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**The HIM and coding workforce in an AI world: opportunities
for the casemix community to set systems up for success**

28 May 2024



The HIM and coding workforce in an AI world:

Opportunities for the casemix community to set systems up for success

Agenda

- 1 Workshop objectives
- 2 Setting the scene
- 3 Role of the HIM workforce
- 4 Recommendations from the PCSI community

Workshop objectives



Explore how AI is impacting health information and casemix



Discuss how advances in technology (autocoding, etc) and “live casemix” determination will influence HIM and coding workforces structure and needs, reporting, performance monitoring and decision making.



Identify the benefits and risks, and how can the HIM community meet the challenge?



Discuss what the scope, shape and skillset of the coding and HIM workforce might therefore look like in the future, including the critical systems and ideas that the community and workforce should be supporting.



Share experiences in automation (success and failure) and collaboratively develop a list of key elements for success for recommendation to healthcare systems internationally.



Make some recommendations to contribute to the debate and support discussion when you return home after this week



Setting the scene

Defining the future

Artificial intelligence (AI) is a computer program with logic and rules that performs cognitive tasks usually associated with human minds, such as perceiving, reasoning, learning, interacting with an environment, problem solving and being creative.³⁹

Machine learning (ML) is a branch of AI which imitates the way that humans learn and adapt, gradually improving accuracy without being explicitly programmed by using algorithms and statistical models to analyse patterns in data and draw inferences.^{40 41 42}

Foundation models are large-scale machine learning models that are trained on a broad range of data at immense scale and can be adapted for a wide variety of tasks, such as medical imaging analysis, predicting the likelihood of diseases based on factors such as a patient's history and genetics, recommending treatments and predicting adverse drug interactions.⁴³

Neural networks are a type of AI inspired by the structure and function of the human brain. They are computational models designed to recognize patterns and solve complex problems by simulating the way biological neurons interact.⁴⁴

Large language models (LLMs) are a type of foundation model designed to understand, generate and work with human language. These models are large both in terms of the size of the neural network (often consisting of billions or even trillions of parameters) and the amount of data they are trained on. They are part of the broader family of machine learning models known as deep learning, designed to work with data that has complex, hierarchical structures like human language.⁴⁵



Today we will be focussing on AI and automation within Health Information Services, and in particular for HIM and clinical coding

AI augmentation can improve accuracy

Augmentation can improve accuracy where AI is carefully integrated into workflow and accuracy is at least as good as human experts.

In one study radiologists were evaluated with and without AI assistance across 124 findings for Chest X-ray. Radiologists performed better on 80% of findings with no decrease for any finding. Efficiency evidence is more subtle.

Seah et al. [Effect of a comprehensive deep-learning model on the accuracy of chest x-ray interpretation by radiologists](#). Lancet Digital Health, 3:e496-506, 2021.

Allocation better than augmentation if trust is not calibrated

The impact of augmentation — where a human agent performs a task with AI assistance — ultimately depends on human trust of AI systems. Two cognitive biases that pull in opposite directions.

Automation bias may lead users to accept AI output without appropriate critical review, reducing system accuracy.

On the other hand, **automation neglect** may lead users to spend too much time reviewing AI output, reducing system efficiency. A recent economic study of radiology AI suggests it's better to allocate cases to either human or AI agents.

Agrawal et al. [Combining human expertise with artificial intelligence: experimental evidence from radiology](#). NBER Working Paper 31422, 2023.

Augmentation can improve productivity and knowledge sharing

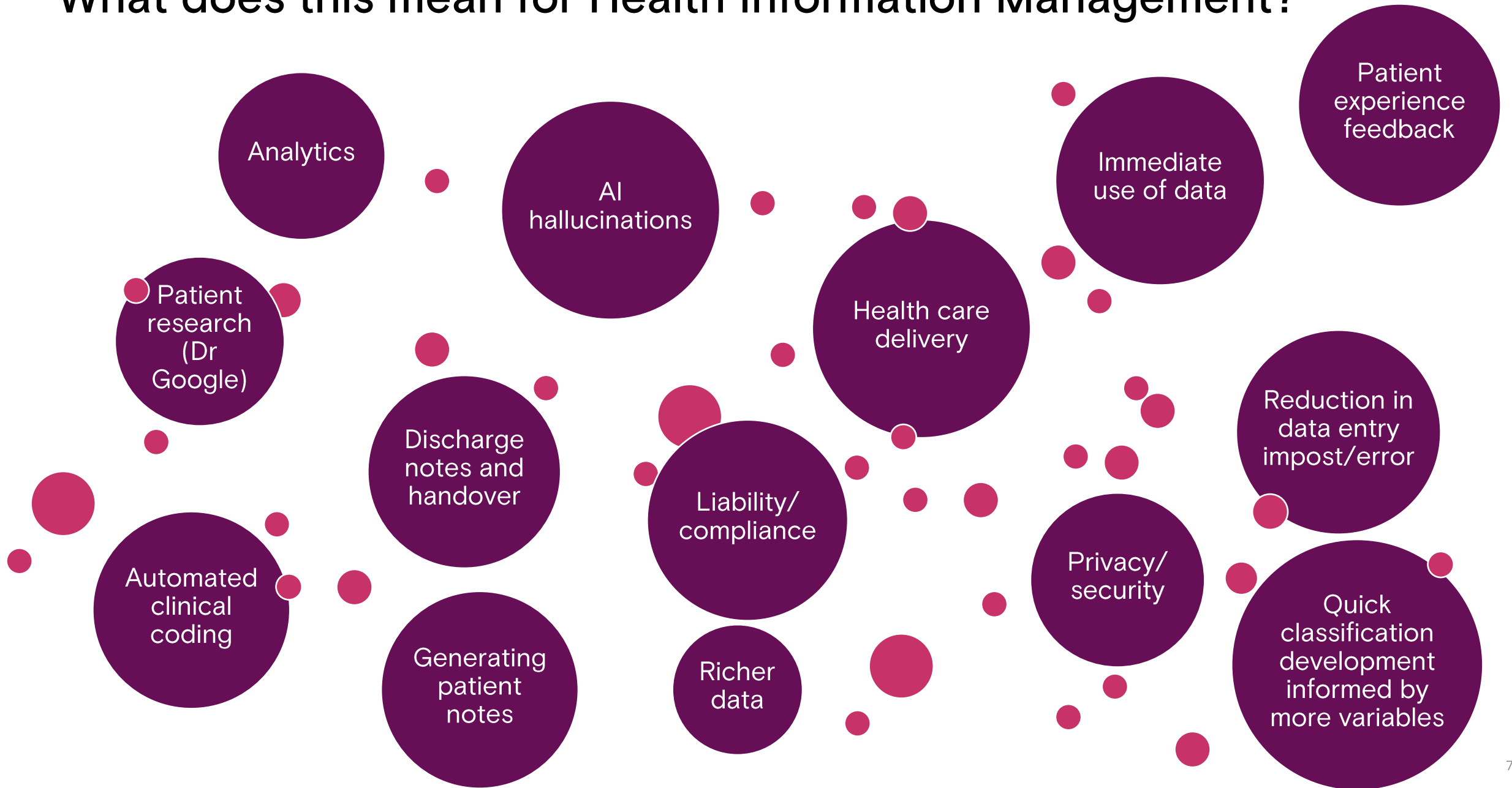
Augmentation that integrates seamlessly with workflow can boost productivity.

For instance, an AI assist tool for customer support agents improves productivity by 14% on average. The system uses custom LLMs to suggest chat responses and retrieves relevant documents for context. Interestingly, the improvement for lower-skilled agents is much higher at 30%.

This suggests a knowledge sharing effect, helping new workers onboard and perform like an experienced agent. A knowledge-sharing system perspective is a north star objective for simultaneously engaging new worker segments and building workforce capacity.

Brynjolfsson et al. [Generative AI at work](#). NBER Working Paper 31161, 2023.

What does this mean for Health Information Management?





Role of the HIM workforce

Small group discussion:

Value of Health Information Management



- 1** What value do health information managers add to the health system?
- 2** Has this changed over time?
- 3** Do the principles stay the same with the practice changing, or has HIM evolved more than that?

Small group discussion:

Role of the HIM workforce

- 1 What does the current structure, scope of practice and skillset of the coding and HIM workforce look like across different countries?
- 2 What do we expect to change over the next few years, and for what purpose?
- 3 What are the variations and the gaps, and why?





Break

Small group discussion:

Vision of the future

- 1 What will the practice of clinical coding and health information management look like, and what will be the extent of AI and automation in:
 - 5 years?
 - 10 years?
- 2 Does this future trajectory ring true in your country?
- 3 Where are you now on this trajectory?
- 4 What do you need to do to make the next step?



Whole room discussion:

What are the next steps in different countries for developing the HIM workforce?

- 1 Perspective from an advanced casemix country – reflections from participants
- 2 Perspective from an emerging casemix country – reflections from participants





Recommendations from the PCSI community

Whole room discussion:

Recommendations from the PCSI community

- 1** What is the future role and scope of practice of HIM, and the sector's ongoing training needs?
- 2** How can advances in digitisation and AI can support demands on the workforce?
- 3** What role can the PCSI community play?



Whole room discussion:

Developing metrics for success in implementation

- 1 Define the metrics for success
- 2 Who is responsible?
- 3 What key actions will take from today's session for discussion with your teams?



Thank you

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