AI AS AN AID: SUGGESTIONS FOR HOW TO USE ARTIFICIAL INTELLIGENCE RELATIVE TO PATIENT CARE

Rasheeta Chandler, PhD

RASHEETA CHANDLER, PHD, RN, FNP-BC, FAANP, FAAN

- I am a Southern born and raised Black woman from rural Florida
- I am a lifelong learner
- I identify as a proud Sexual and Reproductive Avenger, Community-based Family Nurse Practitioner, Public Health Scholar, Innovator for the Culture/Community, and Academician
- My main purpose is to ensure cultural accountability & equity relative to the sexual & reproductive health geared toward communities of color--particularly in the realm of digital tools and resources.

EMORY

NELL HODGSON WOODRUFF SCHOOL OF NURSING

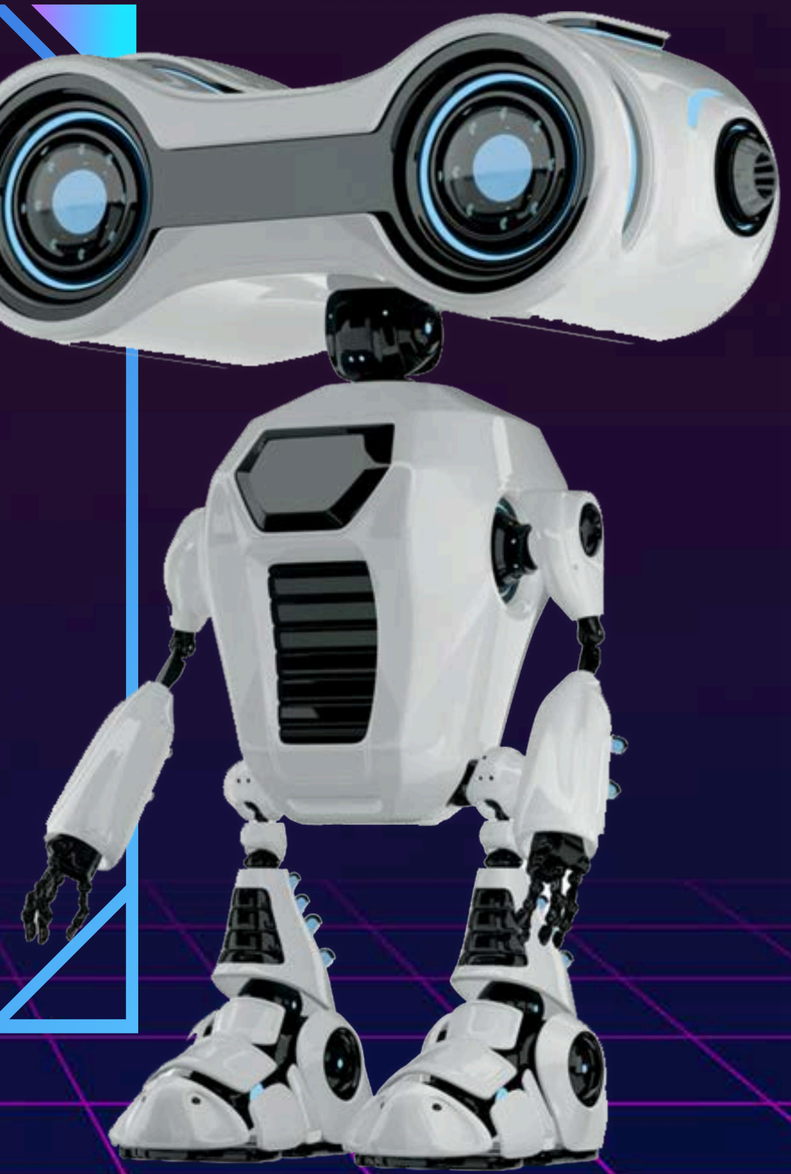
CHANDLER CONSULTING & MEDIA

Creative conversations on digital display

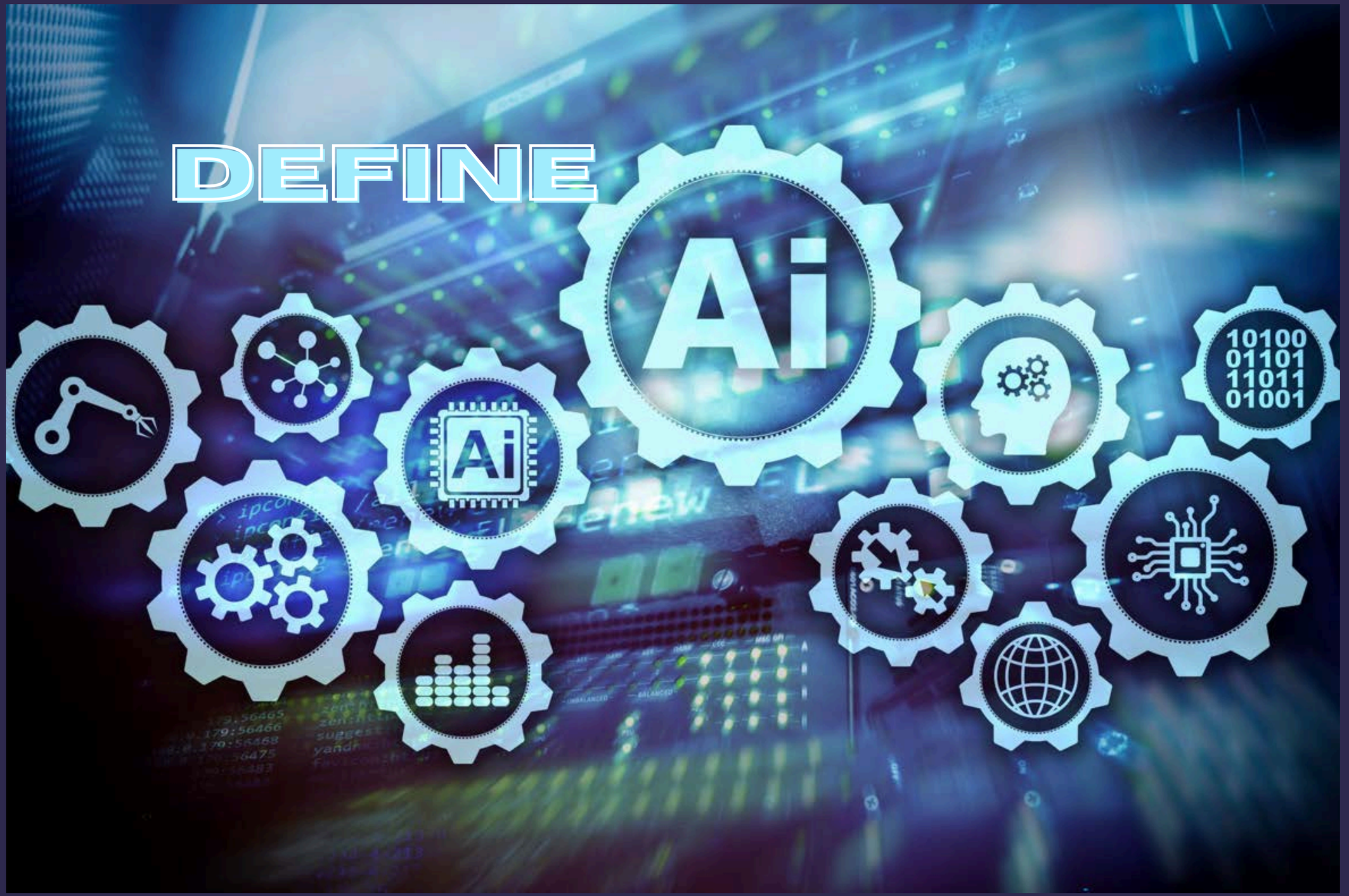
BRIEF OVERVIEW

- Explore the transformative power of technology in HIV

- Explore the potential of AI in the HIV paradigm



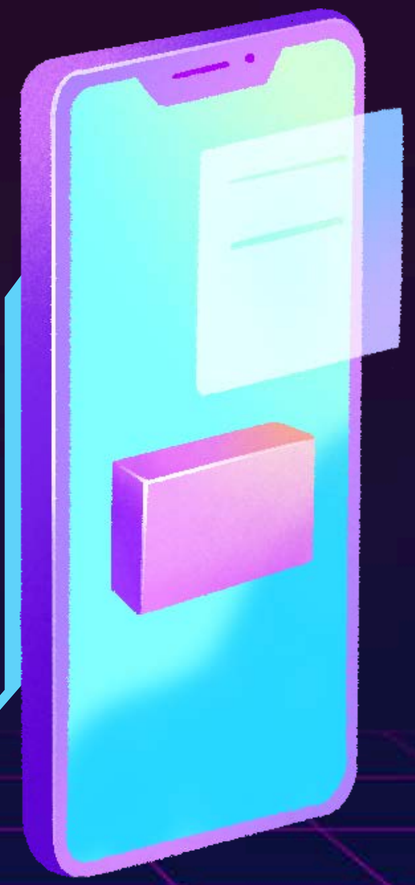
introduction


DEFINE
Ai
Ai
10100
01101
11011
01001

GENERATIVE AI / CHATBOTS

AI as a Learning Tool:

- Artificial intelligence (AI) is revolutionizing patient education, offering personalized, on-demand information. Tools like ChatGPT are being integrated into healthcare to provide patients with accurate and accessible health information."
- These tools can enhance understanding of complex medical conditions, medication management, and treatment options, helping patients make informed decisions.



ChatGPT:

- For example, ChatGPT has been used to support patients in understanding their health records, clarify medical jargon, and even assist in mental health support through AI-driven conversations.
- This supports patient exploration, and supplements provider education by addressing routine questions and concerns.

AI tools in 2024

From sources across the web

Chatbots

- ChatGPT
- Microsoft Copilot
- Synthesia
- Grammarly
- Descript
- Murf
- Adobe Firefly
- Canva
- Character.ai
- Midjourney
- Codium Ltd.
- Gemini
- Duet AI
- Perplexity - Ask Anything
- Adobe Podcast
- Claude

AI Videos

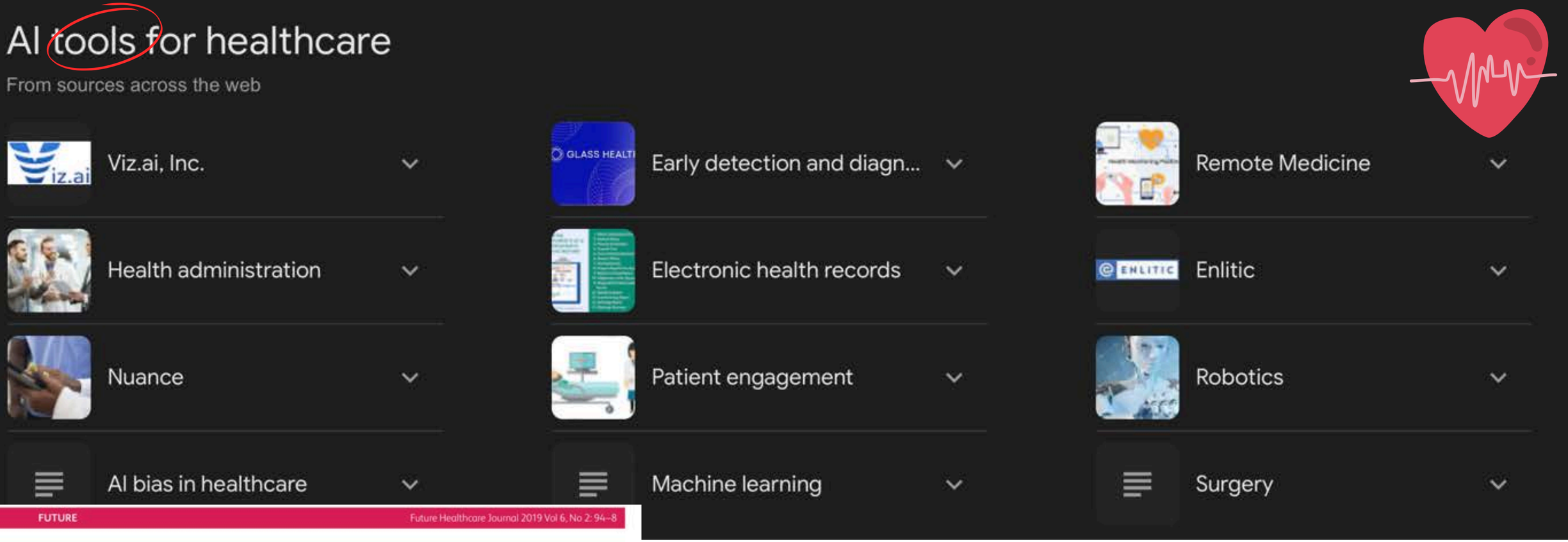
AI Video Editor

AI IMAGE

- DALL-E
- Jasper AI, Inc.
- Fireflies.AI Corp.
- Copy.ai
- ElevenLabs
- QuillBot
- AIXcoder
- AIVA

AI tools for healthcare

From sources across the web



FUTURE Future Healthcare Journal 2019 Vol 6, No 2: 94–8

DIGITAL TECHNOLOGY

The potential for artificial intelligence in healthcare

Authors: Thomas Davenport[A] and Ravi Kalakota[B]

ABSTRACT

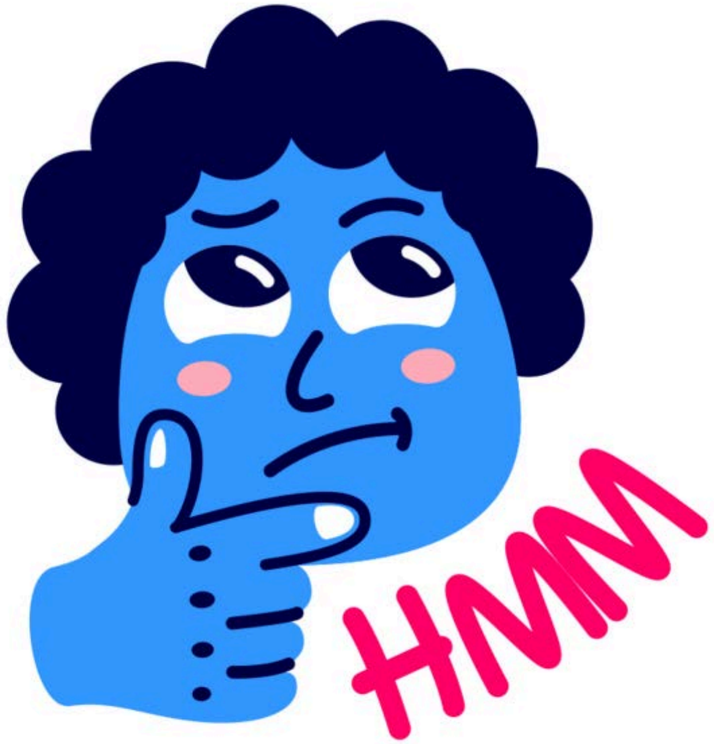
The complexity and rise of data in healthcare means that artificial intelligence (AI) will increasingly be applied within the field. Several types of AI are already being employed by payers and providers of care, and life sciences companies. The key categories of applications involve diagnosis and treatment recommendations, patient engagement and adherence, and administrative activities. Although there are many instances in which AI can perform healthcare tasks as well or better than humans, implementation factors will prevent large-scale automation of healthcare professional jobs for a considerable period. Ethical issues in the application of AI to healthcare are

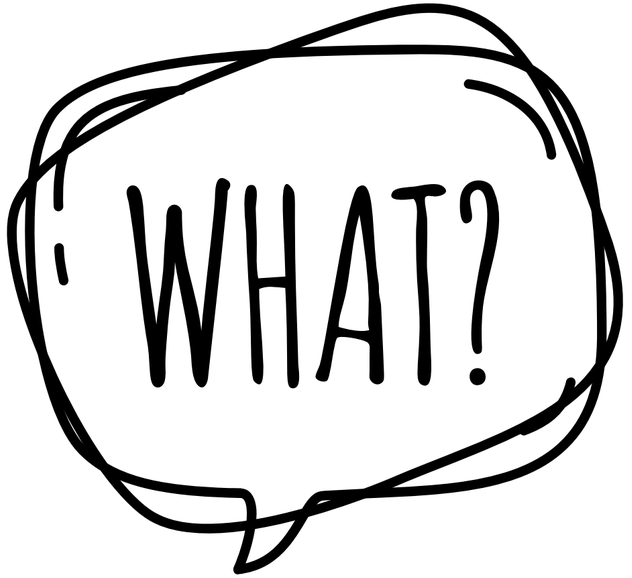
support vary widely. Some particular AI technologies of high importance to healthcare are defined and described below.

Machine learning – neural networks and deep learning

Machine learning is a statistical technique for fitting models to data and to "learn" by training models with data. Machine learning is one of the most common forms of AI; in a 2018 Deloitte survey of 1,100 US managers whose organisations were already pursuing AI, 63% of companies surveyed were employing machine learning in their businesses.[3] It is a broad technique at the core of many approaches to AI and there are

- **Machine Learning**
- **Natural Language Processing**
- **Robotic Processing**
- **Robots**
- **Dx. & Tx.**
- **Patient Engagement**
- **Administrative**





Are some AI Tools that you know about or that you have used?

Tech
Supplemental
Solutions

CURRENT LANDSCAPE IN HIV TECHNOLOGY

Overview of Digital Health Tools:

- The HIV technology space has grown rapidly, with a wide array of digital tools now available. From treatment trackers and apps to telehealth services, these technologies are reshaping how people manage their health.
  - Examples include popular apps like M-Cubed (Mobile Messaging for Men), HealthMindr, and P3, which offer features ranging from PrEP tracking to virtual visits with healthcare providers.

WHERE ARE WE NOW?

Access and Disparities:

- Despite the proliferation of these tools, disparities in access remain a significant challenge.

Bridging Gaps:

- Digital health tools hold immense potential to bridge these gaps.

Resources: Merck for Mothers, Propeller Health

GENERATIVE AI / CHATGPT

CHALLENGE

- While AI tools offer immense potential, they also raise important questions about accuracy, reliability, and ethical use.

Responsible

Ensuring that AI-driven information is evidence-based and culturally sensitive is critical to avoid misinformation.

There’s a need for ongoing research and regulation to guide the ethical use of AI in healthcare, particularly in protecting patient privacy and data security.

HOW TO CHOOSE A TOOL?

Evidence-based

Security & Privacy

Consider the needs & preferences of the patient

QUEEN SAVVY LAB

Quality Equitable & Electronic

iNterventions for Savvy Women

TECH PROJECT 1: MOBILE APP

NIMH Funded

Research Vision :

To cultivate an effective, sustainable, and culturally relevant Optimal Sexual Health and HIV prevention digital resource for Black women (SavvyHER) to educate women about prevention, testing, and treatment for other STIs, in addition to HIV

FUNDING Source: NIMH, R34MH128048-03

website: www.savvyher.me

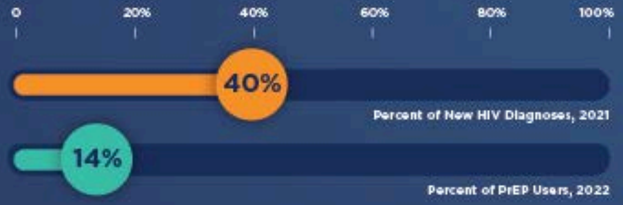
AIDSVu

Black Women and PrEP

In the U.S., both **women** and **Black Americans** have an **unmet need for PrEP.**

Black People and PrEP

In 2021, **Black people** represented **40% of all new HIV diagnoses**, but only accounted for **14% of PrEP users in 2021.**

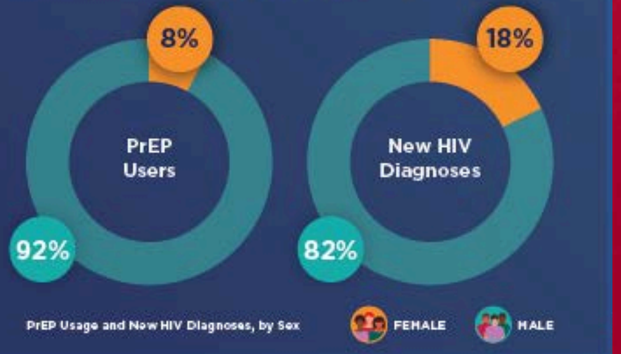


Black Women and HIV

Black women accounted for **54% of new HIV diagnoses** among women in 2021, despite comprising just **14%** of women in the U.S.

Number of New HIV Diagnoses Among Females, by Race, 2021

In 2022, **women made up only 8% of PrEP users,** despite representing **18% all new HIV diagnoses** in 2021.



PrEP Usage and New HIV Diagnoses, by Sex

FEMALE MALE

Black Women and the South

The rate of **Black women** living with HIV in the South is **14X as high** as **White women.**

Rates of Black Females Living with HIV, 2021

Rates of White Females Living with HIV, 2021

0 - 19	20 - 50	51 - 86	87 - 129	130 - 192
193 - 277	278 - 439	440 - 688	689 - 1,181	1,182+

AIDSVu.ORG | @AIDSVU SOURCE: AIDSVu AND

SAVVY Her

Meet Ebony!

My patient who wants to Optimize her Sexual Wellness

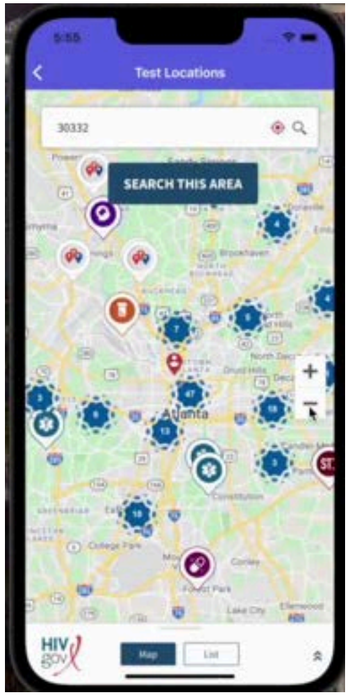
We asked Ebony & other Black women like her!

With over hundreds of hours of co-development, since 2016 & 709K in NIH funding

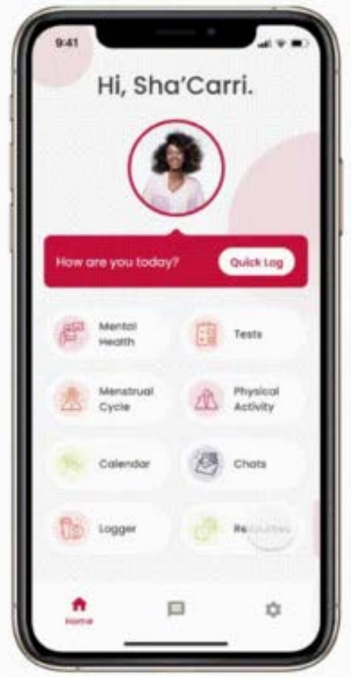
SAVVY Her

Platform	Evidence-Based	Robust user data repository of health identifiers	Integrated services (e.g., telehealth, AI)	Focus on Black Women's Health	Community Network	Health promotion E-commerce Ordering feature	Comprehensive Health Self-Monitoring Toolkit
SavvyHER							
Health In Her HUE	✗	✗	✗			✗	✗
Ethel's Club	✗	✗	✗			✗	✗
Black Women’s Health Imperative (BWHI)		✗	✗			✗	✗
Sistah Space	✗	✗	✗			✗	✗

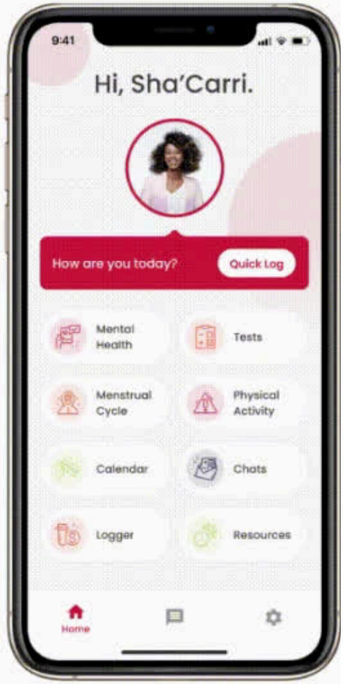
SIGN UP



STI, HIV, PrEP Map



RESOURCES



WELLNESS

- Personalized Experience
- Reporting and Data Tracking
- Synchronous and Asynchronous Education and Training
- Cross-promotion
- Telehealth linkage to care
- In-app ordering

GET IT ON Google Play

Download on the App Store

Expert Team: SavvyHER

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Nurse, CEO

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Sherilyn Francis, MPH, MSBT

Center for Data Science™
& Team

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Associate Director,

Sudeshna Paul, PhD, MS
Statistical Expert

Natalie Hernandez, PhD, MPH
Community Engagement &
Women's Health Expert

JOURNAL ARTICLE OF THE YEAR, 2024

Journal of the Association of Nurses in AIDS Care
JANAC

Chandler, R. , Warner, S. , Aidoo-Frimpong, G. & Wells, J. (2024). “What Did You Say, ChatGPT?” The Use of AI in Black Women’s HIV Self-Education: An Inductive Qualitative Data Analysis. Journal of the Association of Nurses in AIDS Care, 35 (3), 294-302. doi: 10.1097/JNC.0000000000000468.

Research Article

“What Did You Say, ChatGPT?” The Use of AI in Black Women’s HIV Self-Education: An Inductive Qualitative Data Analysis

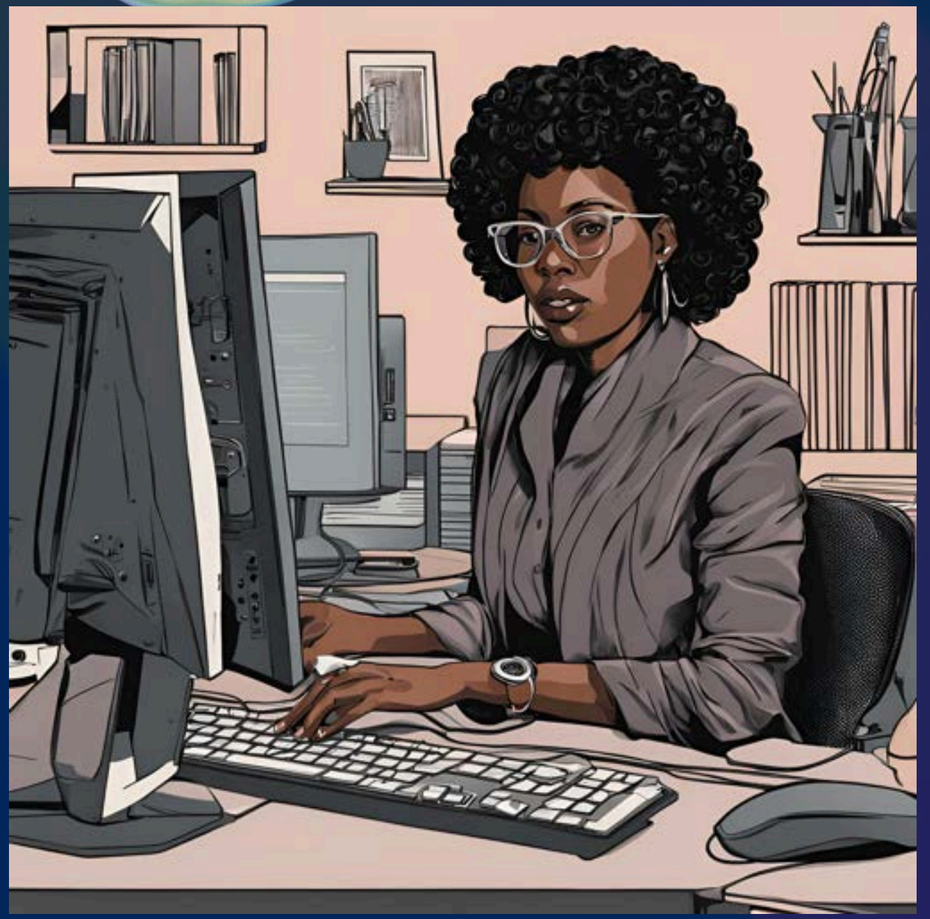
Rasheeta D. Chandler, PhD, RN, FNP-BC, FAANP, FAAN* • Sheena Warner, MS, CRNA, APN • Gloria Aidoo-Frimpong, PhD, MPH, MA • Jessica Wells, PhD, RN, WHNP-BC, FAAN

Abstract

The emergence of widely accessible artificial intelligence (AI) chatbots such as ChatGPT presents unique opportunities and challenges in public health self-education. This study examined simulations with ChatGPT for its use in public education of sexual

INTRODUCTION 01

- Context: Black women in the U.S. face disproportionate HIV susceptibility.
- Challenge: Culture- and gender-specific considerations in the domains of health communication; existing and emerging technology. To foster effective engagement & educational content/context with diverse populations.
- Objective: Evaluate ChatGPT's potential as a tool for HIV prevention education among women more generally & than Black women specifically.



METHODOLOGY 05

- Design: Inductive qualitative analysis of ChatGPT's responses to HIV-related prompts.
- Prompts: Eight scenarios reflecting potential inquiries from women in general & then specifically for Black women about HIV prevention
- Analysis: Thematic analysis to assess response quality, cultural sensitivity, and accuracy.

PROMPTS

06

Four Categories - Comparing Women generally and Black Women

- Simulation [Prompts 1 & 2]
- HIV Prevention-Generally [Prompts 3 & 4]
- HIV Prevention- Biomedical [PrEP-specific]–[Prompts 4& 6]
- Personalization/Conversational [Prompts 7 &8]

DISCUSSION: KEY INSIGHTS

- Accuracy and Consistency: ChatGPT provided accurate information on HIV prevention and PrEP in all prompts, aligning with CDC guidelines.
- Cultural Sensitivity and Tone:
  - Race-Specific Nuances: Prompts specified with Black women led to tailored responses with a supportive, empathetic tone.
  - Personalized Language: Responses addressed race-based healthcare disparities, financial support options, and cultural factors impacting healthcare access.
- Impact of Wording on Power Dynamics:
  - For Black women, language like “negotiating condom use“ contrasted with a general recommendation to “ensure use,“ reflecting perceived power imbalances.

Table 1. Analysis of ChatGPT Transcripts

Prompt and Transcript	Summary of ChatGPT Response	Compare	Contrast	Overall Impression
3: Can you give me information about HIV prevention in Black women?	Acknowledges the specific demographic of Black women and emphasizes the importance of specific HIV prevention efforts. Highlights the higher rates of HIV infection among Black women and the need for culturally sensitive health care. Although it includes general prevention methods, it places particular emphasis on addressing racial disparities, reducing stigma, and building supportive community networks	Both responses provide information about HIV prevention methods and the importance of regular testing and health care access. They both encourage open communication with sexual partners and stress the significance of education and awareness	The response to "HIV prevention in Black women" specifically addresses the demographic's unique challenges, such as higher infection rates and the importance of culturally sensitive care. It emphasizes the need to reduce disparities and stigma The response to "HIV prevention in women" provides a more general overview of prevention methods without addressing the specific concerns or disparities faced by Black women	Overall, the response to "HIV prevention in Black women" is more specific to the demographic's unique circumstances and health care challenges, whereas the response to "HIV prevention in women" offers a broader perspective on prevention strategies without specific demographic considerations
4: Can you give me information about HIV prevention in women?	Provides comprehensive information about HIV prevention strategies applicable to women in general. Outlines various methods, such as safe sex practices, PrEP, regular testing, and health care access. Does not specifically address the unique challenges or disparities that may affect women in different racial or ethnic groups			

CHANDLER ET. AL. (2024)

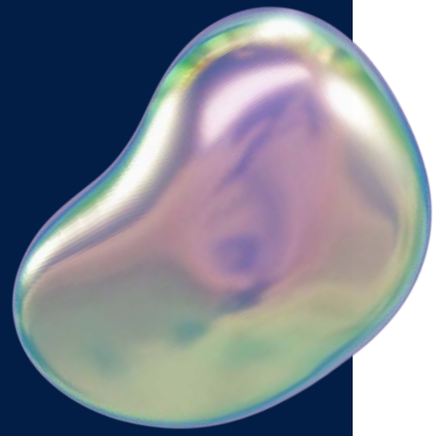
Table 1. (*continued*)

Prompt and Transcript	Summary of ChatGPT Response	Compare	Contrast	Overall Impression
5: Can you give me information about HIV PrEP in women?	Provides general information about PrEP, including its effectiveness, purpose, and potential side effects. Discusses the importance of adherence and the need for consultation with a health care provider. Does not address specific cultural or demographic factors related to women	Both responses provide basic information about PrEP's effectiveness, purpose, and importance of adherence. They both encourage consulting with a health care provider for personalized guidance	The response to "HIV PrEP in Black women" acknowledges the specific demographic and highlights the need for cultural sensitivity, addressing disparities, and community support, whereas the response to "HIV PrEP in women" does not address these distinctive concerns. The response to "HIV PrEP in Black women" underscores the importance of culturally significant outreach and support, while the response to "HIV PrEP in women" provides more general information	Overall, the response to "HIV PrEP in Black women" is more specific to the demographic and its unique health care challenges, whereas the response to "HIV PrEP in women" provides a more general overview of PrEP without addressing cultural or demographic factors
6: Can you give me information about HIV PrEP in Black women?	Acknowledges the specific demographic of Black women and addresses the importance of tailored HIV prevention efforts. Emphasizes that Black women are disproportionately affected by HIV and need access to culturally competent care. Although it includes some general information about PrEP, it highlights the need for culturally sensitive health care and community support			

CHANDLER ET. AL. (2024)

Table 1. *(continued)*

Prompt and Transcript	Summary of ChatGPT Response	Compare	Contrast	Overall Impression
7: I'm a Black woman in college. My doctor mentioned HIV prevention at my last appointment. I don't fully understand. Can you tell me more about it?	Acknowledges the user's identity as a Black woman in college. Provides information on HIV prevention methods, including safe sex, PrEP, PEP, knowing your partner's HIV status, regular testing, harm reduction, education and awareness, support, and counseling. Encourages the user to take proactive steps to protect herself and offers guidance on seeking further support	Both responses provide information on HIV prevention methods, including safe sex, PrEP, PEP, regular testing, and education. Both responses stress the importance of communication with sexual partners and staying informed about HIV. Both responses mention the importance of avoiding sharing needles or drug equipment and the significance of medical care for partners with HIV. Both responses highlight the urgency of PEP as an emergency measure. Both responses encourage seeking further support and information, albeit in slightly different ways	Transcript 8 includes "abstinence" as the first point of HIV prevention, while Transcript 7 does not mention it explicitly. Transcript 8 provides more detailed information about open and honest communication with partners, partner's HIV status, and ongoing HIV vaccine research, which Transcript 7 does not include. Transcript 7 emphasizes harm reduction for those who inject drugs, whereas Transcript 8 focuses on avoiding sharing needles and equipment for drug use. Transcript 7 is empathetic and culturally sensitive, explicitly acknowledging the user's identity, whereas Transcript 8 maintains a more neutral tone without addressing the user's racial identity. Transcript 7 includes more empathetic language and phrases that convey support and care. Transcript 7 places a strong emphasis on the user's health and well-being with more empathetic language and phrases that convey support and encourages responsible decision making, whereas Transcript 8 emphasizes the importance of preventive measures in a straightforward manner without as much emotional emphasis. Transcript 8 advises limiting the number of sexual partners, which is not mentioned in Transcript 7	Overall, both transcripts provide information on HIV prevention. However, there is a notable difference in tone and empathetic language between the two transcripts
8: I'm a White woman in college. My doctor mentioned HIV prevention at my last appointment. I don't fully understand. Can you tell me more about it?	Does not acknowledge the user's racial identity. Does not note college demographic. Provides information on HIV prevention methods, including abstinence, safe sex, PrEP, PEP, regular testing, education and communication, avoiding sharing needles, limiting sexual partners, medical care, and vaccination research. Emphasizes open and honest communication with sexual partners and the importance of partner's HIV status. Mentions ongoing research on HIV vaccines			



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  - Personalized Language: Responses addressed race-based healthcare disparities, financial support options, and cultural factors impacting healthcare access.
- Impact of Wording on Power Dynamics:
  - For Black women, language like “negotiating condom use“ contrasted with a general recommendation to “ensure use,“ reflecting perceived power imbalances.

DISCUSSION: BROADER IMPLICATIONS

- Holistic Health Approach:
  - ChatGPT's responses varied from clinical to socially conscious, emphasizing community support and reducing stigma in race-specific scenarios.
- Emotional Emphasis:
  - Transcripts addressing Black women used compassionate language to build trust, acknowledging historical mistrust in the Black community.
- Advantages of AI in Self-Education:
  - Access: Instant, private, and stigma-free information.
  - Supportive Learning: Enables users to learn at their pace, addressing concepts in multiple ways without judgment, making AI an empowering tool for healthcare education.

LIMITATIONS: CHATGPT

- ChatGPT's Limitations:
  - Accuracy Issues: Prone to plausible but incorrect responses; lacks a verified "source of truth."
  - Bias and Phrasing Sensitivity: Responses vary with wording, are often verbose, and may overuse phrases.
  - Medical Advice Disclaimer: Not a licensed provider; advises consulting healthcare professionals.
  - Knowledge Constraints: Limited by a static knowledge base and cannot access real-time information.
  - Potential for "Hallucinations": Sometimes provides fabricated quotes or citations.

STUDY LIMITATIONS

- Subjectivity in Qualitative Analysis: Interpretations may reflect researcher biases and personal viewpoints.
- Humanistic Nuances: AI lacks subtleties like tone and silence, limiting the interpretation of conversational data.
- Future Recommendations: Use of a hybrid analysis structure and exploration of alternative social platforms for comparative studies in AI-driven patient self-education.

KEY CONSIDERATIONS

- ChatGPT is a new and unprecedented platform that can offer easily accessible information sourcing especially within the realm of public health self-education.
- ChatGPT could be particularly useful for historically excluded communities specifically with sensitive or stigmatizing topics such as sexual health, HIV, and PrEP.
- Quality, accuracy of information, and bias reduction should be cautiously monitored and improved as a multi-sector collaborative approach.
- Further research and structured analysis development should be considered in this ever-growing subject.

IN PROGRESS

AI as an AID:

Impressions of ChatGPT by End Users – Black Women

JOIN US!

FOR A VIRTUAL FOCUS GROUP STUDY

Queen Savvy Lab
led by
Dr. Rasheeta Chandler

We want your opinion about:

› ChatGPT information regarding women's health
› ChatGPT as a health resource for women like you
› Your ChatGPT use

Eligibility:

- Identify as a Black woman
- Aged 18 years or older
- English speaking
- Access to the internet for a virtual focus group (time commitment = 90 minutes)

EMORY UNIVERSITY

COMPENSATION $25 E-GIFT CARD

IRB # STUDY00000693

IN PROGRESS

AI as an AID:

Impressions of ChatGPT by End Users – Women's Health Providers

JOIN US!

FOR A VIRTUAL FOCUS GROUP

We want your perspectives about:

› ChatGPT information regarding women's health

› ChatGPT as a health resource for your patient population

› Your ChatGPT use

Eligibility:

- Healthcare professional who works with at least >15% of patients who identify as a Black woman,
- Aged 18 years or older,
- English speaking,
- Access to the Internet for a virtual focus group.

COMPENSATION $50 E-GIFT CARD

TIME COMMITMENT FOR THE FOCUS GROUP = 90 MINUTES

QUEEN SAVVY LAB LED BY:

DR. RASHEETA CHANDLER

EMORY UNIVERSITY

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NURSE AI & Enterprise Innovation

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Email: savvy_her@emory.edu
Website: SavvyHER.me

PrEP Savvy
www.prepsavvy.emory.edu

FUTURE OPPORTUNITIES IN DIGITAL HEALTH

Empowering Healthcare Providers:

- As digital tools become more prevalent, there is a significant opportunity to empower healthcare providers through training and education.
- Future initiatives might include integrating digital health training into medical and nursing curricula, ensuring that the next generation of healthcare professionals is ready to lead in this digital era.

Innovative Partnerships and Collaborations:

- Collaboration between tech companies, healthcare providers, and public health organizations will drive innovation in patient's health. Public-private partnerships can help scale successful interventions and bring cutting-edge technologies to a broader audience.

QUEEN SAVVY LAB

Thank You!

r.d.chandler@emory.edu