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Discuss the current lack of high quality medical apps for the medical community

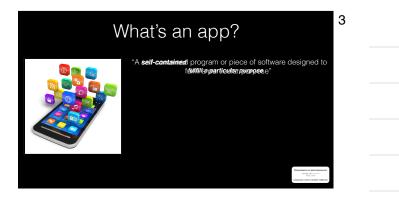
Objectives

Discuss the balance necessary to bridge in-depth medical information, guidelines and algorithms with user-centric interface design

Utilizing smartphone technologies to enhance written algorithms

Discuss strategies to handle licensing and copyright issues with medical societies and publishers.

Review an example case of content that would be valuable in an always-present smartphone app and how to navigate transitioning that content to an easy to use app format



Medicine and Smartphones

Huge adoption of smartphones by clinicians

71% of physicians reported that a smartphone was important to their practice (in 2010!)

Increases to 85%+ in junior physicians and trainees



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What kind of apps are there?

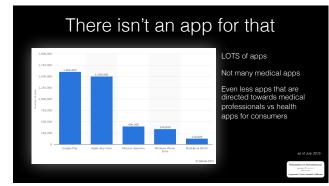
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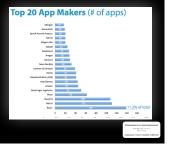
The apps used most frequently by		6,40 PM	1105.00	lana T 43174 💻		Financia Research
trainees include				General Calculators + Cardial Surgery +	21,000+ Medical Algorithms Choose how 46 specialities, ICD-13 code, or MediaPack condition taple	
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There isn't an app for that

Only 54% of "medical apps" in iTunes store are for clinical use 69% are for consumers

The vast majority are made by private companies and not academics



What does an app need?

Good user interface is of utmost importance Readily available

Easy to use

Affordable Internet connectivity

HIPAA/PHI compliant





How do current medical apps fail?

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63 unique colorectal apps identified Almost all on iPhone and Android

35 were truly medical

Only 21 of colorectal surgery themed apps had any named medical professionals involved in the app development

How do current medical apps fail?

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Codeine - F0 Codeine - 50 Disudic/ Hydromorphone - IM

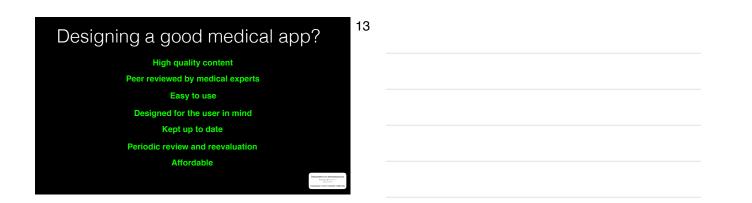
A recent evaluation of opioid conversation apps Only 22% had ANY physician involvement None referenced the qualifications of the physicians in the content area of the app

Only 48% cited any reference material None had copyright permission!

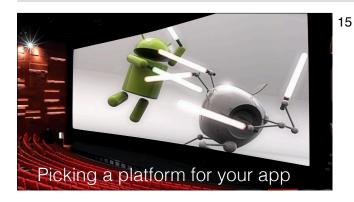
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One of the apps was a dose calculator that went as far as to state that its content was

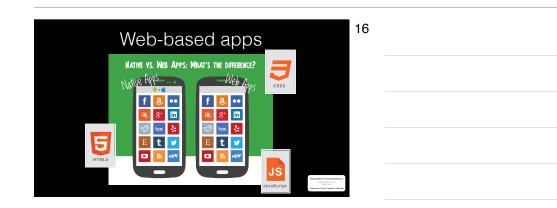
"based on the 'clinical practice' of the author."





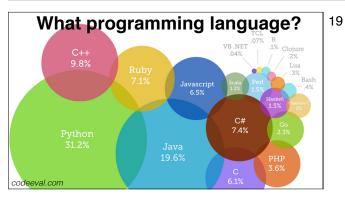






Web-bas	ed apps	
Example the cost of the	LIMITATIONS: • Cosmetics (User-interface) • Access to hardware • Security • Payment structure • Development tools	













"The best method for accelerating a computer is the one that boosts it by 9.8 m/s²." - Anonymus

"Should array indices start at 0 or 1? My compromise of 0.5 was rejected without, I thought, proper consideration." - Stan Kelly-Bootle

"C makes it easy to shoot yourself in the foot; C++ makes it harder, but when you do, it blows away your whole leg." -Bjarne Stroustrup



"Knock, knock." "Who's there?" very long pause... "Java." :-0 22

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 Where to find coders?

 View

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Licensing and Contracts



Published material is copyrighted Using language verbatim is illegal; Seek out the publisher

Often this might connect you to the content experts as well

Co-licensing agreements can invest both parties in the success of the app

Expert content extraction

Development of logic

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Don't just put the text directly into an a

Think about the salient points

Think about the answer needed

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The challenge is how to include the nuance - can be hidden in menus and popups

But the content must be correct - consult the experts!



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This is HARD! Minimize the time it takes to get to an answer Discoverability of functions Unclear decision trees Dead end branches Create Storyboards and Wireframes





User interface considerations



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Keep the interface simple

Create consistency and use common UI elements Be purposeful in page layout Strategically use color and texture

Use typography to create hierarchy and clarity Ensure the system communicates what's happening Think about the defaults

]

User interface considerations

Input Controls Navigational Controls Informational Controls Containers of Information

Trade-offs for every element



Storyboarding and Wireframing

Paper Mind Mapping apps Powerpoint/Keynote Sketching apps on tablets/phones Photoshop-like software Professional Storyboarding apps Online Storyboarding website

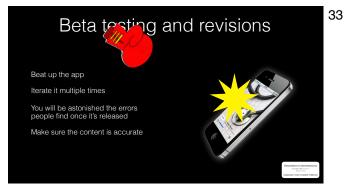
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Focus testing

The content experts or authors of the material are some of the best testers Small group of testers is useful at first Find very critical and mean people!

Find very critical and mean people! Find tech savvy and tech naive/timid people Find people experienced in the field and novices Start this process early - before first version





How to get the word out? (Marketing)

Feedback and Customer support

Publish on the app stores

Promote on Social Media

Promote on a website

Email blasts

< Info

Use the publishing organization to market to their user base (e.g. newsletter) Word of mouth

Encourage people to rate the app

Feedback



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Make sure a mechanism exists Provides a venting vehicle separate from app ratings or comments on the app stores

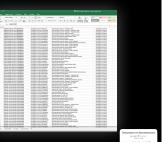
Respond to questions quickly to avoid upset customers

Provides a way to create a "to-do" list for future updates

Research Data Sales/download data Geographic/location data User interaction with the app Data entry

Date/Time stamps Device information

User requested info/surveys



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Privacy concerns

Privacy of patients HIPAA - Health Insurance

HIPAA - Health Insurance Portability and Accountability Act PHI - Protected Health Information



Ask for permission to track data Device ID information Location tracking Secure data management



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Summary

- Still a lot of need for good medical apps for clinicians
- Determine your platform
- Are you going to do the coding?
 design?
- Think User-interface

· Extract the relevant content

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- Market
- Customer support and iterate









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