The Playbook: Digital Healthcare

A curated library of additional resources
Navigating the library

- AI/ML
- AR/VR/MR
- Connected Sensor Technology
- Digital Therapeutics
- Electronic health records
- Mobile health applications
- Engagement and social media
- Virtual Care
- General
AI/ML

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Resources

- FDA action plan: AI/ML in software as a medical device
- AHA report on how hospitals and health systems can use artificial intelligence to build the health care workforce of the future
- WHO guidance principles of ethics and governance of AI in health by identifying the ethical challenges and risks with the use of artificial intelligence of health
- HHS AI Strategy to prioritize the application and development of AI across common enterprise mission areas

Literature

- Article on “AI in health and medicine”
- Forbes piece on why developing decision intelligence and support is the crucial next step for AI in healthcare
- Literature by disease type: Radiology, Cardiology, Oncology, Ophthalmology
- Article on a governance model for the application of AI in healthcare
- STAT piece on “AI gone astray: How subtle shifts in patient data send popular algorithms reeling, undermining patient safety”
AR/VR/MR

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Resources
- **FDA public workshop** on the best evaluation practices for VR/AR in Medicine
- **Exponential medicine talk** future of AR/VR in healthcare by world's first surgeon to use google lens during live surgery
- **Virtual human interaction lab** by Stanford is building solutions to bring empathy and curb disparities in healthcare
- **Medical Extended Reality Program** at FDA conducts regulatory science research to help ensure patient access to innovative extended reality-based devices that are safe and effective.

Literature
- **Case study** of NHS Trust using mixed reality in the fight against COVID-19
- **Forbes** piece on the next frontier for healthcare: AR, VR, and The Metaverse
- **Article** on how can businesses and governments guide augmented reality development
- **9 use cases** on AR apps of improving patient experience
- **Research** on how VR is helping cancer patients better understand about their diagnosis
Connected Sensor Technology

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**Resources**
- *The Playbook* is the essential guide for using connected sensor technology in clinical care
- *Clinical dossier* outlines 7 fundamentals of connected technology for practicing clinicians
- *Guide* to “How do I pick right technology for my needs that also meets the patients’ needs?”
- *US Digital services* play #11 checklist to manage security and privacy
- *Sensor data integration* to power patient care
- *Connected HIPAA* piece on “What is Considered PHI Under HIPAA?”

**Literature**
- *V3 framework* is the foundation to determine fit-for-purpose nature of the digital tool
- *Nature* piece on modernizing and designing evaluation frameworks for sensor technologies
- *EVIDENCE checklist* to ensure quality reporting in evidence evaluating the performance of connected sensor products
- *World economic forum* highlights the use of consumer wearables to try to improve health outcomes during pandemics
- *Guardian article* on fitness tracking app that gives away location of secret US army bases
Digital therapeutics (DTx)
A curated library of peer-reviewed literature and resources

**Resources**
- **FDA pre-cert program** is the digital health software Precertification (Pre-Cert) program for efficient regulatory oversight of software-based medical devices (SaMDs)
- **DTx products library** highlight evidence-based innovative DTx products
- **2021 trends report** on DTx innovation, evidence, regulation, and adoption
- **DTx regulatory pathways** highlighting how DTx products are recognized and regulated

**Literature**
- **Forbes** piece where SaMD and DTx are headed in 2022 and beyond
- **Health Affairs** piece on should digital therapeutics be regulated with gold-standard evidence?
- Research studies in:
  - Cardiovascular, Diabetes, Neurology, Pulmonary
- **STAT piece** on 3 missing pieces of DTX sector that needs to succeed in 2022
- **Article** on the role of digital therapeutics and the changing future of healthcare
Electronic health records
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Resources
- [HHS report and guide](#) on privacy, security and electronic health records
- [FDA guidance](#) on the use of EHR Data in clinical investigations
- [MyData](#) is a human-centric approach to personal health data for a fair data economy
- [HealthIT Playbook](#) is a tool for administrators, physician practice owners, clinicians and practitioners, practice staff, etc to learn to optimize the safety and use of EHR

Literature
- [JAMA piece](#) on should EHR vendors share Health IT patient safety responsibility?
- [Article](#) on privacy-minded consumers more likely to share health data if transparency and altruistic use are guaranteed
- [Article](#) highlighting inequity where 21 Million Americans Still Lack Broadband Connectivity
- [STAT piece](#) on creating a digital Hippocratic oath for the 21st century
- [Article](#) on the “EHR Integration: Achieving this Digital Health Imperative”
- [Article](#) suggesting first challenge for ARPA-H should be electronic health record migration
mHealth
A curated library of peer-reviewed literature and resources

Resources
- **DoD practice guide** on the mobile health practice for clinicians to understand how these tools are used for patient monitoring, education and treatment
- **HL7 framework** for consumer mobile health application functions
- **FTC best practices** for design and development of the mHealth applications
- **DBDP** is an open source software platform for the development of digital biomarkers of mHealth and wearables developed by the Big Ideas Lab at Duke University
- **VA guide** on mobile health in clinical practice

Literature
- **Article** on collecting and analyzing millions of mHealth data streams
- **Guidance** on ethical considerations and policy recommendations when using mHealth applications
- **JMIR** piece to propose criteria for mobile-health related apps
- **Blog** on the nuances of health technology that can hurt patients
- **STAT** piece on wonky data standards and how it will affect health systems and patients
Consumer engagement and social media

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Resources

- FDA guidances on the cybersecurity considerations for safety and effectiveness
- Consumer report on the risk of medical identity theft
- Report against “one-size-fits-all” approach for healthcare consumer engagement
- Perspective on importance of engaging clinicians in digital health
- Insights on direct-to-consumer digital health
- Priorities and roadmap for protecting privacy and security of consumer health information

Literature

- WSJ piece on “The ‘Internet of Bodies’ Is Here. Are Courts and Regulators Ready?”
- Article on how tracking a decade of social media became a hugely profitable dossier on the health of 270 million Americans
- Forbes piece on 1 in 10 American turn to social media for health information
- Article highlighting “Do no Harm” when it comes to social media with the warning from the Federation of State Medical Boards
- Case piece on the silver lining of patient engagement with No Surprises Act
Virtual Care
A curated library of peer-reviewed literature and resources

**Resources**
- [IMPACT](#) care resources by virtual-first medical practice collaborative
- [Framework](#) for eliminating health disparities using telehealth
- [Playbook](#) on the digital health implementation provides resources, tips, and best practices on designing the workflow
- [7 Vignettes](#) that outlines virtual first solutions to improve clinical and health economic outcomes.
- [Report](#) on “Return on health” initiative to articulate the value of digitally enabled care

**Literature**
- [STAT](#) piece on breaking the stranglehold of the doctor-patient visit on healthcare innovation
- [Foley’s](#) piece highlights the top 10 Medicare Remote Patient Monitoring FAQs
- [Research](#) on the effect of home-based telemonitoring using mobile phone technology on the outcome of heart failure patients after an episode of acute decompensation
- [Article](#) on as more clinicians are using virtual care technology, raises the questions about inclusivity and usability
- [Article](#) on Virtual-first care is here to stay, but can it fix healthcare?
General

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Resources

- The National Center for Collaborative Healthcare Innovation - collaborates with industry, other government agencies, academia, and throughout VA to create far-reaching positive impact for our Veterans with cutting-edge technologies
- AMA Telehealth Immersion Program - comprehensive curriculum and enhanced experience navigating the world of telehealth alongside peers nationwide
- National Consortium of Telehealth Resource Centers - provides assistance, education, and information to organizations and individuals who are actively providing or interested in providing health care at a distance

Literature

- AMA Privacy & Design Principles - a case for privacy by design in app development
- Human-Centered Design - as a powerful tool in healthcare with case studies
- Patient Experience Article - improving the patient experience by reducing customer friction points
- Digital Transformation Success - piece on what we can learn from other industries
- Digital transformation in healthcare - a systematic literature review about the state of the art of digital transformation in healthcare