Apps for Academic Physicians: The Hows and Whys
AMA: Academic Physician Section AMA A-HOD 2017

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Co-Founder AMA-YPS-Innovation and Technology Committee 2013
University of Illinois, Urbana, Champaign, TEC-Eng. Graduate Student

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• Residency Trained and Board Certified in Occupational and Environmental Medicine
• Safety Engineering and Technology background.
• Member of AMA, ISMS, CCMS, a Fellow in ACOEM and currently serve as a member of the American Society of Safety Engineers Z-10-ANSI-ISO task force to develop the standard for Occupational and Environmental Medicine Clinics for the United States.
• Member of NQF: first physician to achieve membership for a local county medical society in the United States.
• Founding member of AMA-YPS Technology and Innovation Committee
• Founder and CEO of a small Engineering start up company called VRMD, Inc. I Placed third this year in out of 155 engineering team entries to the University of Illinois Engineering Business Competition.
• Previously was a competitive athlete for the United states in my sports Modern Pentathlon and Shooting and was elected to serve as an athlete member of my sports BOD and served as an athlete representative to the United States Olympic Committee Anti-Doping Task Force. Through the resolution process at the AMA HOD and Co-Chairing a task force with Dr. Nelson of Utah and Dr. Hill of Mississippi I was able to help craft and advance the Ephedra and Steroid Control Act of 2006 to protect athletes and youth in sports.
• I have experience through graduate CS, Ed Psych and Informatics in researching, designing, evaluating and coding Medical Education Apps
• I have no active commercial or other conflicts to disclose at this time.
Welcome! To App Awareness 101....

A. L. Jones MD, MS, FACOEM

Hi Everyone, I am Dr. Jones

Session Goals: Empower Academically Engaged Physician Audience to have a better understanding of Apps in Education and Awareness of ways to optimize use, identify risks and stay safe utilizing these technologies in education or medical practice settings:

- Identify new ways of using current innovations and technologies, in their role as teachers of medical students and resident/fellow physicians
- Integrate data from patient apps into their own practices
- Counsel their patients on useful versus non-useful apps.
- List the potential risk management and HIPPA concerns related to use and sharing of electronic patient information/data and ways to mitigate these issues
- Describe the importance of the physician voice in development of new apps and innovations
• How many of you currently utilize a mobile technical device like a smart phone?
• How many of you currently know how to download and use apps for daily work or education purposes?
• How many of you downloaded the new AMA meeting app available?
• How many of you have awareness of how Mobile Apps are built and activated for use?
• How many of you have ever designed, coded and activated an App for use or supervised App development process in your practice or educational site?
• How many of you have awareness of how Mobile Apps are activated for use and safety issues like potential System IT vulnerabilities, Medical Liability issues and HIPPA and Privacy Breach issues that could be in play?
• How many of you know why this is true?
Mobile Technology Risks.....

Contain Sophisticated Embedded Micro-features with two way data acquisition, storage and two way communication potential.....

- Contain Sophisticated Integrated Micro-features/Hard Ware with two way communication capability....
- Accelerometers- Measure gravity
- IMU’s- Inertial Measurement Units- Measure change in magnetic field
- Gyroscopes- Measure rotation/orientation
- Microprocessors/data storage
- Cameras
- Microphones
- Wi-Fi connection
- Mobile Phone network connection
- Geo positioning capability.....
Concern.....

• Each of these hardware elements can be programmed with written software codes running in the background to perform real-world tasks with either active command keys and/or also act passively without the user being aware.....

• Risks Privacy Loss of individual-Location can be tracked, Identity can revealed and device use can be Tracked/Followed

• If data is sent → to or obtained ← from the user, a data breach could occur and:
  • Private/Protected patient information can be put at risk potentially....
  • Entire IT systems can be put at risk if there is malware attached and activated during onsite or remote use/communication....
  • The user may have little to no awareness of this unless it is too late and there is a HIPPA breach or Liability Issue if Identifiers or Medical Data is breached.....

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Action: Protect your Patients, Professional Reputation and Practice from this Risk....

- Make Certain Patients are aware they could be transmitting or receiving HIPPA/Privacy protected information and that they are educated about what their PHI is and that they sign off on it ‘In General’ and Potentially ‘EACH TIME’, before transmissions/reception of data occurs....

- Work with Legal/Compliance Department, IT and Health Informatics Department to reduce these risks and make sure all have awareness of planned App inclusion or use in your practice.....
Action: Protect your Patients, Professional Reputation and Practice from these Risks....!!!

- Create active practice/facility policy that includes management expectations for:
  - Mobile App use, email, texting, other social media, patient portals
  - Professional and Personal Media Accounts
  - Document medical support team was educated at hire and annually and signature accountability documents that they are made aware and will follow the policy as condition of employment!
### Action: Protect your Patients, Professional Reputation and Practice from this Risk....

<table>
<thead>
<tr>
<th>Action</th>
<th>Establish Action Cycle for Best Practice in Compliance</th>
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</thead>
<tbody>
<tr>
<td>Have</td>
<td>Have awareness what is happening with technologies in your practice</td>
</tr>
<tr>
<td>Set</td>
<td>Set Rules/Policy for Does and Don’ts</td>
</tr>
<tr>
<td>Educate</td>
<td>Educate your pro-staff team members about the rules, Document this Sign off of</td>
</tr>
<tr>
<td>Monitor on</td>
<td>Monitor Rules/Policy on a schedule and Re-visit more frequently if needed</td>
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Action: Protect your Patients, Professional Reputation and Practice from this Risk....

- Verify system architecture contains and has safety features activated and maintained to required and Best Practice medical industry standards including:
  - Secure links
  - Data encryption
  - Data stewardship plan
Important Planning Process to Safely Build/Deploy/Use Mobile Apps for Practicing Physicians:

- Research/Review Apps and Media experiences available in area you wish to design an App
- Identify the Purpose
- Identify Audience
- Select Device/Medium: For Example: Apple/Droid independent or with computer interface/web site for landing from a search.
- Highlight educational purpose of interactions/goals
- Considerations of User interface
- Planning : May Use Outline and translate to Index Note Cards to Find best logical layout
- Wire-Frame: Translate into e-format.....Outline screen by screen your plan for the app to build or get help building...
- Features- Data storage? Communication in Patient to Platform? ....or Learner to Platform? Any Post use response or data collection? .... If yes are there liability and HIPPA and Privacy compliance issues that need addressed and incorporated into the design.....
- Beta-Test use in the field with intended & other audience/pre-deployment in order to address Tech issues....Decide what Features to Preserve or Pivot From
- Plan a way to get information going forward from App use data and feedback so you can iteratively design and advance as technology and needs evolve...
- Identifiers/Stewardship information on Apps, document and keep up to date.....plan on having data in public domain including YOU if there is an issue.....
- Determine if cost or free app and how this will be handled.... May be important to partner with reputable Original Equipment Manufacture to license secure money exchange
- Make sure have freedom to operate/launch app with your employer group if you are an employee or other, there may be specific language in the contract that addresses IP, scope of advertising in how your image/likeness/identifiers as a physician are used. These can be in multiple locations and not be obvious, updated or well integrated. But you still may be held accountable for them......These include, but are not limited to your contract, your partnership agreement, any behavioral compacts you have signed, any IP agreements that may be addressed in the contract.
- Activate Deploy to host service Apple, Android or other system
- Maintenance: Establish a Schedule for Routine and Incidental
System IT/Architecture issues to know and verify are in place to stay safer with Mobile Technology and avoid breaches or medical data omissions to record.....

• Portals:
  • Work with reputable vendors
  • Verify in writing that IT-points of entry allow for secure connection and encrypted communication from the patient and to the patient from you.....

• Make sure if Patient Records or Pt2MD and MD2Pt features are enabled that they:
  • Occur on a secure link and on an encrypted platform
  • If any communication either way was related to care, that the data is transmitted to and captured and stored in a reliable updated trackable encrypted manner and transferred to the medical record on front and back ends to protect
Brainstorming
App conceptualization, creation design process

- Needs Assessment
- Research Current Apps: Awareness of What is Available
- Wire Diagram your concepts
- Work with Key Operational Stakeholders
  Work with Reputable Medical App.
Vision...Activating Physician Voice in Developing and Utilizing Medical and Education App Creation is key to Best Educational and Care Outcomes

Start With: Design and Planning and Hard Work
Create a working plan that can help progressively get you through

Finish With: A High Quality and Excellence
Work consistently with teams with high technical skills and commitment to App from Concept to Build to Activation and Maintenance... Repeat as needed... Technology Changes Frequently!
Resources:

• Contact: A. L. Jones MD, MS, FACOEM: Email: aljonesmd@hotmail.com

• MIT App Builder 2 website: Open source Design and Coding
Thank You!

• Questions.....