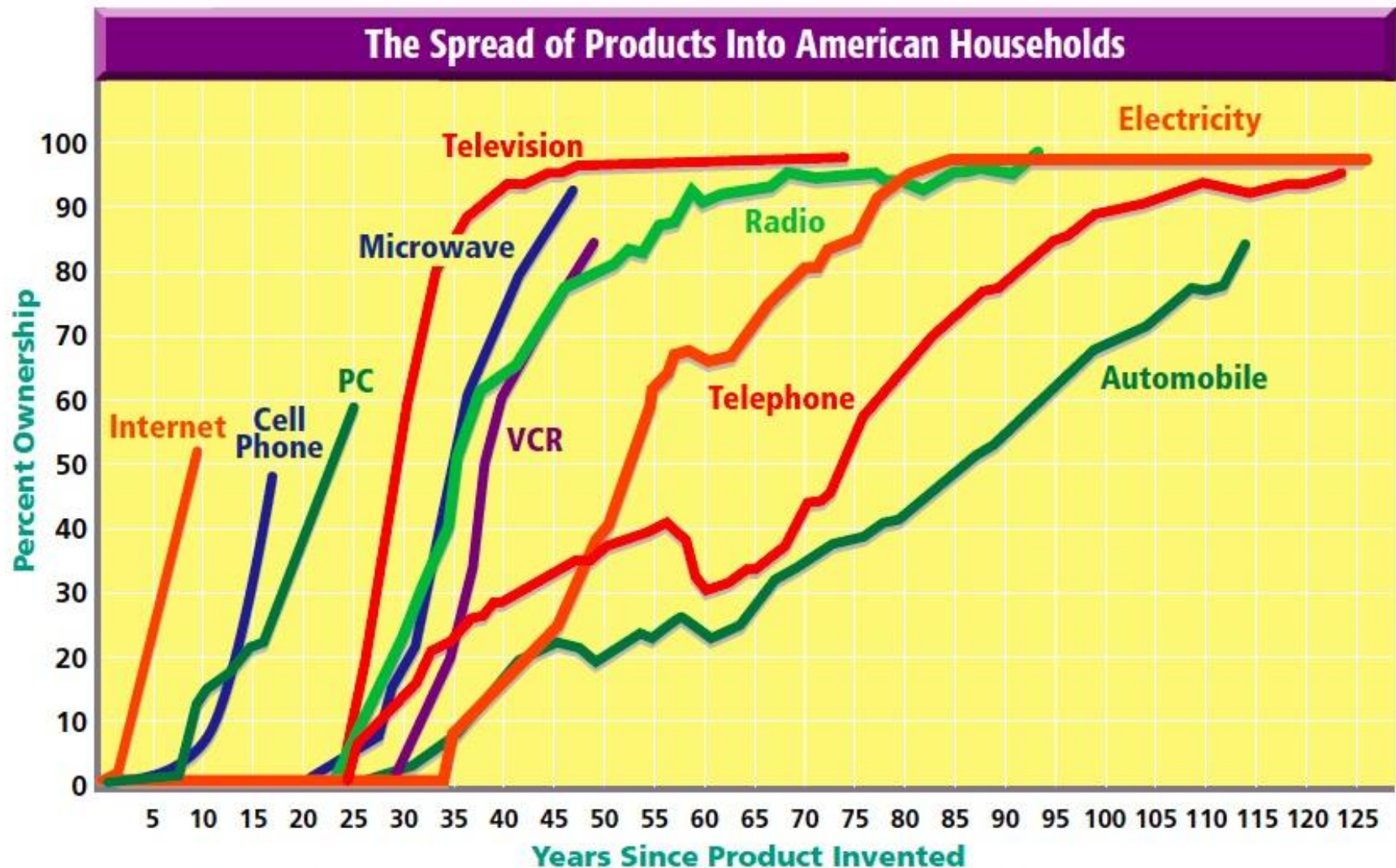
Modern healthcare





Opening theory

Patients are different



Sources: Bureau of the Census; *The World Almanac*; Cellular Telecommunications Industry Association

Healthcare

Is it healthcare?

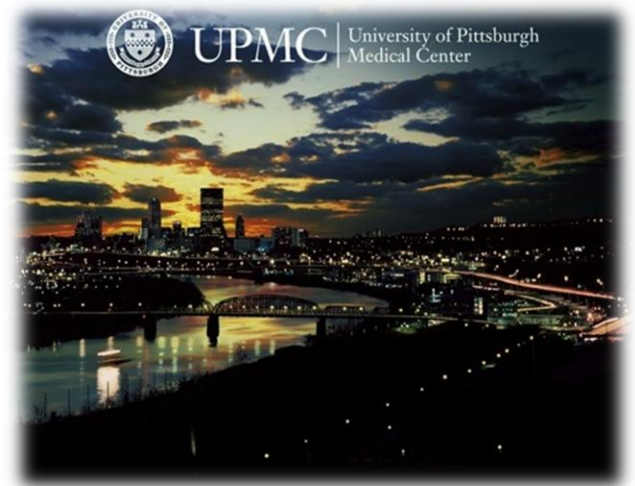
Or health?

Or care?

Or medicine?



Where are the patients or citizens?

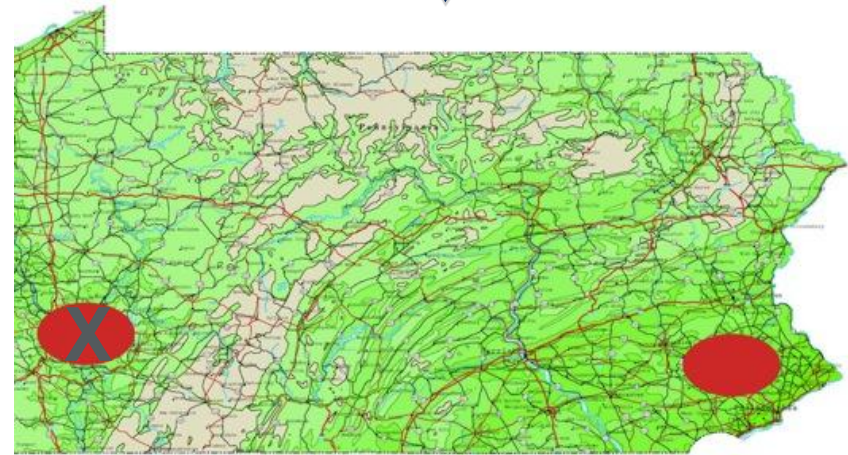


UPMC LIFE
CHANGING
MEDICINE

United States and Pennsylvania Healthcare



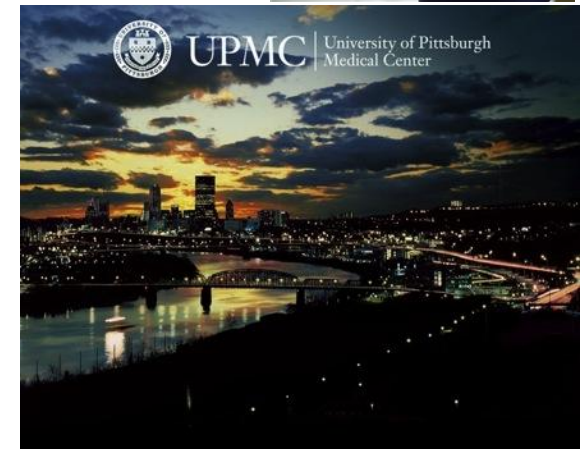
State of
Pennsylvania



2 large cities

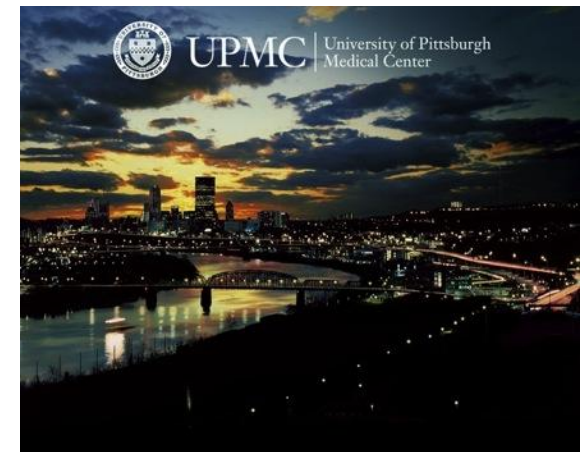
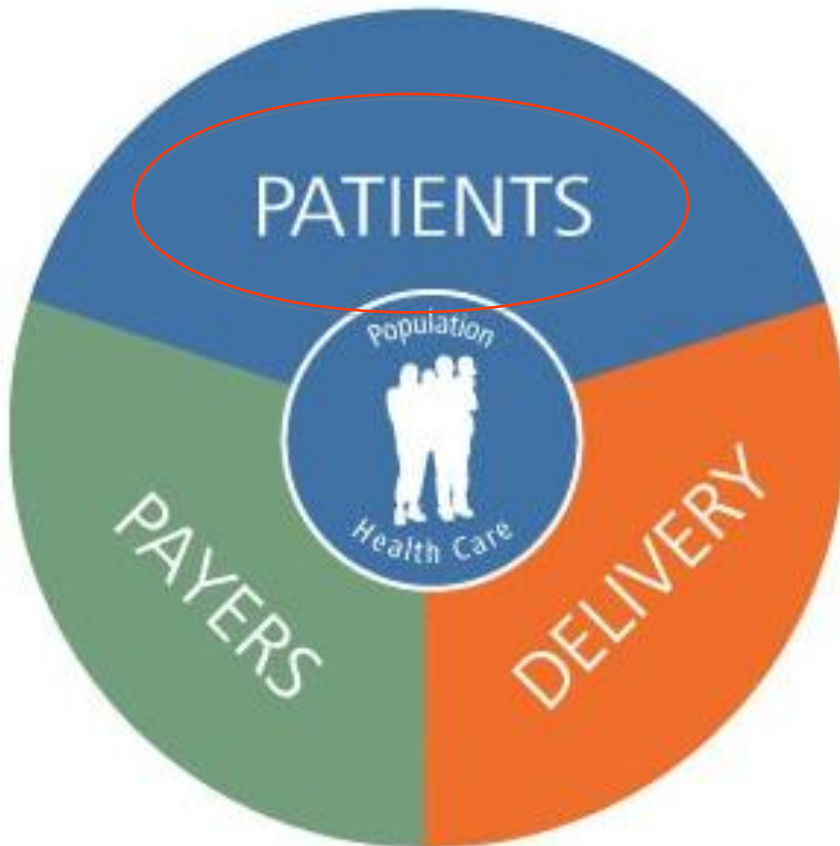
UPMC LIFE
CHANGING
MEDICINE

Healthcare defined



UPMC LIFE
CHANGING
MEDICINE

Healthcare defined



UPMC LIFE
CHANGING
MEDICINE

- Can we agree – healthcare can take place at home and work?
- How do you care for patient / citizens / consumers at home or work?



A care team or a hospital

Care Setting Challenge



Crohn's Disease



UPMC Crohn's medical home - 2014

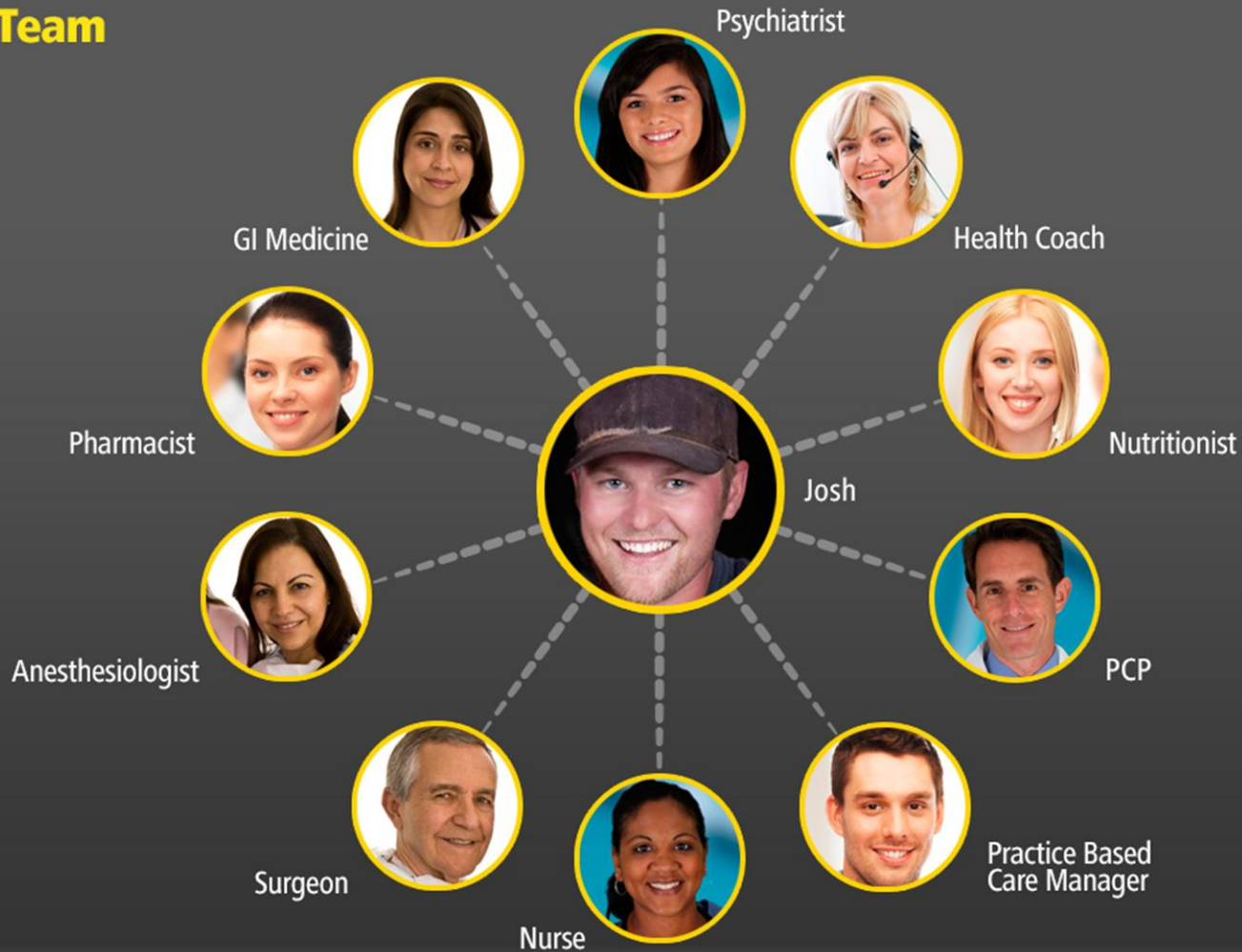
Less CT, less ER, less colonoscopies, less reoperation

No leaks x 4 years

$P < 0.05$

Integration of the care team

Care Team



Care settings

- What is the point of care?
(where does it take place?)
- Key feature – proactive vs.
reactive
- Who manages a care
setting?
 - Provider or payer?



Patient care location features

- Team based
- Call center
- Financial incentives
- Mobile
- Data aggregation



2014 prosumer

UPMC – CHF readmission rate 28% to 5%

UPMC Visiting Nurse Services, 2013. Telemedicine remote monitoring.

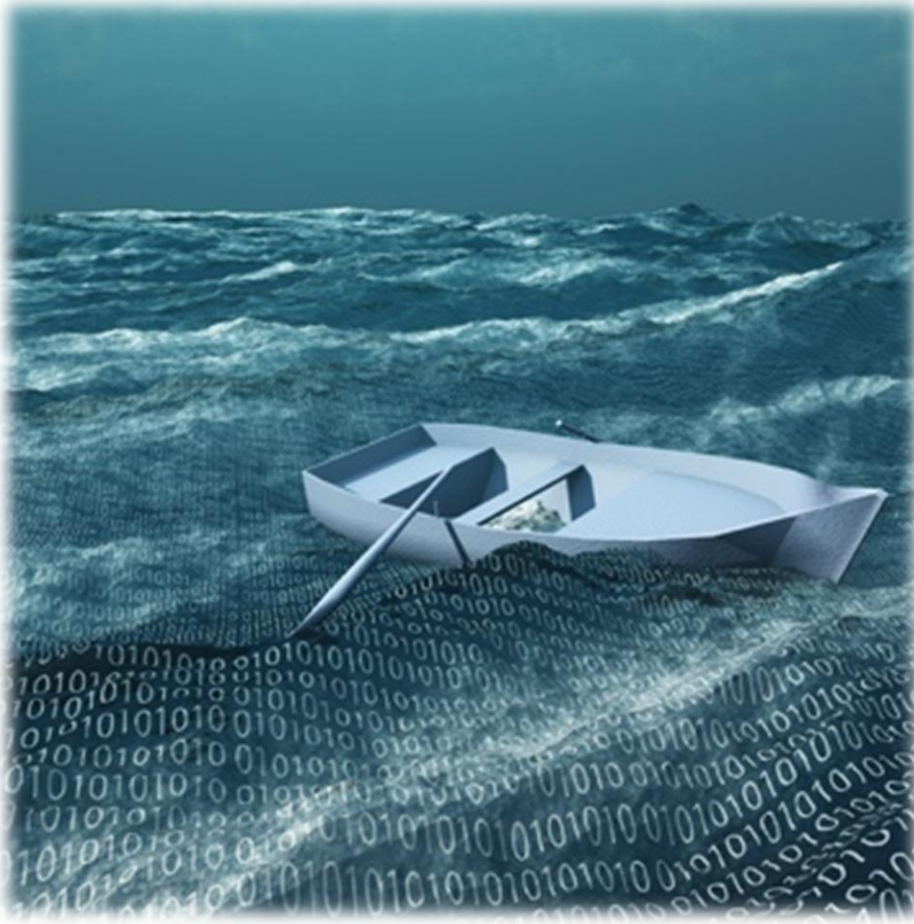
UPMC LIFE
CHANGING
MEDICINE

We still need hospitals, offices and doctors





Data and information



The data dilemma.

? Interoperability ?

Integration 101



Watson driving to work in 2013

General Surgery
Reason for Admission: ABD PAIN RECTAL BLEED
Code Status – Full Code (Ordered 09/06/09)

Allergies: Tigan (anaphylactic shock); ergot alkaloids (projectile vomiting, abd pain, increased pain); Depakene (u/a to keep med down); Compazine (extrapyramidal); dihydroergotamine (severe CP, difficulty breathing, irregular heart rate, abd pain, itch, diarrhea); Depakote (u/a to keep med down); Thorazine (Extrapyramidal disorder, NOS); Imitrex (severe CP, difficulty breathing, difficulty swallowing, hives); Percocet (histamine rxn); Reglan (red itchy rash); Tegretol (became toxic twice on low doses); Dilantin (slurred speech, uncoordinated gait, confusion, lethargy); Toradol (sores r/t toxicity); epinephrine (migraine trigger); Vicodin (histamine rxn); Nardil (sores r/t toxicity); predniSONE (confusion, ataxia, falls); isoniazid (severe abd pain, n/v, wt loss); Orudis (sores r/t toxicity); lithium (confusion, urinary retention, dysuria); nonsteroidal antiinflammatory agent (pancreatitis, sores, cholecystitis); codeine (histamine reaction, severe itching without rash); Fioricet (decreased urinary output, severe lower back pain, excitement); Prozac (became uncooperative); Stadol (increases pain, projectile vomiting); Paxil (became suicidal, unable to sleep, decreased appetite); Phrenilin (decrease in urinary output, severe low back pain); Robinul (migraine trigger); Temovate 0.05% topical ointment (fissuring of skin); pyrethrins topical (chemical burns)

Problems: Tuberculosis NOS; UTI [Urinary tract infection]; Nephrolithiasis; Diarrhea; Panic disorder; Anxiety disorder NOS; HTN [Hypertension]; Anemia; Seizures; Migraine; Stroke; TIA [Transient ischemic attack]; Depressive disorder NEC; IBS [Irritable bowel syndrome]; Gastrointestinal bleeding NOS

Vitals	TempC	BP	Pulse	RR	SaO2	FI02	Date	Wt(kg)	Wt(lb)
09/21 03:47	36.6	142/80	88	14	94				
09/21 00:44	36.8	158/74	80	16	95				
09/20 15:49	37.5	164/88	96	18	96				
09/20 12:13	37.9	180/92	64	17	99				
09/20 10:20	37.2	170/80	76	20	96				

Active Inpatient Medication Orders:
 ampicillin-sulbactam (Unasyn) 3gm IV Q6H
 furosemide (Lasix) 20mg IV Daily
 heparin (Heparin 100 Units/mL Non-... 300Unit(s) IV Daily
 heparin 5,000Unit(s) subQ Q8H
 ... 800mg By Mouth TID

hydrocodone 7.5 IV q8h

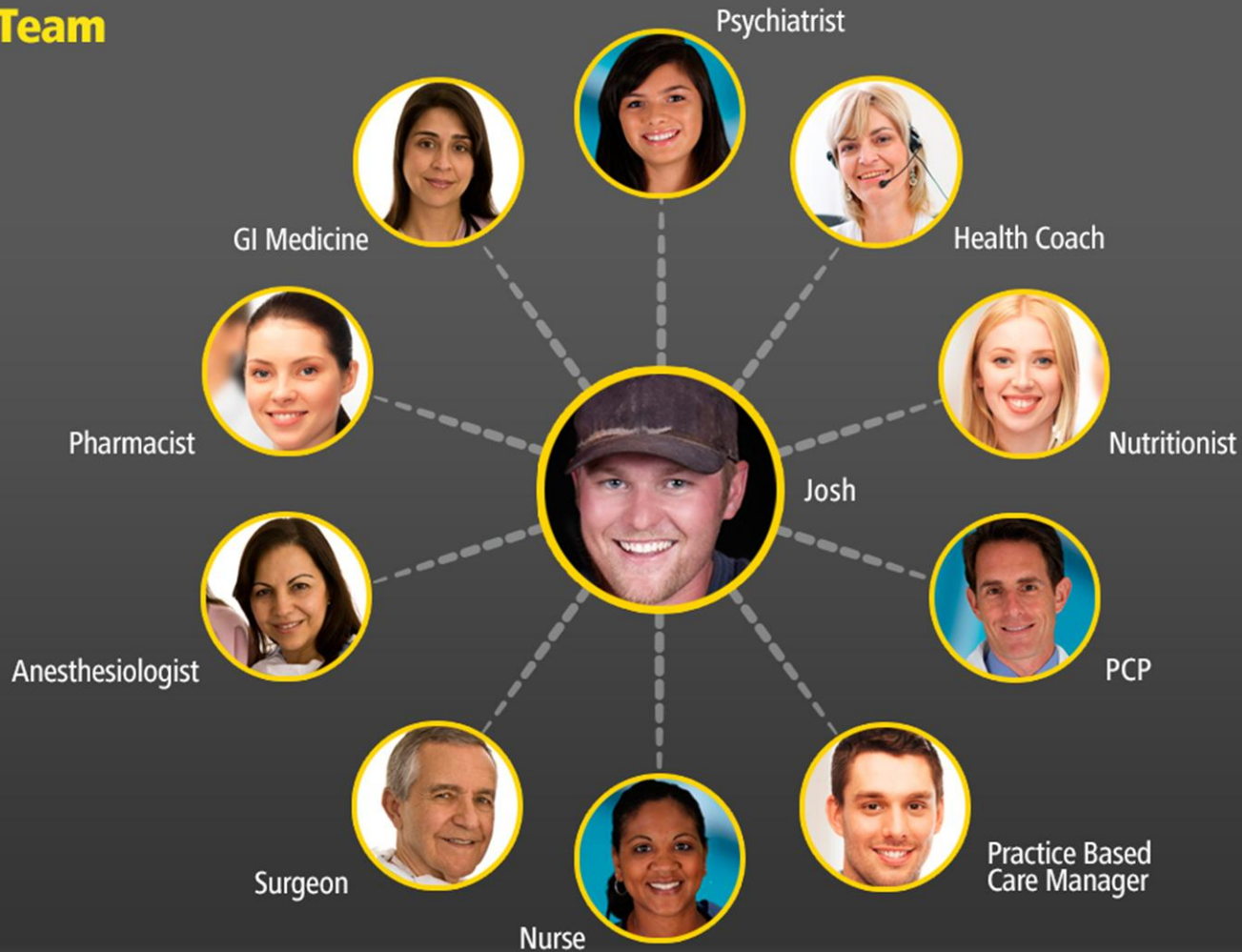
I&O	(09/19) 7a-3p	3p-11p	11p-7a	Total
Intake:	0	2950	800	3750
Output:	0	2970	2000	4970
Balance:	0	-20	-1200	-1220

24 Hr Max Temp: 37.9 at 09/20 12:13
36 Hr Max Temp: 37.9 at 09/20 12:13

lidocaine 0.25% (Lidocaine 0.25% Ne... 3p
 lorazepam (Ativan) 0.5mg By Mouth TID
 morphine 3mg IV Q30MIN
 nalbuphine (Nubain) 5mg subQ Q6H
 naloxone (Narcan) 0.04mg IV As DirCP
 ondansetron (Zofran) 4mg IV Q6H
 PCA BOLUS IF ORDERED (HYDRO...
 polyethylene glycol 3350 + ... 2,000mL

Integration of the care team

Care Team



Integration

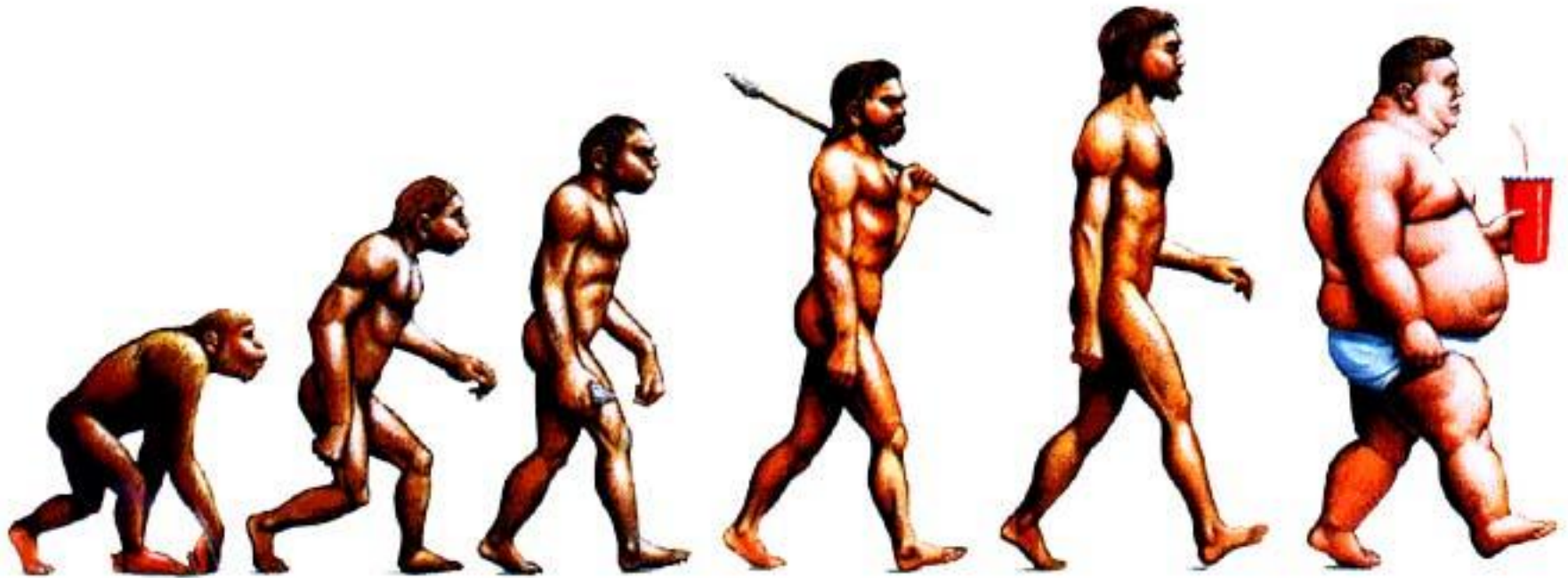
- Data sharing
- Video dial tone
- Security
- Regulations





The modern digital age

The Evolution of Society



The
Economist

UPMC LIFE
CHANGING
MEDICINE

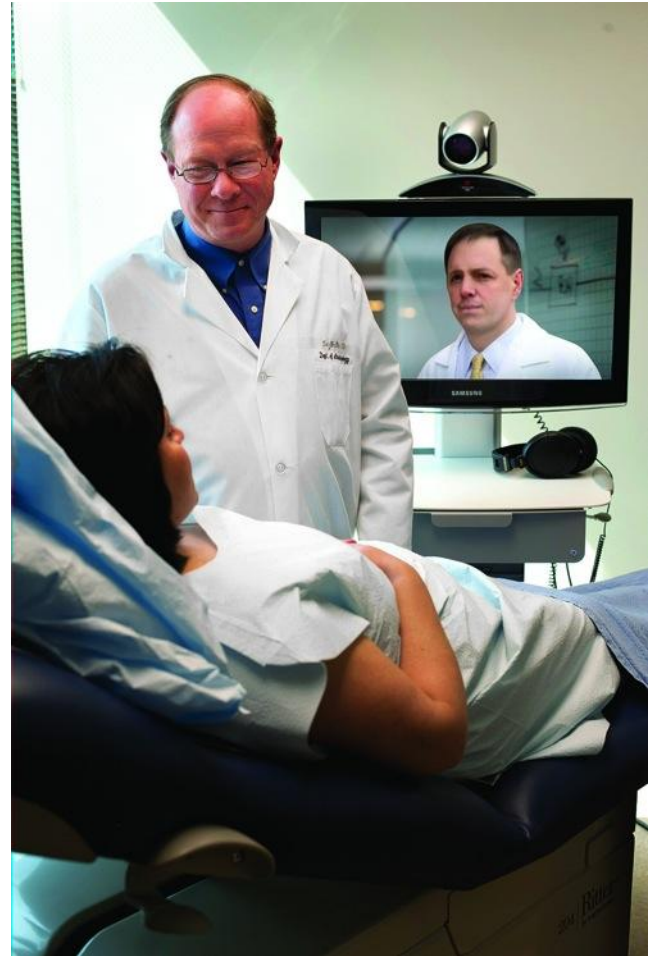
Starbucks



Telemedicine



Telemedicine



Telemedicine





Conclusions

Healthcare does not have to take place in a hospital or office.



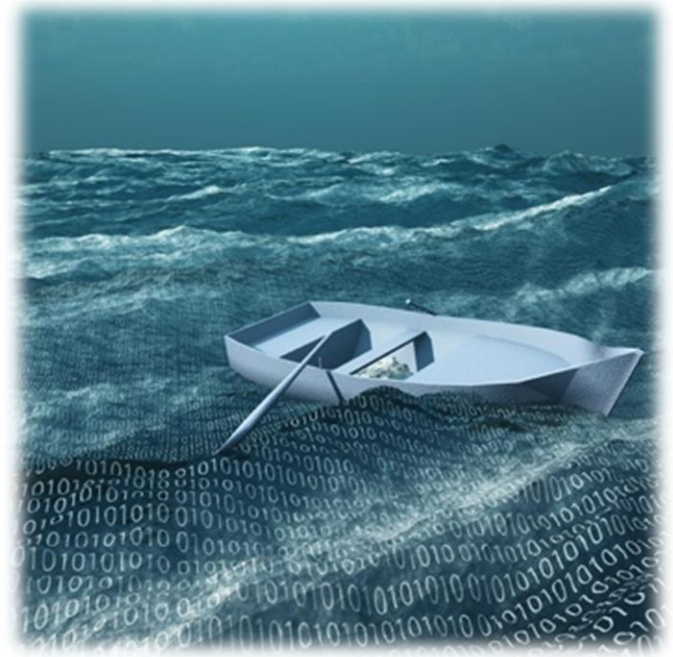
Healthcare needs to be care team based and proactive.



Electronic or digital or virtual healthcare is necessary.



Having the correct information is critical.



Global healthcare going back to home with the patients

