AACP Annual Meeting
July 23–27, 2022
Grapevine, Texas

@AACPharmacy
#PharmEd22

PHARMACY EDUCATION 2022

American Association of
Colleges of Pharmacy AACP

Practice ready. Team ready. Digital health ready? Preparing students for new and emerging roles.

Julie Darnell, PharmD, BCACP, AAHIVP, Assistant Professor, Western University

Lisa Goldstone, MS, PharmD, BCPS, BCPP, Associate Professor and Director of Residency Programs, University of Southern California

Kevin Clauson, PharmD, Professor, Lipscomb University

Parisa Vatanka, PharmD, CTTS, Senior Director Corporate Alliances, American Pharmacists Association

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Learning Objectives

At the completion of this activity, participants will be able to:

1. Describe the importance of digital health in the evolving healthcare landscape, and the impact of digital health on pharmacy practice and education.

2. Identify key competencies in digital health that all pharmacy students should achieve by graduation.

3. Summarize strategies to develop digital health educational material that can be implemented in your institution's curriculum.

Why Digital Health is Important to Pharmacy's Future
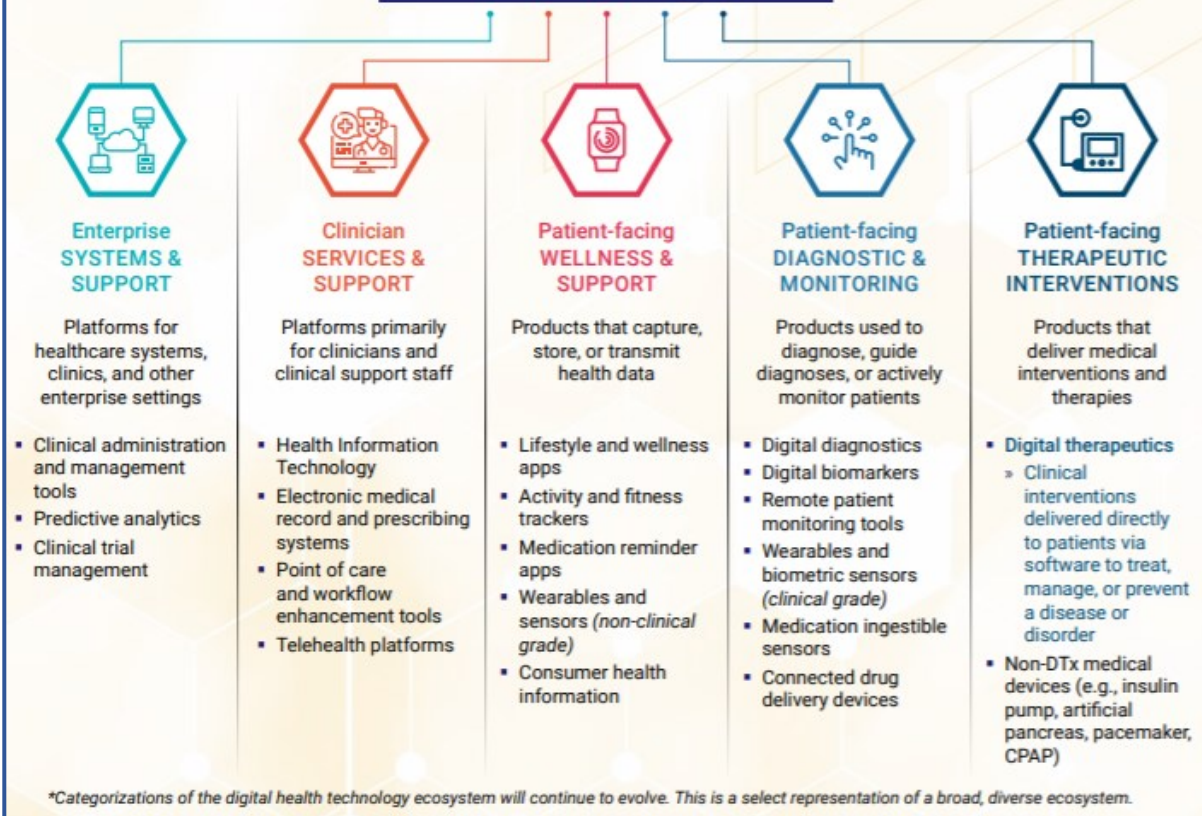
Digital Health Ecosystem

Products across the digital health ecosystem serve different, but complementary purposes. Depending on each product's intended use and risk, it is subject to increasing degrees of clinical evaluation, regulatory oversight, and real-world data requirements.

DIGITAL HEALTH TECHNOLOGIES*

Enterprise SYSTEMS & SUPPORT	Clinician SERVICES & SUPPORT	Patient-facing WELLNESS & SUPPORT	Patient-facing DIAGNOSTIC & MONITORING	Patient-facing THERAPEUTIC INTERVENTIONS
Platforms for healthcare systems, clinics, and other enterprise settings	Platforms primarily for clinicians and clinical support staff	Products that capture, store, or transmit health data	Products used to diagnose, guide diagnoses, or actively monitor patients	Products that deliver medical interventions and therapies
• Clinical administration and management tools • Predictive analytics • Clinical trial management	• Health Information Technology • Electronic medical record and prescribing systems • Point of care and workflow enhancement tools • Telehealth platforms	• Lifestyle and wellness apps • Activity and fitness trackers • Medication reminder apps • Wearables and sensors (non-clinical grade) • Consumer health information	• Digital diagnostics • Digital biomarkers • Remote patient monitoring tools • Wearables and biometric sensors (clinical grade) • Medication ingestible sensors • Connected drug delivery devices	• Digital therapeutics » Clinical interventions delivered directly to patients via software to treat, manage, or prevent a disease or disorder • Non-DTx medical devices (e.g., insulin pump, artificial pancreas, pacemaker, CPAP)

*Categorizations of the digital health technology ecosystem will continue to evolve. This is a select representation of a broad, diverse ecosystem.

Telehealth/Telemedicine

- *Additional channel* for care delivery

Digital Medicine

- *New approach to care (proactive and continuous)*

Digital Therapeutics

- *New category* of medicine

https://dtxalliance.org/understanding-dtx/

The Pharmacist's Role

https://www.istockphoto.com/vector/online-doctor-and-medical-consultation-pharmaceutical-research-laboratory-with-gm1328952772-412855961

Virtual First Care (V1C): http://impact.dimesociety.org/v1c/
The Playbook - Digital Clinical Measures: https://playbook.dimesociety.org/
DTx Value Assessment & Integration Guide: https://dtxalliance.org/advancing-dtx/dtx-value-guide/

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The End of Digital Health is Near

"Ten years from now there will be no such thing as digital health – because *all* health care will be digitally enabled."

- *Rock Health*

How comfortable would you feel teaching digital health in your current course(s)?

Very comfortable

Somewhat comfortable

Neither comfortable nor uncomfortable

Somewhat uncomfortable

Very uncomfortable

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Where and When Should Digital Health Occur in Doctor of Pharmacy Curricula?

Improving population health

Providing personalized care

Improving access to healthcare

Addressing health disparities

Improving patient experience

Improving quality of care (outcomes)

Decreasing healthcare costs

Improving provider experience

Reducing healthcare inefficiencies

Ronquillo et al. Digital Health. May 2021.
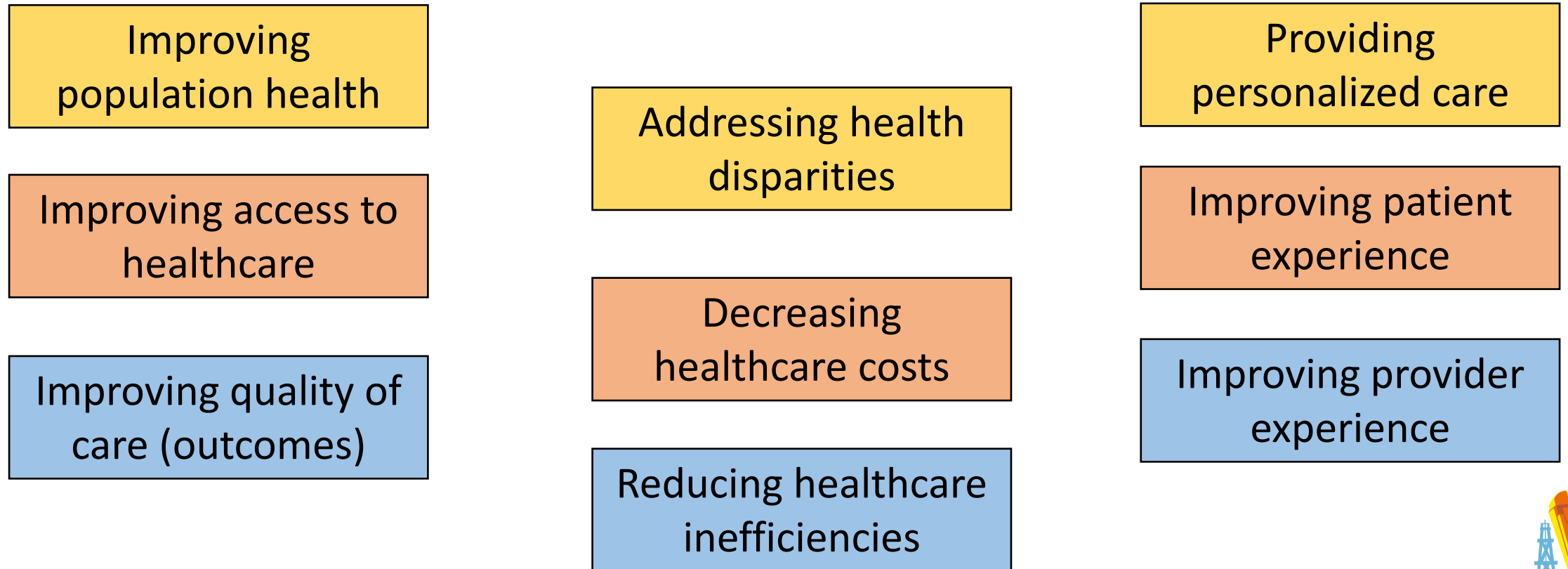
Pharmacists' Patient Care Process
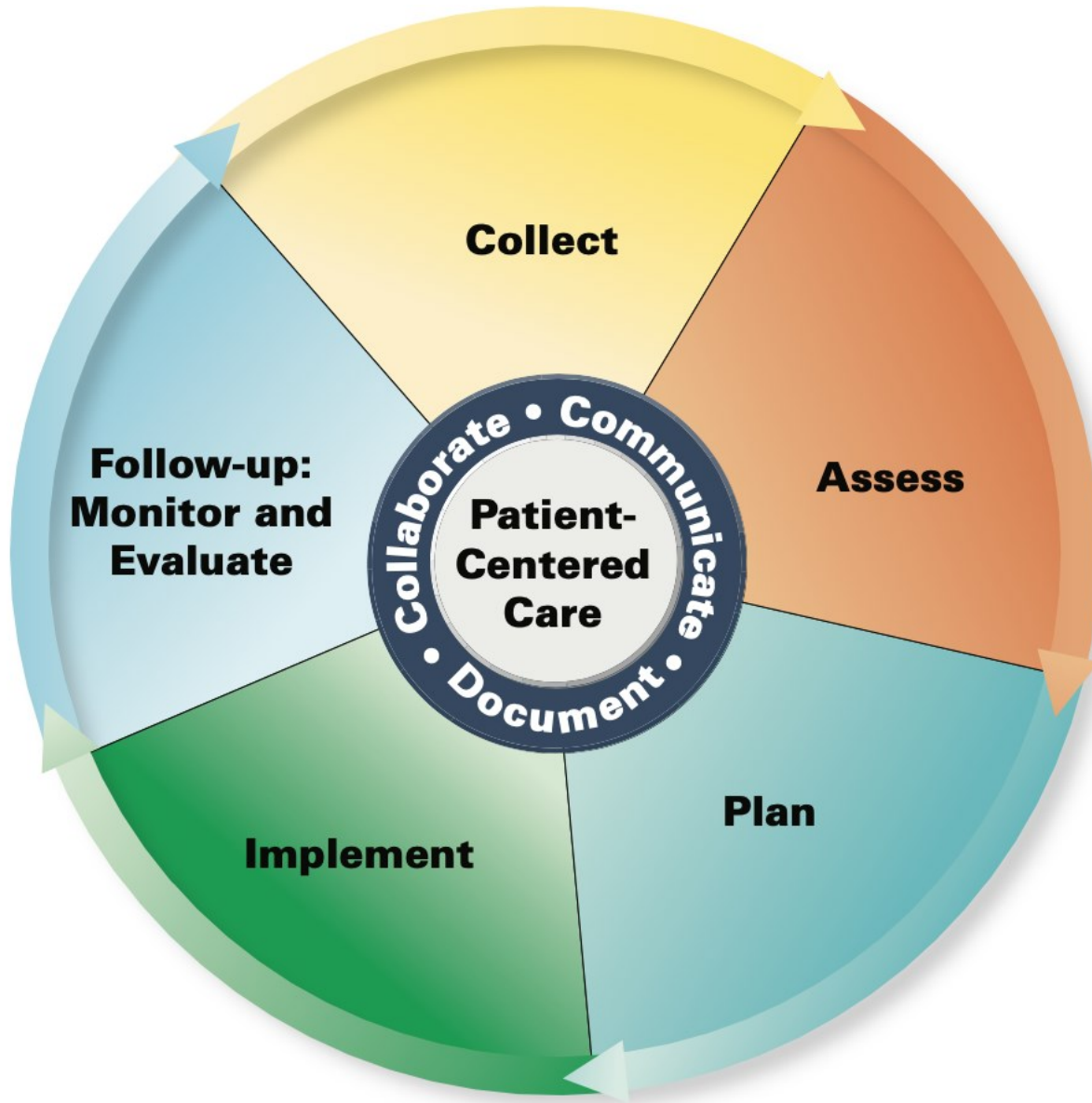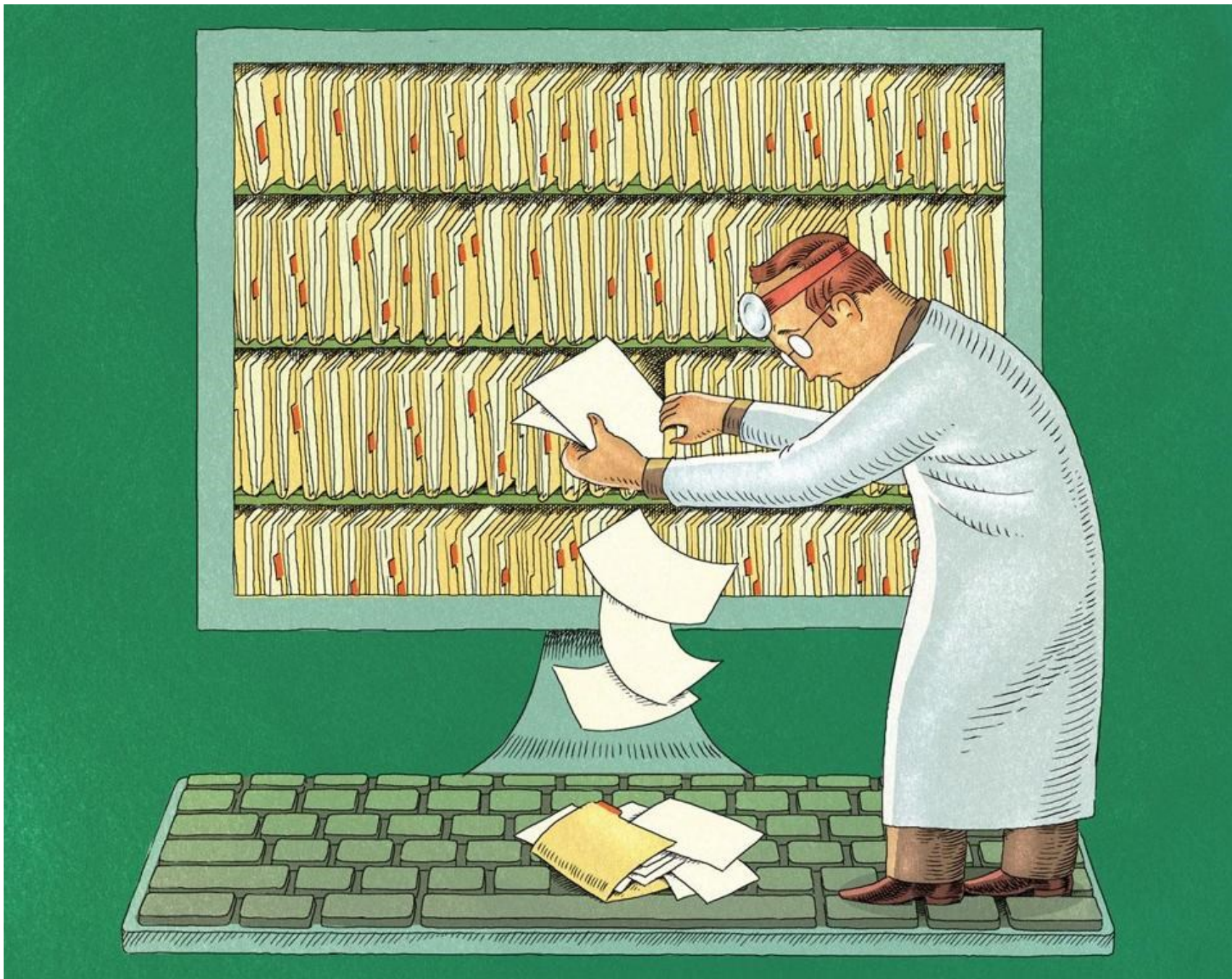
Collect
Assess
Plan
Implement
Follow-up: Monitor and Evaluate

Patient-Centered Care
Collaborate • Communicate • Document •
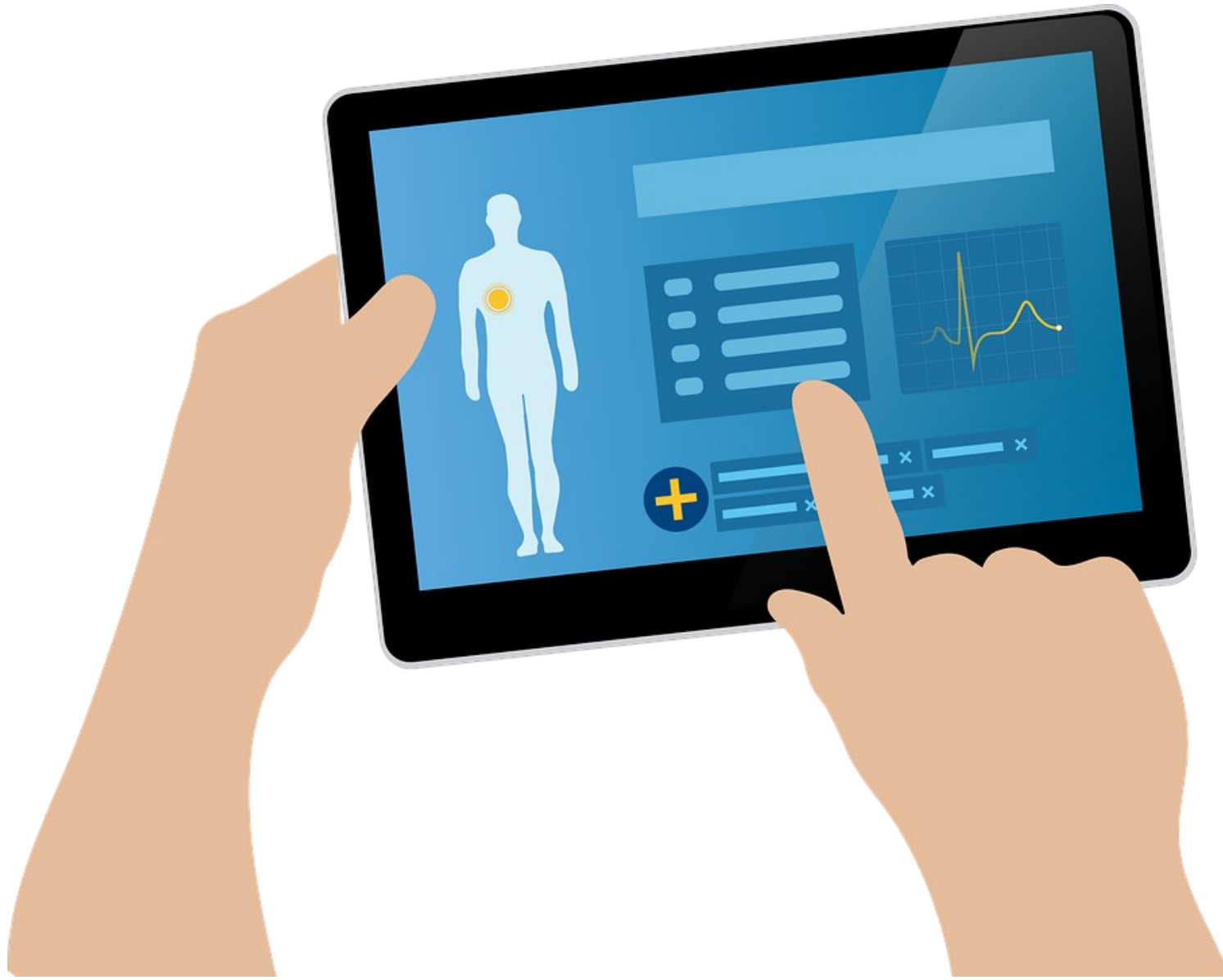
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Core Digital Health Areas for All Student Pharmacists

Pie chart with five segments:
- Wearable devices and sensors
- Digital biomarkers
- Digital therapeutics
- Mobile medical applications
- Telehealth

Aungst T et al. J Med Educ Curric Dev. 2020;7:2382120519901275.

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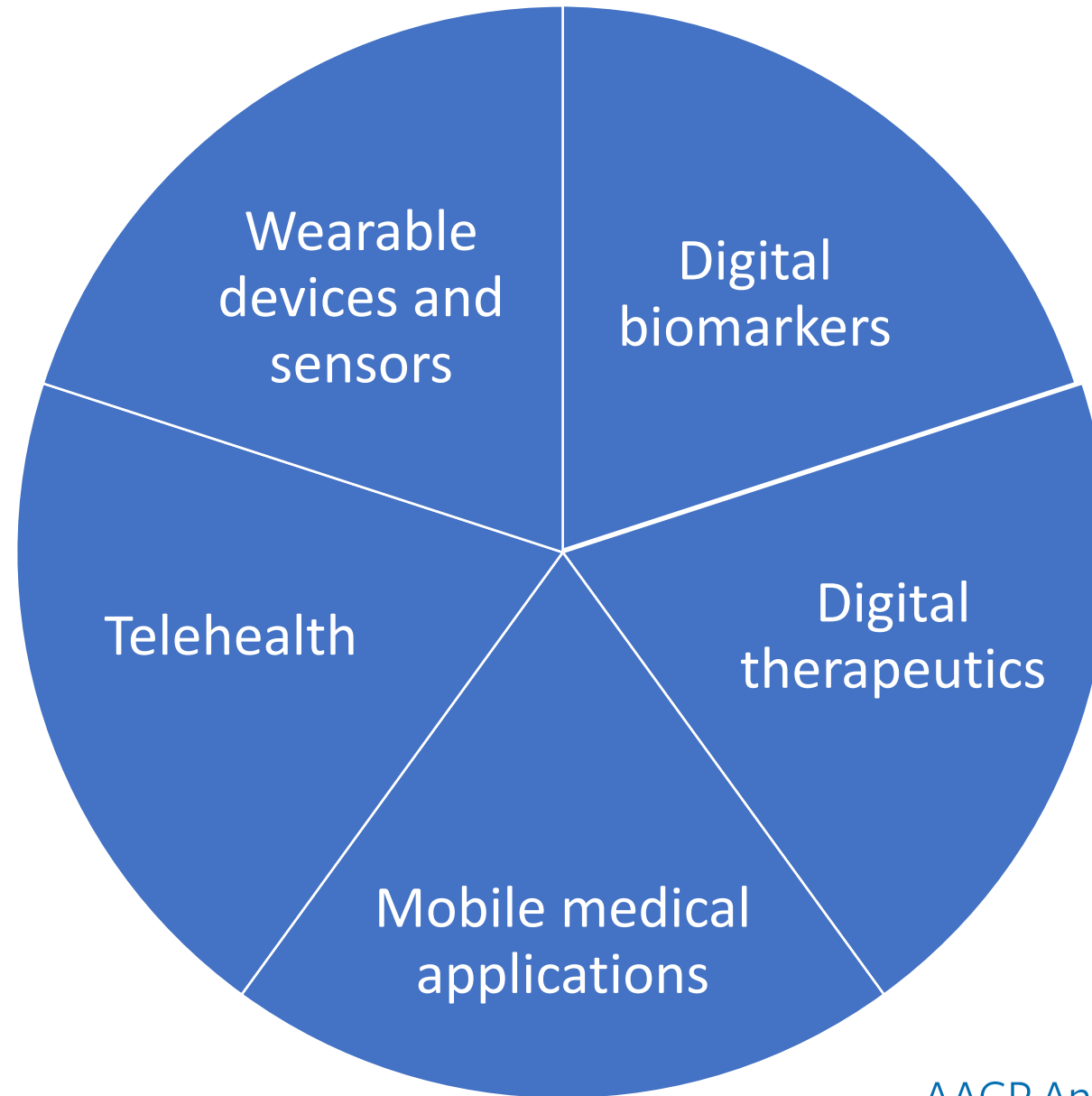
Education For All Plus Accommodating Students with Additional Interest

- All students - core digital health areas built into the curriculum

- Students with additional interest
  - Elective track
    - Above plus electives and preference for digital health experiential experiences
    - Possible focus in a particular area of digital health (e.g. informatics, programming, business)
  - Adjunctive degree (concurrently or prior/after)

- Further post-graduate training (e.g. residency, fellowship)

Aungst T et al. J Med Educ Curric Dev. 2020;7:2382120519901275.

At my institution digital health is currently being taught in:

An elective course

An introductory pharmacy practice course

Therapeutics

An informatics course

I am not sure where digital health is taught in the curriculum

Digital health is not being taught at my institution

Other

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Start the presentation to see live content. For screen share software, share the entire screen. Get help at **pollev.com/app**

Creating a digital health road map

- Evaluate your curriculum
  - Is DH currently taught anywhere?
  - Are there faculty interested in DH?
  - Where should DH be taught?
  - What courses have space to add DH content?

How can I teach DH?

Set the scene

Tie it in

Practice it

Use it

Set the scene

- Definitions
- Relevance to pharmacists
- Spotlight examples
- Resources
- General tools
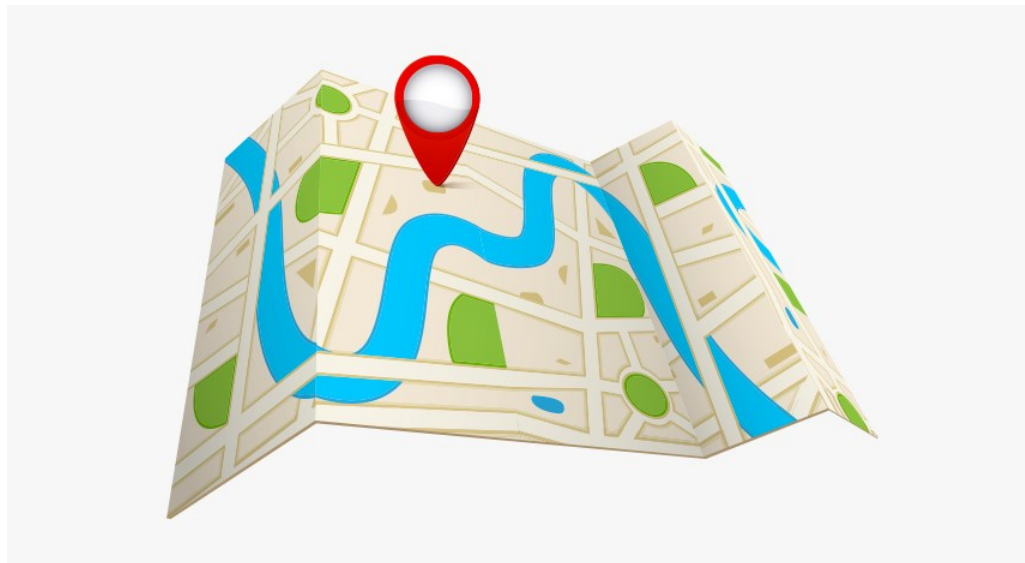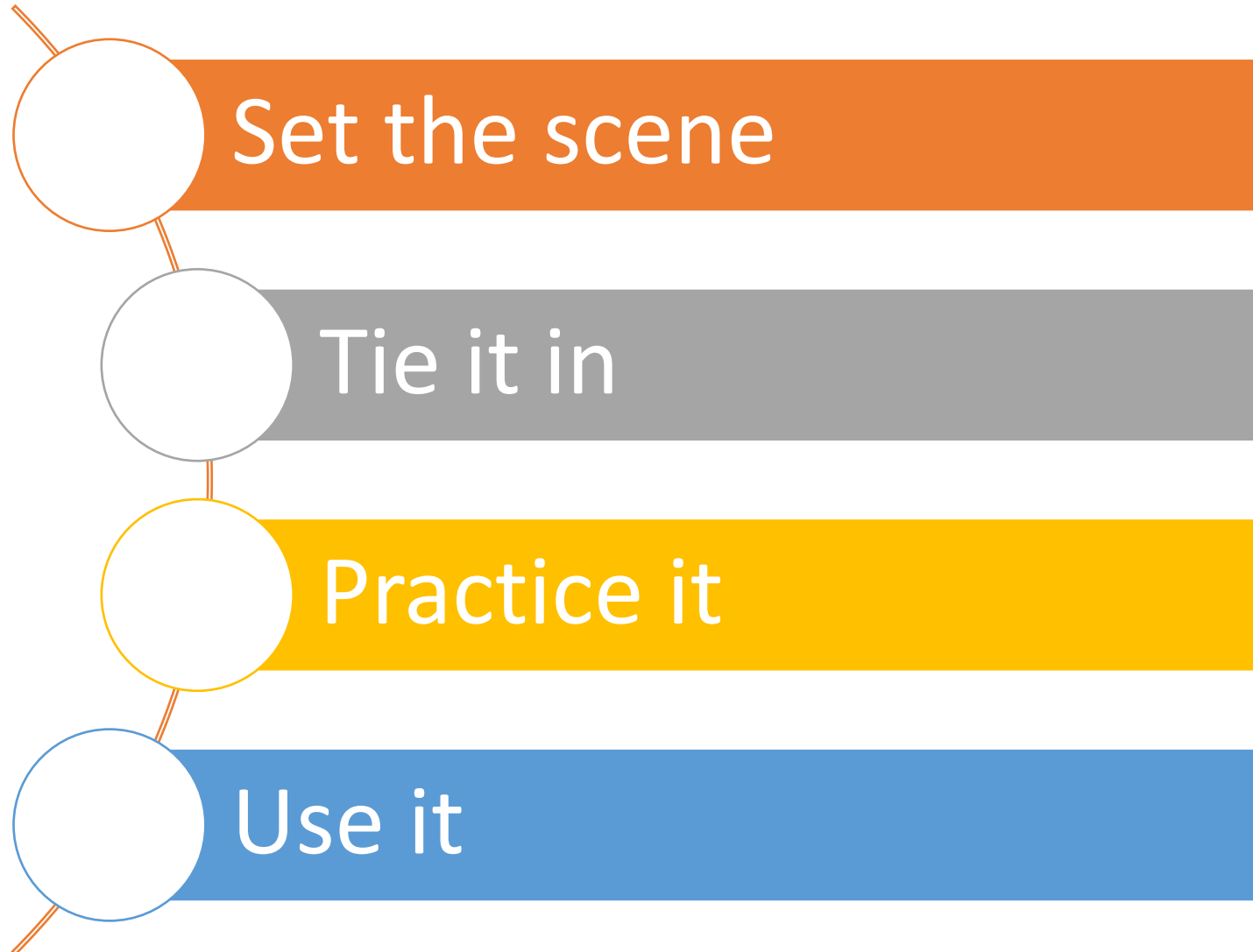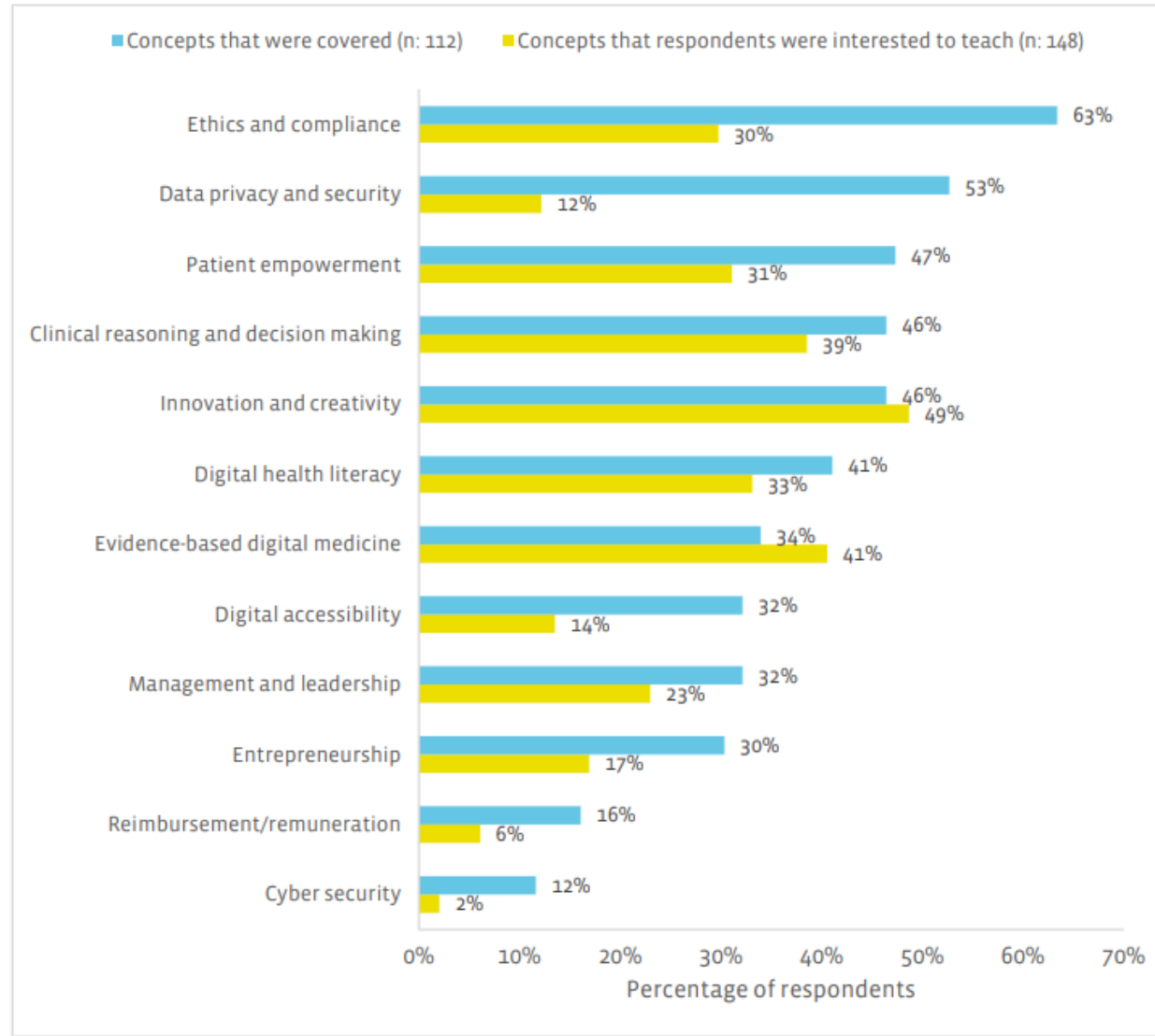
Tie it in

Figure 12. Overview of concepts related to digital health covered in pharmacy school

International Pharmaceutical Federation (FIP). FIP Digital health in pharmacy education. The Hague: International Pharmaceutical Federation; 2021

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Tie it in: Therapeutics

- Reinforce specific DH tools in their respective disease states
    - Continuous glucose monitoring in diabetes
    - Smart watch EKG in arrythmias
    - Sensor enabled inhalers in asthma or COPD
    - Bio-ingestable medication sensors

Practice it

Figure 13. Overview of infrastructures provided to support digital health education

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Practice it

- Active learning
  - Case based applications
  - Innovation projects
  - Hands on skills labs
  - OSCEs
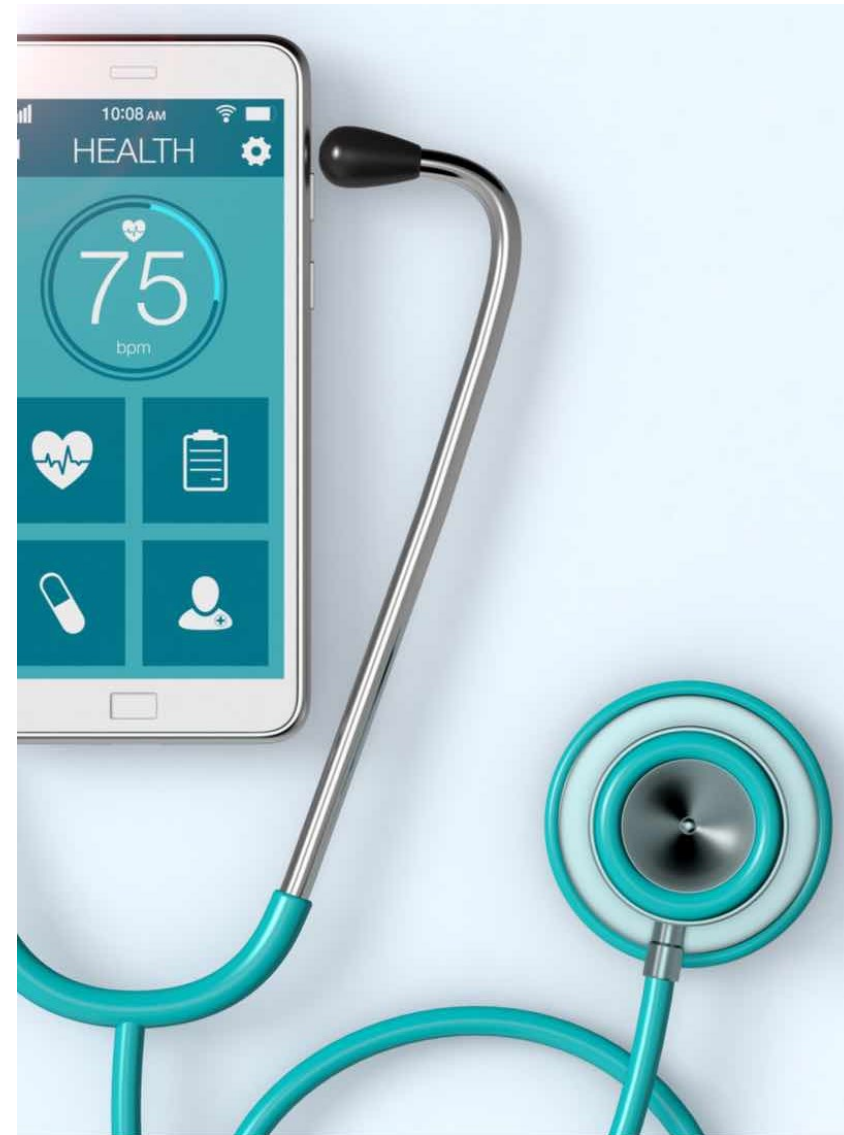
Use it

- Experiential rotations
- Internships
- Research projects
- Co-curriculum
- Post-graduate training

Example of an early road map

P1
- Didactic lecture in an introductory therapeutics course
- Incorporation into Pharmacist Patient Care Process (PPCP) cases

P2 and P3
- Technologies highlighted in each therapeutic course module
- Integration of digital health into a case conference series

P4
- Exposure to digital health in different APPE settings
- Reflection on experiential rotations and digital health

Do I have to be a **digital health** EXPERT to talk about it as a pharmacy educator?

ANXIETY

UNINSTALLING . . .

Leverage existing expertise
don't reinvent the wheel...but you can refine it
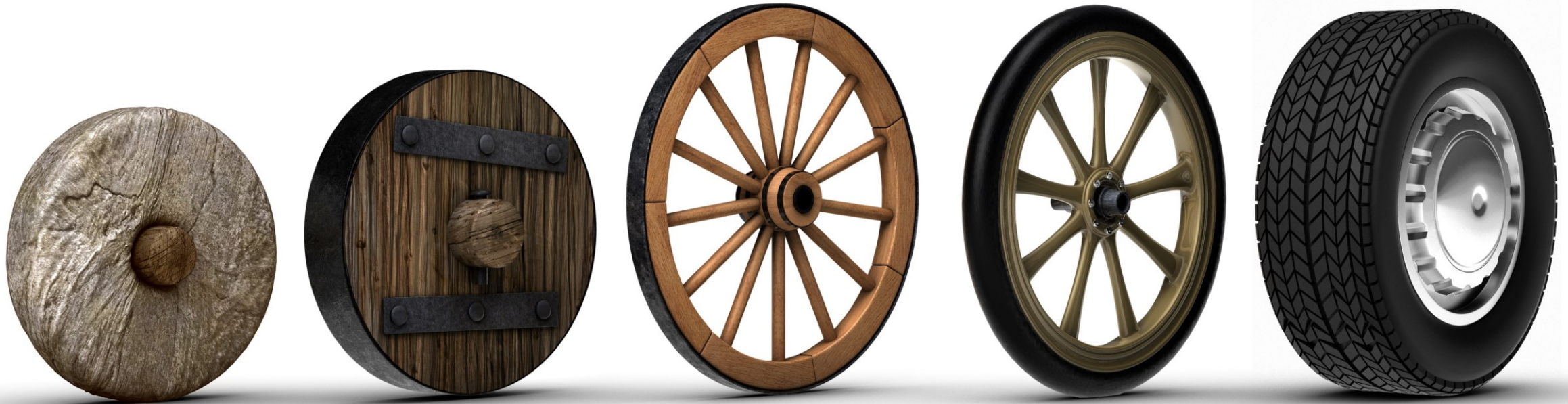
FIP Digital Health in Pharmacy Education: https://www.fip.org/file/4958
CB Insights Digital Health 150: https://bit.ly/3itbTos
DiMe Playbook: https://playbook.dimesociety.org/
mobihealthnews: https://www.mobihealthnews.com/
Informatics for All: https://www.ajpe.org/content/81/2/38
Informatics for Some: https://www.ajpe.org/content/81/9/6241
Partners in e/HIMSS: http://bit.ly/2ozGkU1

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Discover your **hidden treasures***

*Experts within your own university
(or broader university community), but outside of your department, college, etc.

Dual degrees in pharmacy + informatics

1 = Lipscomb University College of Pharmacy and Health Sciences, TN; 2 = Medical University of South Carolina College of Pharmacy, SC; 3 = Mercer University College of Pharmacy, GA; 4 = Nova Southeastern University College of Pharmacy, FL; 5 = Samford University McWhorter School of Pharmacy, AL; 6 = Southern Illinois University Edwardsville School of Pharmacy, IL; 7 = University of Findlay College of Pharmacy, Ohio.; 8 = University of Iowa College of Pharmacy, IA; 9 = University of Minnesota College of Pharmacy, MN; 10 = University of Tennessee Health Science Center College of Pharmacy, TN.

Not pictured/unable to participate in study (n=3): Loma Linda University School of Pharmacy, CA; University of Illinois at Chicago College of Pharmacy, IL; University of South Carolina College of Pharmacy, SC.

Created with mapchart.net

Legend

■ Dual degree program present in this state

■ Dual degree program is not present in this state

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90% of schools/colleges of pharmacy **collaborated** with other graduate schools or colleges **within the same university**

70% partnered with **local health systems** for experiential portions

Bonus: **opportunities** for **interprofessional education**

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Lipscomb University multi-tiered informatics and digital health offerings

Didactic coursework (digital-focused)	Introductory Pharmacy Practice Experiences	Didactic coursework (longitudinal)	Co-curricular

Advanced Pharmacy Practice Experiences	Collaborations	Informatics Residency

Master of Science or Certificate in Health Care Informatics

J Am Med Inform Assoc 2016;23(4):844-7. doi: 10.1093/jamia/ocw023

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Didactic (digital health-focused)

- Health Informatics[a] / Digital Health[b]
  - Importance of **established** (e.g., digital inhalers, wearables) AND **emerging** (e.g., artificial intelligence, blockchain, chatbots) **technologies**

  - **Hands-on** assignments (e.g., app design contest, Cryptozombies blockchain, Cognitive.ai certificates, FreeRice social good, Google Cardboard virtual reality, Grasshopper coding, Misfit wearables)

  - **Career planning** and industry indicators (e.g., resources for seeking digital health positions, review of opportunities)

a=required course, b = elective course

Example of a **non**-digital health expert incorporating digital health

Jessica Wallace, PharmD, BCPS

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CVS files to trademark its pharmacy and health clinics in the metaverse

- CVS filed to trademark its pharmacy and health clinics in the metaverse

- The drugstore chain looks to patent its stores as well as sales of virtual goods **including prescription drugs**, wellness, beauty, and personal care products

- CVS's filing also includes the concept of offering non-emergency medical services, as well as nutrition and wellness counseling
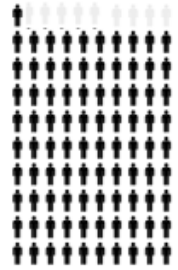
Symbiotic

A decentralized **clinical trial** platform built on **blockchain.**

Symbiotic is a decentralized clinical trial platform (DCT) built on blockchain. We are a two-sided platform connecting participants with biopharma, organic medicine manufacturers, med-tech, big tech and academic institutions.

Experiential

- Conventional informatics sites (e.g., HCA, Vanderbilt)

- Startups (e.g., Capsule, Hashed Health, Monogram)

- Emerging (e.g., Amazon Pharmacy, CDC, divvyDOSE)

Co-Curricular

- DigitalHealth.Rx, Distributed Health, SkyNet and

  W4B hackathons, Health:Further conference, Meetups

Use digital health to encourage student pharmacists (and alums!) to explore new **career paths** and **opportunities**

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Job **resources** for digital health

https://bit.ly/3Aw7ioa

What is one way you can take what you have learned from the session today and implement it into your institution's curriculum?

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Questions?

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Parisa Vatanka: pvatanka@aphanet.org