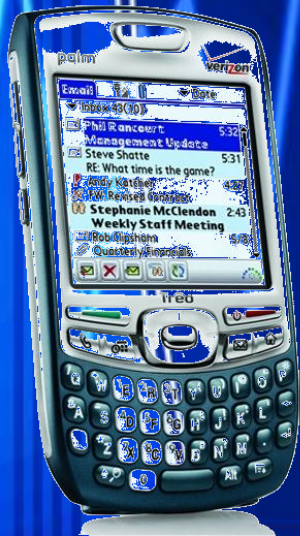# Technology and Clinical Practice

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Technology

- A study last showed 80% of practicing physicians used some type of portable electronic device
- Portable devices deliver large amounts of information in any environment
- Patients expect us to have all of the answers
- Easy way to check drug interactions

Technology Devices

- Smart Phone
  - Iphone
  - Android
  - Blackberry
  - Windows Mobile
  - Palm

- Stand alone Devices
  - Ipad
  - Android Tablets
  - Ipod Touch
  - Net book
  - Palm
  - HP Ipaq

iPhone

- iPhone4S 32 GB $299.00
  - 8 hour talk time
  - Mobile messaging
  - Camera / video phone
  - Voice control
  - Compass
  - 4,000 + medical apps
  - 475,000 + apps
  - Carried by AT&T and Verizon

Blackberry

- Bold9930, Curve9370, Torch9850
  - 330-408 min. talk time
  - Mobile messaging
  - Camera / video phone
  - 20,000 + apps
  - Multiple models supported by all carriers
  - Many medical apps available
  - Good email device

Palm phone

- Palm PRE2
  - 330 min talk time
  - Mobile messaging
  - Camera phone
  - Few apps available
  - Good support for medical programs

Windows mobile phones

- HTC Trophy
  - 300 min. talk time
  - Mobile messaging
  - Camera/video phone
  - Voice control
  - Hundreds of Apps
  - Runs windows phone7
  - Most carriers support windows phones
  - Most popular paid medical programs supported

Android phones

- Motorola Droid Razr, Droid Bionic, Droid Pro, HTC Rezound, Thunderbolt, Rhyme, LG Spectrum, Enlighten, Vortex, Samsung Galaxy Nexus, Illusion, Stratosphere
  - 480/390/312/450/420 min. talk time
  - Mobile messaging
  - Camera phone
  - Voice control
  - GPS, Compass, Accelerometer, Keyboard
  - 175,000 apps

iPod touch

- 8GB $229, 32GB $299, 64GB $399
  - Voice control with 32 and 64 GB models
  - Calendar
  - Email
  - Internet capable (WiFi device)
  - 4000+ medical apps
  - 400,000 + apps
  - Internet accessible only in WiFi zone

Palm Devices

- 5,000 + apps
- Medical programs available for Palm OS
- www.pdamd.com
- www.palmgear.com
- www.handango.com
- http://eponyms.net/palm.htm
- Palm stand-alone devices are no longer manufactured
- Older Palm devices can be found on the web

HP ipaq

- Uses WindowsMobile operating system
- Can run palm applications with Styletap
- Excellent screen
- Fast processor
- Expensive device
- No real apps available
- Paid medical applications available

Ipad2

- Runs most Ipod apps
- 60,000 native Ipad apps
- Camera/video
- Limited memory (max 64GB)
- Won't fit in a pocket
- May be used as a book reader
- Higher cost $499 - $699
- WiFi and 3G versions available

Android Tablets

- Samsung Galaxy Tab 10.1" screen $499
  - 16GB, 3G device, dual cameras
  - 14 hour battery life
- Samsung Galaxy Tab 8.9" screen $449
  - 16GB, 3G device, dual cameras
  - 13 hour battery life
- Samsung Galaxy Tab 7.0" screen $399
  - 16GB, 3G device, dual cameras
  - 10 hour battery life

Android Tablets

- Motorola Droid Xyboard
  - Android Honeycomb OS
  - 10.1" screen and 8.2" screen
  - 8 – 10 hr. battery life
- Motorola Xoom 4G
  - Android Honeycomb OS
  - 10.1" screen
  - 7.5 – 10 hr. battery life

Android Tablets

- Acer
  - Android Honeycomb OS
  - 7 and 10 inch screens
  - 8 hr. battery life
- Asus
  - Android Honeycomb OS
  - 10.1" and 12" screens
- Archos
  - Android Honeycomb OS
  - 4.8, 8 and 10 inch screens

Android Tablets

- Coby
  - Android 2.3 OS
  - 7 and 10 inch screens
- Sony
  - Android Honeycomb OS
  - 9.4" screen
- Lenovo
  - Android Honeycomb OS (7" model uses Android 2.3)
  - 7 and 10 inch screens
  - Up to 10 hr. battery life

Netbook

- Runs on windows 7 or Vista mobile
- Limited RAM (1-2GB)
- Limited hard drive (160-320GB)
- May not run all computer programs
- Heavy compared to other devices
- Won't fit in a pocket

Software

- Skyscape
- Epocrates
- Tarascon
- PEPID

Skyscape

- 379 physician related products
- Constellation bundles
- Individual handbooks
  - Merck manual
  - Harrison's manual
  - Detroit receiving emergency
  - John's Hopkins OB/GYN handbook
  - Will's eye manual
  - Washington Manual series

Available for iPhone/iPod, Android, Blackberry, Palm, WinMobile, PC Desktop

Clinical Constellation

- DrDrugs
- RxPlan Formulary
- 5 minute Clinical Consult
- Mobile DDx
- Bakerman's ABC of interpretive lab data
- Archimedes 360 medical calculator
- CME STAT
  ICD-9 Coding tool
- Life Support 360
- ACCF guidelines
- MSRP: $124.95/12 months

Epocrates Rx

- Drug data base

- Drug interaction program

- Medical calculator

- Pill identifier

- MSRP: **FREE**

- RX Pro MSRP: $ 99.00/year
  - OTC and Herbal guide
  - Infectious disease guide
  - IV compatibility guide

Available for iPhone/iPod, Android, Blackberry, Palm, WinMobile,

Epocrates Essentials

- Disease monographs and images
- Diagnostics and lab tests
- MSRP: $159.00/year

- Essentials Deluxe
  - ICD-9 and CPT codes
  - Medical dictionary
  - MSRP: $199.00/year

Available for iPhone/iPod, Android, Blackberry, Palm, WinMobile,

PEPID

- Included in all suites: Drug database, medical calculator, drug interactions, IV compatibility tool

- EP suite: 2,350 disease and trauma topics, ACLS, PALS, ATLS, RSI, BLS protocols, Peds info, Toxicology, WMD, anatomical illustrations and rhythm strips

Emergency Physician suite: $254.95/12 months

Primary care suite: $254.95/ 12 months

Clinical rotation companion: $254.95/ 24 months

Available for iPhone/iPod, Android, Blackberry, Palm, WinMobile, Online

Tarascon

- Drug data base
  - ➤ Updated via internet
  - ➤ Includes herbal and alternative therapies
  - ➤ Current drug pricing
- Drug interaction program
- Medical calculator
- MSRP: $39.99 Web Edition: $45.95
- Primary care and Adult emergency medicine
-

Available for iPhone/iPod, Android,
Blackberry, Palm, WinMobile,

Sanford Guide

- Antimicrobial therapy guide
- $29.99/year
- iPhone/iPad, Android
- Updated yearly
- Web edition available $48.00/year

Diagnosaurus
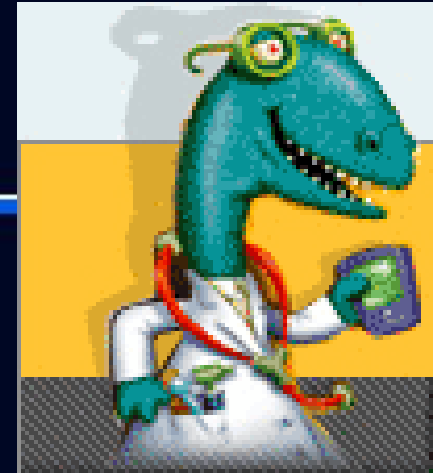
- Differential diagnosis program
- 1000+ differential diagnoses
- Search by disease, symptom or organ system
- Derived from Current Consult Medicine

**Available free for Blackberry, Palm, WinMobile,
$0.99 for iPhone/iPod, Android, Windows phone 7**

Merck Medicus

- Merck Manual

- Harrison's Practice – Answers on Demand

- Pocket Guide to diagnostic tests

- Reuters medical news service

- Medline

- RSS news feeds

Available free for Blackberry, Palm, WinMobile, Windows phone 7, iPhone/iPod, Android,

Medical Apps - paid

ACLS $2.99

PALS $2.99

RSI $4.99

Emergency Medical Spanish Guide $6.99

Medical Calc $.99

PediDoser $4.99
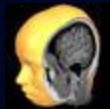
Medical Apps - free

Pocket ACLS

PEPID

STAT E&M and STAT ICD-9 (lite version)

Neuromind

Brain Tutor

Eye Handbook

Gas Guide

Useful Apps

Advanced English Dictionary

Pandora Radio

Flashlight

Free Level

Urban spoon

All recipes

Units (conversion program)

USA Today

Mindlessly Addicting Games

Angry Birds

Words with Friends

Fruit Ninja

Doodle Jump

NinJump

Lane Splitter

iStunt 2 HD

Ant Smasher

Harbor Master

Other Uses

- Calendar
- Email
- Contacts
- News
- Reference
- Social Networking
- Games
- Mindless Leisure (study breaks ?)

Why do I need Technology?

- Instant connectivity to references
- Large volumes of material in small package
- Better ability to manage information
- Increased accuracy
- Have many textbooks available in your pocket
- More accurate documentation
- More accurate coding
- Podcasts for CME and lifelong learning
- Because gadgets are fun ☺

Downfall of Technology

- Distraction
  - http://www.webmm.ahrq.gov/case.aspx?caseID=257
- Common Sense
  - Cell Phone pictures (Mayo surgery resident)
- Total reliance on technology
- Don't forget why you are there: To take care of the patient, they are the number one priority
- Device can become a petri dish
- Loss of protected information

So which device do I choose?

- Cell coverage

- Data plan costs

- Which devices are offered by your provider

- Read reviews

  - http://reviews.cnet.com/best-smartphones/

- Talk to colleagues

- Try them out

- Realize they will be outdated quickly

References

- http://itunes.apple.com/us/genre/mobile-software-applications/id36?mt=8

- http://www.apple.com/education/itunes-u/whats-on.html

- www.iphoneappsdir.com

- http://www.appshopper.com/

- http://www.appsafari.com/

- http://www.ipodapplications.com/