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Clinicians and AI: Finding New Roles

Applications of artificial intelligence in medicine (AIM) continue to increase, including diagnosis generation, treatment selection, disease stratification and healthcare management. This trend has sparked concerns over AI being poised to replace many of today's medical professionals.

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"Despite huge promise surrounding this technology, AI alone cannot support all the requirements for precision medicine, rather AI should be used in cohesive collaboration with clinicians," says an opinion article published in the journal BIO Integration (Zeng et al. 2020).

The article cites studies showing a synergistic effect when doctors and AI work together, producing better results than either alone. These findings are reassuring in that clinicians need not feel threatened by AI, instead what they have to do is embrace the technology and optimise its use for the benefit of their patients.

However, as noted in the article, the increasing use of AIM has created confusion among clinicians as to their role in this era. "Therefore, it is necessary to explore new roles for clinicians in the age of AI," the article says.

The article highlights three roles clinicians need to perform to help with successfully integrating AI into medicine.

Clinician: The Client

Medical AI tools should be developed to meet clinical needs, which are known or determined by clinicians. It is the experienced doctor, not a machine or algorithm, who is able to assess a patient's problem(s) and expectations. The doctor talks with the patient to get as much information as possible to help with making diagnosis and treatment plan. Thus, clinicians can provide the data input (specific requirements according to the patient's condition), which AIM needs to consider or process to come up with more individualised or personalised treatment.

Clinician: The Designer

AI algorithms are designed to solve clinical problems in clinical practice. It is therefore important that clinical expertise must guide the development of AI algorithms and tools. Clinicians should scrutinise data to ensure that high quality data (i.e. unbiased) is used for building AI models with high diagnostic accuracy, for example. Developing healthcare AI without following evidence-based clinical guidelines will result in models that are not consistent with the reality of medical practice and will be a waste of resources. In addition, clinicians need to devise methods for validating the performance of these AI models.

Clinician: The Evaluator

Rigorous evaluation of AIM must be performed by clinicians before any new AI tool can be implemented in clinical practice. Having put into clinical use, feedback on the AI product's performance must also be provided by clinicians who are in a good position to make recommendations as to how the product can be improved or its use optimised. In assessing performance of AI tools, clinicians should utilise medical evaluation metrics such as sensitivity, specificity, reproducibility, and consistency.

Source: BIO Integration

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