Ethical and prof responsibility

When other technologies like elevators and automobiles were introduced, similar issues were raised. Considering artificial intelligence may influence several aspects of human activity, problems of this kind will be researched, and answers to these will be proposed in the future years. Humans would like to see Isaac Asimov's hypothetical three principles of robotics implemented to AI in radiography, where the "robot" is an "AI medical imaging system." Asimov's Three Laws are as follows:

- A robot may not injure a human being or, through inaction, allow a human being to come to harm.
- A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
- A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

The first law conveys that DL tools can make the best feasible identification of disease, which can enhance medical care; however, computer inefficiency or failure or inaction may lead to medical error, which can further risk a patient's life. The second law conveys that in order to achieve suitable and clinically applicable outputs, DL must be trained properly, and a radiologist should monitor the process of learning of any artificial intelligence system. The third law could be an issue while considering any unavoidable and eventual failure of any DL systems. Scanning technology is evolving at such a rapid pace that training the DL system with particular image sequences may be inadequate if a new modality or advancement in the existing modalities like X-ray, MRI, CT, Nuclear Medicine, etc., are deployed into clinical use. However, Asimov's laws are fictitious, and no regulatory authority has absolute power or authority over whether or not they are incorporated in any particular DL system. Meantime, we trust in the ethical conduct of software engineers to ensure that DL systems behave and function according to adequate norms. When an DL system is deployed in clinical care, it must be regulated in a standard way, just like any other medical equipment or product, as specified by the EU Medical Device Regulation 2017 or FDA (in the United States). We can only ensure patient safety when DL is used to diagnose patients by applying the same high rules of effectiveness, accountability, and therapeutic usefulness that would be applied to a new medicine or technology.