



## Beyond Algorithms: Nursing the Future of AI with Compassion, Insight, and Equity

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Early Adopter  
but late to the  
game ?

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The ABAIM has welcomed over 2,200 attendees since 2021  
**How many nurses?**

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# History of Artificial Intelligence in Healthcare

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## AI in Healthcare 1.0 (2010–2020)

### Key Technologies:

- Machine Learning (ML)
- Deep Learning (DL)

**Focus:** Computational Intelligence  
(machine-dominant, pattern recognition from structured data like imaging, labs)

- Radiology AI (image analysis)
- Sepsis prediction algorithms
- Basic clinical decision support

## AI in Healthcare 2.0 (2020–2030)

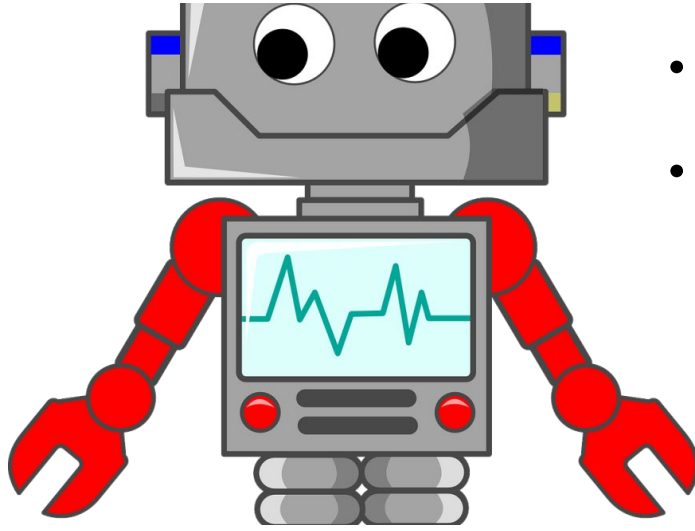
### Key Technologies:

- Generative AI (e.g., GPT, large language models)
- Digital Twins
- Multimodal Models

**Focus:** *Human-AI Collaboration* (shared decision-making, conversational interfaces)

- Ambient documentation
- Virtual health assistants
- Personalized simulations for treatment planning

# *AI Isn't the Future - It's Already Here*



- An explosion of LLMs has occurred since November 2022.
- OpenAI started in 2015 and launched the first GPT in 2018
  - **ChatGPT- Large Language Model (LLM)** released by Open AI
  - Fast adoption (1 million in 5 days)
  - Passed medical, legal, and business school examinations



- More than 1000 LLMs exist today
  - New information appears daily. We need AI to summarize AI developments!
  - AI is embedded in EHRs, devices, and even call bells
  - **Nurses are closest to patients and to the data**
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## Category of AI Application + Current AI Availability

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Medical Imagine +++

Decision Support ++

Robotic Technology ++

Altered Reality +

Biomedical Diagnosis +

Precision Medicine +

Drug Discovery +

Digital Health +

Wearable Technology +

Virtual Assistants +

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Chang, AC. Intelligence-Based Medicine. Principals and Applications of Artificial Intelligence and Human Cognition in Clinical Medicine and Healthcare ( published by Elsevier, 2020).



Messages

# IA in Patient's Portal Messages

- Studies to date have shown excellent potential
- Responses are longer than those generated by physicians and more empathetic
- LLMs may not do as well with negative patient messages
- However, because a physician still needs to review the AI note and make potential edits, thus far, there has been no overall time savings
- Using NLP (BERT) to classify EHR inbox patient messages into 5 categories (e.g., refills, urgent, etc.). Classification was accurate and there was substantial time saving compared to the non-intervention group.

# problem

- ✓ Hallucinations
- ✓ Outdated
- ✓ Price
- ✓ Most provide no references
- ✓ Reproducibility
- ✓ Huge carbon footprint
- ✓ **Inherent biases**

# True or False

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Training a single AI model can consume more electricity than 50 American homes use in one year



So Much  
Confusion

—

# AI Can Reflect or Amplify Bias

## From oximeters to AI, where bias in medical devices may lurk

Nicola Davis

Science correspondent

Analysis: issues with some gadgets could contribute to poorer outcomes for women and people of colour



NEWS

## Suicide Risk Prediction Models Could Perpetuate Racial Disparities

Two suicide risk prediction models are less accurate for some minority groups, which could exacerbate ethnic and racial disparities.

By Jessica Kent

Published: 29 Apr 2021

suicide risk prediction models that perform well in the

ADVERTISEMENT



Algorithms trained on incomplete or biased data can misdiagnose or under-prioritize care especially for underserved populations.




From Bias to Better Care: Nurses Leading AI


# Nurses' Unique Position in Healthcare AI

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 Closest to patients → firsthand insight into care disparities

 Ranked as *most trusted profession* → ethical influence

 What should Nurses do?

 Ask: "*Whose data is missing?*" during AI implementation reviews

 Demand: Diverse training datasets

 Validate: Cross-check AI outputs with clinical intuition

 **SEAT AT THE TABLE.**

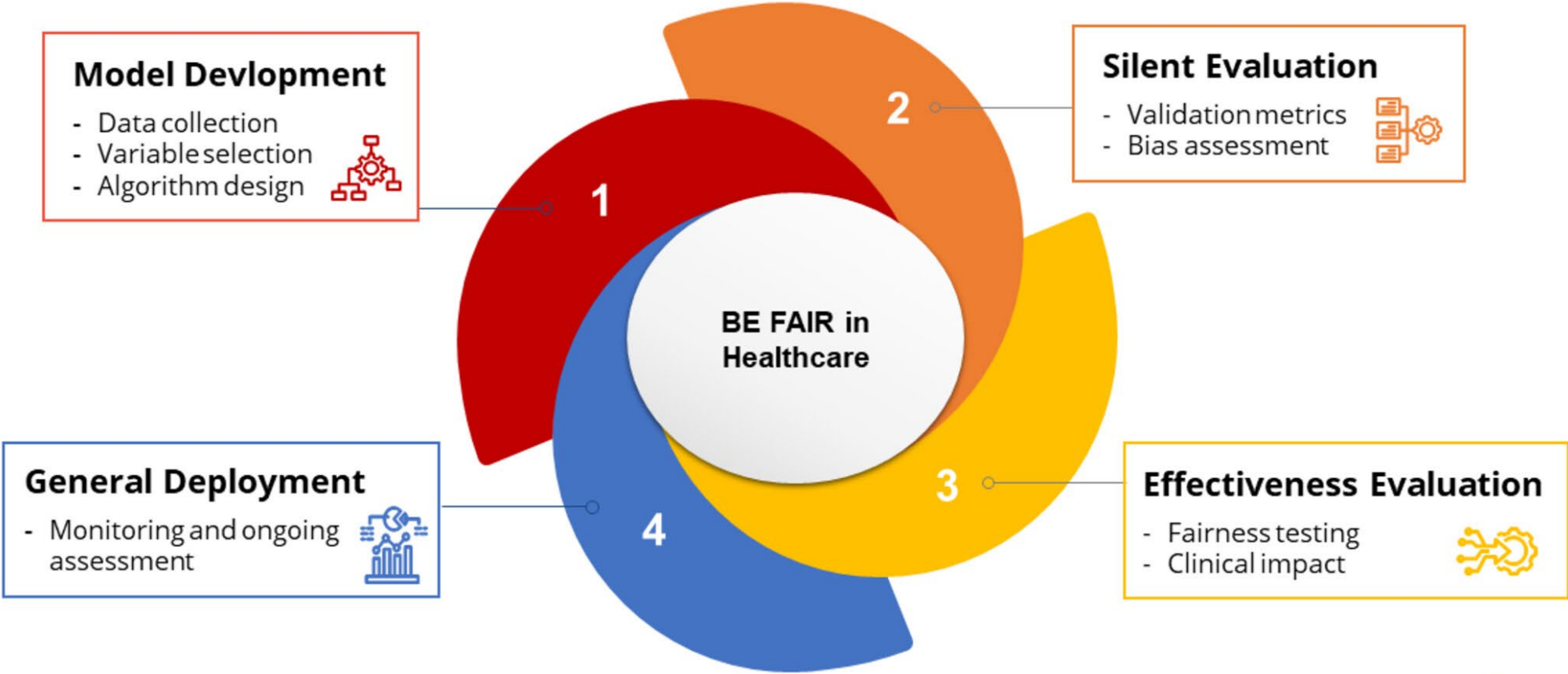
# Empowering nurses to champion Health equity & BE FAIR Bias elimination for fair and responsible AI in healthcare



Multi-faceted framework for mitigating bias across the algorithmic lifecycle from design to deployment



# BE FAIR: Bias elimination for fair and responsible AI in healthcare





As NURSES we have  
an opportunity and  
an obligation to be  
involved in the  
developing,  
evaluating,  
operationalize,  
implement and use  
the AI in healthcare

# Reference

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- Coley RY, Johnson E, Simon GE, Cruz M, Shortreed SM. Racial/Ethnic Disparities in the Performance of Prediction Models for Death by Suicide After Mental Health Visits. *JAMA Psychiatry*. 2021 Jul 1;78(7):726-734. doi: 10.1001/jamapsychiatry.2021.0493. PMID: 33909019; PMCID: PMC8082428.
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