



Global AI Conference 2025

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RCR OPEN 3 (2025) 100162

AN AUDIT OF THE EXPERIENCE OF AIDENCE LUNG NODULE DETECTION SOFTWARE USERS

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Purpose: Aidence is an automated lung nodule detection software system that aids in the detection, quantification, assessment and classification of lung nodules. In Devon and Cornwall, the software is routinely used by three radiology departments to aid with nodule detection within thoracic computed tomography. Little was known of users, attitudes to the use of the software, and the way in which it affected their reporting.

Methods: A web-based 12-question multiple choice survey was distributed to consultants working at the three sites within the region that used the software. Responses were gathered over a two-week period in December 2023.

Results: 33 users responded. Of these respondents, 78% thought that Aidence provided a benefit to patients, and 69% thought it reduced the risk of missing a nodule. Furthermore, 61% felt that it either did not slow their reporting, or that it increased their reporting speed. From the perspective of safety, only 3% believed there to be serious safety issues with using Aidence in practice.

Conclusion: This multicentre survey demonstrates four key opinion trends: that Aidence is considered beneficial to patients, it is generally neutral to reporting speed, it is safe to use, and it is beneficial to nodule detection and analysis. This audit provides a direct account of user experience of Aidence, in the context of NICE assessment that there is insufficient evidence from cost-benefit analysis to recommend purchase of Aidence. This may lend weight to consideration of further utilisation of lung nodule detection software within other radiology departments.

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CDSS – AN INTERDISCIPLINARY PERSPECTIVE ON THE STATEMENT OF THE CENTRAL ETHICS COMMISSION OF THE GERMAN MEDICAL ASSOCIATION

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Purpose: On June 23, 2021, the Central Ethics Commission of the German Medical Association (ZEKO) decided to publish the detailed statement 'Decision Support for Medical Activities by Artificial Intelligence'. This statement addresses the increasing use of artificial intelligence (AI) in medicine, which raises both the potential to improve healthcare and concerns about its impact on the relationship between healthcare providers and patients. Particularly commendable is the identification of different levels of responsibility to address the complex issue of blame and accountability (including the question of liability) in the context of AI use. However, as we will show in this paper, there is room for improvement in the allocation of responsibilities and the adaptation of obligations. In addition, detailed considerations of technical feasibility are conspicuously lacking. In this paper, we aim to fill these gaps from an interdisciplinary perspective.

Methods: We examine the ZEKO statement from a philosophical and technical perspective. We begin with the question of responsibility and, in a second step, raise questions and suggestions regarding the attribution of autonomy.

In addition, the evaluation of technical feasibility and its implications for future considerations are particularly worthwhile, as we will illustrate by examining the underlying technologies. After an overview, we will first examine the issue of explainability of model-based decisions and current technical solutions from a technical perspective as a crucial point for improving patient care. The importance of collaboration between machine-learning specialists and healthcare providers will then take centre stage in the analysis. Simultaneously, the provision of adequate digital literacy for medical professionals will be discussed in the same vein.

Results: We have proposed an extension of multi-actor responsibility that takes aspects of the CDSS as a starting point for the allocation of ethical concepts to be considered that can sensibly be assigned to different technical actors. From a technical perspective, we have presented concrete implementation proposals in line with the recommendations outlined by ZEKO. In doing so, we have developed an 'XAI-Compass' to help navigate the complex discourse surrounding eXplainable Artificial Intelligence (XAI).

Conclusion: We have successfully proposed specifications from an interdisciplinary perspective that address gaps in the ZEKO statement. In addition, we recognise the need to approach this issue not only from an individual ethical, but also from a social ethical standpoint.

