

## Digital Health: What is the Role of CME/CPD in a World of Wearables, Apps, and Other Technologies?

Results and Implications of a Survey  
from the ACEHP Research Committee

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8th Annual Mid-Atlantic Alliance for CME (MAACME)  
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Resorts Casino Hotel, Atlantic City, N.J.




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## Disclosures

- Andrew D. Bowser, ELS, CHCP, has no commercial relationships relevant to the content of this presentation.
- Wendy Turell, DrPH, FACEHP, has no commercial relationships relevant to the content of this presentation.

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Review	Describe	Discuss	Solicit
Review quantitative and qualitative results of ACEHP survey on digital health	Describe examples of digital health in HCP education	Discuss implications of the findings for future CME activity development, curriculum planning, strategic partnerships, and additional ACEHP communications or initiatives	Solicit further opinions on Digital Health and solicit your experiences (either as a consumer or as an educator) with these technologies

## Objectives

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**"To fight this wave is like holding back the ocean."**  
 — Charles Willis, MBA, ACEHP Research Committee;  
 Director of Continuing Education, Annenberg Center for Health Sciences at Eisenhower

<https://ffc123rf.com>

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### Impact of Digital Technologies in CE/CME

**"To fight this wave is like holding back the ocean."**  
 — Charles Willis, MBA, ACEHP Research Committee;  
 Director of Continuing Education, Annenberg Center for Health Sciences at Eisenhower

Rests on broader seismic shifts:

- Accretion of ever-more-sophisticated applications on phones and devices
- Development of the Internet of Things, with its proliferation of sensors
- AI will increasingly run analytics that can serve up useful findings to clinicians
- Patients will be shedding reams of data, eventually in real time (+/- privacy?)



<https://ffc123rf.com>

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### Digital Health: Technology to Improve Health Care

- Broadly defined as mobile health (apps), health information technology, wearable devices, telehealth and telemedicine, and personalized medicine (FDA.gov)<sup>1</sup>
- Typical use cases: track symptoms, monitor progress, improve medication adherence, improve access to support and information, reduce costs, increase quality, personalize medicine
- Disease areas: diabetes, hypertension, pulmonary (eg, COPD), cancer, dermatology (eg, acne, psoriasis), etc.
- Generally speaking, digital health tools:
  - **Collect** patient-generated health data
  - **Provide** individualized feedback
  - **Aggregate** patient-reported clinical and outcomes data  
 → Potential to track and change meaningful clinical outcomes in a population



1. U.S. Food and Drug Administration. Digital Health.  
<https://www.fda.gov/medicaldevices/digitalhealth/>

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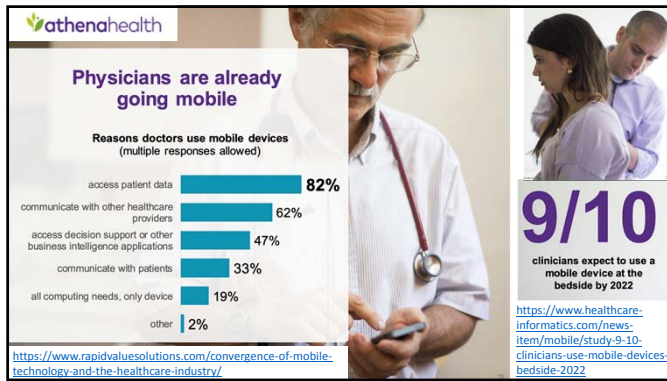
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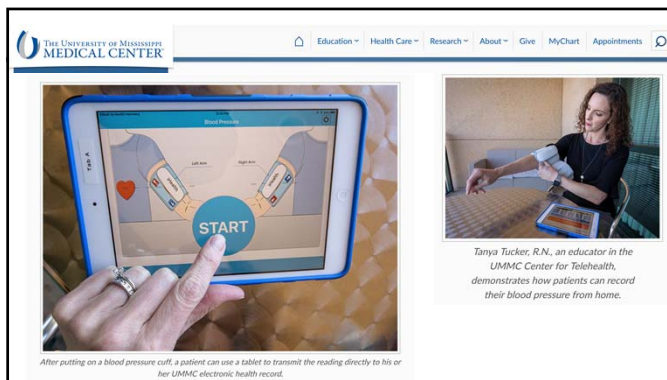
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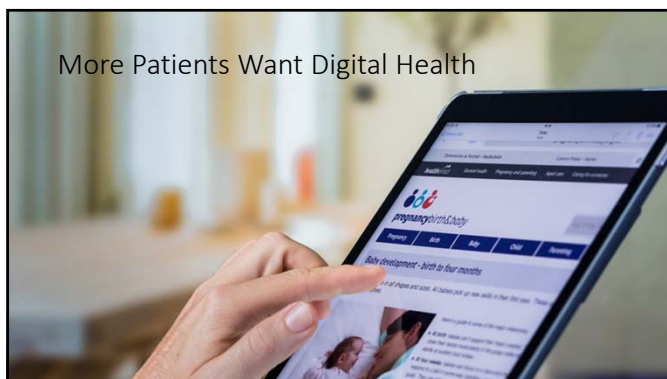
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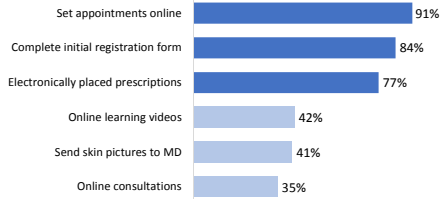
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## More Patients Want Digital Health

**77%**

Interested in using digital healthcare services



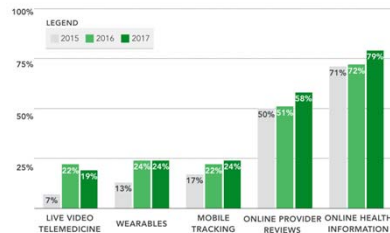
Greis C, et al. J Dermatolog Treat. 2018 Nov;29(7):643-647.

## Healthcare Consumers in a Digital Transition

### ADOPTION OF DIGITAL HEALTH TOOLS

Year-over-year adoption rates, 2015-2017

ROCK  
HEAL+H



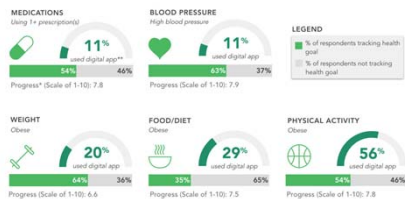
Source: Rock Health Digital Health Consumer Adoption Survey (Nov = 2017, Nov = 2016, Nov = 2015)

## Healthcare Consumers in a Digital Transition

### TRACKING OF HEALTH GOALS

Among respondents with corresponding condition

ROCK  
HEAL+H



Source: Rock Health Digital Health Consumer Adoption Survey (Nov = 2017)

Note: \*% of respondents who reported tracking the health goal in use from progress within the consumer health tracking app in a scale of 1 to 10, with 1 being "not helpful for achieving goal" and 10 being "extremely helpful for achieving goal"

\*\*Represents the percentage of respondents tracking the corresponding health activity or indicator using a digital app

## Digital Health and Education

- Education is at the core of successful digital health interventions in chronic disease
  - Improve health literacy
  - Patients need education about their disease, lifestyle modifications, and treatment adherence that can impact physical and mental health functioning
- Education can assist HCPs to adapt to the new paradigm of integrating digital health technologies and the resulting patient-reported outcomes (PROs) into their clinical workflow
  - Creates problems/"gaps" that are familiar to CME/CPD (eg, information overload)
  - Patients are turning to providers with questions and data!




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## Digital Health: Information Overload

- **KardiaBand:** "FDA-Cleared EKG at Your Fingertips"
- Created a flood of (potentially useful) info that overwhelmed doctors, instead of assisting them
- Doctors didn't want to—and didn't have time to—pore over a patient's longitudinal heart rate data
- **Confusion** ensued as doctors got an email every time a patient took an EKG reading



Sources: [AliveCor](#); Wakabayashi D. [New York Times](#), Dec. 26, 2017; Krasny L. [MedPage Today](#), Sept. 13, 2018.

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ECG on your wrist.  
Anytime, anywhere.

With the ECG app, Apple Watch Series 4 is capable of generating an ECG reading in a single lead. It's a noninvasive alternative to a wearable device that can provide critical data for doctors and peace of mind for you.

ECG app coming later this year.



Your finger can tell you  
a lot about your heart.

Electrodes built into the Digital Crown and the back crystal work together with the ECG app to read your heart's electrical signals. Simply touch the Digital Crown to generate an ECG waveform in just 30 seconds. The ECG app can indicate whether your heart rhythm shows signs of atrial fibrillation—a serious form of irregular heart rhythm—or sinus rhythm, which means your heart is beating in a normal pattern.

ECG app coming later this year.




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## Care Traffic Controllers: Diabetes Care in 5-10 Years

- Patients monitor blood glucose via digital device
- AI evaluates results (eg, "You're doing great!" or "Looks like you should increase insulin by 2 units")
- **PROBLEM:** 2000 digital patients = overwhelmed MD
- **New layer:** "Care traffic controller" – may be NP with some advanced technology expertise
  - Monitor hundreds or thousands of patients in real time
  - Zero in on **patients of immediate concern**
  - Contact via video chat
  - If needed, schedule office visit (assuming the doctor still has a physical office)



Source: Interview with Robert Wachter, MD, author of The Digital Doctor, on [The Pulse](#) (WHYY), Mar. 23, 2018.

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## Rationale

- Experience incorporating Digital Health into CME/CPD initiative remains very limited
- Depth of awareness and knowledge of Digital Health among CME/CPD professionals is unknown
- **AIMS:**
  - Survey the ACEHP membership to assess current attitudes, knowledge, and experience with Digital Health
  - Establish a **baseline** understanding of awareness, understanding, and adoption of Digital Health in the CME/CPD community




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## ACEHP Membership Survey: Methods

- Brief, 9-question survey
- Participants recruited via ACEHP emails
- 2,330 total distribution (est.)
- 211 responses received




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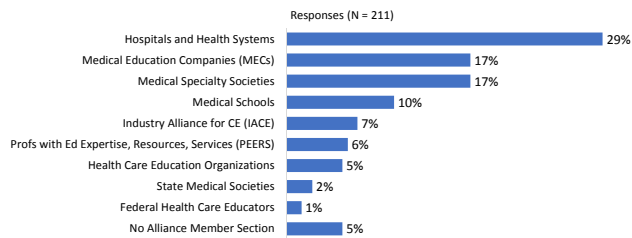
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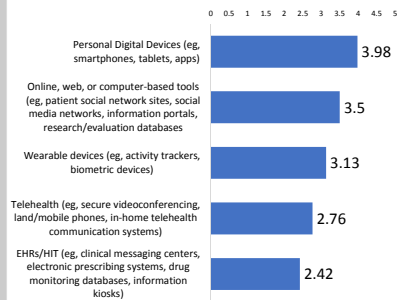
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## What Alliance Member Section do you belong to?

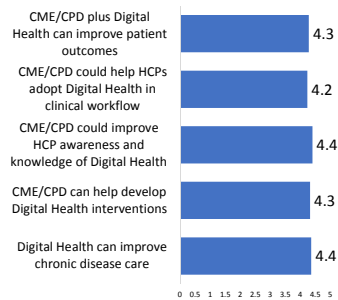


\*PEERS = Professionals with Educational Expertise, Resources, and Services

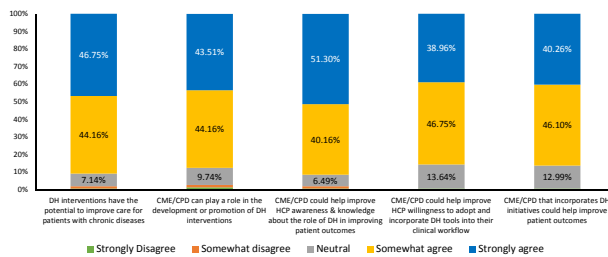
## Rate your familiarity with the following: (1 = not at all, 5 = very)



## CME + Digital Health: What Do You Think?



## Attitudes Toward Digital Health




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*“Do you have any **personal** experience using any of the above (eg, smartphones, apps, wearables, EHRs/HIT, online tools, telehealth) to monitor or track a health condition? If so, please describe:”*

• Response N = 130/210 (62%)

- Smart phone apps (53) (eg, activity tracker)
- Fitbit (29)
- Patient portal (10)
- Apple Watch (9)

I have an app on my phone that links to my EHR so I can access test results, reports, message my docs etc.

I have used a fitbit to track steps and the weight watcher's app to track food and nutrition. Both on my computer, tablet or smart phone via their websites or apps.

I have used a wearable to track activity and sleep for a few years. I also use a mobile app to track caloric intake (occasionally).

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*Do you have any **professional** experience integrating any of the above (eg, smartphones, apps, wearables, EHRs/HIT, online tools, telehealth) into an educational activity? If so, please provide describe the intervention and whether digital health added value to the activity:*

- Response N = 104/210 (50%)
- Outcomes not detailed, and there is **confusion** about:
  - Digital **delivery** of CE with incorporation of **content** about digital health tools in the CE
- 59 of the 104 comments mention tools like LMS, PollEverywhere, GoToMeeting, Slido, Dropbox in responses

We created an app for patients with overactive bladder that included timers, trackers, reminders, and data was sent to the provider. It was used by thousands of patients with excellent feedback.

A screening program for atrial fibrillation uses electronic EKG scanners to identify individuals with possible atrial fibrillation. The technology is integral to the activity.

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### "What questions do you have about Digital Health or the role of CME in Digital Health?"

How to integrate digital health into patient care?

- Is the field of CME/CPD prepared to address digital health integration?

Feeling underinformed

- Need for additional exposure to information about digital health

Privacy + regulations

- Need to address data/privacy breaches and concerns

Cost + support

- Who will fund digital health education?

Efficacy

- Research on outcomes still in infancy

Patient perspective

- Need better understanding of patient perspective



### Qualitative Results: Additional points

- Discrepancies and Misinformation revealed re "digital tools"

- understanding of vs. use of
- personal use vs. professional use

- Digital delivery of CME/CE vs. integration of digital tools in CME/CE

- Respondents understood the use of apps for tracking their own health measures (diets, diabetes blood sugar readings, blood pressure, etc.)

- Responses did NOT reflect incorporation of tools into CE activities

- Many were forthcoming about their LACK of knowledge and need for info/training/resources










Our office utilizes CloudCME app for polling pre and post knowledge questions and answers

We have incorporated a meeting website for our workshops [and removed the] printed agenda... Participants appreciate the ability to take notes on their tablet or laptops during the workshop and email it to themselves.

Is "digital health" really the best term to describe what we're talking about here? Is the meaning clear to those both inside and outside the Alliance...?

### Examples of digital health initiatives that involve CME/CPD

## American College of Cardiology (ACC): Free Apps to Improve Clinical Decision Making

	<b>Guideline Clinical App</b> The mobile home of ACC/AHA clinical guideline content and tools. Access guideline recommendations, "50 Points" summaries, and tools such as risk scores, calculators and algorithms.		<b>BridgeAnticoag</b> Safely manage anticoagulation around non-invasive procedures for nonvalvular AF patients. Provides advice on anticoagulation interruption, bridging, and restart.
	<b>ASCVD Risk Estimator</b> Helps clinicians and their patients estimate 10-year and lifetime risks for ASCVD. Includes guideline reference information for both providers and patients related to therapy, monitoring, and lifestyle.		<b>ICD/CRT Appropriate Use Criteria App</b> Provides decision and documentation support for clinicians assessing the suitability of ICD implantation and CRT, and likelihood of CMS coverage for these patients.
	<b>LDL-C Manager</b> Helps clinicians reduce ASCVD risk by managing LDL-C. The app guides clinicians through one continuous lipid-lowering process by linking the ASCVD Risk Estimator, Statin Intolerance app, and the brand new Lipid-Lowering Therapy tool.		<b>DAPT Risk Calculator</b> Provides decision support for clinicians evaluating the continuation of DAPT therapy for patients at least 12 months post-PCI procedure, and the risk/benefit of continuing or discontinuing DAPT.
	<b>Statin Intolerance App</b> Guides clinicians through the process of evaluating possible intolerance to a patient's current statin prescription, follow steps to manage a patient who reports muscle symptoms on a statin, and compare statins to inform management of LDL-related risk.		<b>TAVR In-hospital Risk Mortality App</b> Assists clinicians in determining the predicted in-hospital mortality risk of a patient who is considering TAVR as a treatment option for AVR. Evaluate a patient's mortality risk and compare it to the national average based on STS/ACC TVT Registry data.
	<b>AnticoagEvaluat</b> For clinicians treating patients with nonvalvular chronic atrial fibrillation. Determine individualized stroke and bleeding risk and assess the best antithrombotic therapy for patients.		

Downloadable online at  
[www.acc.org/apps](http://www.acc.org/apps) or  
available by QR code



## ACC Activity (Live): Core Curriculum for the Cardiovascular Clinician

### Hands-on breakout session: *ACC Point of Care Tools: Evaluation Outcomes\**

General improvement	Specific improvement	% respondents
Plan to make a change in primary practice	Use of clinical apps & resources	N=41/80 (51%)
Plan to overcome barriers to change	Clinical apps & tools	N=34/680 (5%)
Changes I plan to implement	Use of online tools	N=81/85 (95%)

#### Anecdotal remarks

- "I think the apps/tools that were suggested are sufficient to help with **quality improvement**"
- "More apps and shortcuts to help make it easier to navigate the **guidelines**"
- "More quick tools for **guidelines**"
- "Use of guideline directed therapy & the ACC **guideline** apps in practice"
- "Having & utilizing more **guideline** based materials on my smart phone"
- "Ensuring I constantly use the apps to check the **guidelines** & **treat patients with GMDT**"

\*Thanks to ACC's Ellen Cohen, CHCP for this example



## American Academy of Physical Medicine and Rehabilitation (AAPM&R)\* – slide 1

- Background: Physiatrists use ultrasound in the outpatient setting to:
  - Evaluate for soft tissue abnormalities in commonly examined joints and structures
  - Guide injections
  - Improve placement of needles for delivery of treatment without exposure to ionizing radiation
- Goal: instruct physiatrists on better use of ultrasound
- Tool: app on iPad mimics ultrasound machine
  - Includes library of scans, videos on procedures like joint injections
  - 3-D anatomy feature: "Peelaway" function allows learner to look deep into muscle structures

\*Thanks to AAPM&R's Rebecca DeVivo, Jose Lopez, Brian Thompson

## American Academy of Physical Medicine and Rehabilitation (AAPM&R)\* – slide 2

- Educational intervention:
  - Hands-on courses offered instruction on how to use ultrasound
  - iPads were outside resource of courses – not integral part of the education
- Outcomes: Extends learning of live course
  - In past, participants would get bored between sessions and stand around
  - App increases interactivity; students engage around iPads loaded with the app
- Interesting fact: App developed to teach 3<sup>rd</sup>-world nurses how to perform ultrasound on women to save their and their babies' lives  
<https://www.youtube.com/watch?v=dBUxMyXU1z4>

\*Thanks to AAPM&R's Rebecca DeVivo, Jose Lopez, Brian Thompson

## Topics for *potential* CE activities using digital health tools

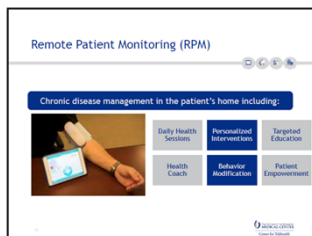
Examples based on real-world experiences (AMIA):

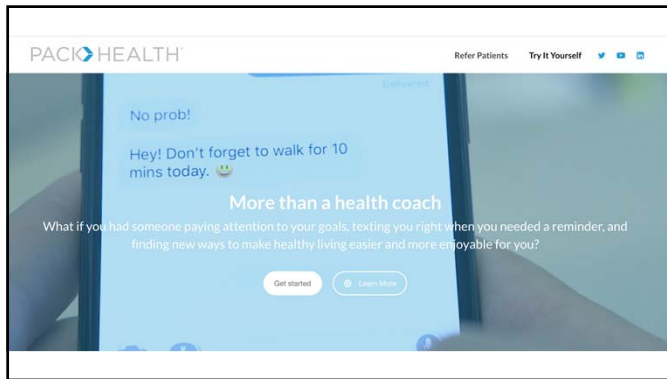
- Medical students and pediatricians work together to involve pediatric patients and their caregivers in their care **using tech and virtual educational interventions** (eg, disease management websites and chat rooms)
- Use **patient upload of images** to Patient Portal to reduce 1) patient burden on long, difficult travel for 5-minute office visit, and 2) unbillable post-procedure office visits for chemo port placement
- **Digital drawing app** for early detection of dementia to improve clinician's performance of cognitive assessment (1-minute video):  
<https://tinyurl.com/y88rt3tj>

## Hypertension Summit

- **Mississippi** – many rural areas with NO physicians. 53 of 82 counties located 40+ minutes from any type of specialty care
- Clinicians depend heavily on **telehealth** for treatment and monitoring of patients AND for delivery of continuing education for clinicians
- **Hypertension Summit:** Annual event, originally from a GE grant.
- Focus on community health, home monitoring of hypertension and comorbidities; uses of telehealth and at-home monitoring devices

Patients in the initial grant/trial used an iPad-based device to monitor and send data to HCP, who helped them regulate






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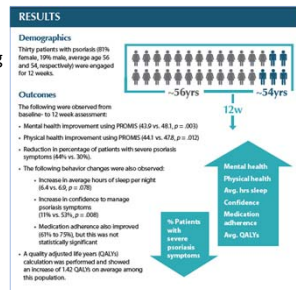
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## Effectiveness of Pack Health Digital Health Coaching in Psoriasis CME

- Digital health coaching outcomes vs. baseline demonstrated that engaging patients in the management of their psoriasis results in both clinical and behavioral improvements
  - Improvement in mental health using PROMIS ( $p = .003$ )
  - Physical health improvements using PROMIS ( $p = 0.12$ )
  - Reduction in severe psoriasis symptoms
  - Increase in confidence managing psoriasis symptoms ( $p = .008$ )



Reiter J, Perez J, Tordoff S, Faler W, Srivastava U. Presented at Fall Clinical Dermatology Conference-2017, October 12-15, 2017, Las Vegas, NV

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## Conclusions

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### Questions for you

- How familiar are you with digital health -- personal digital devices (eg, smartphones, tablets, apps), wearable devices, online health-oriented tools, voice-activated devices (eg, Alexa), etc.?
- Have you used digital health devices to monitor or track a health condition?
- Do you, or anyone you know, have experience with Digital Health in CME/CPD?
- Do you think Digital Health interventions have the potential to improve care for patients with chronic diseases?

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### Questions for You (continued)

- What is the role of CME/CPD in Digital Health?
  - Developing or promoting of Digital Health interventions
  - Improving HCP awareness and knowledge about Digital Health
  - Improving HCP competence or performance in using Digital Health tools (ie, training)
  - Improve patient outcomes through improved HCP knowledge, competence and performance
  - Improve HCP confidence or willingness to adopt Digital Health tools in clinical workflow
  - Helping HCPs overcome digital overload

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### Questions for You (continued)

- Would you like to see any of the following:
  - Review of educational literature, presentations, and CME provider websites to assess digital health attitudes and experience to date
  - Interviews with community members with interest or experience in Digital Health
  - Almanac article on Digital Health and CME
  - Recommendations for ACEHP/CME community regarding next actions on Digital Health
  - Establishment of a Digital Health working group
  - Digital Health content at annual/regional conferences

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THANK YOU  
from the  
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Research  
Committee

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→ Would you be willing to  
participate in a follow-up  
telephone survey to discuss  
attitudes and perceptions of  
Digital Health in the CME/CPD  
community?

- Elizabeth G. Franklin
- Alexandra Howson
- Carla Jones
- Jan Perez
- Greg Salinas
- Peshia Rubinstein
- Charles Willis
- Amanda Browe, ACEHP  
Coordinator

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