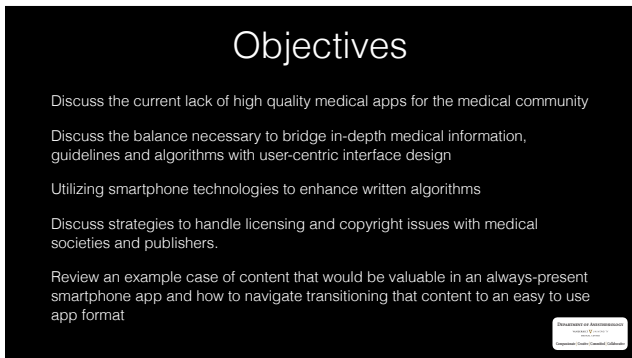
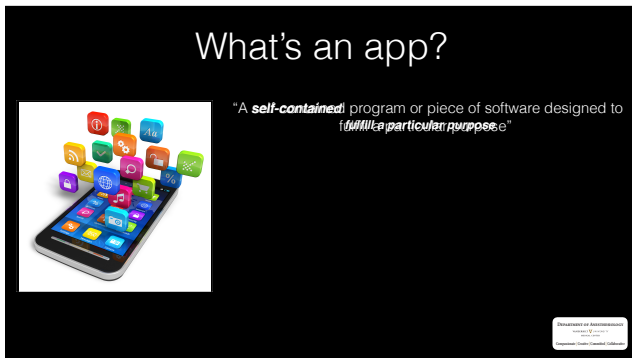


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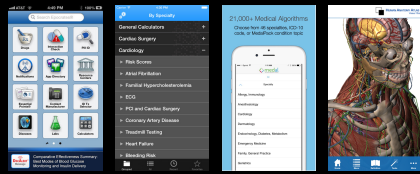
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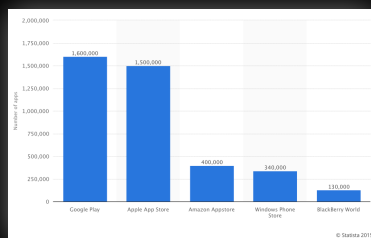
What kind of apps are there?

The apps used most frequently by trainees include drug references, medical calculators, treatment algorithms, and general medical knowledge



5

There isn't an app for that



LOTS of apps

Not many medical apps

Even less apps that are directed towards medical professionals vs health apps for consumers

6

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



7

What does an app need?

Good user interface is of utmost importance

Readily available

Easy to use

Affordable

Internet connectivity

HIPAA/PHI compliant



8

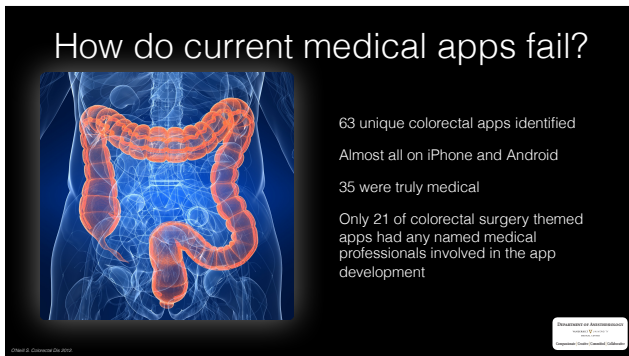
How do current medical apps fail?

9



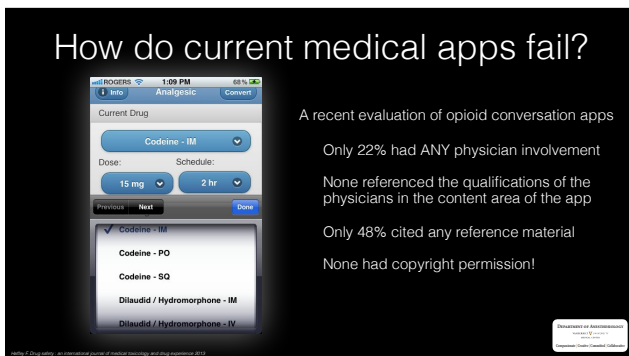
How do current medical apps fail?

10



How do current medical apps fail?

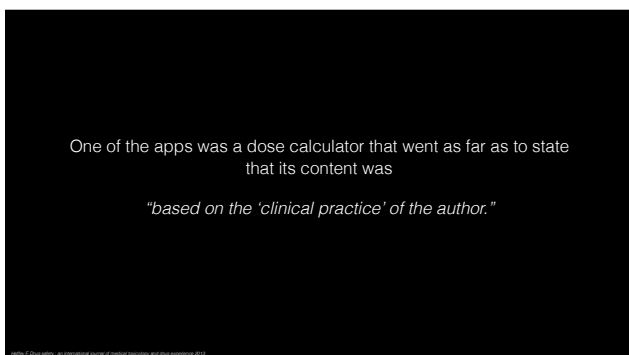
11



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."

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Designing a good medical app?

- High quality content
- Peer reviewed by medical experts
- Easy to use
- Designed for the user in mind
- Kept up to date
- Periodic review and reevaluation
- Affordable

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Smartphone Platforms



iOS



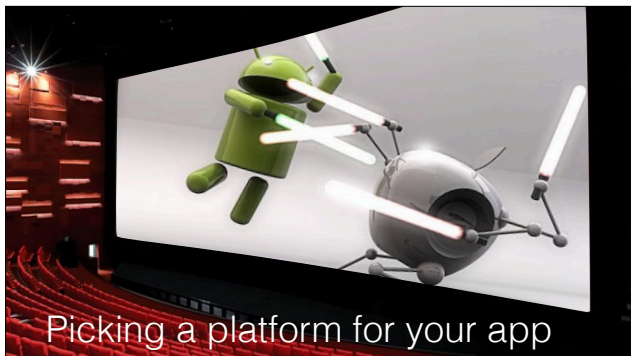
Windows

BlackBerry



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Picking a platform for your app


15

Web-based apps



16

Web-based apps



Advantages:

- Cheaper
- More standard
- Easiest to distribute
- Cross platform
- Easier to keep up to date
- Centralized data collection

LIMITATIONS:

- Cosmetics (User-interface)
- Access to hardware
- Security
- Payment structure
- Development tools

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Doing the design & coding yourself



designer

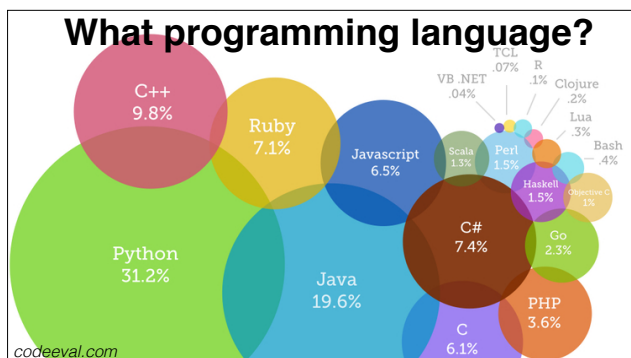
- code.org
- lynda.com
- udemy.com
- khanacademy.com

<coder>

- codeschool.com
- codecademy.com
- teamtreehouse.com

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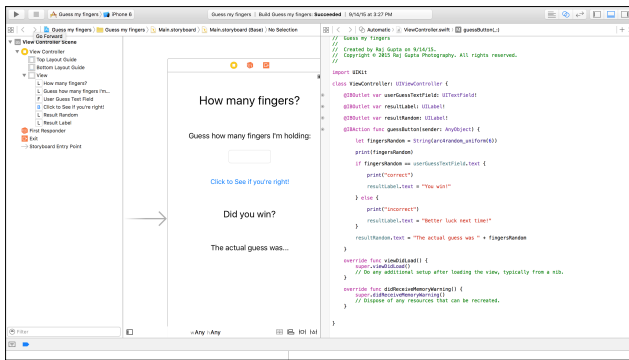
19

Swift and XCode

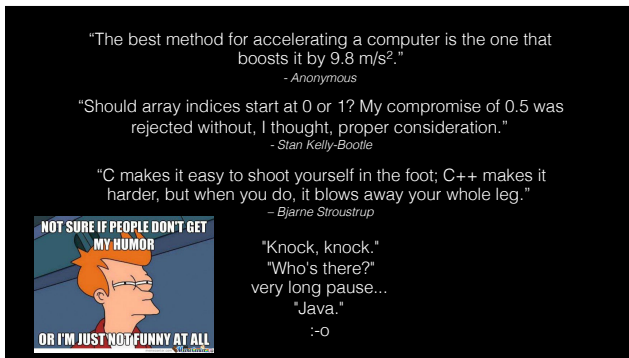


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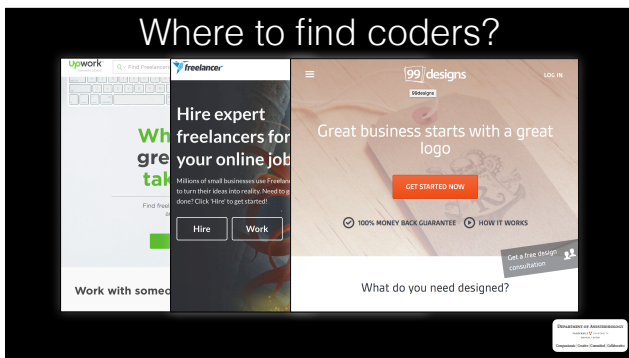
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Licensing and Contracts



License Agreements

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

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Expert content extraction

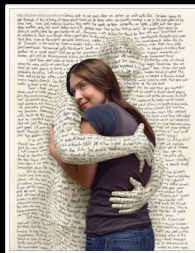
Don't just put the text directly into an app!

Think about the salient points

Think about the answer needed

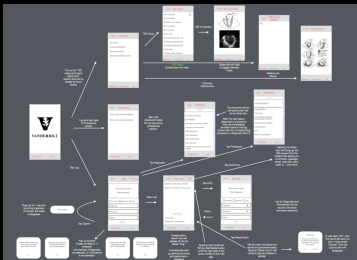
The challenge is how to include the nuance
- can be hidden in menus and popups

But the content must be correct - consult
the experts!



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Development of logic



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

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User interface considerations

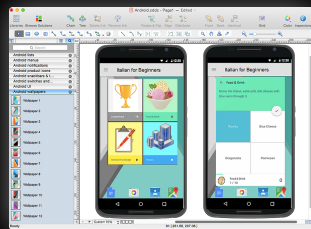


- Keep the interface simple
- Create consistency and use common UI elements
- Be purposeful in page layout
- Strategically use color and texture
- Use typography to create hierarchy and clarity
- Ensure the system communicates what's happening
- Think about the defaults

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User interface considerations

- Input Controls
- Navigational Controls
- Informational Controls
- Containers of Information
- Trade-offs for every element



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



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Beta testing and revisions

Beat up the app

Iterate it multiple times

You will be astonished the errors people find once it's released

Make sure the content is accurate



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How to get the word out? (Marketing)

Publish on the app stores

Promote on Social Media

Promote on a website

Email blasts

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

Word of mouth

Encourage people to rate the app



34

Feedback and Customer support

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

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Research Data

Sales/download data

Geographic/location data

User interaction with the app

Data entry

Date/Time stamps

Device information

User requested info/surveys

36

Privacy concerns

Privacy of patients

HIPAA - Health Insurance
Portability and Accountability Act

PHI - Protected Health Information

Privacy of users

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?
- Get good content
- Utilize the content experts
- Extract the relevant content
- Storyboard
- Think User-interface
- Test, test, test
- Market
- Customer support and iterate

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"No one is dumb who is curious. The people who don't ask questions remain clueless throughout their lives."

- Neil deGrasse Tyson

39

Stroke Guidelines

Design the app workshop

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