AI and Health Solutions in Nursing: Optimizing Patient Care

Judy Murphy, DN (hon), RN, FACMI, LFHIMSS, FAAN

Nurse Exec & Health IT Leader
Former IBM CNO; Former ONC Deputy Director; Former Aurora VP-IT

NENIC
New England Nursing Informatics Consortium
Nurses Transforming Healthcare *Through Informatics*

2024 Trends in Clinical Informatics Spring Program, May 17, 2024

What we will cover

- AI in Health IT Strategy & Organizational Culture
  - Health IT Hierarchy of Needs
  - Development Lifecycle & Implementation
  - Organizational Readiness
- Guiding Principles for AI in Healthcare
  - Responsible, Safe & Ethical Use
  - Operationalizing the Guiding Principles
  - Government Regulation
  - Governance
- Nursing & Healthcare AI Use Cases
  - Value Propositions and Examples:
    - ✓ Supporting Patient Care
    - ✓ Supporting Patient Experience
    - ✓ Supporting Workforce
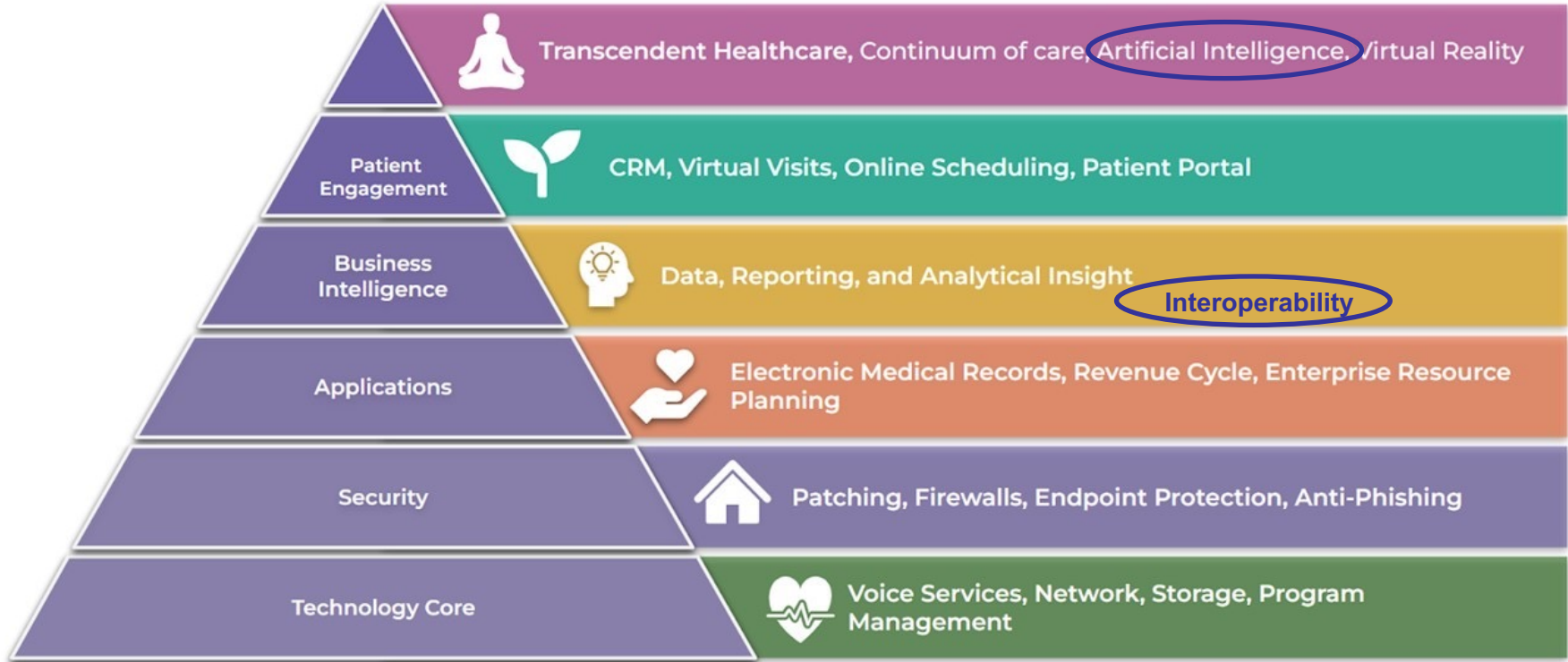 - Pitfalls to Avoid
- AMIA 25x5 Task Force Update

Maslow's Hierarchy of Needs

"We can only reach our full potential after our basic needs are met."

SELF-ACTUALIZA-TION
morality, creativity, spontaneity, acceptance, experience purpose, meaning and inner potential

SELF-ESTEEM
confidence, achievement, respect of others, the need to be a unique individual

LOVE AND BELONGING
friendship, family, intimacy, sense of connection

SAFETY AND SECURITY
health, employment, property, family and social abilty

PHYSIOLOGICAL NEEDS
breathing, food, water, shelter, clothing, sleep

Healthcare IT Hierarchy of Needs

"AI does not meet healthcare technology needs on its own"

"The promise of AI in healthcare is built upon the success of the past 3 decades in digitizing our core processes"

Credit: Daniel Barchi, 2023
CIO CommonSpirit Health

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The Importance of Interoperability in AI

- Types of Interoperability:
  - Technical (communication)
  - Syntactic (format, structure)
  - Semantic (nomenclature)
  - Organizational (business processes, polices)

- One of the largest barriers for applying AI to healthcare and building scalable solutions is not a lack of algorithms, but a **lack of suitable data** for developing AI applications.

- AI relies on growing volumes of digital healthcare data – to use AI algorithms/big data analytics to their capacity and feed them with maximum input, **processing information from different systems and across institutional boundaries is crucial**.
  - Micro Example: Analysis of a patient's health data requires information from general practitioners, hospitals, laboratories, mobile health apps, wearable sensors, and SDOH data sources
  - Macro Example: Multiple data sources are necessary when data are scarce, for example, in the areas of rare diseases, precision medicine, or pharmacogenomics; tailoring treatments and drugs small subpopulations of patients requires a large pool of comparable data, making it necessary to exchange information across systems, institutions, and countries

- Interoperability solutions are needed to **support technical and business agreements** between parties providing data and services, including knowledge services such as ML and AI

- Computable expression of consent and ethics policies are needed to **control how patient information is used**, including compliance with local guiding principles and regulative rules
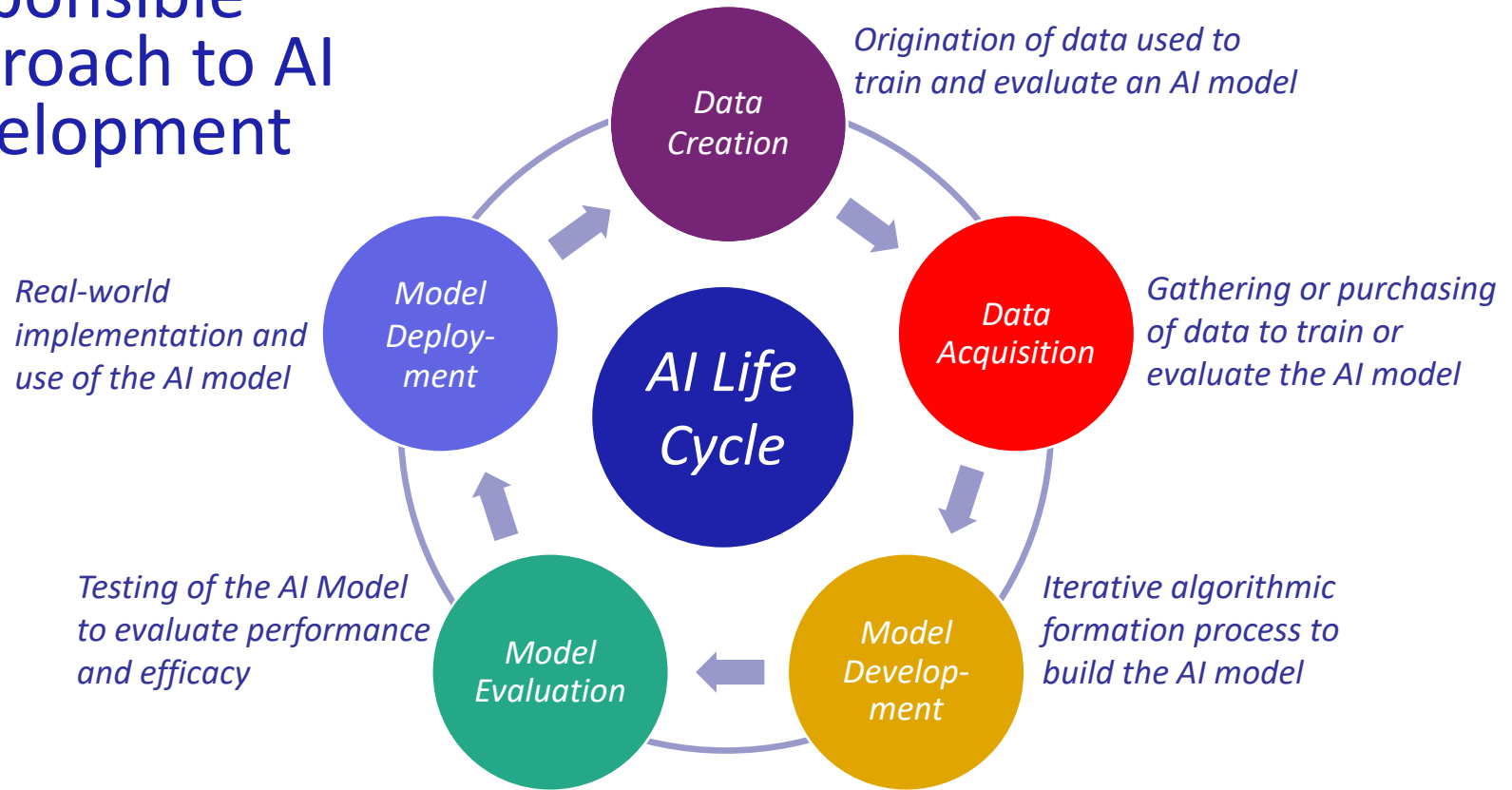
Status of Healthcare AI – Gartner Hype Cycle

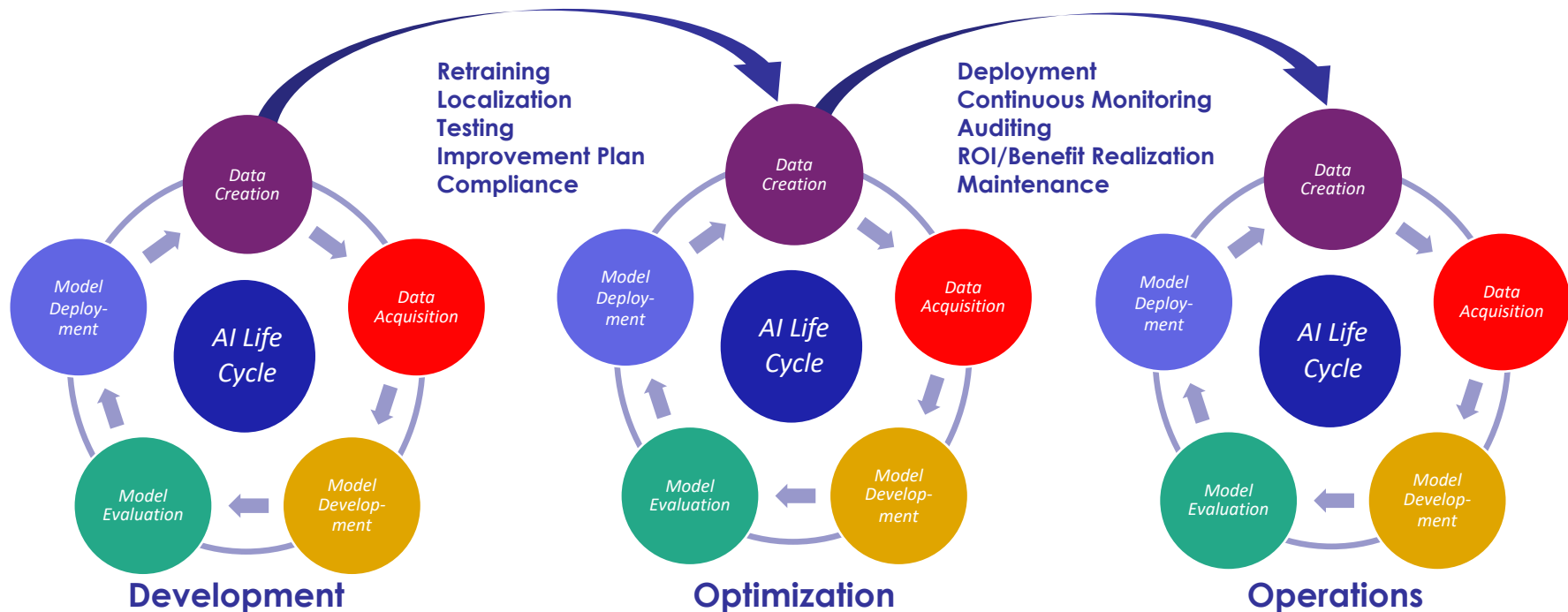Hype Cycle for Healthcare Data, Analytics and AI, 2023
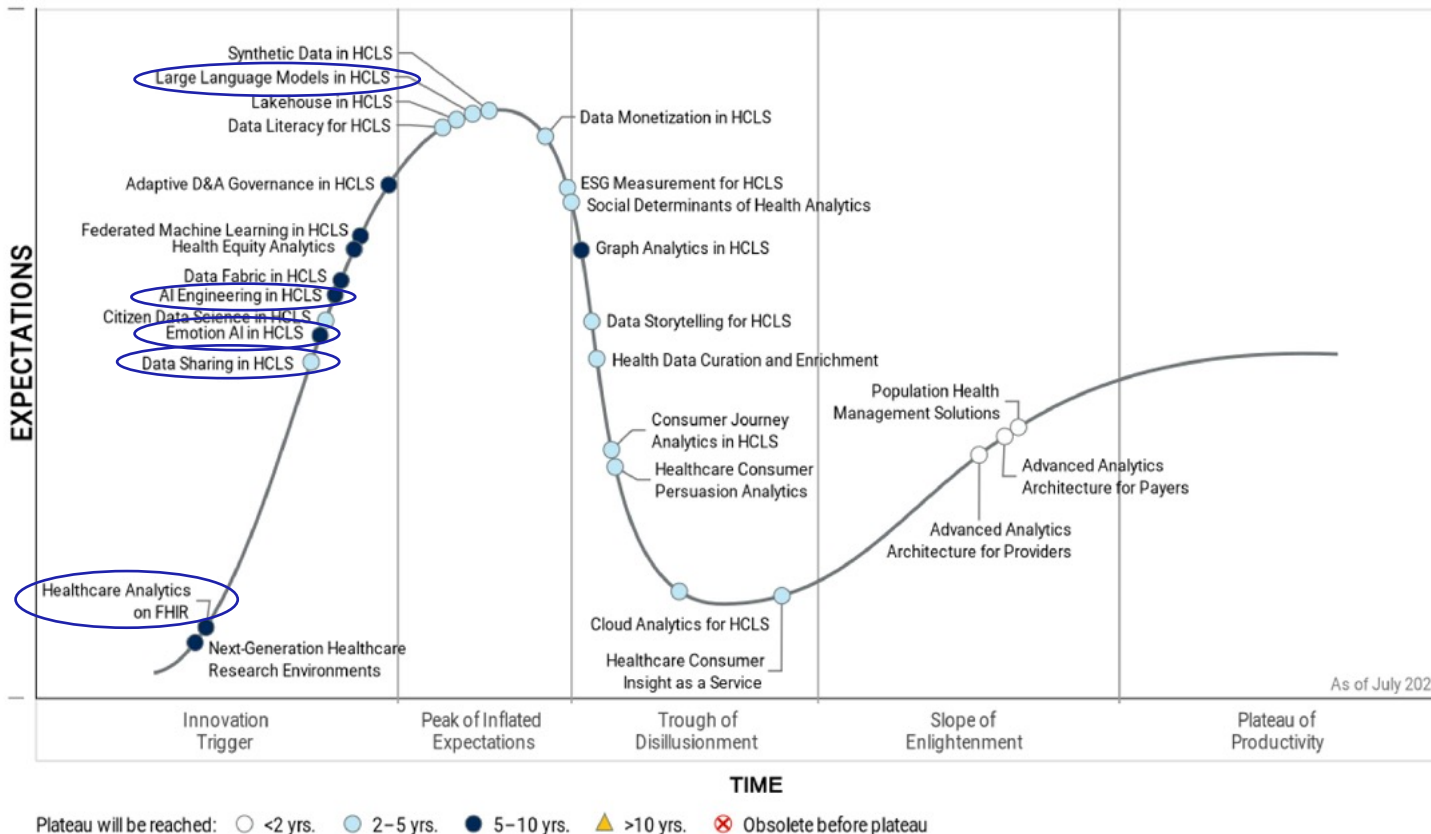
Credit: Jeff Cribbs, Gartner Research, Hype Cycle for Healthcare Data, Analytics and AI, 24 July 2023.

Responsible Approach to AI Development

AI Life Cycle

Data Creation — Origination of data used to train and evaluate an AI model

Data Acquisition — Gathering or purchasing of data to train or evaluate the AI model

Model Development — Iterative algorithmic formation process to build the AI model

Model Evaluation — Testing of the AI Model to evaluate performance and efficacy

Model Deployment — Real-world implementation and use of the AI model
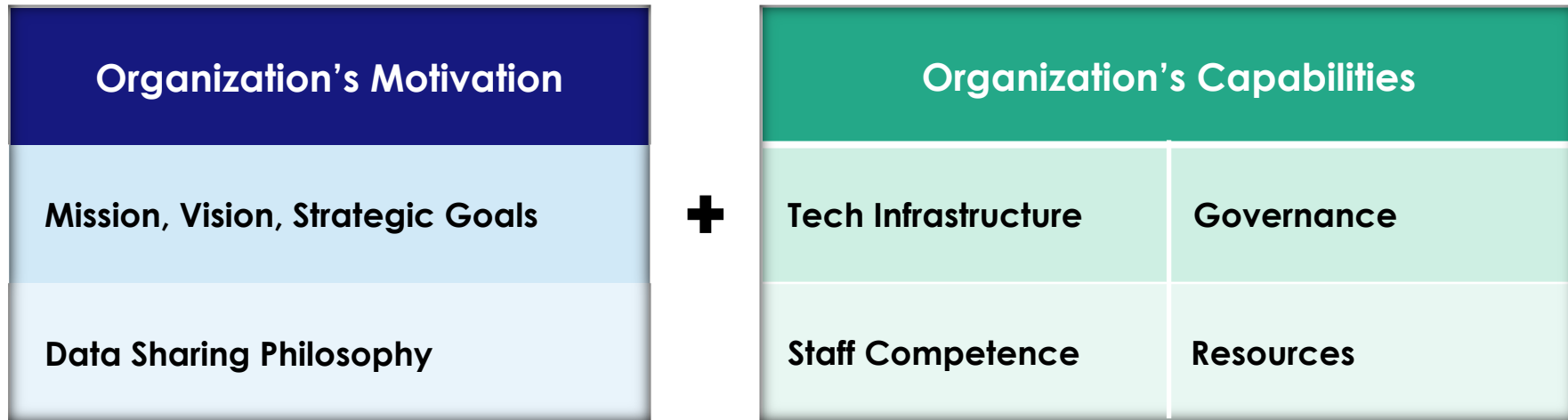
Reference: Ng M., Kapur S, Blizinsky K, Hernandez-Broussard T. The AI lifecycle: a holistic approach to creating ethical AI for health decisions. Nature Medicine, 2022.

Responsible Approach to AI Implementation – Moving from Development to Operations
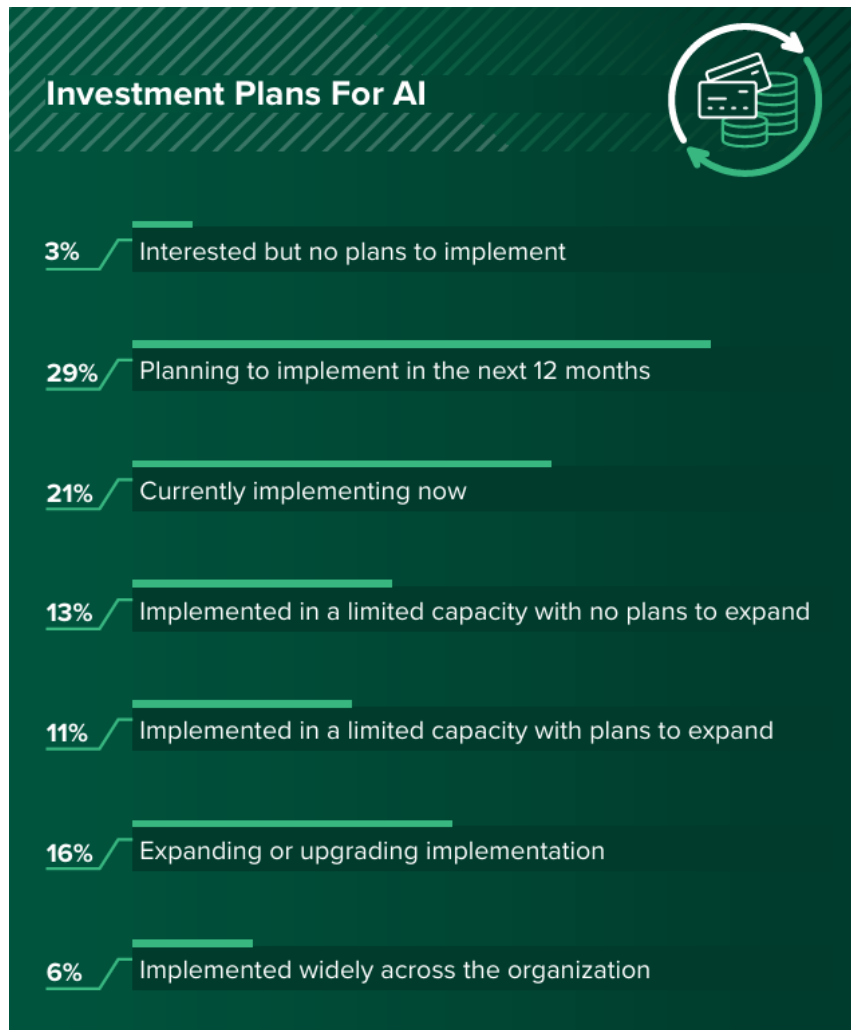

Development

Optimization

Operations

Retraining
Localization
Testing
Improvement Plan
Compliance

Deployment
Continuous Monitoring
Auditing
ROI/Benefit Realization
Maintenance

AI Life Cycle: Data Creation, Data Acquisition, Model Development, Model Evaluation, Model Deployment

Organizational Readiness

Organization's Motivation
Mission, Vision, Strategic Goals
Data Sharing Philosophy

+

Organization's Capabilities	
Tech Infrastructure	Governance
Staff Competence	Resources

Reference: Youssef A, Ng M, Hernandez-Broussard T, Shah N, Miner A, Larsen D, Langlotz C. Organizational Factors in Clinical Data Sharing for AI in Health Care. JAMA Network Open. 2023 Dec 1;6(12):e2348422.

Forrester AI Applications in Healthcare & Life Sciences Report, Feb 2024

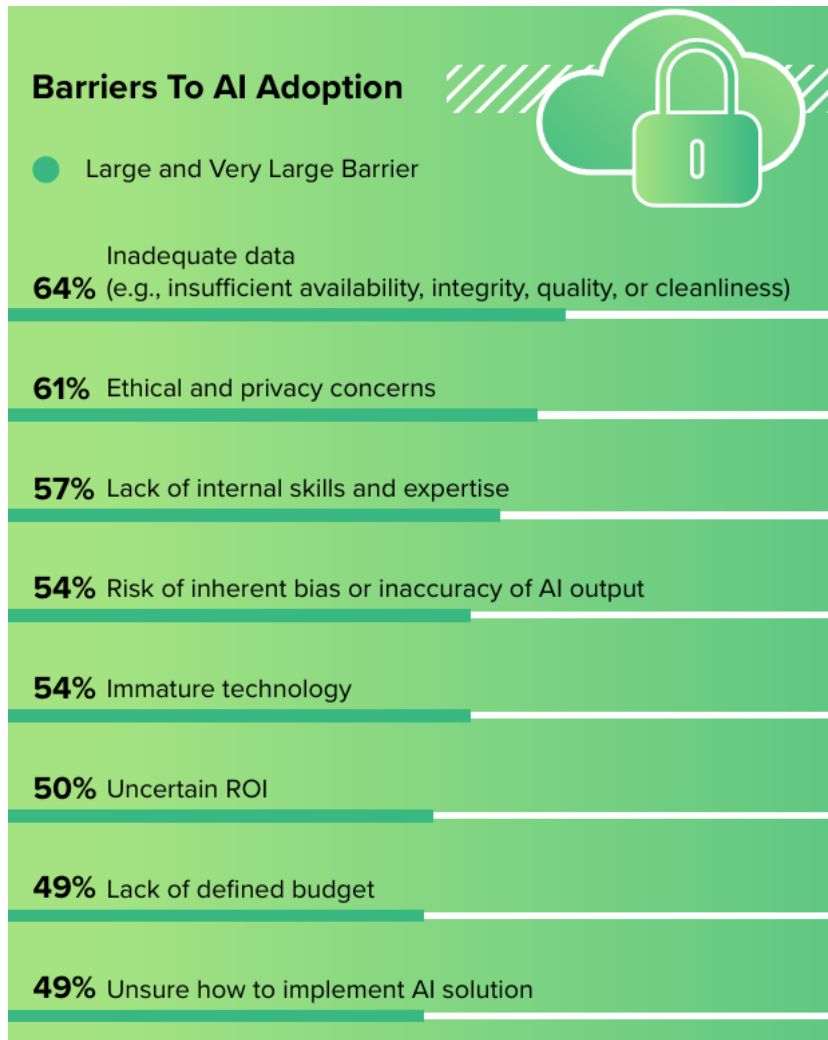➢ Most organizations are in the early stages of AI implementation

Credit: Forrester Opportunity Snapshot: A Custom Study Commissioned by Salesforces, Feb 2024.

Investment Plans For AI

3%	Interested but no plans to implement
29%	Planning to implement in the next 12 months
21%	Currently implementing now
13%	Implemented in a limited capacity with no plans to expand
11%	Implemented in a limited capacity with plans to expand
16%	Expanding or upgrading implementation
6%	Implemented widely across the organization

Forrester AI Applications in Healthcare & Life Sciences Report, Feb 2024

➢ The biggest threats to successful adoption are poor data, privacy concerns, and lack of internal skills
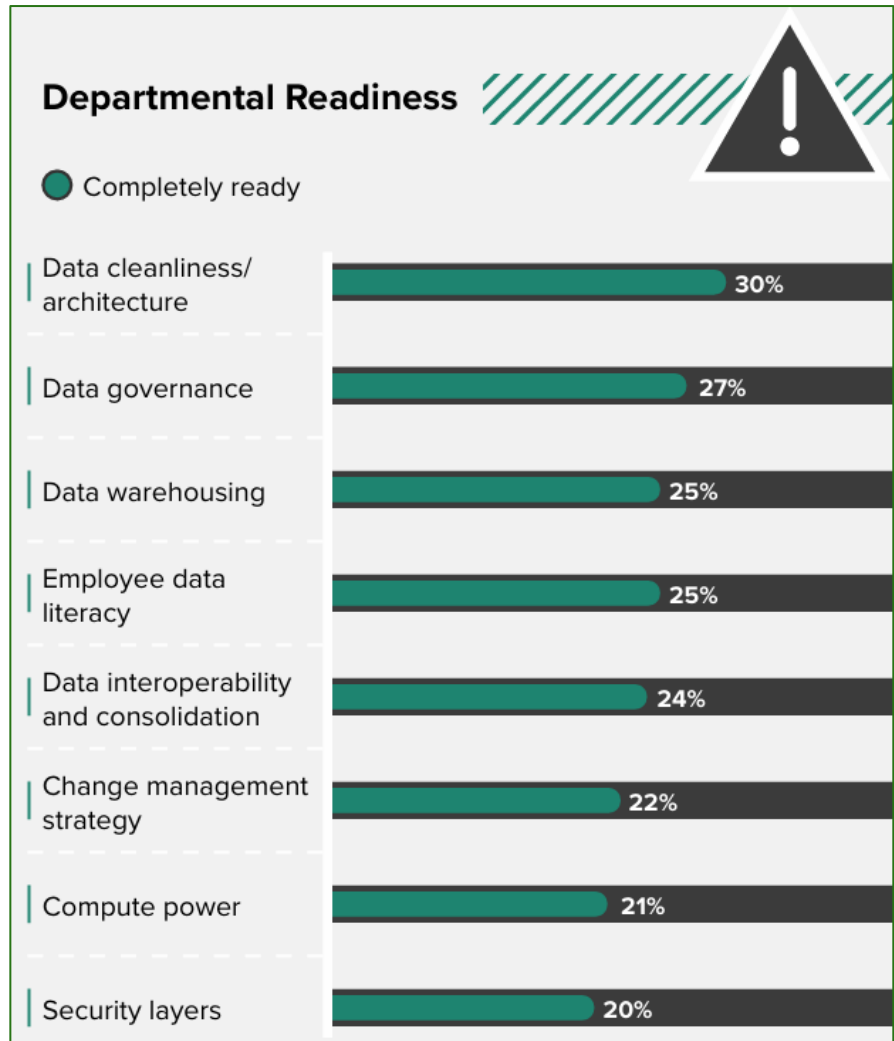
Credit: Forrester Opportunity Snapshot: A Custom Study Commissioned by Salesforces, Feb 2024.

Barriers To AI Adoption

● Large and Very Large Barrier

64% Inadequate data (e.g., insufficient availability, integrity, quality, or cleanliness)

61% Ethical and privacy concerns

57% Lack of internal skills and expertise

54% Risk of inherent bias or inaccuracy of AI output

54% Immature technology

50% Uncertain ROI

49% Lack of defined budget

49% Unsure how to implement AI solution

Forrester AI Applications in Healthcare & Life Sciences Report, Feb 2024

➤ Most organizations are not ready for widespread adoption

Credit: Forrester Opportunity Snapshot: A Custom Study Commissioned by Salesforces, Feb 2024.

Departmental Readiness

⬤ Completely ready

Category	Percent
Data cleanliness/architecture	30%
Data governance	27%
Data warehousing	25%
Employee data literacy	25%
Data interoperability and consolidation	24%
Change management strategy	22%
Compute power	21%
Security layers	20%

Leadership

- Health systems who are embracing AI are hiring **Chief AI Officers** and other AI leaders as point-persons for how the technology is assessed, piloted, strategically applied, and integrated across their organizations – as well as how it is evaluated, monitored and governed for *adherence to their Guiding Principles for Use of AI*

- 3 Emerging Role Phenotypes:
  - **Operations:** implementing AI into the workflow to improve EHR management and advance other operational aspects from HR to billing to revenue cycle and beyond; <u>leaders w/clinical, healthcare informatics background</u>

  - **Transformation:** integrating AI more broadly to improve operational efficiency and update existing care models to harness the potential of AI tools; <u>leaders w/bioinformatics or computer science background</u>

  - **Research and Innovation:** focusing on the research/development end of creating new AI tools that can be implemented to innovate healthcare processes across diagnostics, treatment and experience; <u>leaders w/research, PhD background</u>

Reference: Ross H, Giannas N, Durst Z, Dethloff S, Kerschner W. Who is Hiring Chief AI Officers in Healthcare, and Why? Published on LinkedIn, 04/01/24.

AMIA's Guiding Principles for Responsible, Safe & Ethical Use of AI in Healthcare

1. **Transparency**
2. **Explainability**
3. **Equity**
4. **Nonbiased**
5. Autonomous
6. Beneficence
7. "Do no Harm"
8. Interpretability

9. Dependability
10. Auditability
11. Knowledge Mgt
12. Benevolence
13. Accountability
14. Vulnerable populations
15. AI Research
16. User Education

Trustworthy AI For An Equitable Healthcare Future (from HIMSS)

Do you trust your AI models?

Our trust in technology relies on understanding how it works. We need to understand why AI makes the decisions it does to make AI more *explainable, fair, robust, private, and transparent.*

85% of consumers say that it is important for organizations to factor in ethics as they use AI to tackle society's problems.

75% of business executives view ethics as a source of competitive differentiation and see it as a core initiative.

<20% of respondents strongly agreed that their organization's practices and actions match (or exceed) their stated principles and values.

The Intention-Action Gap

Organizations are endorsing AI ethics principles — but are still catching up on implementing them.

7 PILLARS OF TRUSTWORTHY AI

FAIR
Does the model favor all people equally?

Businesses have a societal, legal, and business obligation when creating an AI model to ensure it is **not treating any member of a particular group less favorably** than others.

In healthcare, for example, when AI systems guide medical treatment, they should make the same recommendations for everyone with similar symptoms, financial circumstances or professional qualifications.

EXPLAINABLE
Can the model's outcomes be interpreted by the end user?

The model's decisions should be **interpretable by the end user.** The meaningfulness of explanations depends on the consumer. Data scientists need to improve performance, physicians need to trust insights and understand the deciding factors.

In healthcare, wearables are a rich source of patient data as they monitor patients' health throughout the day. Explainable AI can tap into this data to formulate suggestions and diagnose accurately.

PERFORMANT
Does it consistently achieve business goals?

The model should be able to **consistently deliver on its defined objectives** (OKRs), whether that's business KPIs (ROI, New Customers, etc.) or technical KPIs (Accuracy, F1, RMSE, etc.).

Adhering to reproducible research practices when developing and employing prediction models in healthcare is important for the design of efficient health systems and health delivery programs, and the improvement in patient outcomes.

CONFIDENT
Can users trust the model predictions?

The models should have the **ability to communicate how unsure they are about their predictions.** This includes quantifying, understanding the quality of, and communicating uncertainty.

For example, the early detection of sepsis is important, and AI can help, but only when predictions are accompanied by meaningful uncertainty estimates.

TRANSPARENT
Are key model decisions documented and approved?

The models should enable **AI consumers to better understand their purpose,** how they were trained, the data used, how they're being measured, their limitations, and how they're maintained and updated.

When AI systems are used to make decisions that impact patients' lives, individuals including ML developers, providers, and patients must understand how those decisions were made.

PRIVATE
Does the model shield sensitive data?

The models should be able to **withstand malicious privacy attacks** that try to reveal sensitive, personal data about the people whose data was used to train the model.

In healthcare, systems should enable patients to choose how their data is collected, stored and used, through clear, and accessible privacy settings.

ROBUST
Can the model be protected from adversarial attacks?

The models should be able to **prevent themselves from malicious adversarial attacks** that try to make them misclassify outputs, control inputs and outputs, and create their copies.

For example, one of the most pertinent threats to AI systems is the potential for the training data to be poisoned. If the training data is tampered with, this could have a dire impact on patient outcomes.

Credit: HIMSS, 7 Pillars of Trustworthy AI. https://www.himss.org/sites/hde/files/trustworthy-ai-for-an-equitable-healthcare-future.pdf

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References for Guiding Principles

ETHICS AND GOVERNANCE OF ARTIFICIAL INTELLIGENCE FOR HEALTH
WHO GUIDANCE
World Health Organization

AMA — AMERICAN MEDICAL ASSOCIATION
Principles for Augmented Intelligence Development, Deployment, and Use
Approved by AMA Board of Trustees on November 14, 2023

NEJM AI
Your trusted guide to rigorous evaluation of clinical applications of AI.

POSITION STATEMENT — ANA AMERICAN NURSES ASSOCIATION
The Ethical Use of Artificial Intelligence in Nursing Practice

AMIA
INFORMATICS PROFESSIONALS. LEADING THE WAY.
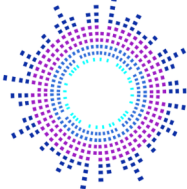Position Paper Defining AMIA's AI Principles

HIMSS
7 Pillars of Trustworthy AI

OECD.AI Policy Observatory
OECD AI Principles overview

NATIONAL ACADEMY OF MEDICINE
Health Care Artificial Intelligence Code of Conduct
Toward a Code of Conduct Framework for Artificial Intelligence in Health, Health Care, and Biomedical Science

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NATIONAL ACADEMY OF MEDICINE

Artificial Intelligence in Health, Health Care, and Biomedical Science: An AI Code of Conduct Principles and Commitments Discussion Draft

By Laura Adams, Elaine Fontaine, Steven Lin, Trevor Crowell, Vincent C. H. Chung, and Andrew A. Gonzalez, editors

Published April 8, 2024

https://nam.edu/artificial-intelligence-in-health-health-care-and-biomedical-science-an-ai-code-of-conduct-principles-and-commitments-discussion-draft/

AI Nutrition Facts

Your Product Name

Description	
Describe your product	
Privacy Ladder Level	1
Feature is Optional	Yes
Model Type	Generative
Base Model	OpenAI - GPT-4
Trust Ingredients	
Base Model Trained with Customer Data	No
Customer Data is Shared with Model Vendor	No
Journey prompts are NOT used for training OpenAI models	
Training Data Anonymized	N/A
Data Deletion	Yes
Journey inferences deleted after 30 days	
Human in the Loop	Yes
User sees output immediately in UI	
User must choose to publish journey	
Data Retention	30 days
Compliance	
Logging & Auditing	N/A
Guardrails	N/A
Input/Output Consistency	Yes
Other Resources	
Add any additional resources...	

A proposed A.I. warning label would provide more detail into how tech companies use personal data to train A.I. models. (Referenced in the NTIA AI Accountability Policy Report 03/27/24.) https://nutrition-facts.ai/
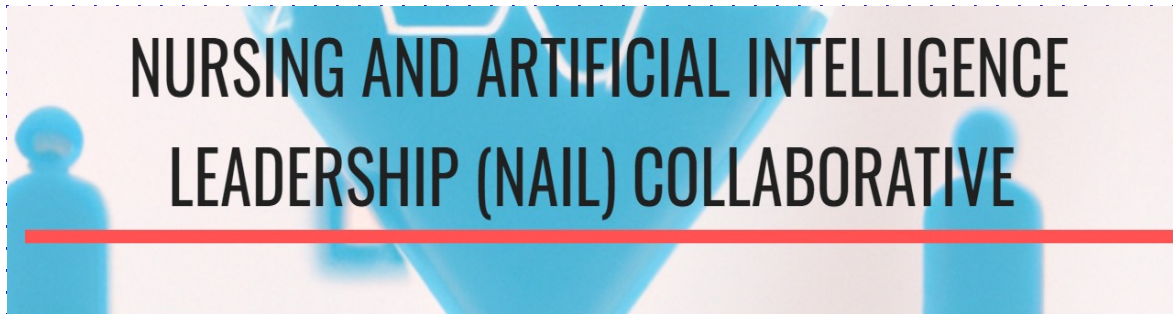
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Operationalizing Responsible AI Principles; Forming Learning Collaborations with Like-Minded Organizations

CHAI™
Coalition for Health AI

A diverse array of stakeholders who listen, learn, and collaborate to drive the development, evaluation, and appropriate use of AI in healthcare; keeping patients, their families and communities, as the focus of attention.

https://www.coalitionforhealthai.org/

NURSING AND ARTIFICIAL INTELLIGENCE LEADERSHIP (NAIL) COLLABORATIVE

Vision: To reimagine and transform nursing with AI.

Mission: We focus on nurses- the largest sector of healthcare providers worldwide- and believe that every nurse has the right to use cutting-edge AI tools to advance people's health. Our mission is to advocate, educate, and study health AI tools to make them safe, equitable, and user-friendly.

COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

UF | College of Nursing UNIVERSITY of FLORIDA

UNIVERSITY OF MINNESOTA Driven to Discover®

UBC | THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY OF TURKU

https://www.nailcollab.org/home

Government Regulation & Guidelines

The Office of the National Coordinator for
Health Information Technology

- **Cures Act: Seamless and Secure Access, Exchange, and Use of EHR Information** Final Rule, 05/01/2020.
- **[HTI-1]** Health Data, Technology, and Interoperability: Certification Program Updates, **Algorithm Transparency, and Information Sharing** Final Rule, 12/13/2023.
- **[HTI-2]** Health Data, Technology, and Interoperability: **Patient Engagement, Information Sharing, and Public Health Interoperability** Proposed Rule, coming in future.

OCTOBER 30, 2023

Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

OFFICE OF MANAGEMENT AND BUDGET

03/27/24. OMB releases AI safeguards for federal agencies

National Telecommunications and Information Administration
United States Department of Commerce

AI Accountability Policy Report
March 27, 2024

Artificial Intelligence Risk Management Framework (AI RMF 1.0)

NIST NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

January 2023

Governance of AI Principles

What projects to do based on Guiding Principles?

How to mitigate or eliminate risk?

Map
Context is recognized and risks related to context are identified

Govern
A culture of risk management is cultivated and present

Measure
Identified risks are assessed, analyzed, or tracked

How to track for risks or unintended consequences?

How to monitor clinician compliance with AI recommendations?

How to weigh risks v. tangible benefits?

Manage
Risks are prioritized and acted upon based on a projected impact

Credit: NIST AI 100-1. Artificial Intelligence Risk Management Framework (AI RMF 1.0), January 2023

Some Definitions …

Artificial Intelligence (AI): ability of a computer system to perform tasks that typically require human intelligence, such as learning, problem-solving, decision making.

Natural Language Processing (NLP): ability to extract concepts from narrative text.

Generative AI: allows users to input a variety of prompts to generate new content, such as text, images, videos, sounds, and other media. It "learns" and is trained on documents and artifacts that already exist online.

Machine Learning (ML): subset of AI that refers to the ability of a computer system to process large volumes of data and extract meaningful information to address practical problems. Improves its performance over time without being explicitly programmed through supervised or unsupervised learning.

Algorithm: set of rules or steps that a computer system follows to solve a problem or perform a task. ML algorithms inform decision support, providing users with evidence based information, alerts, and recommendations to aid decision-making.
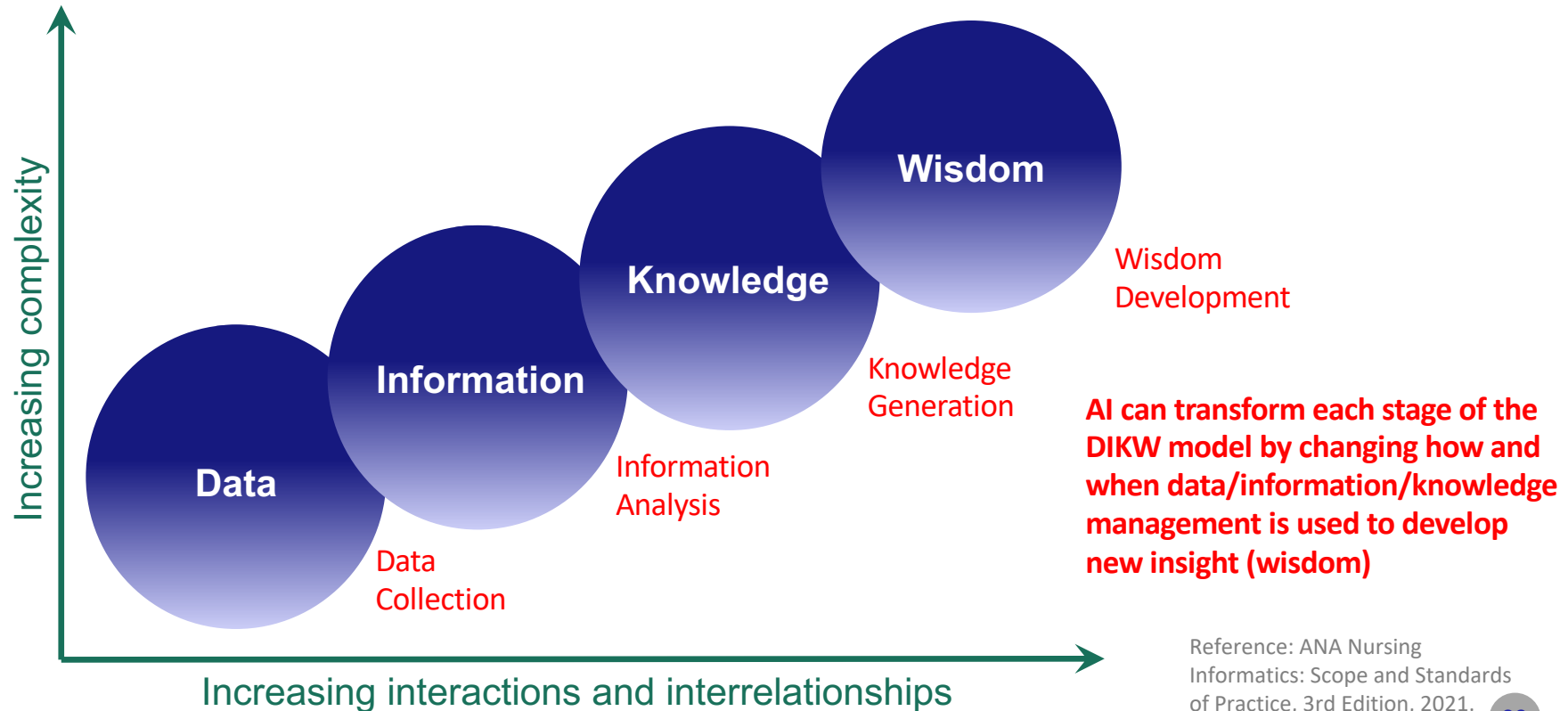
Large Language Model (LLM): learning algorithm that can perform a variety of natural language processing (NLP) tasks and is trained to recognize, translate, predict, or generate text and other content.
- ChatGPT

Data Analytics – any of these could use AI:
- Descriptive - "What happened?"
- Diagnostic - "Why did this happen?"
- Predictive - "What might happen in the future?"
- Prescriptive - "What should we do next?"

Reference: E. Koski, J. Murphy. Artificial Intelligence in Healthcare in Essentials of Nursing Informatics, 7th Ed, V. Saba and K. McCormick. New York: McGraw-Hill, 2020.

ANA Nursing Informatics Scope of Practice: Data to Wisdom (DIKW) framework

Increasing complexity

Data — Data Collection

Information — Information Analysis

Knowledge — Knowledge Generation

Wisdom — Wisdom Development

Increasing interactions and interrelationships

AI can transform each stage of the DIKW model by changing how and when data/information/knowledge management is used to develop new insight (wisdom)

Reference: ANA Nursing Informatics: Scope and Standards of Practice, 3rd Edition, 2021.

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Healthcare AI Applications: "The Wild, Wild West!"

AI helps screen for SDOH

Chatbot may help people manage effects of tinnitus

ChatGPT produces easily understood patient instructions

Permanente Medical Group CEO sees role for AI in VBC

Cleveland Clinic pilots AI sepsis prediction and documentation model

AI verifies, accelerates cancer diagnoses

AI could help determine if skin lesions are dangerous

Yale creates governance structure to control AI costs

AI models to predict depression show uneven performance

Study: GPT-4 better at diagnosing imaging cases

Bill would require CMS to test fraud-detecting AI

ML may help detect early signs of cancer in blood plasma

Generative AI may help compile patient registries

AI-assisted CT predicts subsequent fracture risk

AI helps predict heart failure hospitalizations

AI-based system detects sleep apnea at home

Google rolls out suite of health care AI tools

Urology-based AI software introduced by GE HealthCare

ML identifies risk factors for osteoporosis in RA

Providence partners with Microsoft on health care AI

AI may help prevent hospitalizations for chemo toxicity

AI may cut trial-and-error prescribing of antidepressants

ML identifies drug that might prevent heart fibrosis

AI accurately finds interval breast cancers

Healthcare AI Value Propositions

Support Patient Care

- Diagnosis and Treatment Recommendation
- Decision Support
- Outcome Improvement
- Precision Medicine
- Population Health Management

Support Patient Experience

- Enhance Engagement
- Foster Adherence
- Streamline Participation
- Promote Personalization

Support Workforce

- Reduce Administrative Burden
- Optimize Workflow
- Reduce Cognitive Burden
- Improve Efficiency

AI Examples – Solutions Supporting Patient Care

- **Clinical decision support**
- **Improve diagnosis accuracy**
- **Treatment recommendations**
- **Disease progression or complication prediction and identification**
- Personalized and precise interventions tailored to individual
- Increase accuracy of assigning oncology protocols to cancer patients
- Create and advance use of care plans
- Reinforce medication management – reconciliation, interactions, errors
- Support Value Based Care (Permanente Medical Group) – knowing which patients need high touch, which need to be seen – triage for care managers
- Remote monitoring; alert to deterioration or changes trending outside the patient's normal range
- Public health syndromic surveillance
- Image and speech analysis
- Internet of Things (IoT)
- Integrate genomic information into the EHR (Stanford Health Care)
- Clinical Trials Management (Stanford Health Care)

AI Examples – Solutions Supporting Patient Experience

- **AI-powered chatbots and virtual assistants to facilitate customer service** - schedule appointments, answer medical questions, answer billing questions, and provide healthcare information (Providence Healthcare)

- **Manage inbox messages** – triage, label by topic, and route to be managed by appropriate staff - medical assistant, teleservice representative, pharmacist, nurse, doctor, etc. (Kaiser Permanente, others/Epic)

- **Deliver patient education**, enhance clinician teaching and patient learning, translate medical terminology, explain patient visit summary/highlight important information

- Provide reliable medical information about medical conditions and treatments – aiding patient decision-making

- Provide recommendations for patient referrals from primary care to specialty care (Providence Healthcare)

- Calculate the estimated date of discharge for inpatients

- Personalized coaching for patients with wearable fitness and health monitors
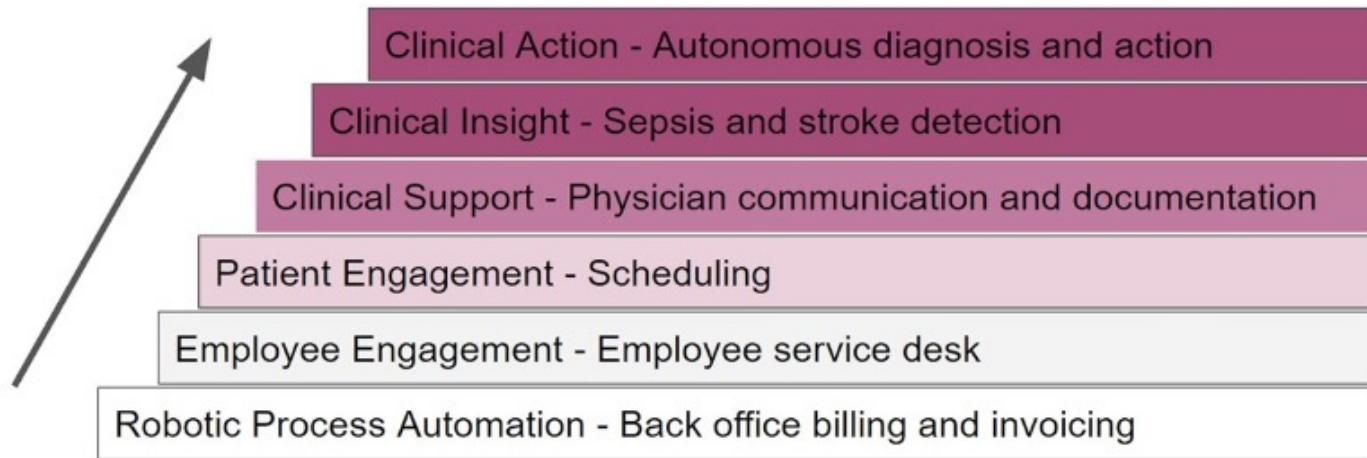
- Robotic companionship

AI Examples – Solutions Supporting the Workforce

- **Ambient listening/scribing** for clinical documentation notes (Duke, Atrium Health, UNC Health Care, many others/Epic/Nuance)
- **Inbox management** - triaging/filtering/routing and drafting responses (Providence Healthcare, many others/Epic)
- **Draft responses to patient portal** questions and messages for the clinicians (Stanford Health Care, many others/Epic 90 customers)
- Task organization: present suggestions/reminders for activities/interventions required during a shift; prioritize and schedule
- Text generation: change of shift reviews, discharge and specialty note summaries
- AI-powered robots to assist healthcare professionals with tasks such as supply delivery, patient education, physical therapy and rehabilitation
- Ambient verbal assistance with policy & procedure instructions
- Staff scheduling and management; AI-powered chatbots assistance for staff
- Write job descriptions and performance evaluations (Providence Healthcare)
- Generative-AI coding application to suggest diagnosis and procedure codes (Epic)
- Tools to create referral, prior auth, denial and appeal letters (Epic)

One organization's AI Use

CommonSpirit

Clinical Action - Autonomous diagnosis and action

Clinical Insight - Sepsis and stroke detection

Clinical Support - Physician communication and documentation

Patient Engagement - Scheduling

Employee Engagement - Employee service desk

Robotic Process Automation - Back office billing and invoicing

60 full scale AI-based systems that support clinical and operations processes – some examples:

- Inbound phone call automation
- Patient communications – ED status updates, appointment scheduling and reminders
- Service Desk - step-by-step instructions on setting up company email on a new phone
- Ambient scribing for documentation
- Inbox management, filtering and routing
- Algorithms to predict or identify sepsis and stroke

Avoid the "Tail Wagging the Dog" and the "Bright Shiny Object" Condition
(the Great AI Solution looking for a Problem to Solve)

- Use AI implementation as a **means to an end**, and not as an end unto itself – AI is the enabler of practice change

- Plan and execute AI projects as **people/process/practice changes** facilitated by technology; and not as IT implementations

- Don't forget the importance of **workflow integration** – difficult in a very EHR-centric culture

Avoid Workarounds to retrofit Solutions into Workflow

An example of trying to support nursing mobile workflow before the technology enabled mobility ...

Involve practicing nurses in the planning

San Francisco Chronicle

Kaiser nurses protest use of AI that they say could put patient safety at risk

By Catherine Ho

April 22, 2024

Include Patients in Co-creation of AI Solutions

#PatientsUseAI

Patients are end users of AI

Include actual patient users in leading AI governance.

We have real work to do in managing our care. Our needs and uses are our own.

Remember the patient rallying cry: **"Nothing about us without us."**

Medical work patients do with AI:

Patient administrative burden · Organizing records for action · Comprehension (records and literature) · Diagnosis · Exploring knowledge & options

Reference: 'e-Patient Dave' deBronkart blog, April 2, 2024: "Include patient users in co-creation of AI and related policy." https://www.epatientdave.com/blog/

AI Rights For Patients

Written By Patients Experts and Community Leaders

Version 1.0, Mar 22, 2024

https://lightcollective.org/patient-ai-rights/

38% of U.S. adults believe using AI would lead to better health outcomes

Reference: Pew Report, 22 February 2023

The embrace of AI in Nursing
isn't just a leap forward in technological terms;
it's a step closer to the heart
of what healthcare promises to be:
a haven of human touch,
improved by the precision of evidence-based
intelligent decision management support systems.

Reference: Domondon, B. Why Nurses? Embracing AI Synergy of Care with Nursing Roles, Medium, Mar 19 2024

Update on AMIA's 25 x 5 Initiative

AMIA 25x5
Reducing Documentation Burden

2024 Trends in Clinical Informatics Spring Program, May 17, 2024

AMIA's 25x5 Task Force Background: 2021 Symposium, 2022-present Task Force

Mission

A U.S. healthcare workforce free of documentation burden, focused on patient care and improved outcomes.

Vision

Reduce U.S. health professionals' documentation burden to 25% of current state within five years.

Optimize and spread across health systems impactful solutions that decrease non-value-added documentation and leverage partnerships and advocacy with health systems, professional societies, and public/private sector organizations.

Strategic Goals

1. Wide adoption and utilization of task force tools and exemplars' solutions by health professionals to reduce documentation burden across U.S. healthcare organizations.
2. Greater funding for research and process improvements related to mitigation of documentation burden.
3. Increased identification of strategic initiatives to reduce burden within U.S. healthcare organizations.
4. Improved perception of documentation burden among health professionals.

Use of ANIA's Six Domains of Documentation Burden as a Guiding Framework

Domain	Definition
Reimbursement	Documentation, coding and administrative charting required for reimbursement, by payors such as: CMS, Blue Cross/Blue Shield, United Healthcare, Aetna, Anthem, Cigna, Humana.
Regulatory	Accreditation agency documentation requirements such as: The Joint Commission, Healthcare Facilities Accreditation Program and State Regulatory Agencies.
Quality	Documentation required to demonstrate that quality patient care has been provided. This includes documentation requirements by the healthcare organization itself, as well as by governmental and regulatory agencies.
Usability	Insufficient use of human factors engineering and human-computer interface principles. EHRs are not following evidence-based usability/human factors design principles.
Interoperability	Insufficient standards requiring duplication and re-entry of data even though it resides elsewhere, either internal to the organization or in an external system.
Self-Imposed: "We've done it to ourselves"	Organizational culture's influence on what should be documented can exceed what is needed for patient care, including fear of litigation, 'we've always done it this way,' and misinterpretation of regulatory standards. Includes insufficient education on system use.

Reference: Sengstack P, Adrian B, Boyd DL, Davis A, Hook M, Hulett SL, et al. The Six Domains of Burden: A Conceptual Framework to Address the Burden of Documentation in the Electronic Health Record: Position Paper of the American Nursing Informatics Association Board of Directors. 2020.

AMIA 25x5
Reducing Documentation Burden

25x5 Task Force Resources and Activities

- **25x5 Website**: https://amia.org/about-amia/amia-25x5

- **Slack Community** ~ 185 members and growing! JOIN TODAY.

- Publication of 25x5 **Symposium Final Summary Report and Executive Summary**

- Charter Member of the NBRC (National Burden Reduction Collaborative): https://amia.org/news-publications/amia-and-pacesetters-comprehensively-tackle-burden-reduction-healthcare

- **Burden Reduction Toolkit** published in spring 2023 ~1000 downloads to date!
  - ✓ Provide feedback via survey: https://www.surveymonkey.com/r/NLZPZKC

- Review of Documentation Burden Reduction Activities

- **Logic Model** to organize/evaluate 25x5 Task Force Activities

- Publication of **2 Policy Briefs**: *Policy Reforms* and *Reform Prior Authorization*

- **Six Publications in Peer-Reviewed Journals**

## 25x5 Task Force Resources and Activities

- Hospital Survey to identify if documentation burden is part of the hospital strategic plan (in coordination with HIMSS)

- Successful competitive selection of Documentation Burden as topic for AHRQ Evidence Review, evidence review began Fall 2023 (in process)

- Standardized Definition of Clinical Documentation Burden
  - ✓ Scoping Review in process to reexamine/validate definition; hopeful publication in JAMIA

- HIT Roadmap of Recommendations to Reduce Documentation Burden (in development)

- Recognition program for demonstrating a measurable positive impact on documentation burden (in development)

- **TrendBurden Pulse survey** for Measuring Clinician Perception of Documentation Burden
  - ✓ First one open in April 2024; will be repeated every 6 months
  - ✓ https://www.surveymonkey.com/r/MV6NJDD

LOGIC MODEL

5 Components to Evaluate Burden Reduction resulting from activities of the 4 Workstreams

1. Perceptions of documentation
2. Impacts resulting AMIA/25X5 community investigations and thought leadership
3. Funding availability
4. Rates of burden as organizational strategic initiative
5. Rates of utilization and engagement

N = number of measured items for logic model that comprise each component (Total N = 40 items)
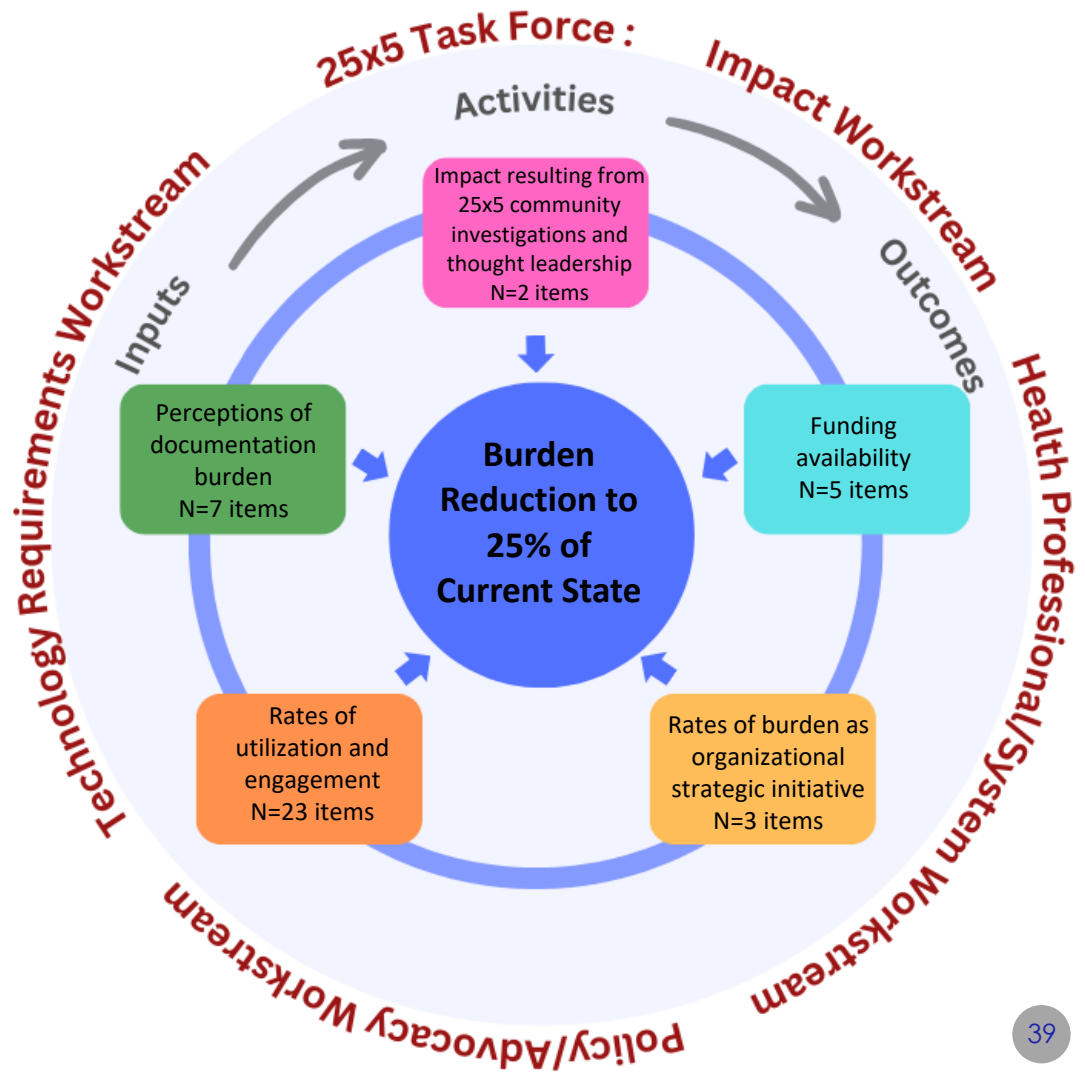
Thanks!

Open for Discussion/Q&A

Email: judy.murphy29@gmail.com
LinkedIn: judy-murphy-dn-hon-rn-facmi-lfhimss-faan-4066442

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