

Health Everywhere

Making Mobile Beautiful

HIMSS Usability Workgroup

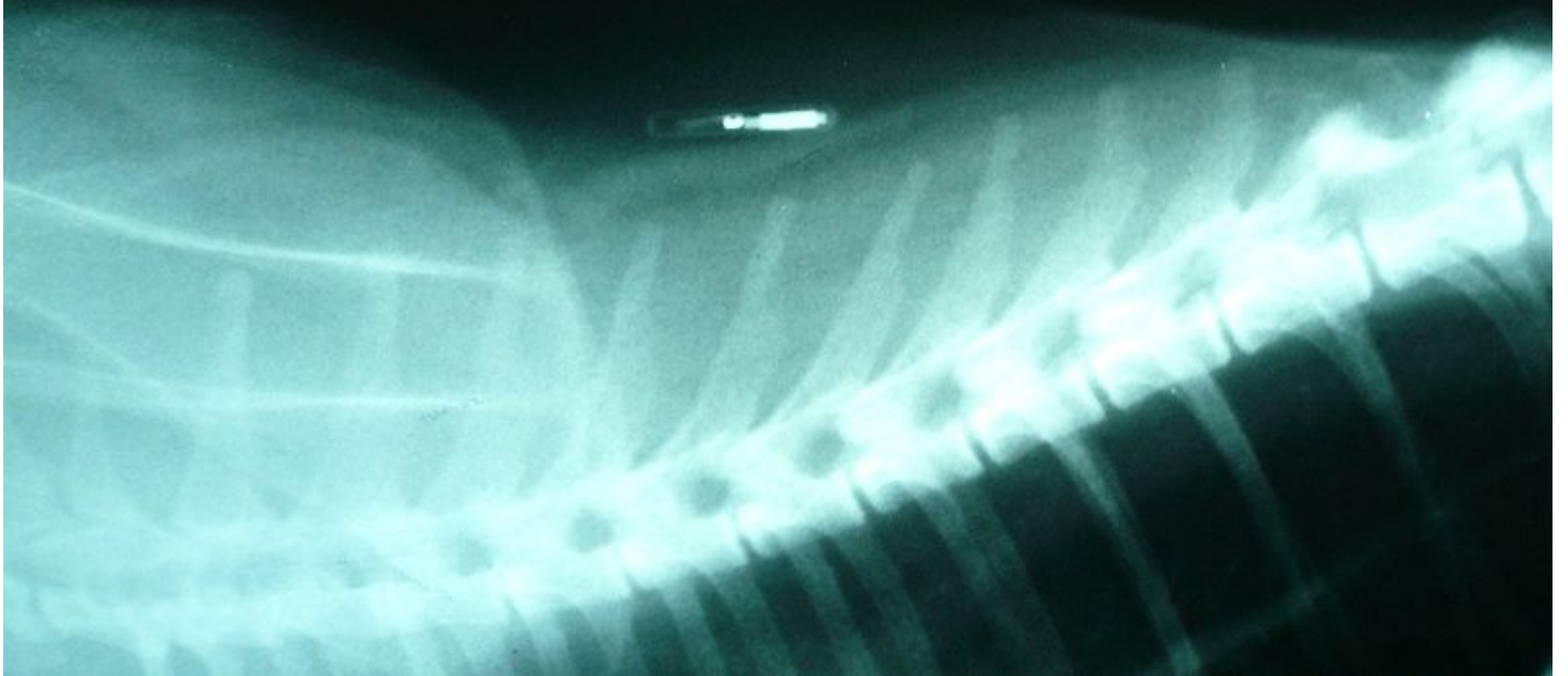
Juhan Sonin

10.Jun.10

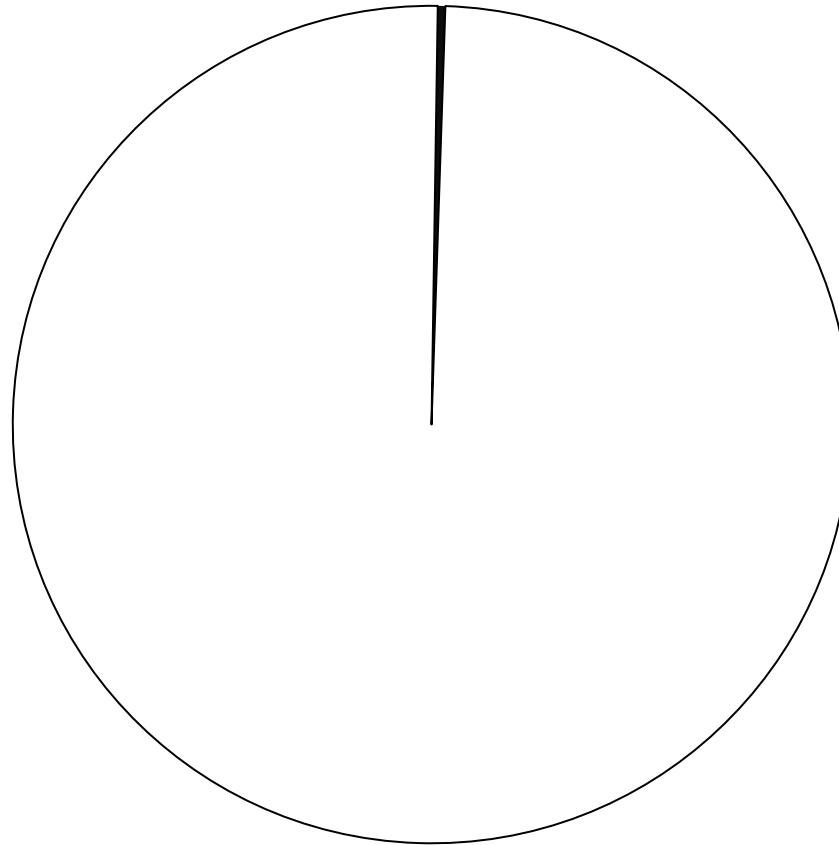


Your health data is going digital.

Your pets' health data is digital.

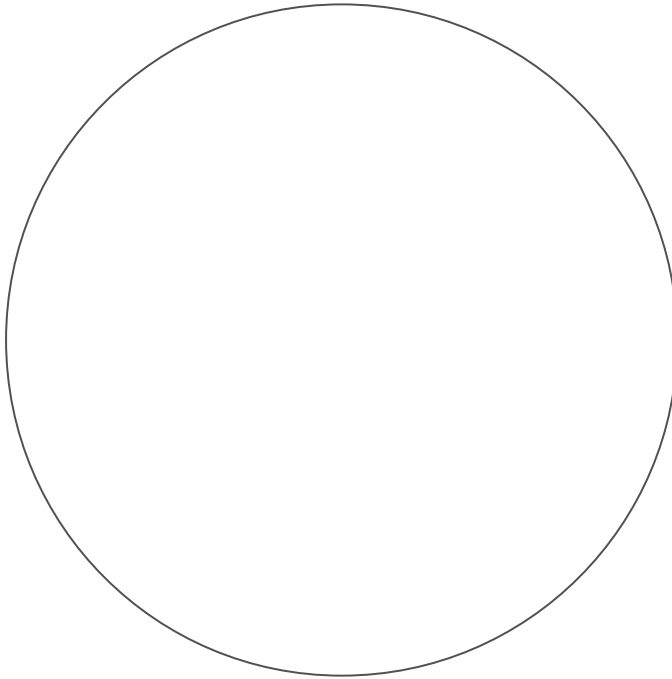


5 million doctors

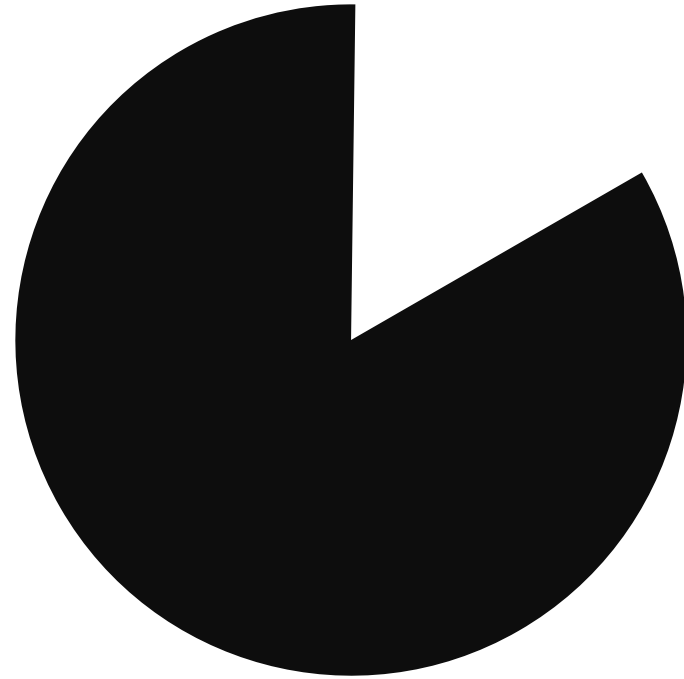


6.7 billion patients

6.7 billion patients



4.7 billion cell phones



mHealth Axioms

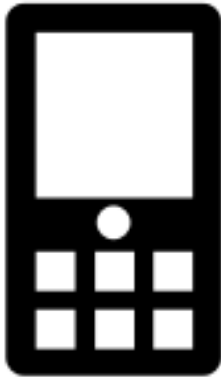
Bring the examination room to the patient

Bring the collective expertise of the practice, the standard of care, to the patient's bedside or home

Migrate from a system of episodic evaluation to a system of continuous assessment

Expect patients and their families to be their own primary care provider (key member of the care team)

Jay Sanders



+



=





iTunes

Search Store

juhan@mit.edu

LIBRARY

- Music
- Movies
- TV Shows
- Podcasts
- Apps
- Ringtones
- Radio

STORE

- iTunes Store
- Purchased
- GENIUS
- PLAYLISTS

Top Healthcare & Fitness Paid Software

Sort By: Best-sellers

- All-in Fitness Pedometer**
Healthcare & Fitness
Updated May 28, 2010
\$1.99 BUY
- iFitness**
Healthcare & Fitness
Updated May 27, 2010
\$1.99 BUY
- Tap & Track - Calorie Counter**
Healthcare & Fitness
Updated May 25, 2010
\$3.99 BUY
- Go Pedometer**
Healthcare & Fitness
Updated May 19, 2010
\$0.99 BUY
- C25K (Couch to 5K)**
Healthcare & Fitness
Updated Feb 11, 2010
\$2.99 BUY
- Sleep Cycle alarm clock**
Healthcare & Fitness
Updated Feb 24, 2010
\$0.99 BUY
- Period Tracker Deluxe**
Healthcare & Fitness
Updated Mar 03, 2010
\$1.99 BUY
- Calorie Tracker - Accurate**
Healthcare & Fitness
Updated May 24, 2010
\$2.99 BUY
- Calorie Counter PRO**
Healthcare & Fitness
Updated May 24, 2010
\$1.99 BUY
- Hundred PushUps**
Healthcare & Fitness
Updated May 19, 2010
\$1.99 BUY
- Poo Log**
Healthcare & Fitness
Released Aug 04, 2009
\$0.99 BUY
- Sleep Machine**
Healthcare & Fitness
Updated Apr 02, 2010
\$1.99 BUY
- Nutrition Menu - Calorie Counter**
Healthcare & Fitness
Updated Feb 18, 2010
\$0.99 BUY
- Footsteps - Pedometer**
Healthcare & Fitness
Updated Apr 26, 2010
\$0.99 BUY
- Pregnancy Companion**
Healthcare & Fitness
Released May 27, 2010
\$0.99 BUY
- Cyclemeter GPS Cycling**
Healthcare & Fitness
Updated May 22, 2010
\$4.99 BUY
- Men's Health Workouts**
Healthcare & Fitness
Updated Feb 08, 2010
\$1.99 BUY
- Fast Food Calorie Counter**
Healthcare & Fitness
Updated May 20, 2010
\$0.99 BUY
- FoodScanner - Calorie Counter**
Healthcare & Fitness
Updated May 25, 2010
\$0.99 BUY
- RunKeeper Pro**
Healthcare & Fitness
Updated May 23, 2010
\$9.99 BUY
- Couch to 5k**
Healthcare & Fitness
Updated May 18, 2010
\$2.99 BUY
- iPeriod Ultimate (Period Tracker)**
Healthcare & Fitness
Updated Apr 14, 2010
\$1.99 BUY
- Ambiance**
Healthcare & Fitness
Updated Oct 12, 2009
\$0.99 BUY
- SixPack App PRO**
Healthcare & Fitness
Updated Mar 02, 2010
\$0.99 BUY
- White Noise**
Healthcare & Fitness
Updated May 19, 2010
\$1.99 BUY
- Runmeter GPS Running**
Healthcare & Fitness
Updated May 22, 2010
\$4.99 BUY
- Walkmeter GPS Walking**
Healthcare & Fitness
Updated May 22, 2010
\$4.99 BUY
- iTreadmill: Pedometer**
Healthcare & Fitness
Updated Apr 26, 2010
\$0.99 BUY
- Eat This? for health**
Healthcare & Fitness
Updated May 26, 2010
\$0.99 BUY
- Two Hundred Situps**
Healthcare & Fitness
Updated Dec 08, 2009
\$1.99 BUY
- Get Running (Couch to 5K)**
Healthcare & Fitness
Updated Apr 22, 2010
\$1.99 BUY
- Pedometer**
Healthcare & Fitness
Updated Mar 11, 2010
\$0.99 BUY
- dLife**
Healthcare & Fitness
Updated Apr 18, 2010
\$0.99 BUY
- Pocket Yoga**
Healthcare & Fitness
Updated May 13, 2010
\$2.99 BUY
- Navy SEAL Fitness**
Healthcare & Fitness
Updated May 14, 2010
\$1.99 BUY
- Abs Diet Smoothie Selector**
Healthcare & Fitness
Updated Nov 25, 2009
\$0.99 BUY
- Track Your Weight**
Healthcare & Fitness
Updated May 20, 2010
\$0.99 BUY
- Brain Wave - 22 Brain Exercises**
Healthcare & Fitness
Updated May 28, 2010
\$1.99 BUY
- Women's Health Workouts**
Healthcare & Fitness
Updated Dec 07, 2009
\$1.99 BUY
- Water Your Body**
Healthcare & Fitness
Updated Jan 18, 2010
\$0.99 BUY
- iWatchr**
Healthcare & Fitness
Updated Mar 17, 2010
\$0.99 BUY
- Zen Timer - Meditation**
Healthcare & Fitness
Updated May 19, 2010
\$1.99 BUY
- Yoga STRETCH**
Healthcare & Fitness
Updated Nov 25, 2009
\$0.99 BUY
- iPregnancy**
Healthcare & Fitness
Updated May 27, 2010
\$4.99 BUY
- Army Survival for iPad/iPhone**
Healthcare & Fitness
Updated Apr 09, 2010
\$1.99 BUY

Carrier 10:20 PM

STAT MEDS **HELP**

1. Weight: 70 kg lb

2. Age: 50 Year Month

3. **Emergency Meds**

P&C Pros and Cons of Rule-of-Six vs Fixed Concentrations

Medication Doses and Programmed Maximums **Max Dose**

Fix. Conc. Fixed Concentration Medicated Infusions

Drug-based calculation →

Calculator Tools Applications



Ouch.

We need a simple set of design best practices that

... takes a **system approach** to design

.... accelerates **good software** behavior and interface design pattern **adoption**

Guidelines will cover:

interaction and behavior models,
graphic design (including layout, grid, color palette, type and naming conventions),
information architecture,
technical implementation

MOBILE DESIGN TENETS

Let data scream
Only handle information once

Grid it
Type less + less type
Color carefully

Date your users
Speak my sign

What interface?
Repeat customers ROCK
Get physical
Lust to dust

MOBILE DESIGN TENETS

Let data scream

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Color carefully

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Speak my sign

What interface?

Repeat customers ROCK

Get physical

Lust to dust

Let data scream

MTI ASSESSMENT OF TEMPERATURE CONCERN ON SRM-25 (51L) LAUNCH

- 0 CALCULATIONS SHOW THAT SRM-25 O-RINGS WILL BE 20° COLDER THAN SRM-15 O-RINGS
- 0 TEMPERATURE DATA NOT CONCLUSIVE ON PREDICTING PRIMARY O-RING BLOW-BY
- 0 ENGINEERING ASSESSMENT IS THAT:
 - 0 COLDER O-RINGS WILL HAVE INCREASED EFFECTIVE DUROMETER ("HARDER")
 - 0 "HARDER" O-RINGS WILL TAKE LONGER TO "SEAT"
 - 0 MORE GAS MAY PASS PRIMARY O-RING BEFORE THE PRIMARY SEAL SEATS (RELATIVE TO SRM-15)
 - 0 DEMONSTRATED SEALING THRESHOLD IS 3 TIMES GREATER THAN 0.038" EROSION EXPERIENCED ON SRM-15
 - 0 IF THE PRIMARY SEAL DOES NOT SEAT, THE SECONDARY SEAL WILL SEAT
 - 0 PRESSURE WILL GET TO SECONDARY SEAL BEFORE THE METAL PARTS ROTATE
 - 0 O-RING PRESSURE LEAK CHECK PLACES SECONDARY SEAL IN OUTBOARD POSITION WHICH MINIMIZES SEALING TIME
- 0 MTI RECOMMENDS STS-51L LAUNCH PROCEED ON 28 JANUARY 1986
 - 0 SRM-25 WILL NOT BE SIGNIFICANTLY DIFFERENT FROM SRM-15


JOE C. KILMINSTER, VICE PRESIDENT
SPACE BOOSTER PROGRAMS

MORTON THIOKOL INC.
Wasatch Division

INFORMATION ON THIS PAGE WAS PREPARED TO SUPPORT AN ORAL PRESENTATION
AND CANNOT BE CONSIDERED COMPLETE WITHOUT THE ORAL DISCUSSION

HISTORY OF O-RING DAMAGE ON SRM FIELD JOINTS

	SRM No.	Cross Sectional View			Top View		Clocking Location (deg)
		Erosion Depth (in.)	Perimeter Affected (deg)	Nominal Dia. (in.)	Length Of Max Erosion (in.)	Total Heat Affected Length (in.)	
Oct 30, 1985 61A LH Center Field**	22A	None	None	0.280	None	None	36° -- 66°
61A LH CENTER FIELD**	22A	NONE	NONE	0.280	NONE	NONE	338° - 18°
51C LH Forward Field**	15A	0.010	154.0	0.280	4.25	5.25	163
51C RH Center Field (prim)***	15B	0.038	130.0	0.280	12.50	58.75	354
51C RH Center Field (sec)***	15B	None	45.0	0.280	None	29.50	354
41D RH Forward Field	13B	0.028	110.0	0.280	3.00	None	275
41C LH Aft Field*	11A	None	None	0.280	None	None	--
41B LH Forward Field	10A	0.040	217.0	0.280	3.00	14.50	351
STS-2 RH Aft Field	2B	0.053	116.0	0.280	--	--	90

*Hot gas path detected in putty. Indication of heat on O-ring, but no damage.

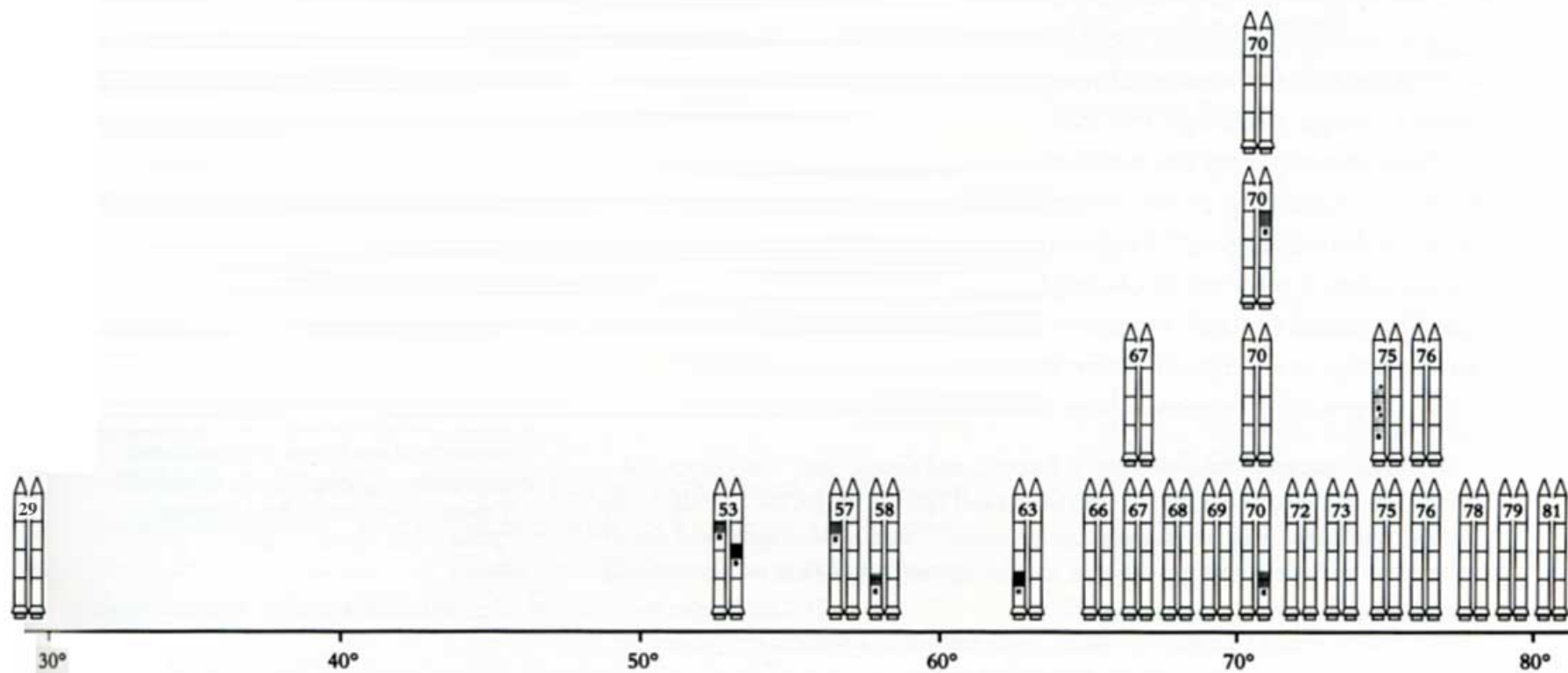
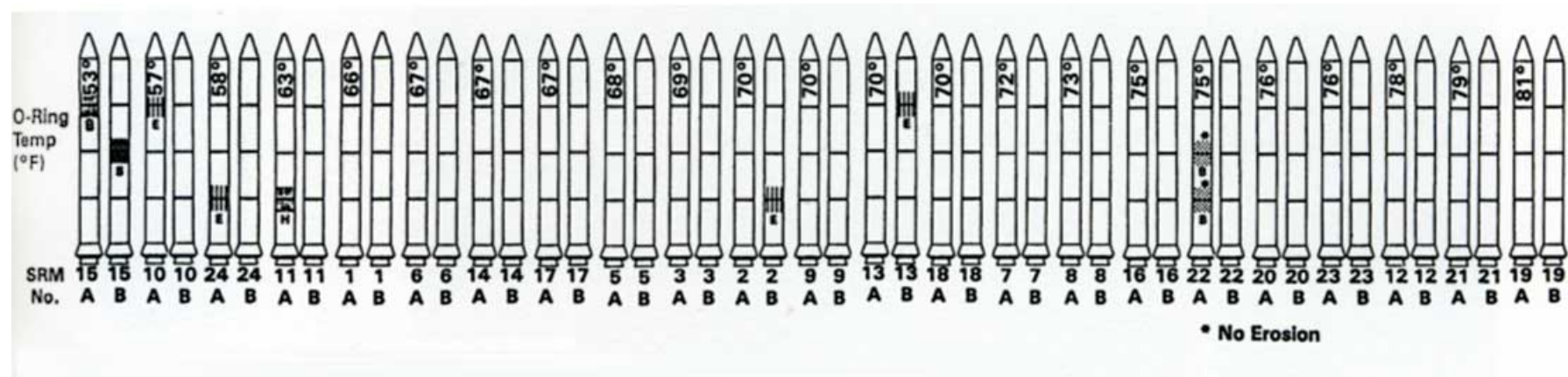
**Soot behind primary O-ring.

***Soot behind primary O-ring, heat affected secondary O-ring.

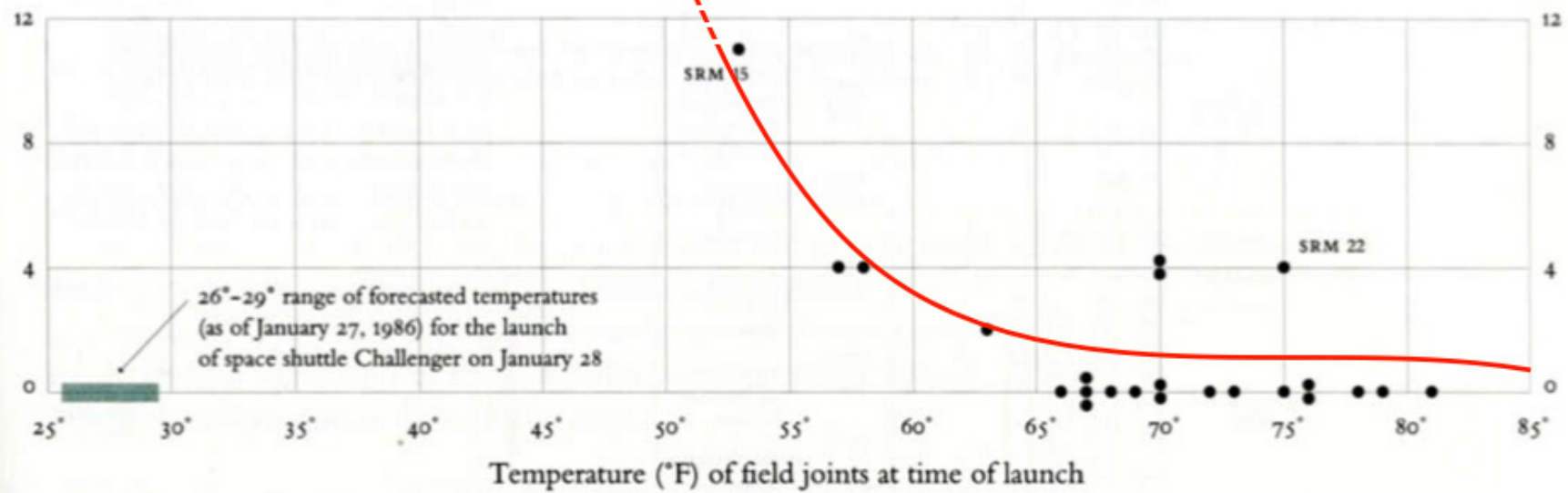
Clocking location of leak check port - 0 deg.

OTHER SRM-15 FIELD JOINTS HAD NO BLOWHOLES IN PUTTY AND NO SOOT NEAR OR BEYOND THE PRIMARY O-RING.

SRM-22 FORWARD FIELD JOINT HAD PUTTY PATH TO PRIMARY O-RING, BUT NO O-RING EROSION AND NO SOOT BLOWBY. OTHER SRM-22 FIELD JOINTS HAD NO BLOWHOLES IN PUTTY.



O-ring damage
index, each launch



and the Problem is...

Increasingly complex systems

- Tool and Methodology gap

Decision makers are swamped with conflicting data

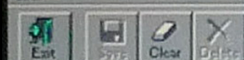
- Our work is increasingly multi-dimensional (not a flat-decision space)

Artifacts driving decisions need to be coordinated,
presented

Minimal transparency into key health metrics

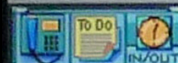
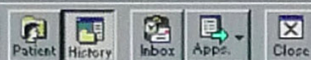
How do I (as a patient, nurse, doctor, proxy) **make quicker, more accurate decisions?**

FIND THE PATIENT GAMESHOW



ARLINGTON OFFICE

DAVID CURTIS, MD

Age

HOME

CC / HPI

Histories

R.O.S.

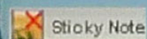
Tech Exam

Provider Start

Examination

Impression/Plan

Coding



Special Exams

Post-Op Exam

CL Evaluation

LASIK Eval

IOP Check

Rx Check

Procedures

Office px

Alerts

Diagnostics

Test Interp

History Taken By: TONY DAVIES

Comments: Chart Update Update Notes: Glasses wearer ☒ Yes ☐ No CL wearer ☐ Yes ☐ NoOcular Medications ☐ No Ocular Meds at This Time

Brand Name	*	Dose	Sig Codes	Start	Refilled
ARTIFICIAL TEARS	N			//	//
PILOCARPINE HCL	N	2%	qid	//	//

Allergies ☐ No Known Allergies Noted

Allergy	Comment	Reaction
EGG		
PENICILLINS		
DORZOLAMIDE HCL	TRUSOPT	Muscular pain

Systemic Medications ☐ No Systemic Meds at This Time

Brand Name	Generic Name	Sig Codes	*	Stopped
ARTIFICIAL TEARS	DEXTRAN		N	//
	70/HYPROMELLOSE			
PILOCARPINE HCL	PILOCARPINE HCL	qid	N	//

- ☐ Patient taking unknown cardiac meds.
☐ Patient taking unknown high blood pressure meds.
☐ Patient taking unknown diabetic meds.
☐ Patient taking unknown cholesterol meds.
☒ Patient taking other unknown meds.

Past Ocular History ☐ No past ocular history noted ☐ Pt has prosthetic ☐ Right eye ☐ Left eye

Category	Disease	DiseaseSide	Year Dx	SurgeryTextHold
Cataract	Nuclear Sclerosis	OU		
Glaucoma	Glaucoma suspect	OU		
Retina	ARMD Drv	OII	2001	PI laser

Past Systemic History ☒ Detailed ☐ Reviewed ☐ Unobtainable

Disease	Year Dx	Sx Procedure	Year Px	Outcome
Rhinitis				
Osteoporosis				
Anemia - unknown cause				

Family History ☒ Detailed ☐ Reviewed ☐ UnobtainableRelation Diagnosis Add

Family Member	Diagnosis
Father	Glaucoma
Mother	Macular Degeneration

Social History ☒ Detailed ☐ Reviewed ☐ Unobtainable

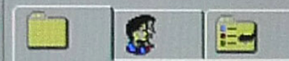
Smoke Y/N?

☐ Yes ☐ No ☐ Formerly

Drinks alcohol Y/N?

☐ Yes ☐ No

Caffeine Y/N?

☐ Yes ☐ NoAmount Amount Per Day Frequency Recreational Drugs Y/N? ☐ Yes ☐ No ☐ Formerly

New Lock

- 11/12/2007 01:30
 - Examination
 - CC / HPI
 - Coding
 - Refraction
 - Impress/Plan
 - Home Screen
 - Diagnostic Te
 - ROS
 - Tech Exam
 - Provider Start
 - EHS1 EyeMa
 - OPH_chart_n
 - Untitled
 - Allergy
 - Medication
 - Problem
 - Procedure

11/12/2007 01:03

Custom



Ready

EHS DCURTIS

NUM

08/25/2009



OSClinic

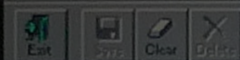


Set Database



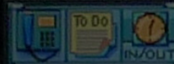
EMR: CAT

3:30 PM



ARLINGTON OFFICE

DAVID CURTIS, MD



Age
HOME
CC / HPI
Histories
R.O.S.
Tech Exam
Provider Start
Examination
Impression/Plan
Coding
Sticky Note

Special Exams

Post-Op Exam
CL Evaluation
LASIK Eval
IOP Check
Rx Check

Procedures
Office px

Alerts

Diagnostics
Test Interp

History Taken By: TONY DAVIES

Comments:

Chart Update

Update Notes:

Glasses wearer ☒ Yes ☐ No CL wearer ☐ Yes ☐ NoOcular Medications ☐ No Ocular Meds at This Time

Brand Name	*	Dose	Sig Codes	Start	Refilled
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PILOCARPINE HCL	N	2%	qid	//	//

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Brand Name	Generic Name	Sig Codes	*	Stopped
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	70/HYPROMELLOSE			
PILOCARPINE HCL	PILOCARPINE HCL	qid	N	//

- ☐ Patient taking unknown cardiac meds.
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Past Systemic History ☒ Detailed ☐ Reviewed ☐ Unobtainable

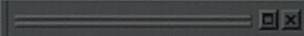
Disease	Year Dx	Sx Procedure	Year Px	Outcome
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Osteoporosis				
Anemia - unknown cause				

Family History ☒ Detailed ☐ Reviewed ☐ UnobtainableRelation Diagnosis Add

Family Member	Diagnosis
Father	Glaucoma
Mother	Macular Degeneration

Social History ☒ Detailed ☐ Reviewed ☐ Unobtainable

Smoke Y/N? ☒ Yes ☐ No ☐ Formerly
Drinks alcohol Y/N? ☒ Yes ☐ No ☐ No
Caffeine Y/N? ☒ Yes ☐ No ☐ No
Amount Amount Per Day
Frequency
Recreational Drugs Y/N? ☐ Yes ☐ No ☐ Formerly



11/12/2007 01:30
Examination
CC / HPI
Coding
Refraction
Impress/Plan
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11/12/2007 01:03

Custom

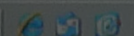


Ready

EHS DCURTIS

NUM

08/25/2009



OSClinic



Set Database



EMR: CAT

3:30 PM

HealthCard

PERSONAL HEALTH CARD

1 Mar. 1972



83
HEALTH SCORE

SONIN

JUHAN
22 SURRY RD
ARLINGTON, MA
02476

617.504.3390
JUHAN@MIT.EDU

SEX HGT WGT BTYPE VISION
M 5-10 218 A+ 20/20

DOB
1.MAR.1972

SS#
022 46 6322

LAST MD VISIT LANGUAGE
16.JUN.2009 ENGLISH, ESTONIAN

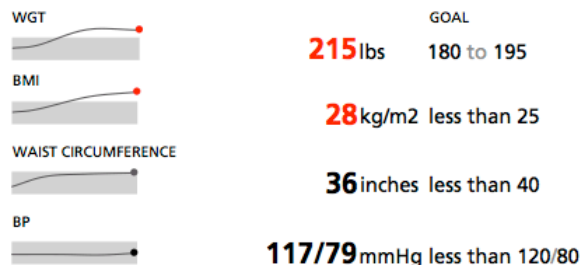
HEALTHPLAN
ANTHEM BLUE CROSS

PRIMARY CARE PHYSICIAN
DAVID IVES, MD

MEDICATION
MULTI-VITAMIN

MEDICAL HISTORY
BICEP TENDON SURGERY, 11.DEC.09 BY ARUN RAMAPPA MD

ALLERGIES
NONE



POLICY NUMBER DONATE CODE STATUS
DX231A60874 YES NONE

PHONE
781.672.2250

DAILY AMOUNT
1x/DAY

HealthCard

PERSONAL HEALTH CARD

CALORIE INTAKE **2950/day** GOAL 2600

EXERCISE **35 min/day** 45

OF STEPS OVER PAST MONTH

NATIONAL AVERAGE
GOAL: EXPEND 3500 CALORIES PER DAY, 8000 STEPS PER DAY

HEALTH SCORE

83
AS OF
2.FEB.2010



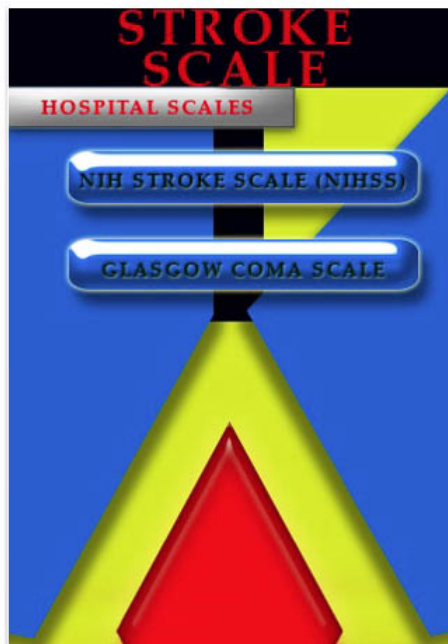
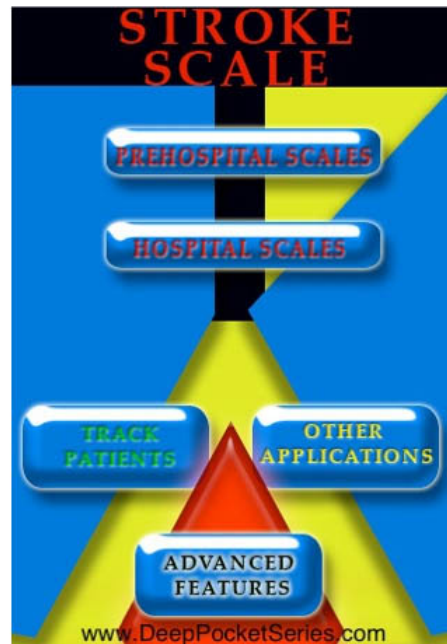
AGE-APPROPRIATE SCREENING
Cholesterol, Prostate

VACCINATIONS					
Tetanus	NEG	5-15-2000	Influenza	NONE	4-20-2000
TB	NEG	7-02-1998	Polio	NEG	5-15-2000
MMR	NEG	1-28-1985	Typhoid	NEG	5-15-2000
Hepatitis A	NEG	5-15-2000	Meningeal	NEG	5-15-2000
Hepatitis B	NEG	5-15-2000	Smallpox	NEG	5-15-2000
Diphtheria	NEG	5-15-2000	Yellow Fever	NEG	5-15-2000

COMPLETE BLOOD COUNT (AS OF 6.NOV.2005)		LEVEL	RANGE
Hemoglobin (Hgb)		17 gm/dl	13.6 to 16.1
Hematocrit (Hct)		52 %	39 to 52
Platelets		150k ml	140k to 440k
Red Blood Count		5.01 pg/ml	3.9 to 5.5
White Cell Count		9900 mm3	3900 to 10000
CD4 Count		500 ng/ml	416 to 1751
Viral Load		none	0

PT/INR		? gm/dl	13 to 18
aPTT		35 sec	25 to 41
Troponin		? ml	150k to 350k

METABOLIC PANEL			
Na (Sodium)		140 mEq/l	135 to 145

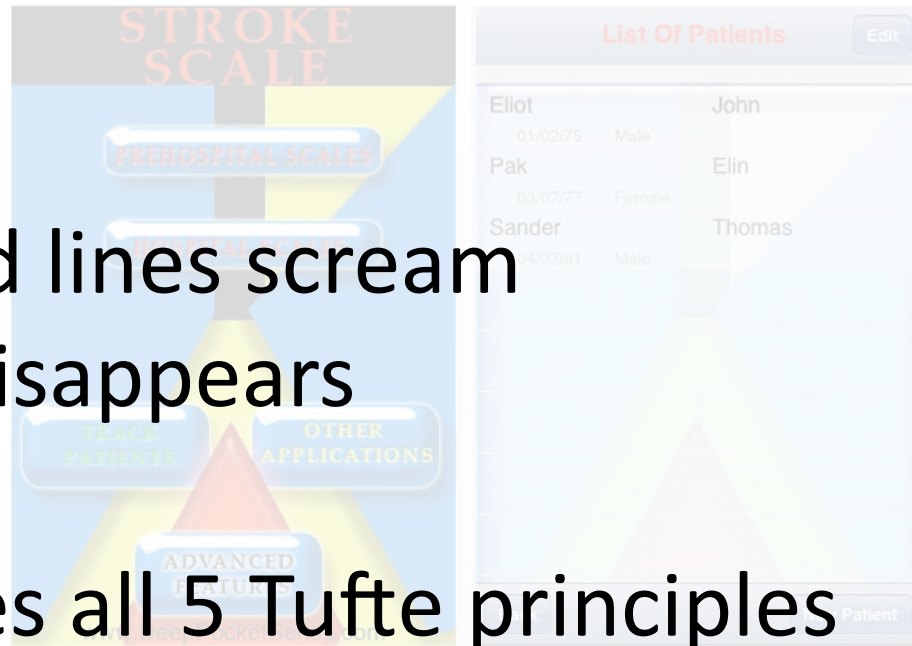


Glasgow Coma Scale

	1	2	3	4	5	6
Eyes	Does not open eyes	Opens eyes in response to painful stimuli	Opens eyes in response to voice	Opens eyes spontaneously	N/A	N/A
Verbal	Makes no sounds	Incomprehensible sounds	Utters inappropriate words	Confused, disoriented	Oriented, converses normally	N/A
Motor	Makes no movements	Extension to painful stimuli	Abnormal flexion to painful stimuli	Flexion / Withdrawal to painful stimuli	Localizes painful stimuli	Obeys commands

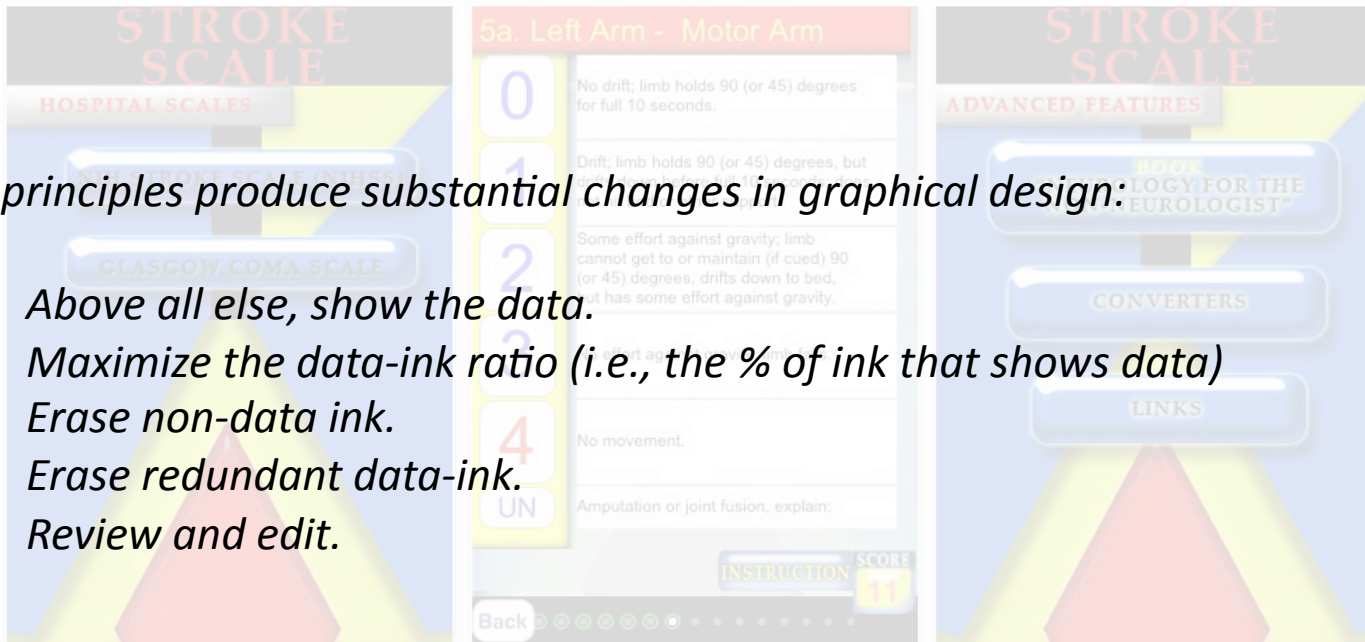
Ink and lines scream
Data disappears

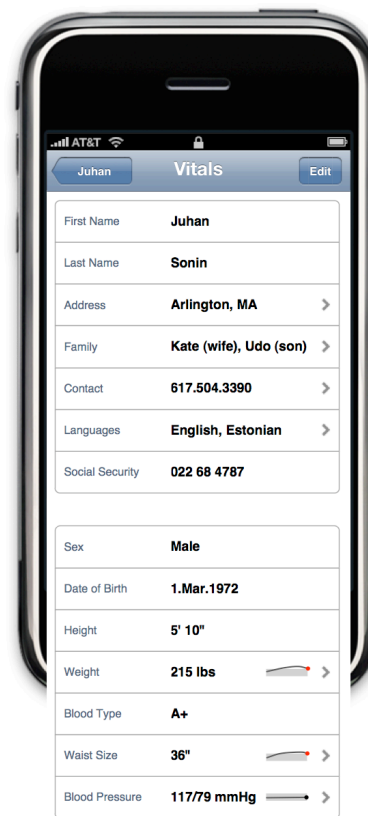
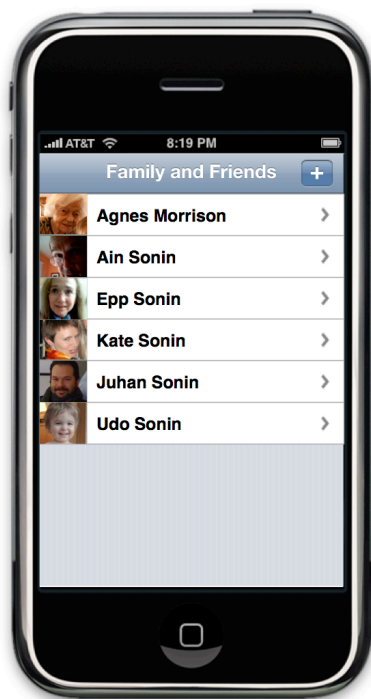
Violates all 5 Tufte principles



5 principles produce substantial changes in graphical design:

1. *Above all else, show the data.*
2. *Maximize the data-ink ratio (i.e., the % of ink that shows data)*
3. *Erase non-data ink.*
4. *Erase redundant data-ink.*
5. *Review and edit.*





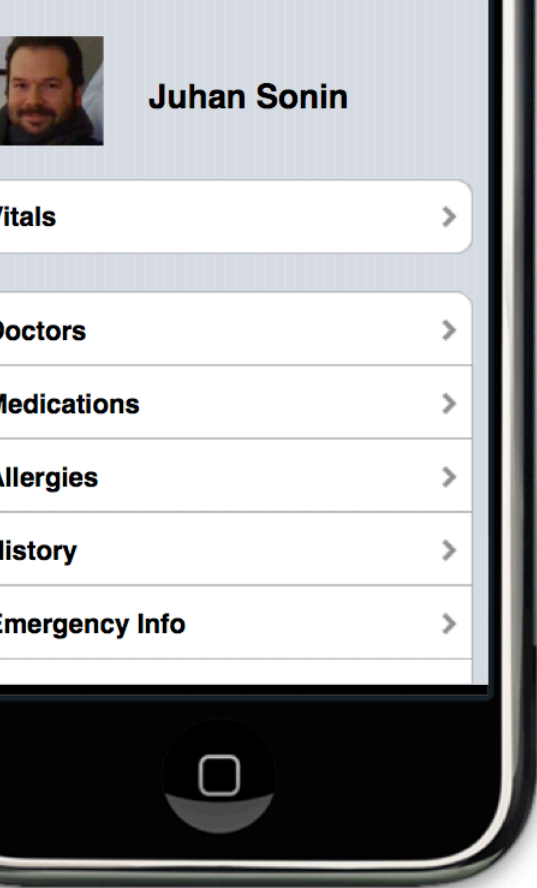
First Name	Juhan
Last Name	Sonin
Address	Arlington, MA
Family	Kate (wife), Udo (son)
Contact	617.504.3390
Languages	English, Estonian
Social Security	022 68 4787

Sex	Male
Date of Birth	1.Mar.1972
Height	5' 10"
Weight	215 lbs
Blood Type	A+
Waist Size	36"
Blood Pressure	117/79 mmHg




Cholesterol

Total	220 mg/dl
LDL	128 mg/dl
HDL	38 mg/dl




Triglycerides	270 mg/dl
Glucose	101 mg/dl
Alcohol	1 drink/week
Tobacco	0
Blood Type	A+
Waist Size	36"
Blood Pressure	117/79 mmHg



First Name	Juhan
Last Name	Sonin
Address	Arlington, MA >
Family	Kate (wife), Udo (son) >
Contact	617.504.3390 >
Languages	English, Estonian >
Social Security	022 68 4787

Sex	Male
Date of Birth	1.Mar.1972
Height	5' 10"
Weight	215 lbs  >
Blood Type	A+
Waist Size	36"  >
Blood Pressure	117/79 mmHg  >

Cholesterol

Total	220 mg/dl  >
LDL	128 mg/dl  >
HDL	38 mg/dl  >

Triglycerides	270 mg/dl
Glucose	101 mg/dl



Carrier 11:33 PM

Clear History Exam History Continue

Virtual Exam				
#	Date/Time	Score	Questions	Details
1	Nov 2, 2009 11:33:45 PM	0.00	45	details

Practice Exam				
#	Date/Time	Score	Questions	Details

Carrier 11:34 PM

Time remaining 00:59:47

By definition, ultrasound is sound having a frequency greater than _____ cycles per second, that is, sound above the audible range.

A) Antipruritic

B) 40,000

C) 30,000

D) 20,000

A B C D

Mark For Review Add Notes Show answer

Unreadable

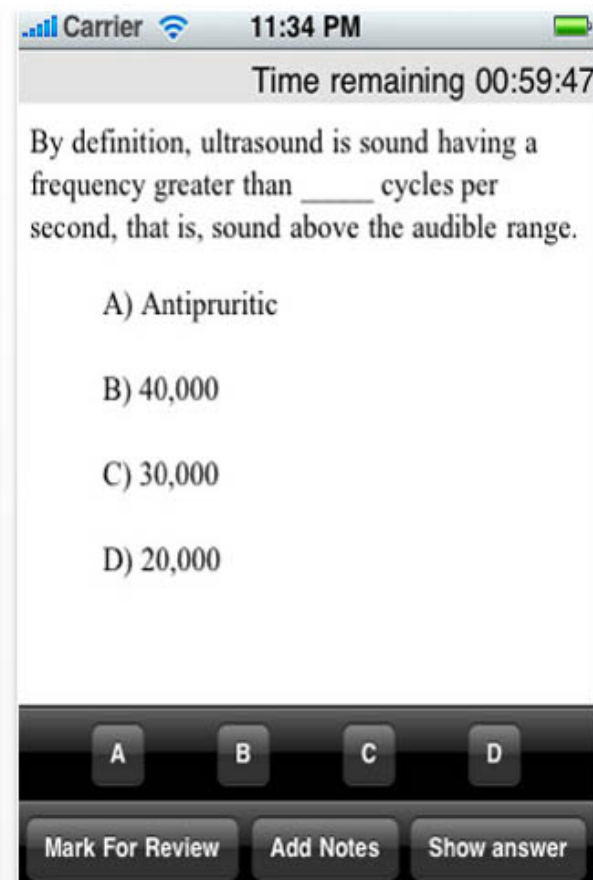


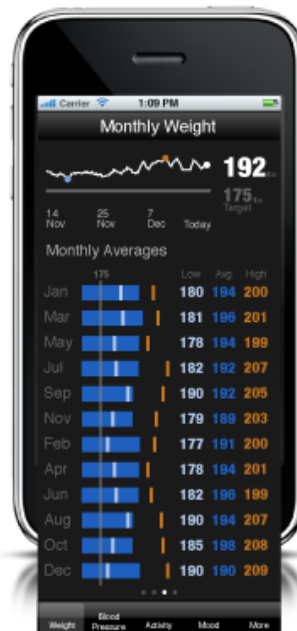
Grid >> Data

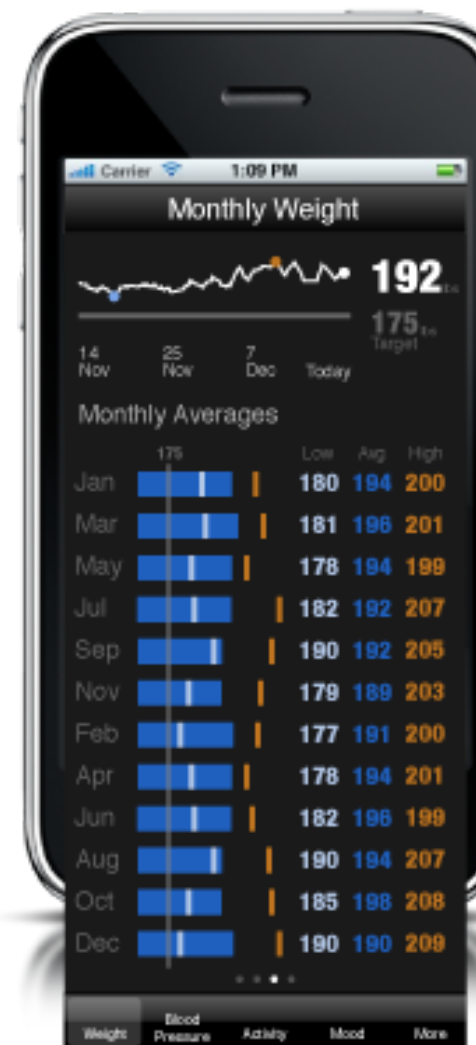
#	Date/Time	Score	Questions	Details
1	Nov 2, 2009 11:33:45 PM	0.00	45	details

#	Date/Time	Score	Questions	Details
---	-----------	-------	-----------	---------

Data as Interface... NOT







CARTER, Darren, DOB: 05-May-1955, NHS 345-324-2342 - NHS Pathways 1.0

CLH NHS Trust • Dr. Adam Marshall • Patients • Carter, Darren • Footcare •

Carter, Darren
Known as: AKA goes here...

Born: 05-May-1955
Age: 57

Sex: Female
NHS number: 345 324 2342

Consult: Dr. Gilt
Dependency status: Not known

View Assessment Planning Filter Sort

Paediatric A&E Attendance
Paediatric Admission
Paediatric Outpatients
New Examination
New Investigation
New Assessment
New Plan

120/70
Pulse
80
Resps
11
Oxygen saturation
98

Day of operation

FAIRWAY: Distal First Metatarsal Osteotomy

start

Indications

- CP lateral
- X-ray, foot
- Referral diagnosis Orthopaedic OPD: Hallux Valgus

Discussion criteria

- Angle 15°-22°
- Day case
- OA and Surgery

Exclusions

- Carer Unavailable
- Recent MI

Team

1 Pre Op Assessment

- Cardiorespiratory
- Investigations requested
- Day case criteria
- Patient questionnaire
- Allergies and risks
- Medications
- Information given to patient
- Further advice: Surgeon
- Outcomes

Team

Treatment route

2 Pre Op Reassessment

- Reassess fitness for surgery
- Discharge planning

Team Info

3 Pre Op Check

- Admission
- Admission health check
- Vital signs baseline
- Confirm Medications
- JVT Prophylaxis
- Nil by mouth
- Patient Check
- Anaesthetic review
- Surgeon review
- Patient Consent
- Primed

Team

4 Surgery

- Admission
- Theatre: position and equipment
- Wash check
- Drape items
- Skin drape
- In situ items
- Operation summary
- Post op and follow-up instructions

Team

5 Post-op recovery

- Recovery Checklist
- Monitoring and Observations
- Handover and instructions

Team

end

MOBIL
Removal of fixation, pain free mobility

OUTCOME

Tools & Utilities View Navigator Time Doctor Split View Case Settings

Help My Preferences

CARTER, Darren, DofB: 05-May-1955, NHS 345-124-2342 - NHS CFH Pathways L2

CLH NHS Trust • Dr. Aden Mansel • Patients • Carter, Darren • Paediatric •

Carter, Darren
Known to: RGA good bond...

Born: 05-May-1955
Age: 57

Sex: Female
NHS number: 345 124 2342

Coen: Dr. Chit
Dependency status: Not known

View • Assessment • Planning • Filter • Sort •

Paediatric A&E Attendance
Paediatric Admission
Paediatric Outpatients
New Examination
New Investigation
New Assessment
New Plan
120/70
Pulse
80
Resps
11
Oxygen saturation
98

Day of operation

38%

PATHWAY: Distal First Metatarsal Osteotomy

start

INDICATIONS

- CP lateral
- X-ray, foot
- Referral diagnosis Orthopedic OPD: Hallux Valgus

EXCLUSION CRITERIA

- Angle 15°-22°
- Day case
- OA and Surgery

EXCLUSIONS

- Case Unavailable
- Recent MI

Team

1 Pre Op Assessment

- Cardiorespiratory
- Investigations requested
- Day case criteria
- Patient questionnaire
- Allergies and risks
- Medications
- Information given to patient
- Further advice: Surgeon
- Outcomes

Team

2 Pre Op Assessment

- Reassess fitness for surgery
- Discharge planning

Team

3 Pre Op Check

- Admit
- Admission health check
- Vital signs baseline
- Confirm Medications
- IV/1 Prophylaxis
- Nil by mouth
- Patient Check
- Anaesthetic review
- Surgeon review
- Patient Consent
- Primed

Team

4 Surgery

- Admit
- Theatre position and equipment
- Wash check
- Sterile items
- Skin drape
- In situ items
- Operation summary
- Post op and follow-up instructions

Team

5 Post-op recovery

- Recovery Checklist
- Monitoring and Observations
- Handover and instructions

Team

6

7

8

9

10

end

NOTE: Removal of patient post live initially

Team

Priorities, hierarchy

1 Filtering

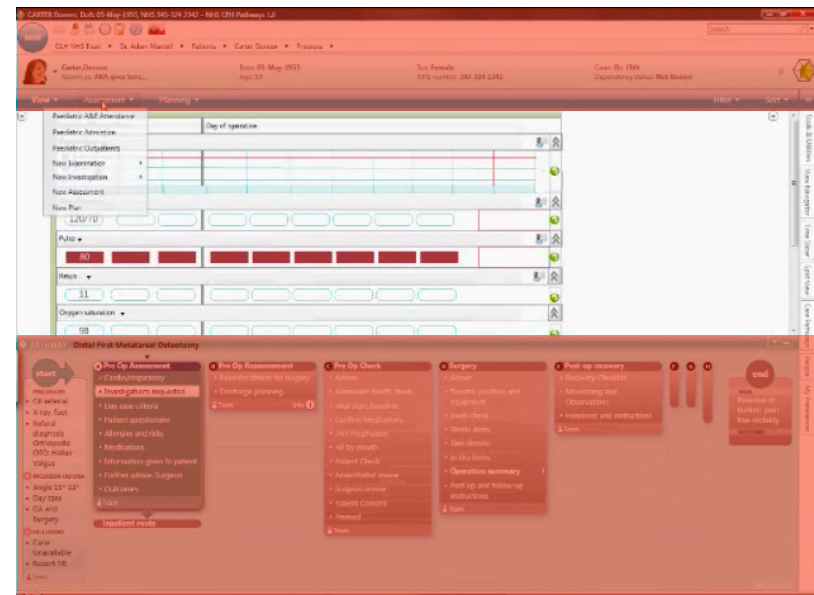
2 Navigating

...

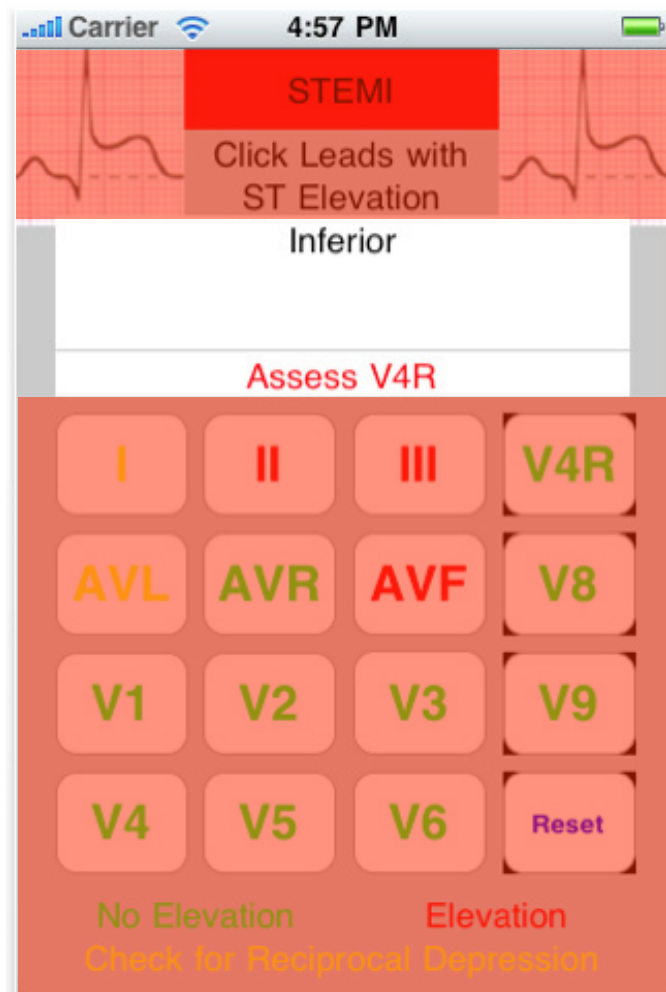
...

...

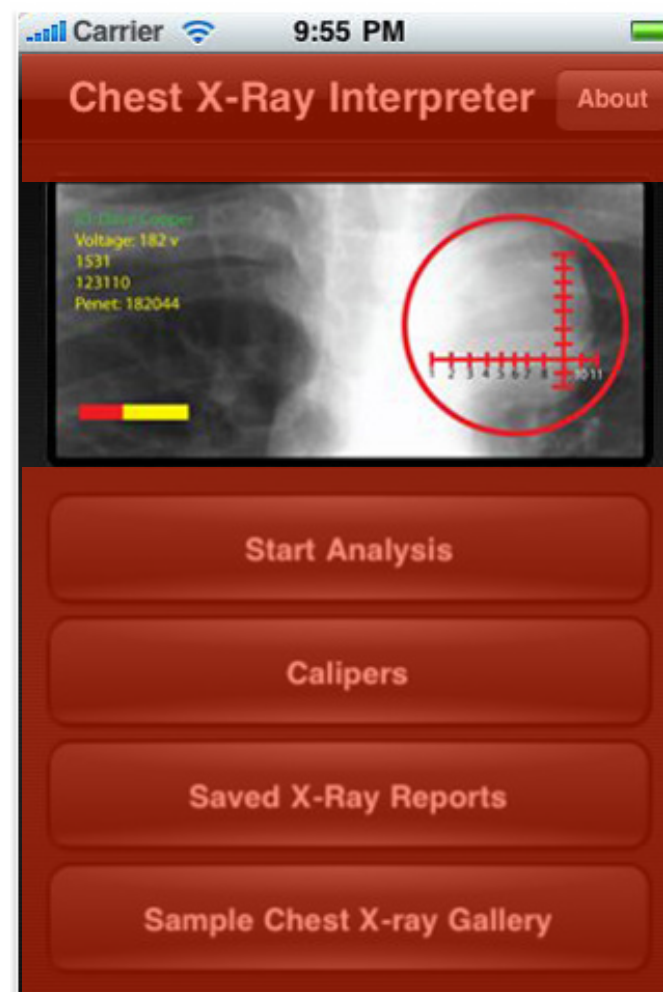
last Patient data



20%

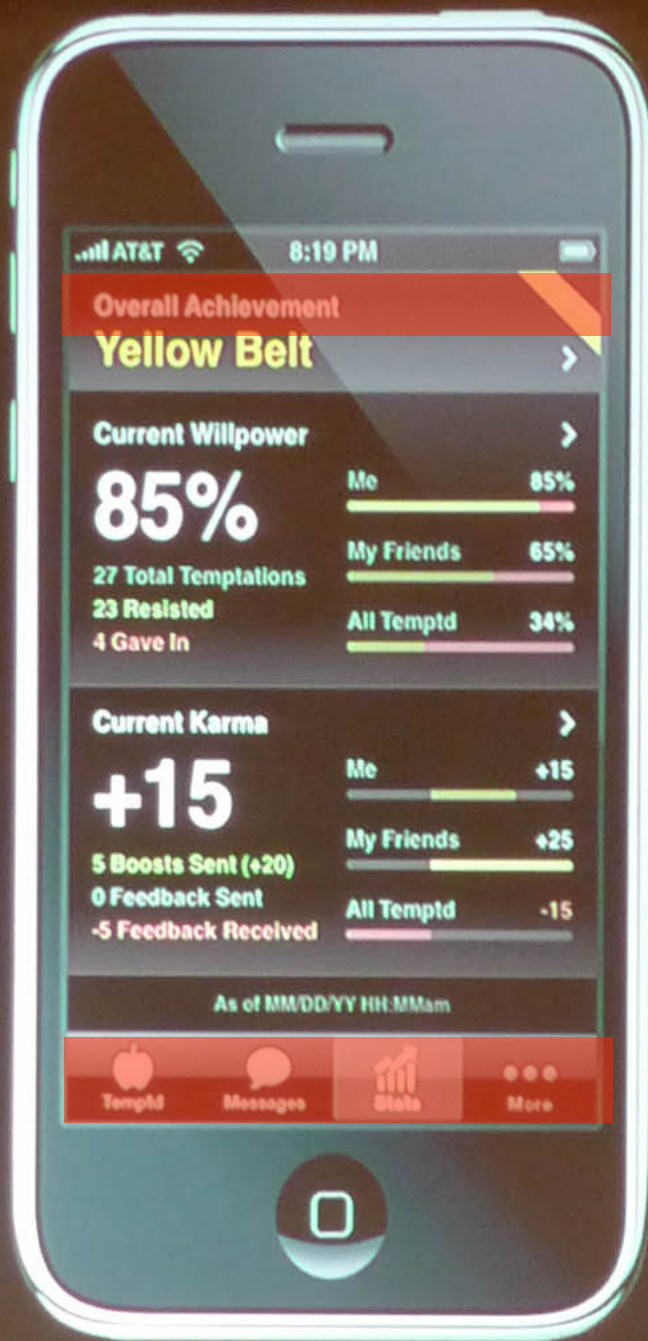


25%

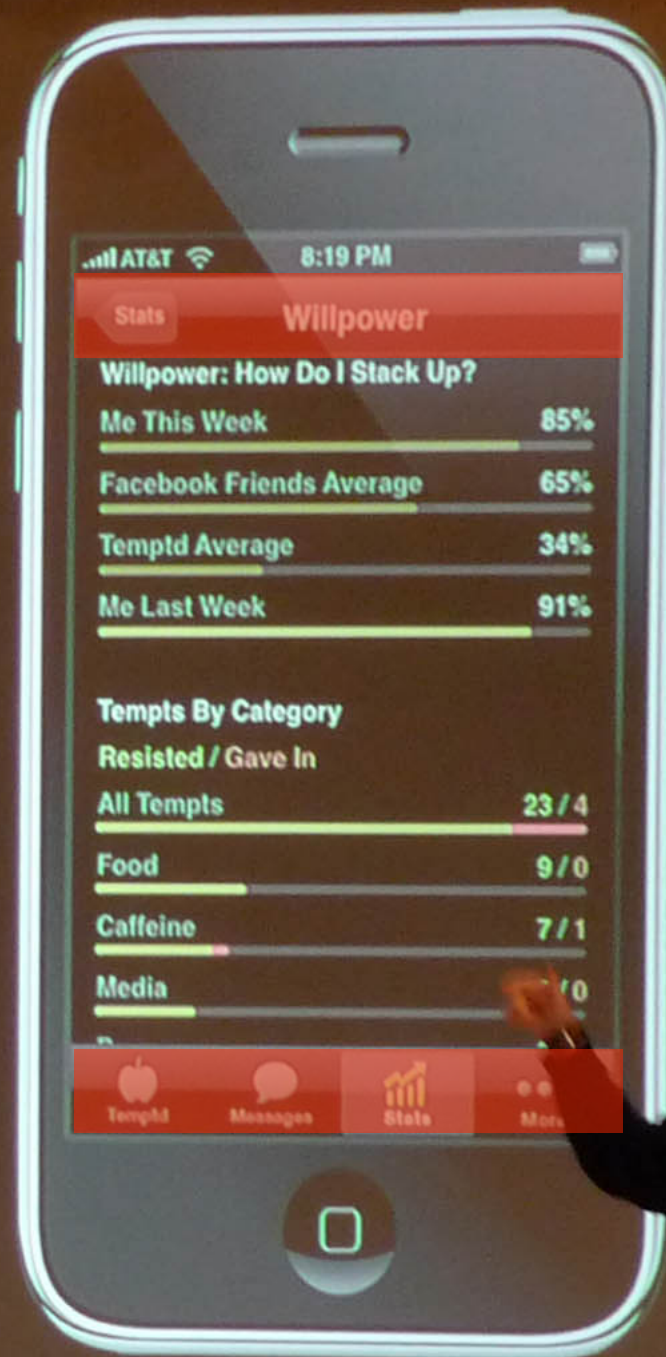




70%



80%





80%

of the screen space should be for data, the actual workspace



Let data scream

The data is THE story
Less ink, more bang
80% rule

Grid it

running heads

columns

gutters

captions

margins

Was das Deutsch betrifft, so ist Reinhold hier einer der Ausnahmefälle. Was das Bismarckianertum angeht, so ist es eher in der Natur seiner beschränkten Verbindung mit einem Kaiserreich und einem Bismarckianertum, hervorgerufen aus der christlichen Situation des Deutschen, in der der Autor mit seinen vorfindungsreichen Text, Ein Zwillingsspiel, vornehmlich entstanden durch Bismarck. Ob es sich um jenen Text, den Wort Anspielungen angeht, auch das ist nicht zu zweifeln, denn zwei Finger mit dem Namen von Lohse schrieben ihn.

Ellen G. White

THE UNIVERSITY OF CHICAGO PRESS

den Reaktor im Kern stehen
den Reaktor nicht definiert im Kern gewesen
den Reaktor im Kern gewesen und daher die Pläne aufgeben
Wo geht's denn hier im Kern nach, um die Pläne zu verwirklichen?
Sowohl Wirtschaft, der Endbenutzer, Kaufmann (bedeutet) und mit
entscheidend gefolgt hat, so elementar im Kern war
nicht die absolute Distanz hat, so leicht die Pläne in den Kern wird,
die sie ableiten hat

Er wenig gewandt ist der Neue Wiener Tagblatt. Es hat, so das Geschäftsleben mit geringe Ausdehnung, den Charakter des Kern geworben und stellt die Pläne aufzugeben. Es hält sich an die populärsten Ereignisse des Tages, die sein Hauptziel

Ich habe, heißt es, die Fliese aus Stein gewaschen. Teil ich denn die
Kameradschaft an, statt sie zu erschaffen, verstoßen ihre
journalistischen Äußerungen nicht.

Wenn Herrschaft bröckelt, steht die Flut im Raum
Des gemachten Gottes Dorn wach, als, das müssen wir verschlingen,
Wo geteilt dem Lord ein Korn wach, um die Flut zu bewachen!

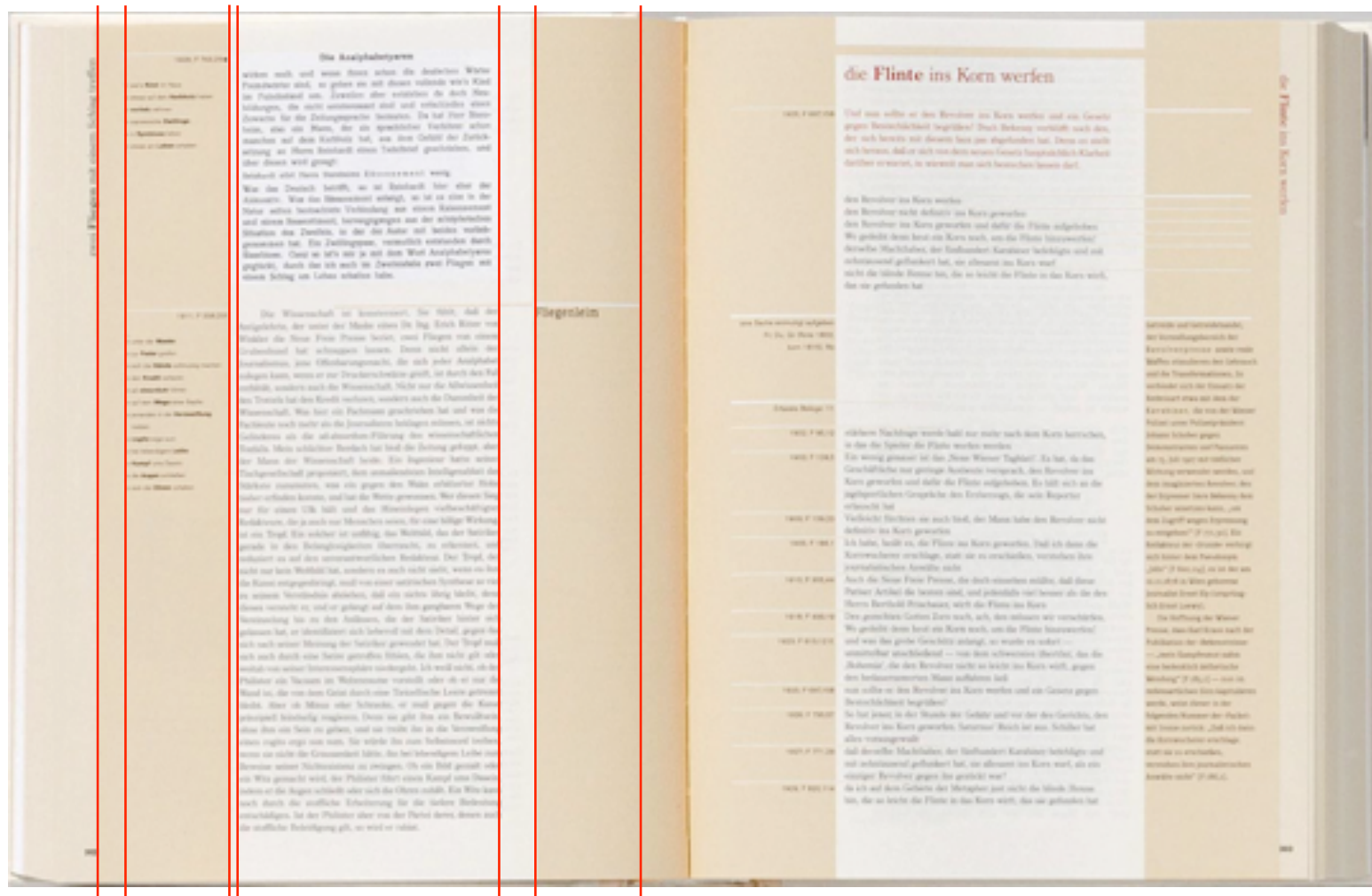
den Inflationsumsetzungsweg aufzuheben soll
man sollte es den Revolutionen im Osten nach und ein Gesetz gegen
Deutschland begreifen?

„Ich bin die Mädelchen, der Hundertjährige Karoliner befehlige und
ich schreibe sie gefordert hat, sie aber nicht im Kurs war, die ein-
zigste Person, die gegen sie geschickt war.“

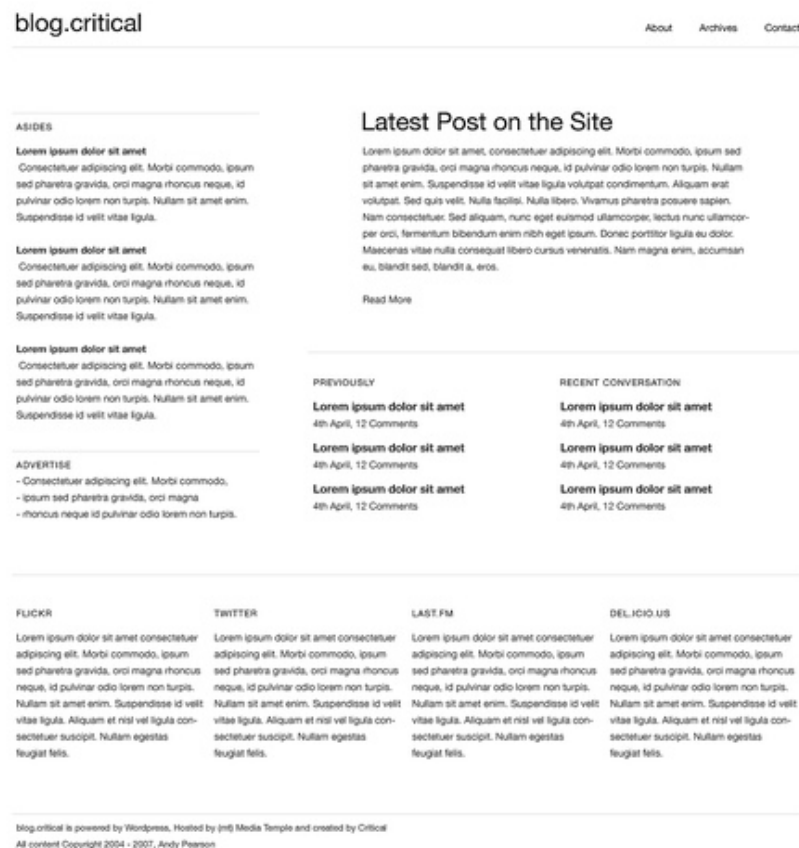
Als ich auf dem Gelände der Mülldeponie just unter der blauen Himmelstende, die so schön die Fliese in den Wurzeln hält, das sie sich nicht hat

[illegible]

Grids have been used for centuries in art and composition and for 60 years in graphic design and typography.



A typographic grid is a 2-dimensional structure for ordering graphical objects.



A grid system =
schema that can be applied to a number of
designs without blowing up the grid structure

Grid systems don't solve every layout problem
... the math and implementation can quickly
become nightmarish

However, they do create an understandable
scaffolding and form that helps our
eyes and brains gain visual traction

Mobile Design Tenets

Let data scream

The data is THE story; it should be front and center. Stories are often muddled by information-starved graphics. Aesthetically beautiful diagrams can suffer from low data-to-ink ratios (lots of paint, little useful data). Don't pollute the data with eye candy: aim for clear, clean displays. One bite, big flavor.

Other concepts: information density, 80% of screen real estate should be dedicated to data; 20% to interface, and let data sing (listening to data can be more story-rich than using your eyeballs).

Only handle information once

Don't make me input the same data twice, three times, or every time I hit a common data entry service.

Grid it

Graphic design and grid construction are key visual design concepts for interface designers. Grid hierarchies and basic information layouts (similar in book, mag, and newspaper design) will be described and diagrammed. InfoViz enthusiasts, scientists, and engineers often don't know basic graphic design and layout practices. By instituting a few straightforward grids and thinking about how to align and design data (beautiful evidence), data visualization will become an even more powerful storytelling technique.

Gutter, column, margin, captions =

Use one grid and stick to it

When in doubt, bang left

Bend it like Beckham: once mastered, break the grid for elements that need a different treatment

Tenets

- Let data scream
- Only handle info once
- Grid it
- Type less + less type
- Color carefully
- Date your users
- Speak my sign
- What interface?
- Repeat customers ROCK
- Get physical

What is this?

- Missionette Statement
- Presentations
- Open to all
- Send feedback

Mobile Design Tenets

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Recently, the software development world has adopted grid-based layout schema.

[Home](#)

[Manage Your Health](#)

[Medicare Basics](#)

[Resource Locator](#)

[Help & Support](#)

[New to Medicare?](#)

[Health & Drug Plans](#)

[Facilities & Doctors](#)

[MyMedicare.gov](#)

Getting Started

[Are You a New Beneficiary?](#)

[Find Out if You're Eligible](#)

[Choosing or Changing Your Coverage?](#)

[Medicare & You 2010 Handbook](#)

[Apply Online for Medicare Now](#)



Stay Healthy



Benefits of Quitting Smoking

Talk with Your Doctor



Spotlight on Getting the Most from Doctor's Visits

Keeping Fit

What's New?

Closing the Prescription Drug Coverage Gap

Medicare and the New Health Law - What It Means for You

Watch Video: Secretary Sebelius Introduces the New Medicare.gov Website

Improved COMPARE Data Interface & Website

Stop Medicare Fraud

Information about

*the Affordable
Care Act for People
with Medicare*



MyMedicare.gov



[Secure Sign In](#)

[Create an Account](#)

[Home](#)

[Manage Your Health](#)

[Medicare Basics](#)

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[Health & Drug Plans](#)

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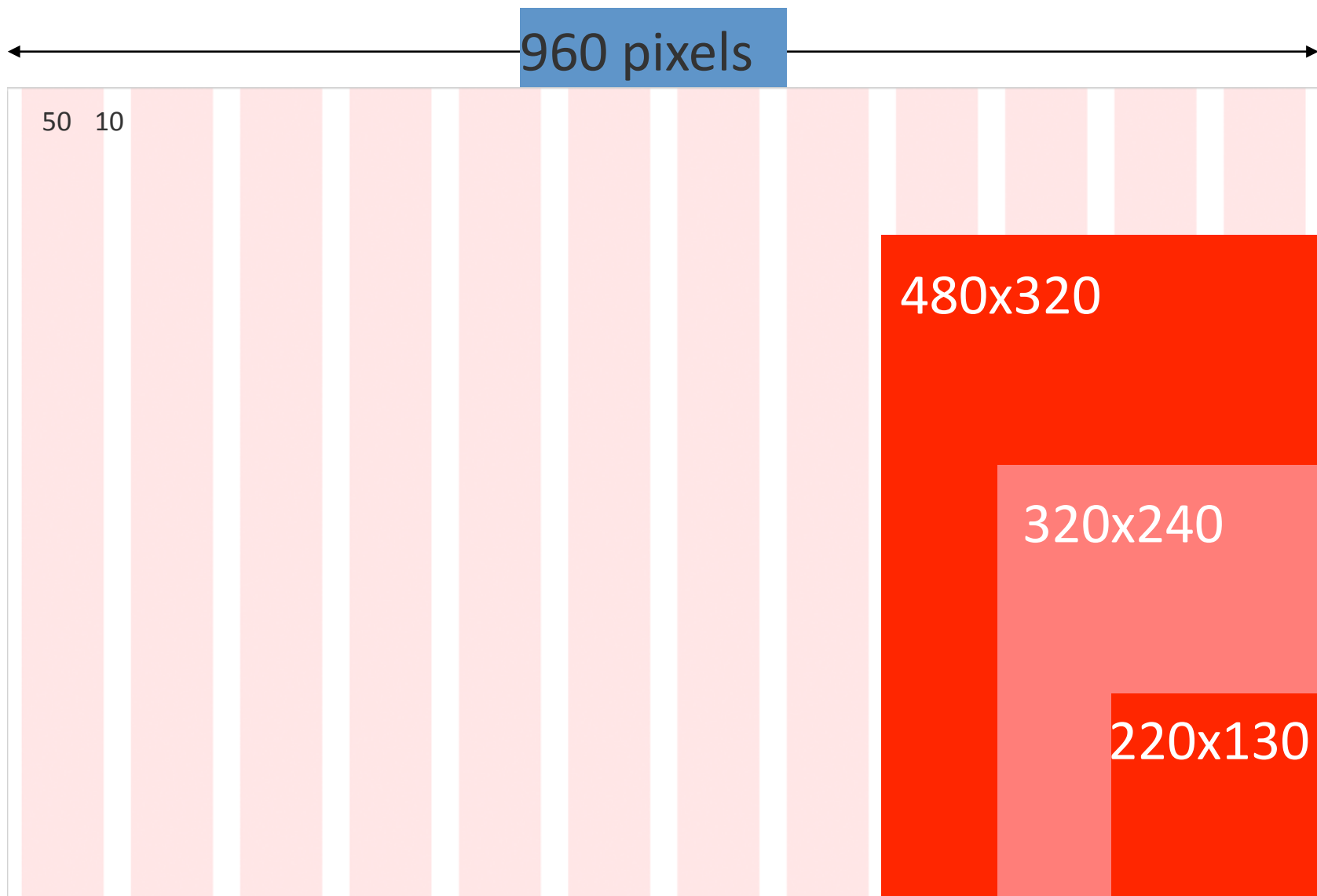


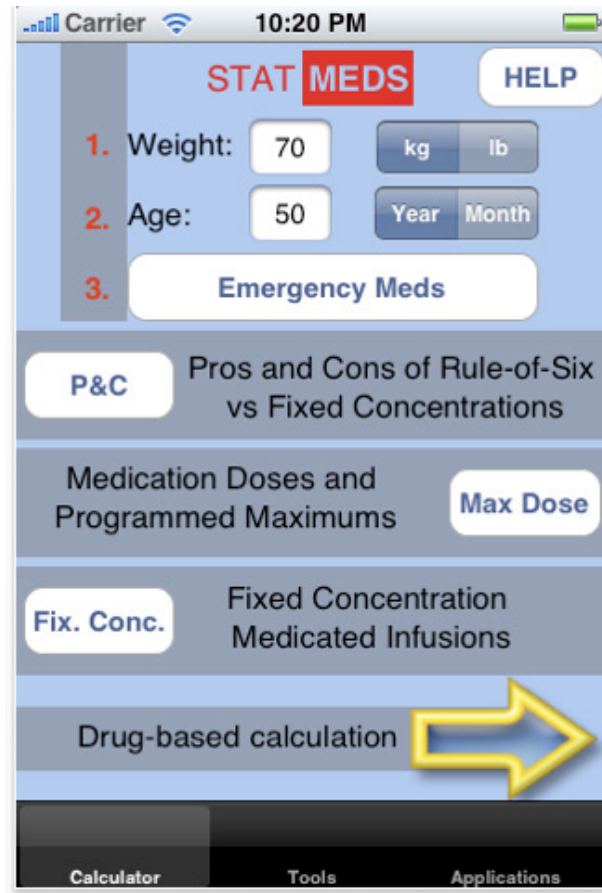
MyMedicare.gov



[Secure Sign In](#)

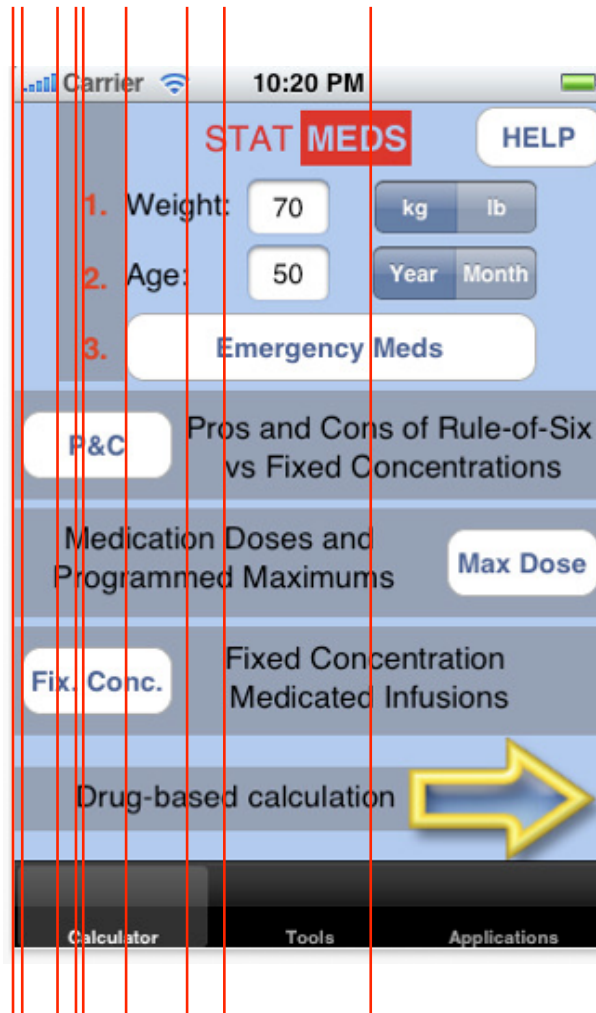
[Create an Account](#)





What's the most important task?

Haphazard design



Hard to read
Hard to scan
No grid

Looks bad, feels bad

Hard to use

Healthcare applications continue to suffer from grid-less services.

AT&T 7:54 PM

STAT Meds

Weight **kg** **lb**

Age **Yr** **Mon**

Emergency Meds

- Rule of Six vs Fixed Concentrations** >
- Med Doses and Programmed Maximums** >
- Fixed Concentrations Medicated Infusions** >
- Drug-based calculation** >

Calculator Tools Applications Help

Task hierarchy

Clear labeling

The screenshot shows the STAT Meds app interface. At the top is a status bar with 'AT&T', signal strength, Wi-Fi, time '7:54 PM', and battery level. Below is a blue header bar with the title 'STAT Meds'. The main content area has two input fields: 'Weight' and 'Age'. The 'Weight' field has a unit selector with 'kg' (selected) and 'lb'. The 'Age' field has a unit selector with 'Yr' (selected) and 'Mon'. Below these is a grey button labeled 'Emergency Meds'. A list of menu items follows, each with a right-pointing chevron: 'Rule of Six vs Fixed Concentrations', 'Med Doses and Programmed Maximums', 'Fixed Concentrations Medicated Infusions', and 'Drug-based calculation'. At the bottom is a dark blue navigation bar with four icons and labels: 'Calculator' (calculator icon), 'Tools' (wrench icon), 'Applications' (ambulance icon), and 'Help' (target icon).

Weight	kg	lb
Age	Yr	Mon
Emergency Meds		
Rule of Six vs Fixed Concentrations		
Med Doses and Programmed Maximums		
Fixed Concentrations Medicated Infusions		
Drug-based calculation		

Calculator Tools Applications Help

Readable
Scannable
Logical grid

Feels better

Straightforward use

Age

Emergen

**Rule of Six vs Fixed
Concentrations**

**Med Doses and
Programmed Maximums**

Age

Margin



Gutter



Bullets
belong in
the
gutter

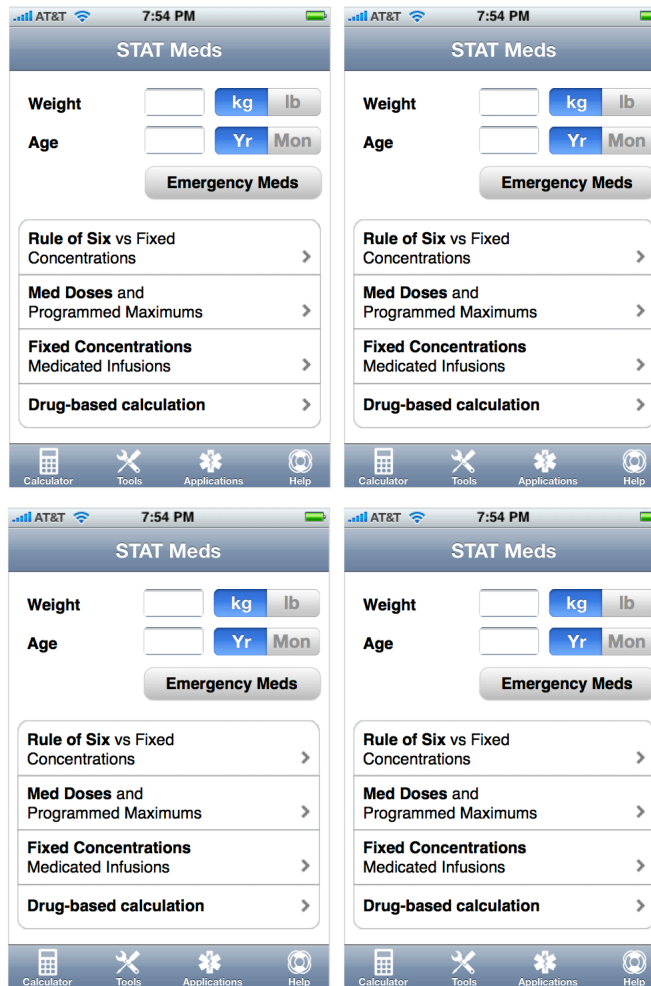


**Rule of Six vs Fixed
Concentrations**

**Med Doses and
Programmed Maximums**

Emergen

Use one grid and stick to it



Same grid across all screens the app

Creates a natural rhythm for reading and use



Becomes second nature
to use... from muscle
memory to visual
memory

Actions require less
attention

Efficiency++

The grid is a governance system that guides basic design choices.

The grid's preconditions act as an initial arbiter for determining structure, hierarchy, and object layout.

But...

It's critical to break the grid rules to provide functional importance, visual highlighting, or better usability.

A grid system =

Create an understandable scaffolding and form
that helps our eyes and brains gain visual
traction

... and our hands and fingers the muscle memory
to think less about tasks

Use one grid and stick to it
Bend it like Beckham

Type less

Less type

Typography is interface design for text

Clarity + simplicity apply to typography, just as
in general interface design rules

Typography sets the visual hierarchy for words

Size

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

Weight

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

Style

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

Color

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

Spacing

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

GM posts largest loss ever
Today General Motors posted the largest loss for
any corporation in American history.

Typography is interface design for text

Use simple, highly legible sans-serif faces

Helvetica

... can work at sizes over 11pt

Or use device-optimized fonts.

Not Comic Sans.

NOT COPPERPLATE.

Not Marker Felt.

Legibility: the degree at which text is readable, understandable

Typography is the red-headed stepchild of interface design: forgotten, abused, but always visible.

- 1 font to rule them all
- Skim baby, skim
- Speak their language
- Write right
- Fat fingering, small devices

It's the interface design for text. Good typography practice is critical for readability and scanning.

Our eyes gravitate towards straight lines.
Indented bullets kills the flow.

Typography is the red-headed stepchild of interface design: forgotten, abused, but always visible.

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- Skim baby, skim
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It's the interface design for text. Good typography practice is critical for readability and scanning.

A single line of text = more legible.

Readability

overall clarity achieved
through font size, line spacing,
placement, margins, and color

iPad Wired App

Insane to have 5-7 word columns!

THE BIG QUESTION

Do We Still Have Power Cords?

One thing Nikola Tesla never figured out how to travel, because that cord jungle behind your apartment center would break his heart—again. More than a century since he lit incandescent bulbs tirelessly in his lab, and yet you're still plugged into the wall. ¶ Even your three-pronged socket



looks surprised.

There are plenty of ways to beam volts through the air. Unfortunately, none of them are as cheap, efficient, convenient, or, well, safe as a cord. Radio waves can carry electromagnetic radiation to your devices, but radiation tends to peter out over long distances, leaving a thirsty gadget on the receiving end. Sure, you can crank up the amps to compensate for the loss, but then you end up frying passersby. Not good.

Lasers provide a better long-distance solution—but only if there is direct line of sight between source and device. Hey ... down in front!

MIT spinoff WiTricity has worked out how to transmit juice to any gadget that enters a certain magnetic field. Using two magnetically resonant coils that operate at the same frequency—one in the transmitter and one

litters your house with magnetic fields. While the company says these fields are orders of magnitude weaker than those found in an MRI machine, your tinfoil-hat-wearing neighbor is likely already imagining exploding pacemakers and brain tumors.

Other firms are banking on magnetic induction. You might already have a gadget that charges this way: Electric toothbrushes have used the technology for years. Recently PowerMat started using it for a charging pad that lets you gas up any gadget for which the company makes a compatible adaptor. But magnetic induction is barely wireless: It relies on superclose proximity between two coils to transfer power. It's also unclear whether it can supply enough power for the amp-hungry gadgets in your living room.

Bottom line? Get used to gear

Readability

overall clarity achieved
through font size, line spacing,
placement, margins, and color

Page Model

Multicolumn



Single Column

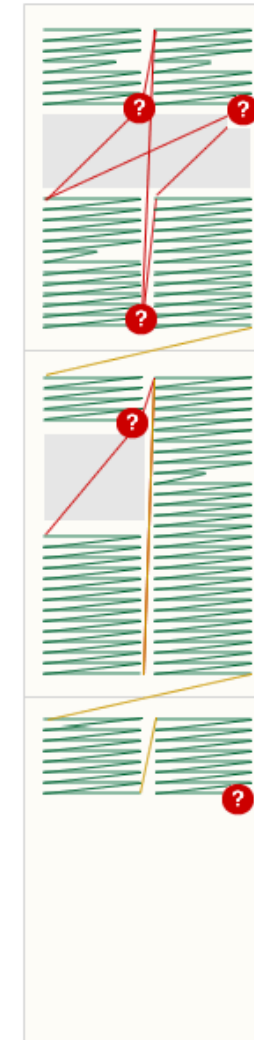


➡ Swiping (controlled)
➡ Scrolling (seamless)

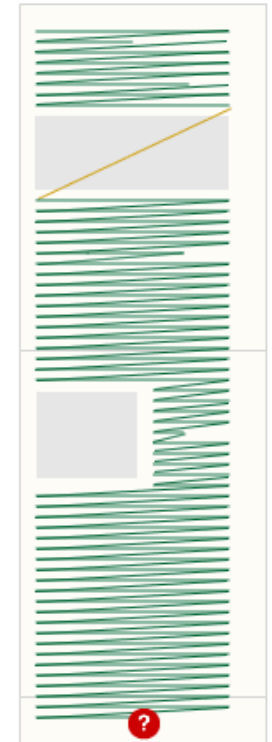
❓ What Now?

Text Model

Multicolumn



Single Column



— Orientation
— Break
— Fast Reading Path

Choose a single typeface

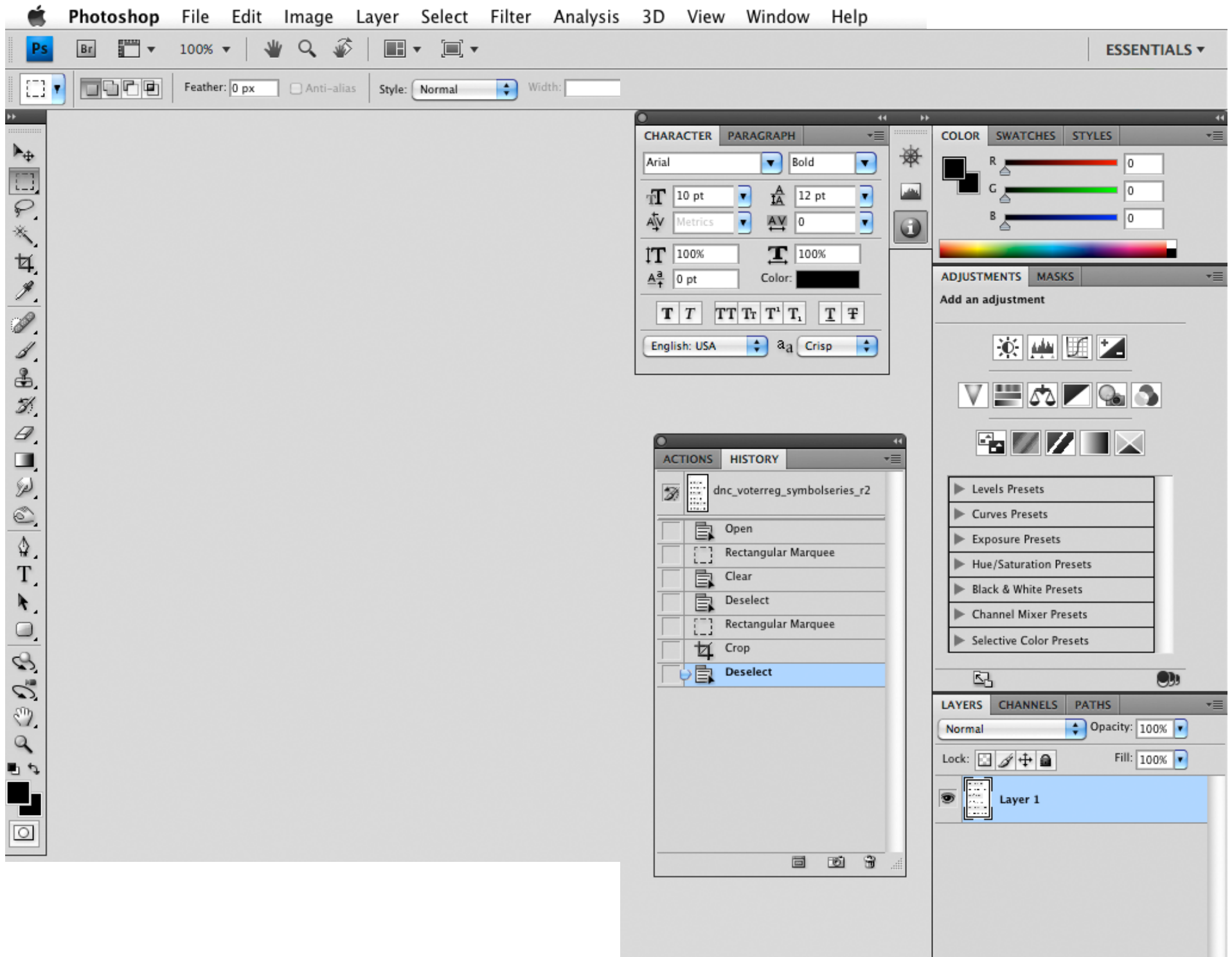
Switching from one font to another adds visual noise to the interface and damages coherence

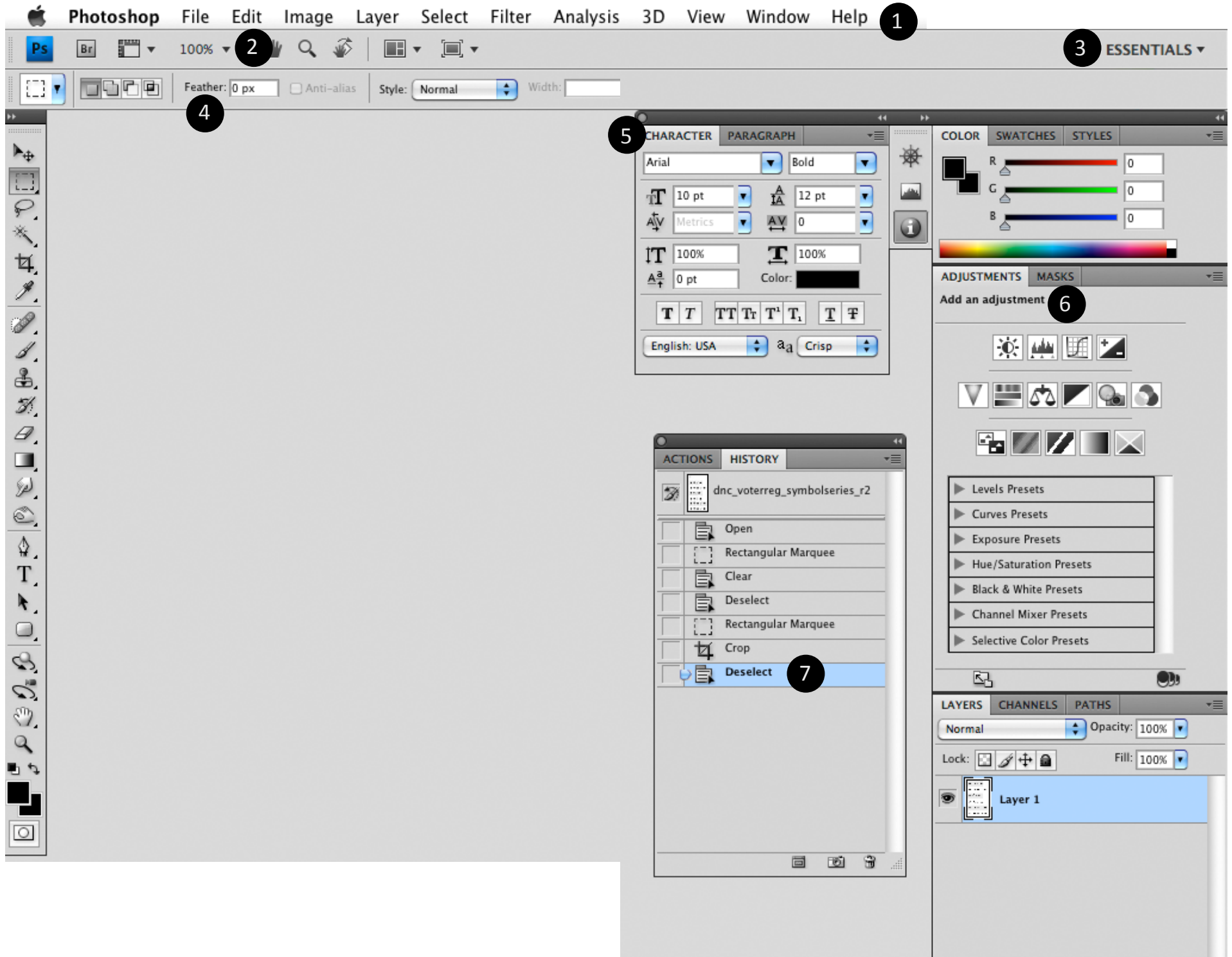
Choose a limited set of sizes

Font sizes connote importance and meaning.
Don't introduce variants.

DON'T SHOUT

ALL CAPS SLOWS READING BY 50%





1

HIMSS Mobile Design Workgroup : Home / Wiki / HIMSS.org /

2

Mobile Design Tenets

3

Let data scream

The data is THE story; it should be front and center. Stories are often muddled by information-starved graphics. Aesthetically beautiful diagrams can suffer from low data-to-ink ratios (lots of paint, little useful data). Don't pollute the data with eye candy: aim for clear, clean displays. One bite, big flavor.

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4

Only handle information once

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Grid it

Graphic design and grid construction are key visual design concepts for interface designers. Grid hierarchies and basic information layouts (similar in book, mag, and newspaper design) will be described and diagrammed. InfoViz enthusiasts, scientists, and engineers often don't know basic graphic design and layout practices. By instituting a few straightforward grids and thinking about how to align and design data (beautiful evidence), data visualization will become an even more powerful storytelling technique.

Gutter, column, margin, captions =

Use one grid and stick to it

When in doubt, bang left

Bend it like Beckham: once mastered, break the grid for elements that need a different treatment

5

PowerPoint presentation (2MB)

Typography is the red-headed stepchild of interface design: forgotten, abused, but always visible. It's the visual hierarchy for words. It's the interface design for text. Good typography practice is critical for readability and scanning.

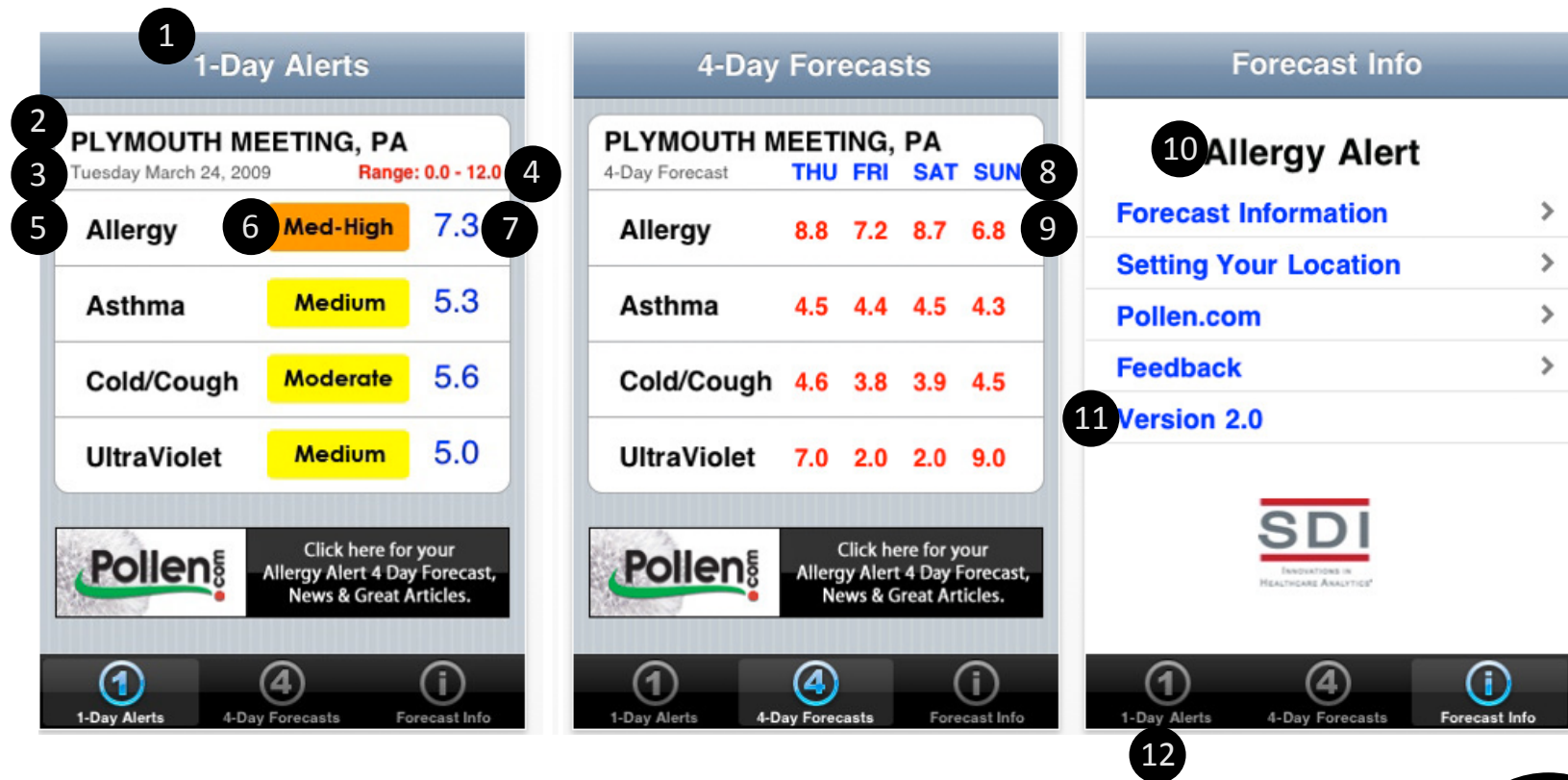
Tenets

- Let data scream
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- Color carefully
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What is this?

- Missionette Statement
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- Send feedback

5



1 typeface
6 treatments

Arial 10 Black

Arial 10 Grey

Arial 12 Black

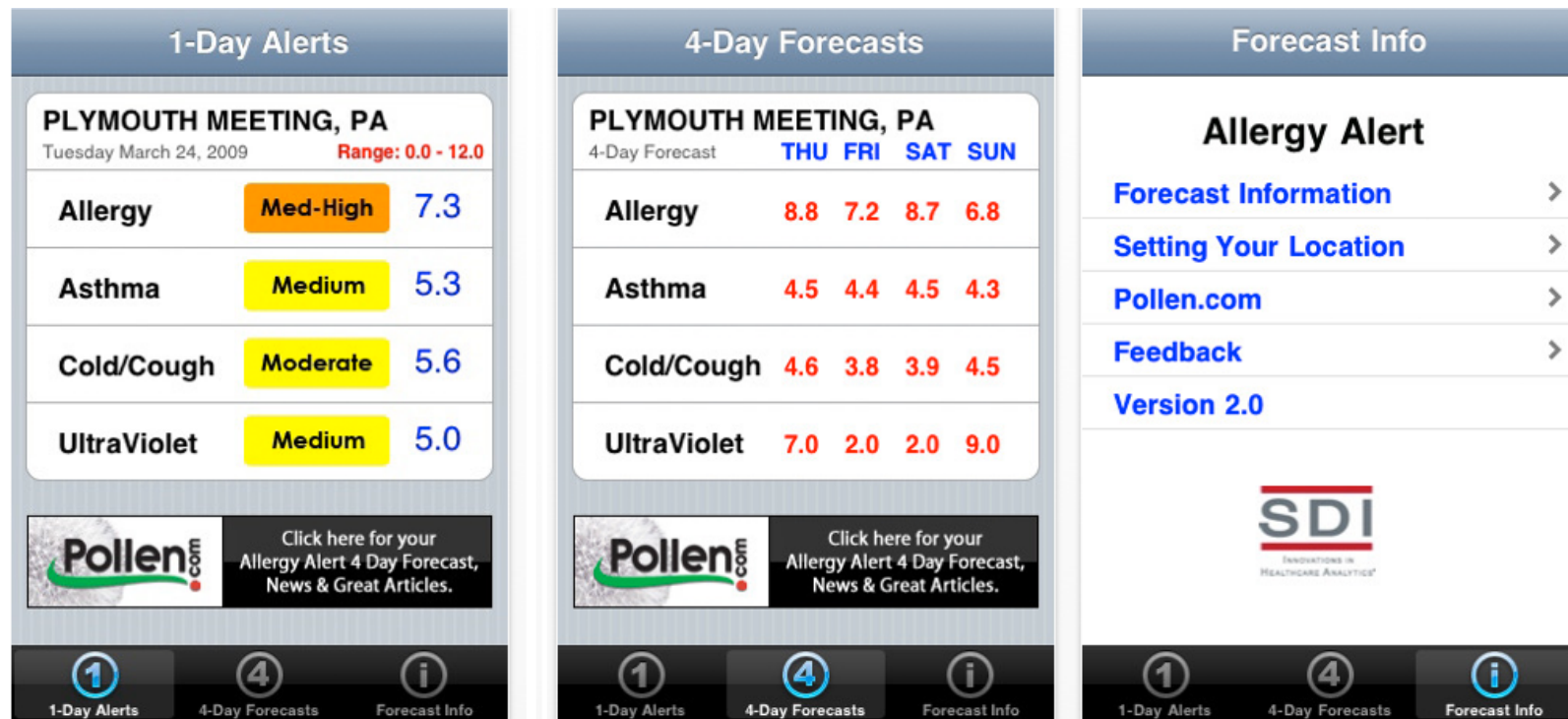
Arial 12 Grey

Arial 12 Bold Black

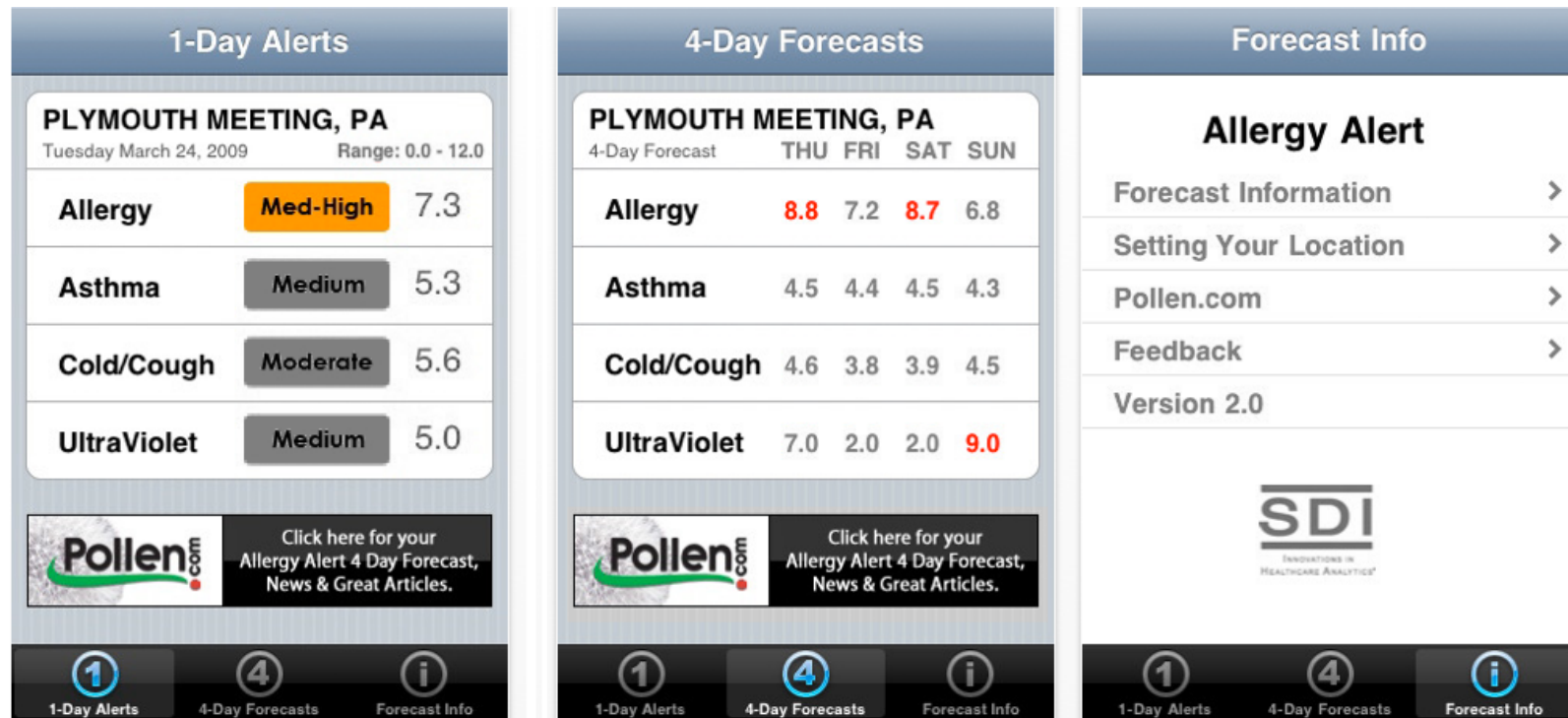
Arial 18 Bold Black

Don't get fancy with color

... unless you're using color to add meaning to your text.



Start by making all the UI shades of grey.
Then accentuate the **hot** data.



Write for short attention spans

Users typically skim more than they read.

Write for quick comprehension.

Speak their language

“Ambulatory Care”



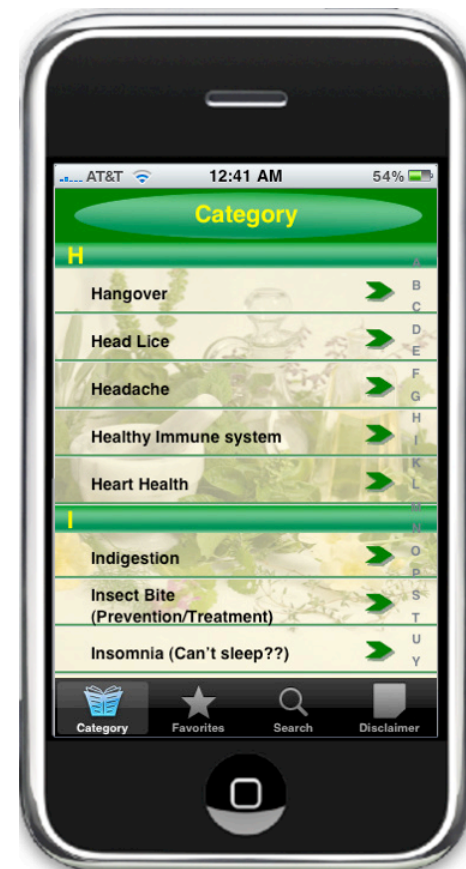
Maintaining ambulances or typical health clinic services?

Striking a balance

Communicating complicated
medical information == difficult.

Be precise
and
understandable.

*Categories don't help if the user can't
understand the rules behind the
categorization*



Striking a balance

Communicating complicated
medical information == difficult.

Be precise
and
understandable.


*Use the device conventions...
...don't fight them.*



Striking a balance

An easy way out is to pile on additional “help” content. ([what is this?](#))

But the better way is probably to rethink the information you’re presenting and how you are presenting it, particularly given the constraints of mobile devices.

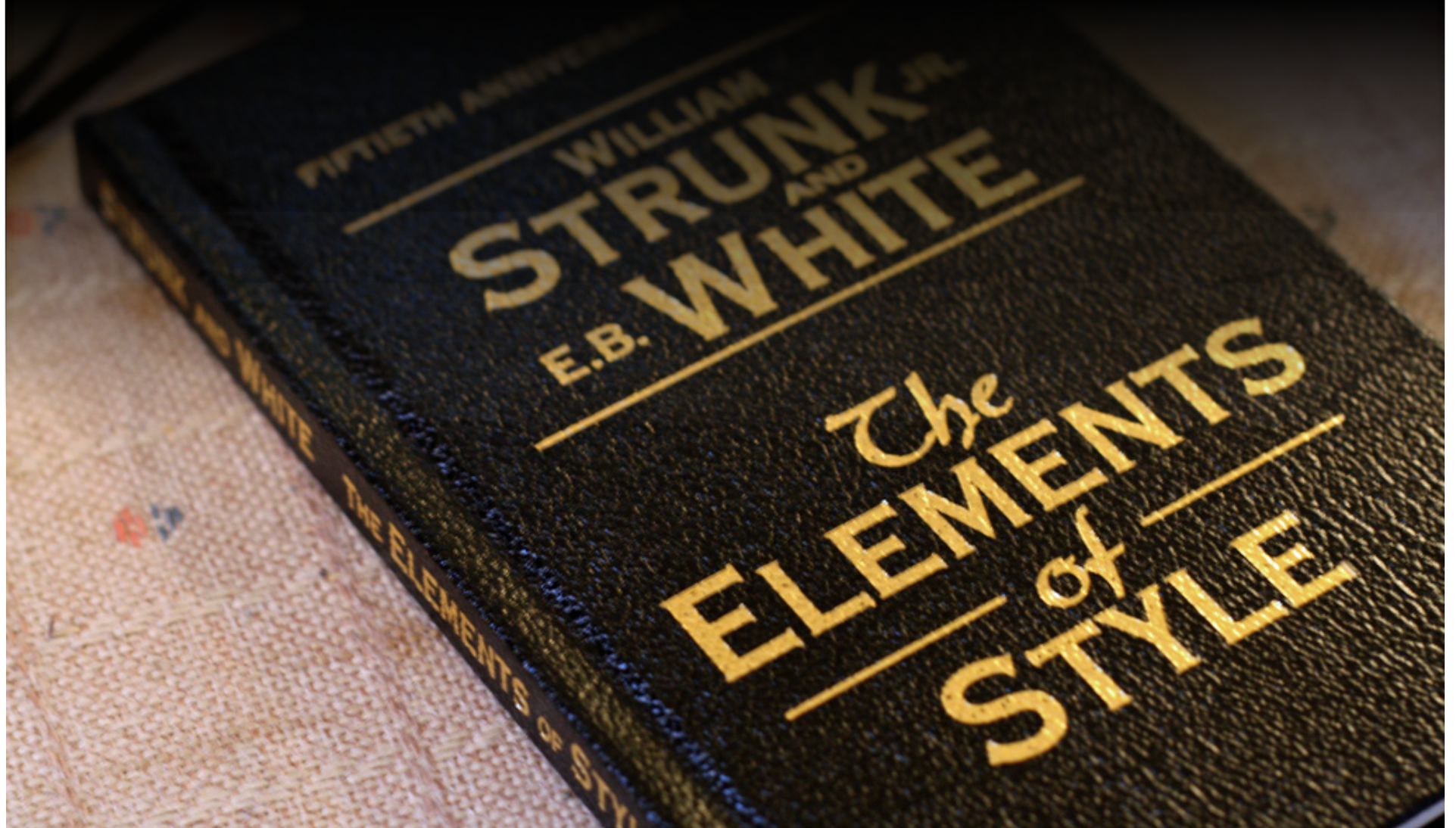
Sort Table By : Distance  Sort		
Major cardiovasc procedures w MCC o thoracic aortic aneurysm repair [MS-DRG 237]		
Median Medicare Payment to Hospital	Number of Medicare Patients Treated ^c	
What is This?		

Nowhere in the application is “MCC” defined

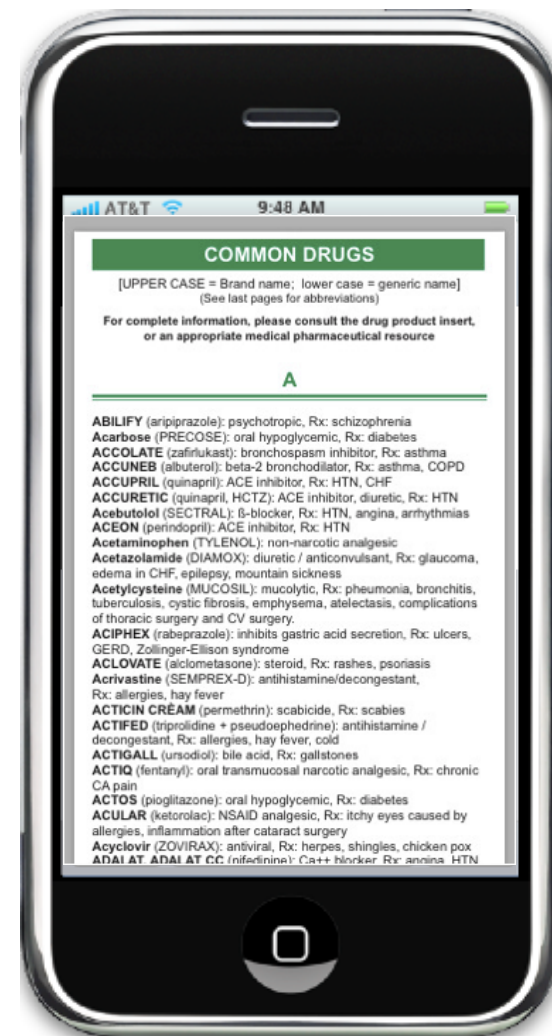
Your users don't have patience to wade through the data fire hose.

Pixels are precious.

Be concise.

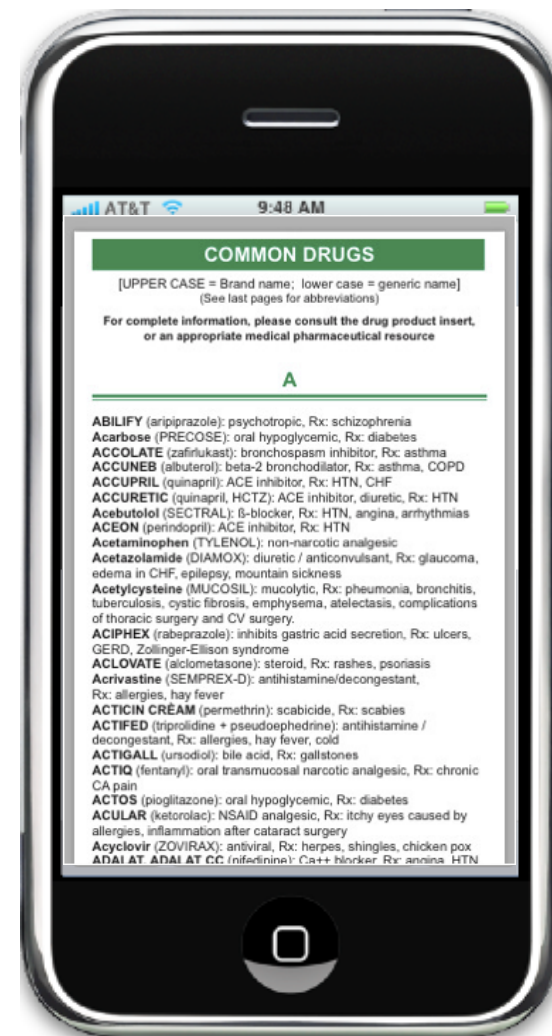


Evaluate **all** your content and interactions to make sure it works in the mobile context.



Evaluate **all** your content and interactions to make sure it works in the mobile context.

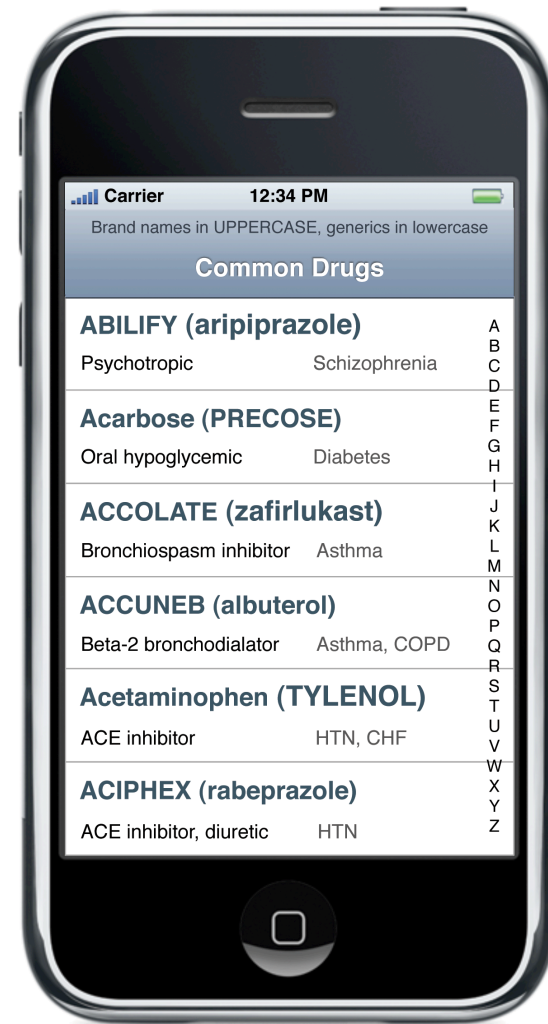
The content should be formatted to work on mobile screens



OUCH

Evaluate **all** your content and interactions to make sure it works in the mobile context.

The content should be formatted to work on mobile screens



...better

Type less and less type

Typography is interface design for text

1 font to rule them all

Skim baby, skim

Speak their language

Write right

What interface?

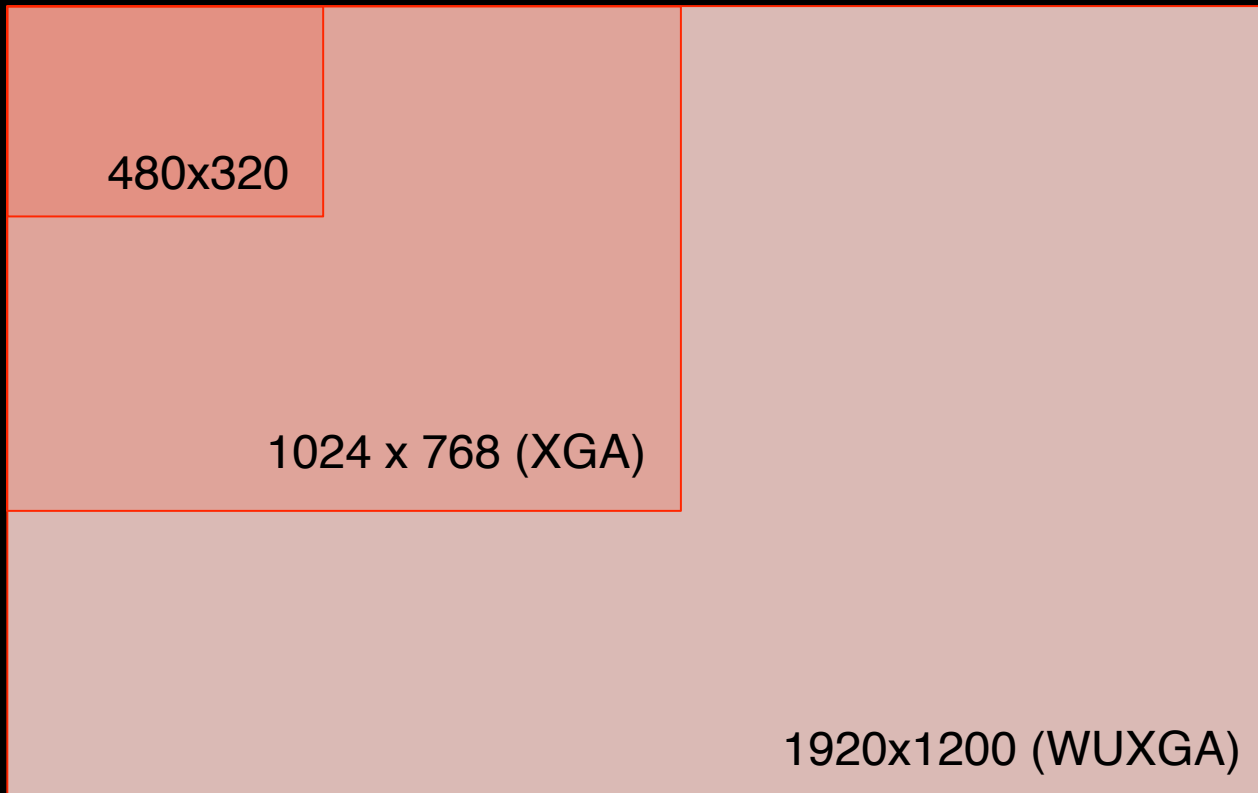




Over time, you don't notice the interface

Think small

Screen real estate is limited and valuable.

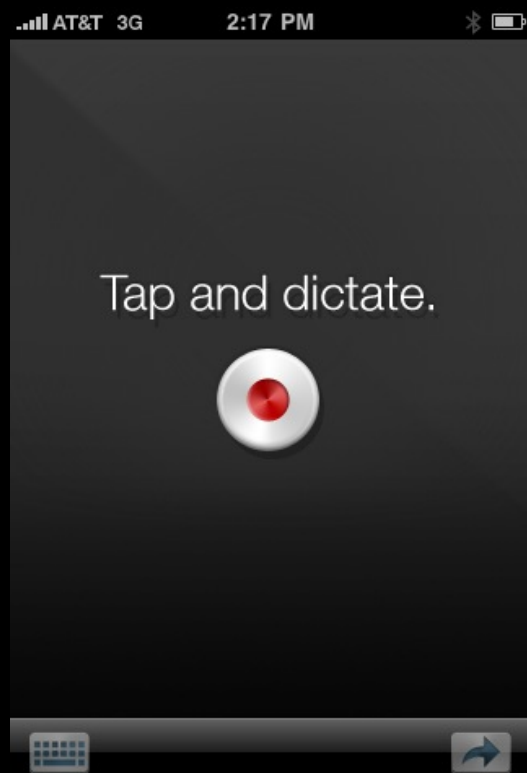


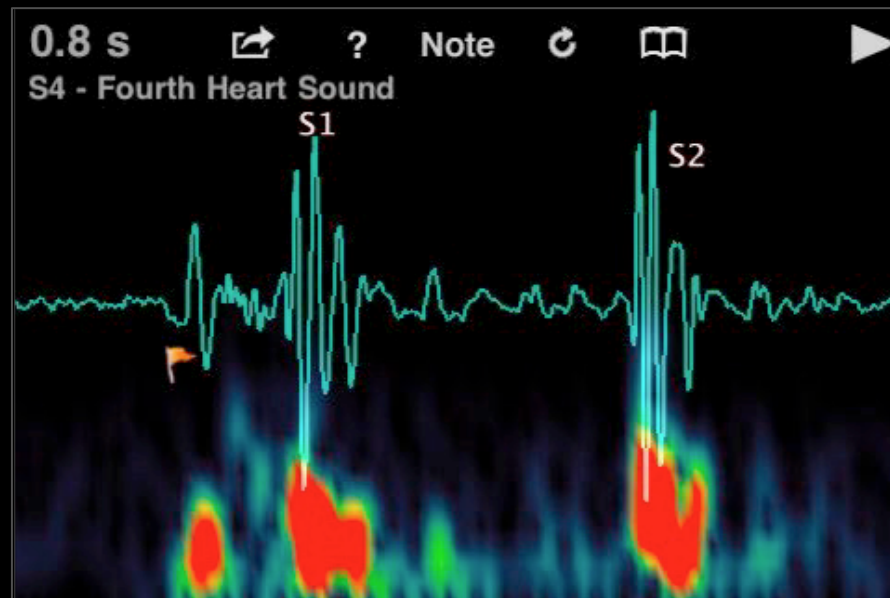
Mobile device < 20% of the pixels of a laptop
< 6% of the pixels of a desktop

Be Ruthless

Every UI element = necessary and efficient

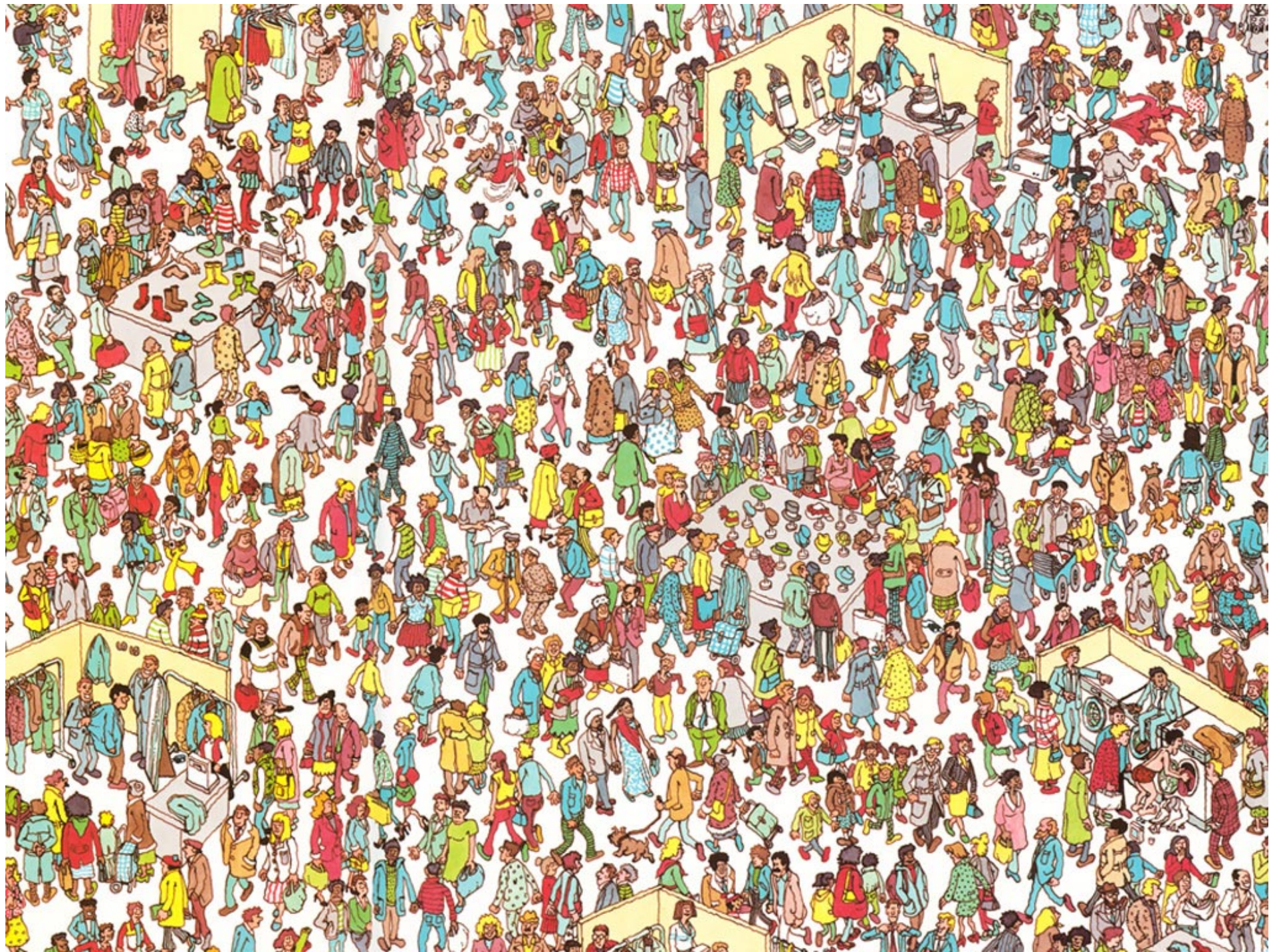
Focus on key user tasks



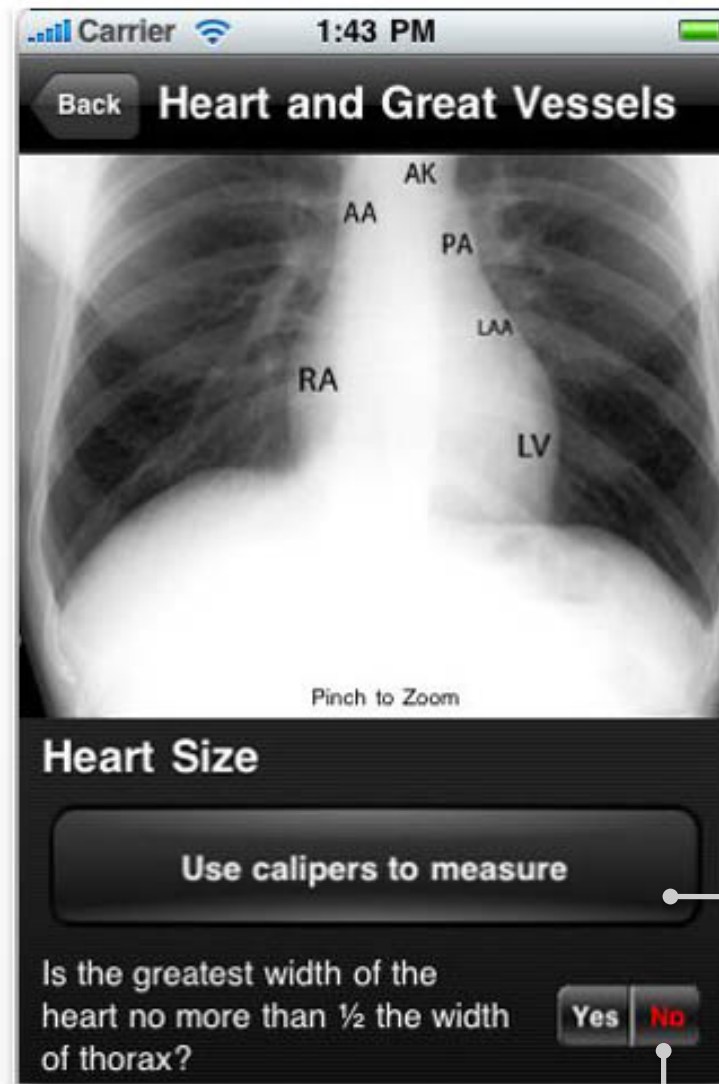


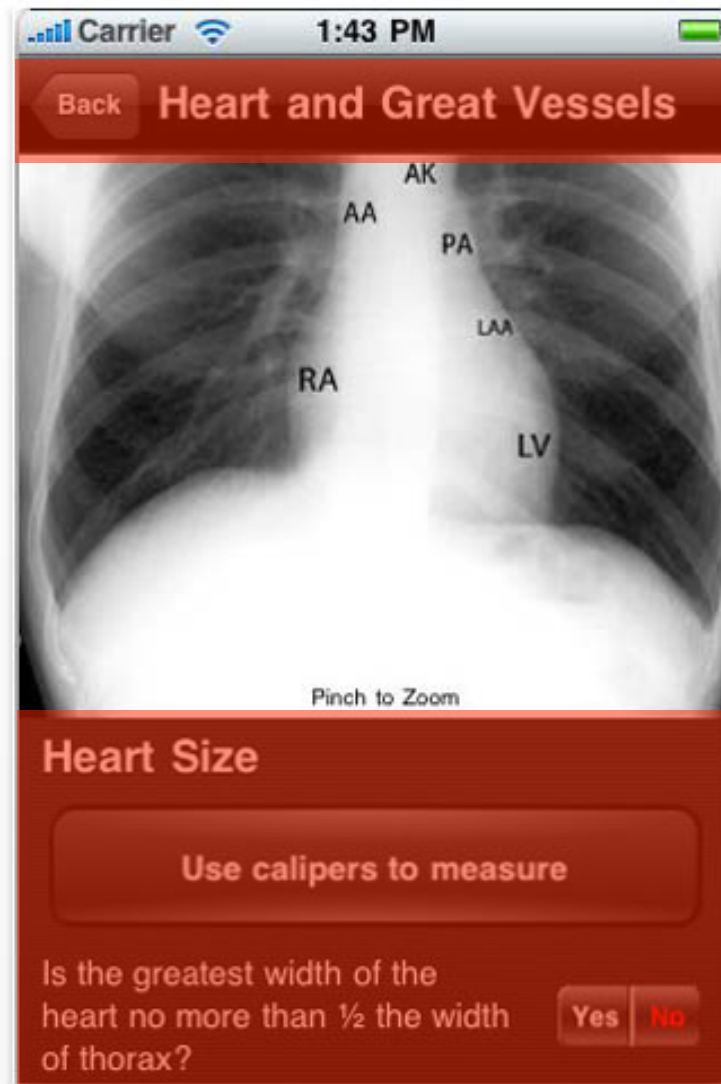
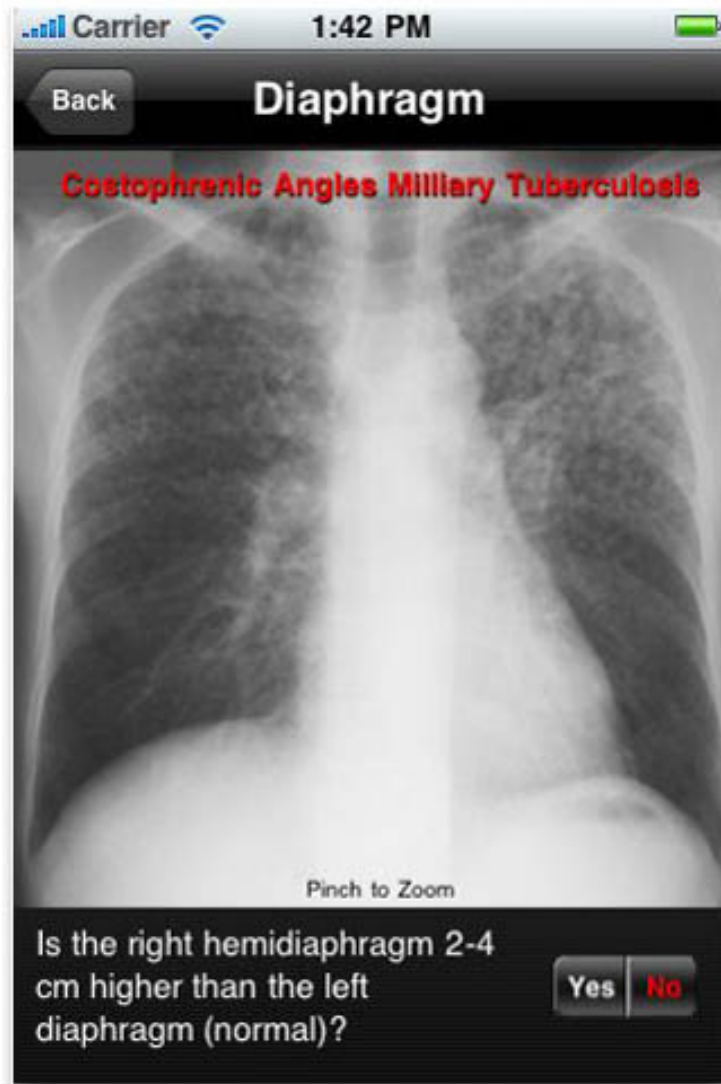
More Signal, Less Noise

With limited real estate, it's critical to
remove interface clutter

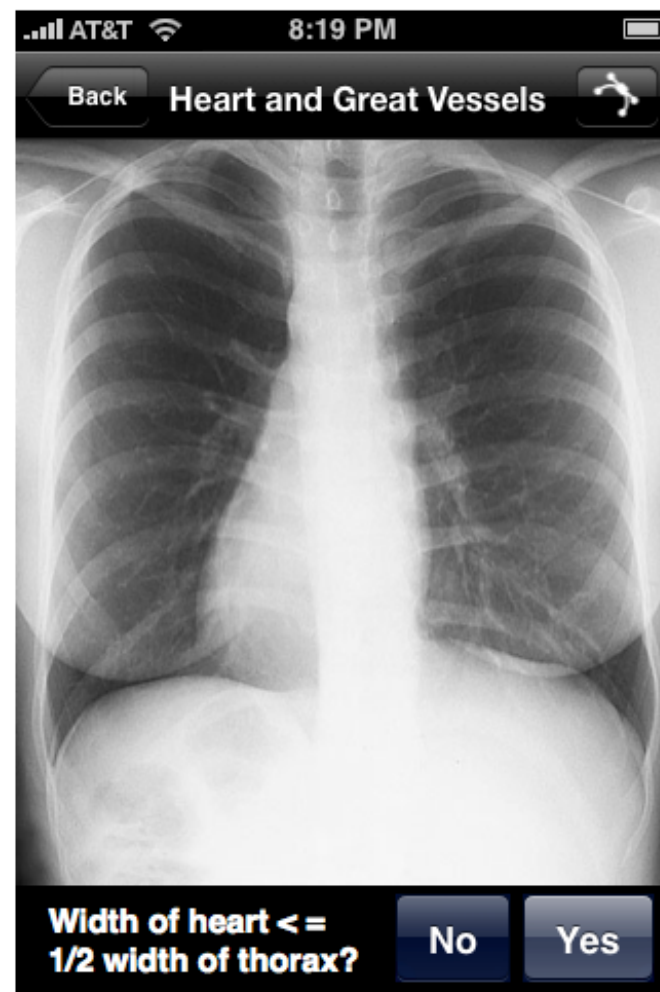
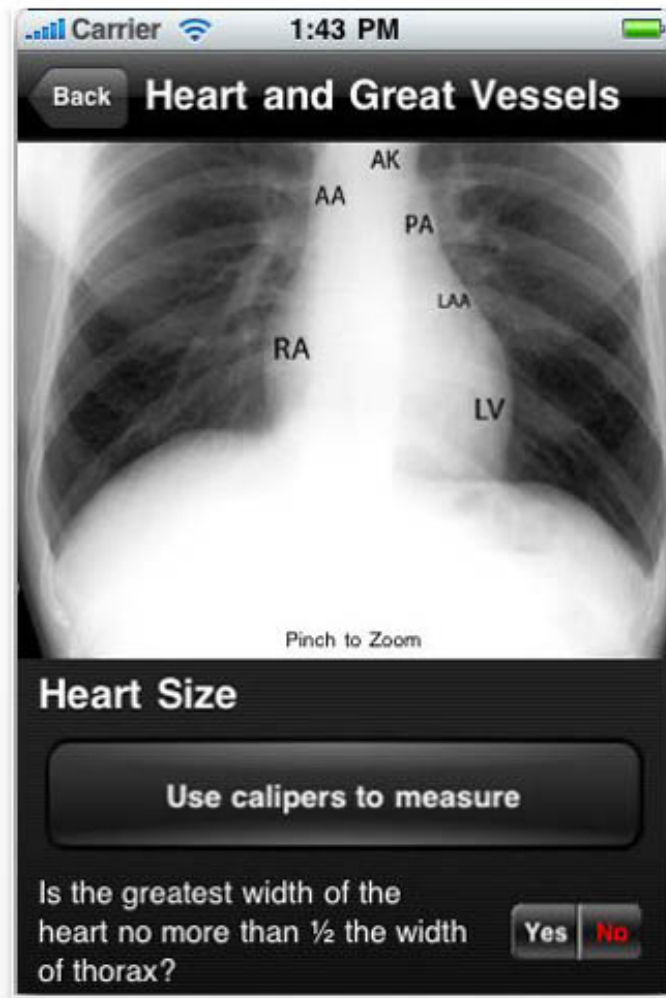








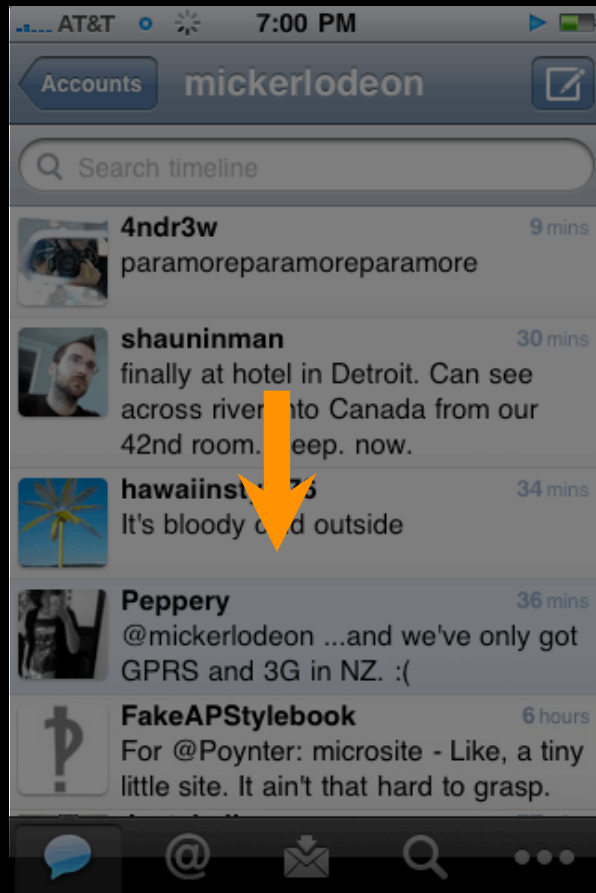
50%



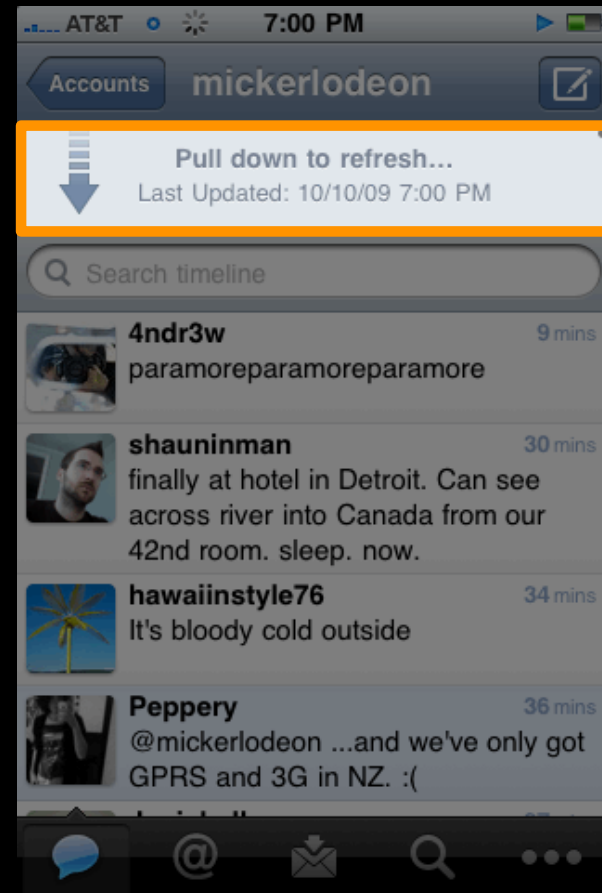
Timely design

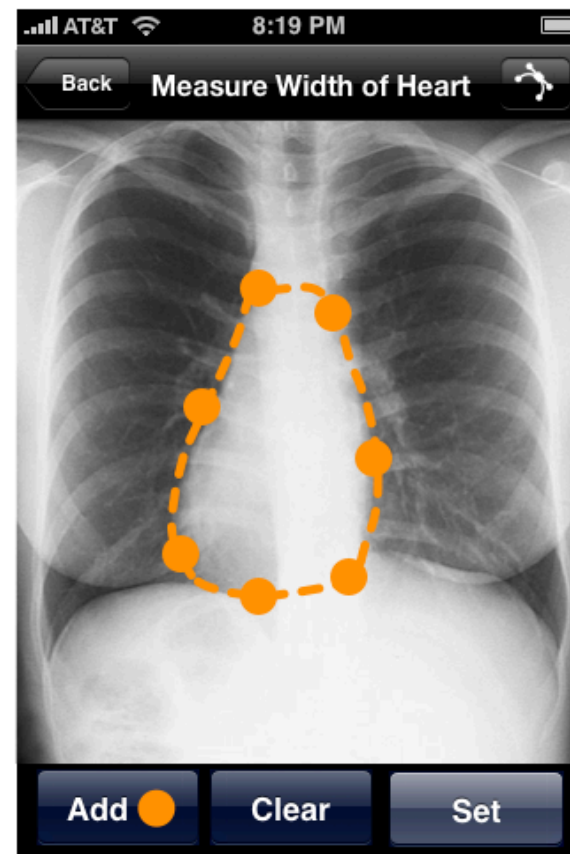
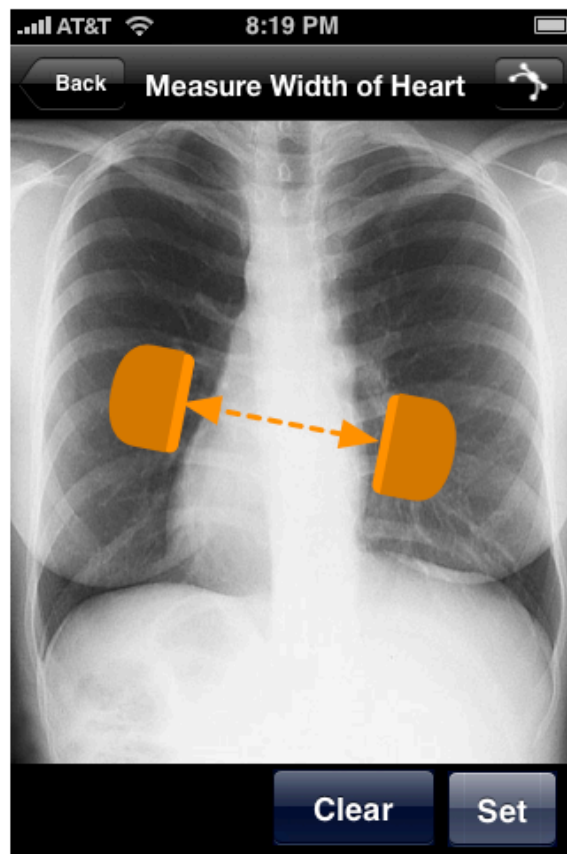
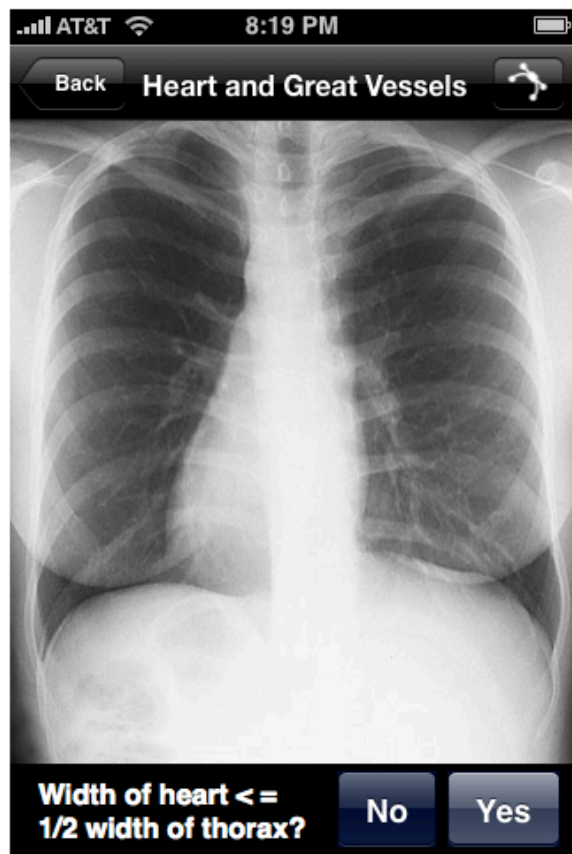
Show controls only when needed.

Tweetie 2



Pull down to refresh





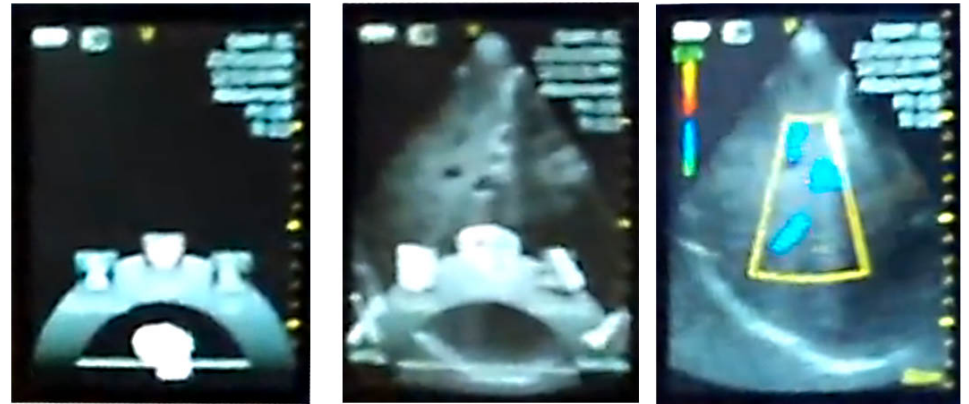
Be Direct

Use direct manipulation of data elements

Pocket-sized ultrasound



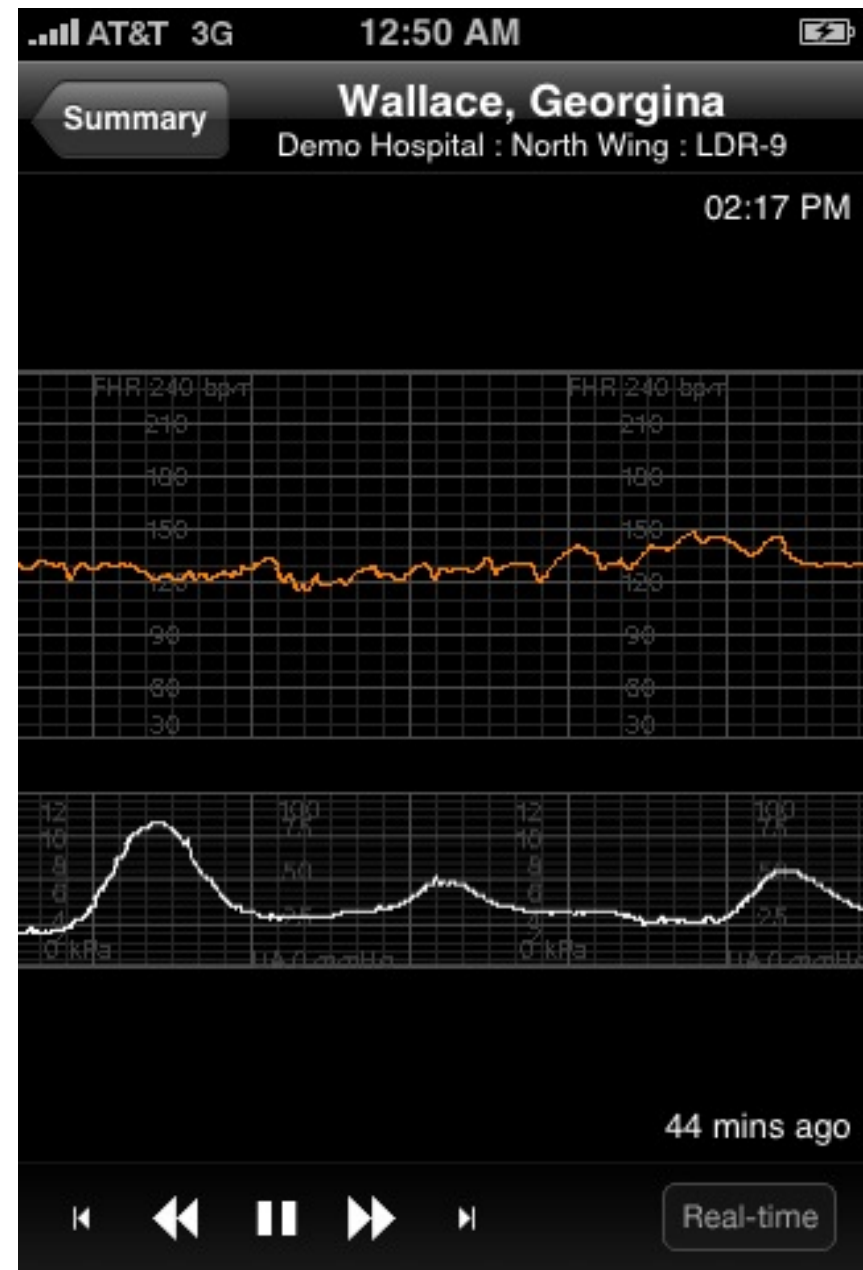
Pocket-sized ultrasound

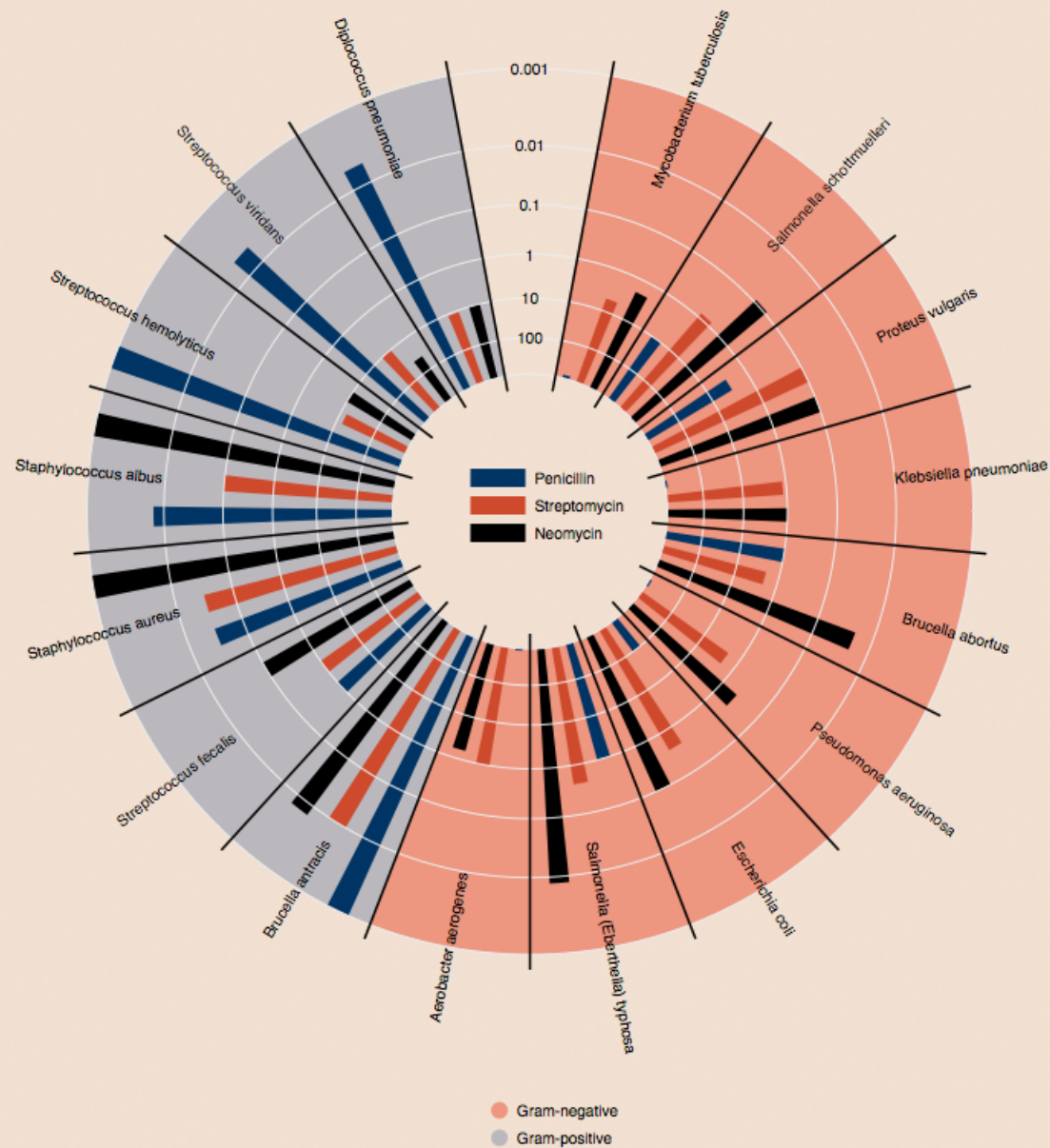


At your fingertips:

- Gain control
- Color doppler
- Storing data
- Voice recording

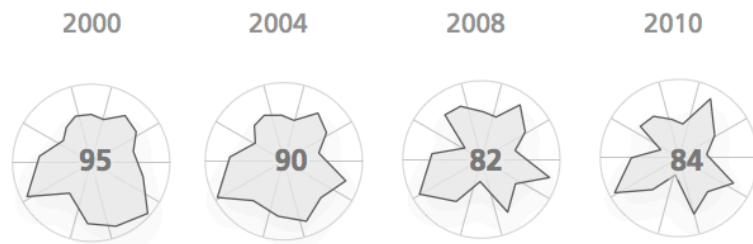
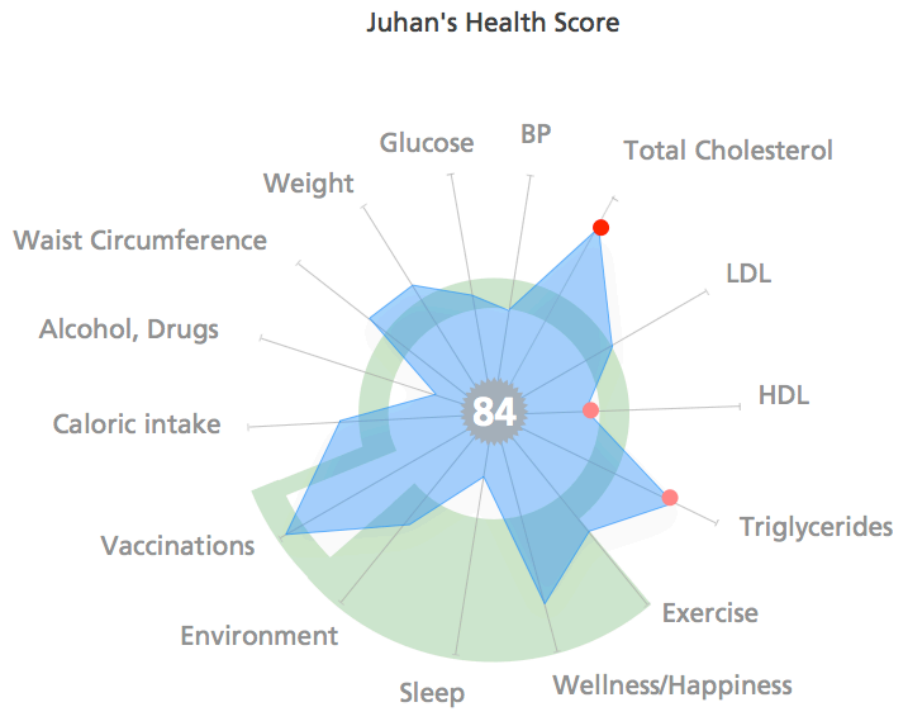
Manipulate the data, not the interface



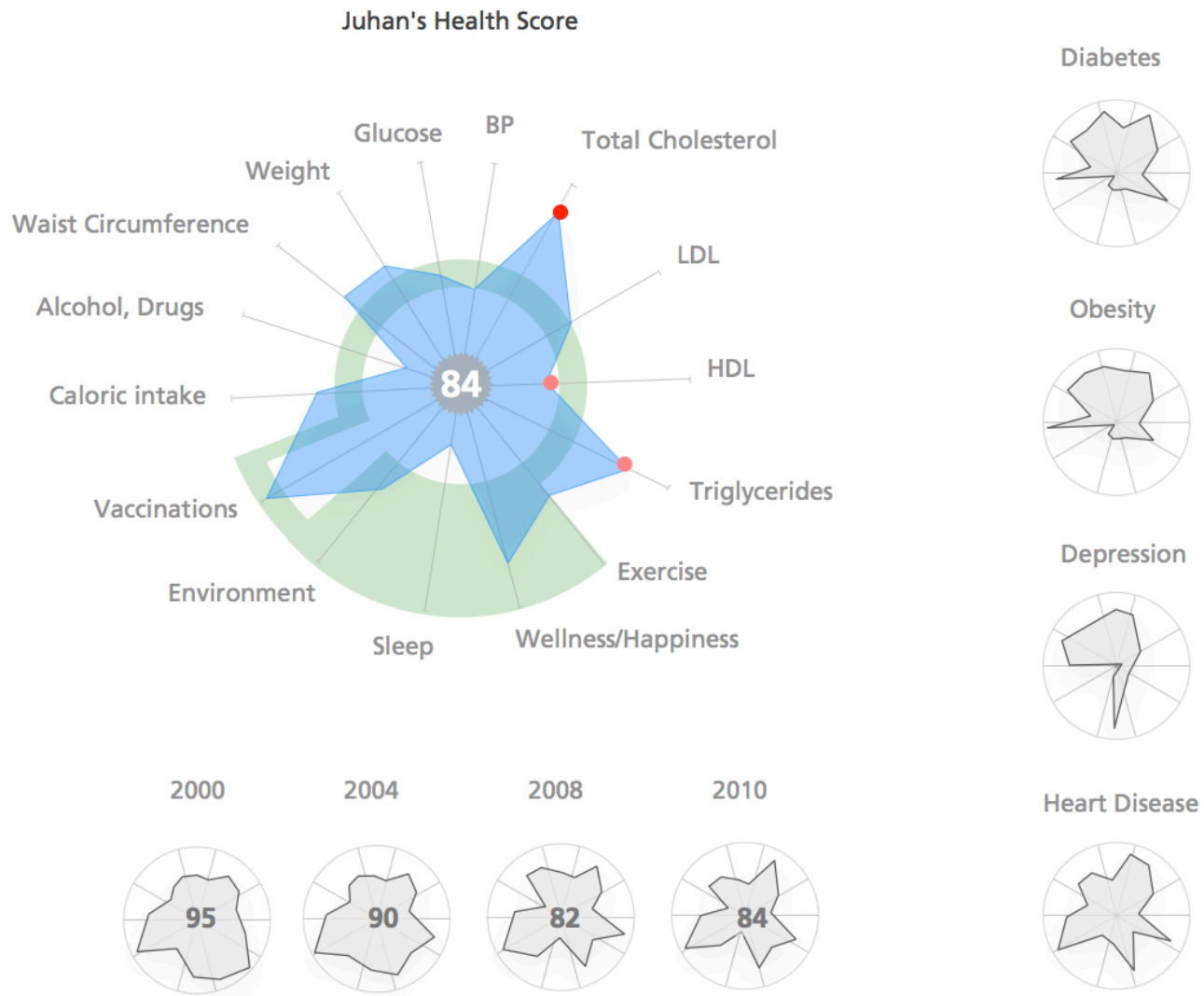


1951 by Will Burtin

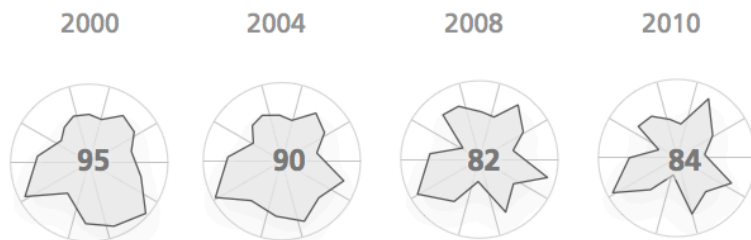
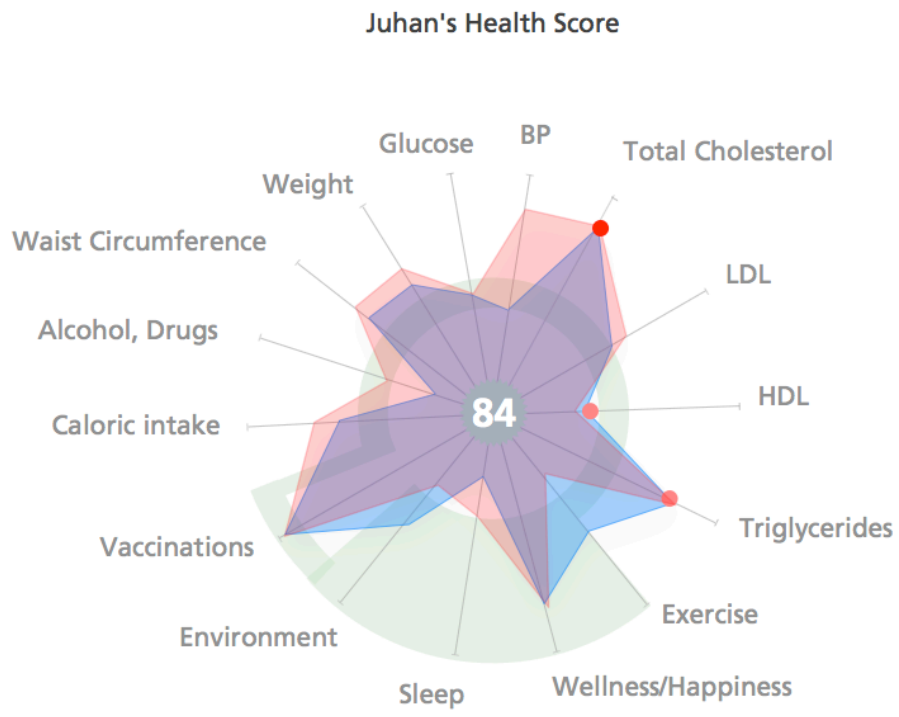
This graph shows the effectiveness of three popular antibiotics on 16 different bacteria, measured in terms of minimum inhibitory concentration.



Pattern recognition (advanced example)



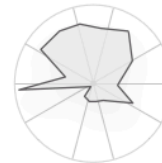
Pattern recognition (advanced example)



Diabetes



Obesity



Depression



Heart Disease



Pattern recognition (advanced example)

What interface?

Over time, you don't notice the interface

More signal, less noise

Timely design

Manipulate the data, not the interface

MOBILE DESIGN TENETS

Let data scream
Only handle information once

Grid it
Type less + less type
Color carefully

Date your users
Speak my sign

What interface?
Repeat customers ROCK
Get physical
Lust to Dust



DESIGN



BUSINESS



TECHNICAL



BEHAVIOR



IMPACT

Next steps...

Reference implementation

Demonstrate a prototype... then grow advocacy
Looking for participation from mobile developer

Public Guidelines

to house UI practices, and allow citizens of
planet earth to evolve

Health Dash updated 10.Jun.10



Juhan Sonin

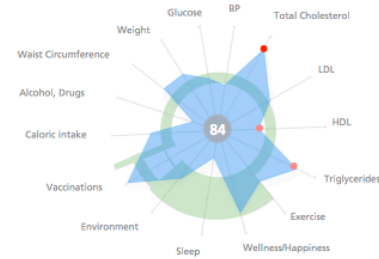
38 years old

1.Mar.1972

Male

juhan@mit.edu

617.504.3390



Geo hScore



22 Surry Rd
Arlington, MA 02476

Major Complaints

1 Flexor Tendon Injury

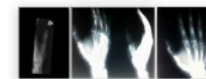
PATIENT ISSUE

Right Thumb, torn ligament
Occurred on 18.Feb.10
Treated, splinted on 24.Mar.10
Recovered, 5% movement loss

INSTRUCTIONS, NOTES

Keep thumb straight continually by splint and tape until 24.May.
After 24.May, splint only at night for 2 weeks (until 7.Jun).
BIDMC Orthopedics: Flexor Tendon Cheat Sheet
Lifelong ramifications for not treating hand ligament injuries

IMAGING



TIMELINE



2 Knuckle Injury

PATIENT ISSUE

Right Ring Finger
Occurred on 27.Mar.10
Pain score: 3/10
No consult

INSTRUCTIONS, NOTES

Continual sharp pain on movement, contact [patient]

IMAGING

TIMELINE



3 Loose 10 pounds

PATIENT ISSUE

10 pounds overweight
Weight gain increase beginning on 15.Mar.04
High cholesterol (225)

INSTRUCTIONS, NOTES

Step 1: Eat 700 less calories/day. Reduce saturated fat intake to 16 grams/day
Step 2: Track your weight daily.

IMAGING

TIMELINE



Pain score: 3/10
No consult

TIMELINE

27.Mar



12.Apr



5.May



1.Jun



3 Loose 10 pounds

PATIENT ISSUE

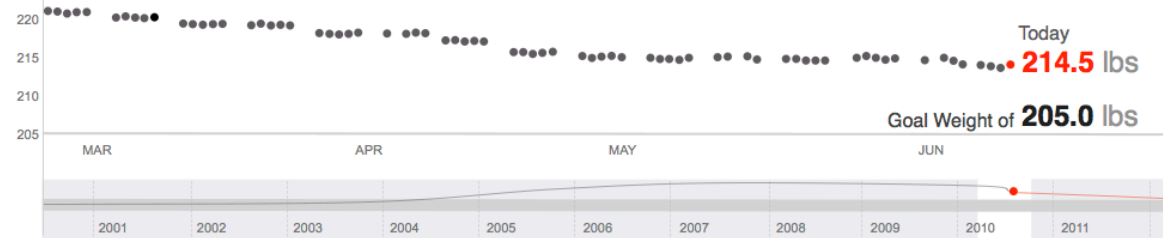
10 pounds overweight
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Step 1: Eat 700 less calories/day. Reduce saturated fat
intake to 16 grams/day
Step 2: Track your weight daily.

IMAGING

TIMELINE



Environment

PROFESSION

Designer, Business Owner

STRESS

60

HAPPINESS INDEX

86

HEALTHINESS INDEX

81

GEOHEALTH

74

REYNOLDS RISK SCORE

1.4

HEALTH IQ

92

Medications

NAME

NONE

DOSAGE

Allergies

NAME

NONE

SEVERITY

LAST REACTION

Vitals

BLOOD PRESSURE

118/73 mmHg

CHOLESTEROL

220 mg/dl

LDL

128 mg/dl

HDL

38 mg/dl

TRIGLYCERIDES

270 mg/dl

GLUCOSE

101 mg/dl

Body Metrics

WEIGHT

214.5 lbs

WAIST CIRCUMFERENCE

36 inches

BMI

28 kg/m2

HEIGHT

5' 10"

118/73 mmHg

CHOLESTEROL

220 mg/dl

LDL

128 mg/dl

HDL

38 mg/dl

TRIGLYCERIDES

270 mg/dl

GLUCOSE

101 mg/dl

Body Metrics

WEIGHT

214.5 lbs

WAIST CIRCUMFERENCE

36 inches

BMI

28 kg/m2

HEIGHT

5' 10"

EYE SIGHT/RETINAL SCANS

20/15



ORAL HEALTH

97



EXERCISE

7600 steps/day

VIGOROUS EXERCISE

30 min/day



CALORIE CONSUMPTION

3200 /day

SLEEP SCHEDULE

4.5 hrs/day

ALCOHOL, SMOKING

1 drink/week

Healthplan

PRIMARY CARE PHYSICIAN

David Ives, MD Internist

781.672.2250

Beth Israel Deaconess Medical Center

SPECIALISTS

Charles Day, MD Orthopedist

Arun Marappa, MD Orthopedist

UPCOMING APPOINTMENTS

23.Jun.10 Ortho review at BIDMC

RECENT VISIT HISTORY

23.Apr.10 Ortho review at BIDMC

17.Mar.10 Ortho consult at BIDMC

TIMELINE (4 YEAR)



HEALTHPLAN, INSURANCE

Blue Cross of Massachusetts

XXH981666084

HMO Blue, \$20 Copay











800.424.0794

PAYMENT HISTORY (3 YEAR)

\$514 (disputed)



My Health

-  Dashboard
-  Care Plan
-  Recent Changes 2
-  Medications 1
-  History >
-  Labs >
-  Imaging >
-  Vaccinations
-  Insurance >
-  Family Tree >
-  GeoHealth









Juhan Sonin

Patients

-  **Kate Sonin** >
22.Jun.71 38 yrs
-  **Udo Sonin** >
17.Mar.07 3 yrs
-  **Ain Sonin** >
24.Dec.37 72 yrs
-  **Epp Sonin** >
9.Jun.45 65 yrs
-  **Ina Sonin** >
3.Mar.11 99 yrs
-  **Agnes Morrisson** >
30.Mar.16 94 yrs

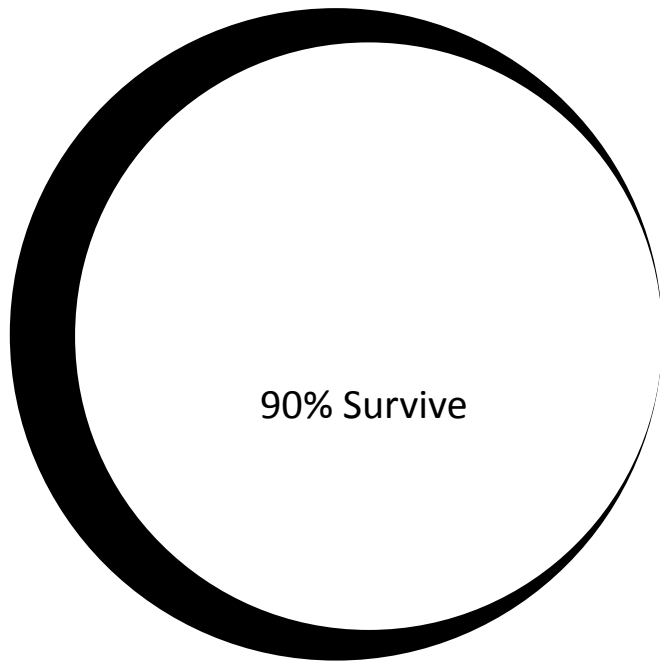
Add Data

-  Weight
-  BP
-  Temperature
-  Exercise
-  Condition >
-  Encounter >

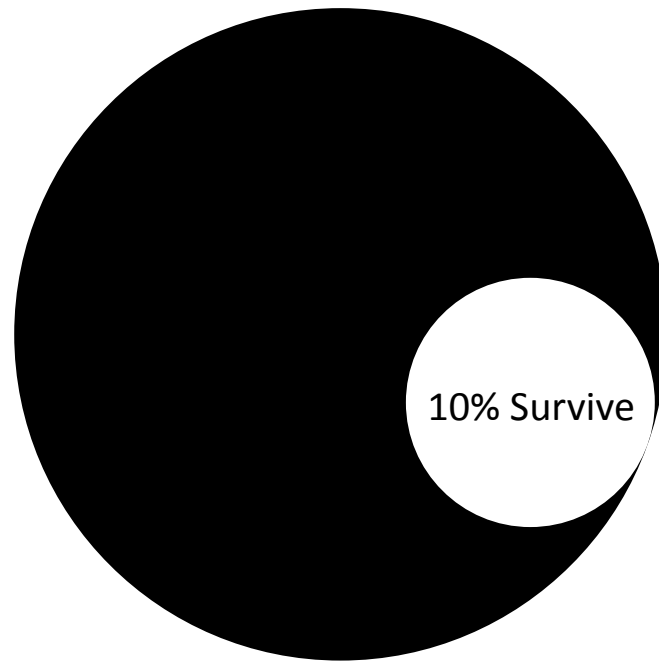


**85% of adults have a
cellphone today...**

The Future: **Stage zero detection**



Early stage detection



Late stage detection

HIMSS Celltop Design Workgroup

Janey Barnes

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Juanita Threat

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healtheveryware.com