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Artificial intelligence in health care: value for whom?



Waymo, formerly Google's self-driving technology company, has raised US\$2.25 billion from outside investors, to expand its commercial efforts. Waymo might deploy its autonomous vehicle service in several geographical areas. After using public space for years—for the hundreds of cars driving more than 20 million miles—and human resources from Chandler, USA, to collect an enormous amount of data to its advantage, Waymo is going to commercialise its service according to a classic fee-for-ride model. Is the relationship balanced, between a company on one side that excels in technology yet lacks the necessary data; and society on the other side, which conversely has a lot of data yet little expertise in artificial intelligence technology? Most health-care systems will soon need to find an answer to a very similar question.

Health-care systems generate a huge quantity of data. In Europe, most of those data come from public funding. In the USA, funding is far more complex, with the US Government paying for approximately 50% of care.¹ Data that belong to health-care systems are incomplete, imperfect, and underused, yet these data do exist and health-care systems probably have more data than any other stakeholder. Technology companies seek to get access to those data, while promising to help the health-care systems to mitigate their three historical weaknesses: access to care, quality of care, and inefficiency. This promise makes sense, but several initiatives are needed to ensure that the medical artificial intelligence market will indeed be a fair market, associated with an appropriate value sharing. Three initiatives should be prioritised.

First, massive public investment is necessary so that hospitals, which are the current health-care data giants, are equipped to develop their own algorithms. Several examples show that it is feasible.² Such algorithms basically create value through an enhancement of accuracy in interpretation of data or any type of exam output. Their limitations, including biases and lack of transparency, clearly need to be taken into account, but if adequately validated, these algorithms allow health-care providers to improve medical performance³ and therefore can improve efficiency.

Second, public hospitals or hospital groups should be allowed to implement non-conventional business

models that will be complementary to their normal funding sources. If they succeed in constructing validated and transportable medical algorithms, it should be legal for them to sell those products to other players of the health-care industry, such as private hospitals or hospitals in different countries. Some difficult issues will need to be addressed, such as the continuous refinement of algorithms as they are exposed to new data. Such refinement can lead to improved performance even though this does not seem to always be the case. Selling algorithms to hospitals in other countries will be perceived by some people as an infringement, yet vastly preferable to the exclusive option of paying money for getting access to algorithms developed by others. Many hospitals worldwide are struggling to recoup their budget, leading to intensive pressure passed onto their workers; however, these hospitals generate data whose value is high and whose valuation should be invested back into health-care systems.

Third, the global community needs to be realistic: public investment will not be able to fund the development of all the needed algorithms because several of them should be available per condition and there are thousands of conditions.⁴ The well-known principle of a partnership between technology companies and health-care facilities is acceptable but implies both a competitive bidding and an anticipation of a future economic relationship between the two stakeholders. Providing access to resources, data, and medical expertise to companies to help them to develop algorithms for which they will subsequently charge fees for use is unreasonable without a tailored and predefined agreement. From the moment that hospitals provide the majority of the raw material with which artificial intelligence algorithms are trained, an equitable value sharing is essential. This value sharing could go through a discounted right for use or royalties on the selling to other parties. This agreement can only be achieved if negotiations occur in a fair context and therefore if private companies are not in a quasi-monopolistic situation. Yet past experience showed that digital giants (so-called GAFAM) have often been those winning bids on public tenders.⁵⁻⁶ Nevertheless, we recognise that hospital leaders should not

underestimate the difficulties inherent to the curation and structuration that precedes the analysis of the raw data.

The asymmetry of value between current artificial intelligence algorithms and data has repeatedly been outlined by leading experts.⁴⁻⁷ This difference makes a point for changing the rules in the relationship between health-care systems and private companies. The value created by an optimised use of artificial intelligence in health care should eventually return to those that gave time, effort, and resources to produce the data allowing a better performance. It means that health-care systems should be indirectly or directly compensated in a fair setting. In most countries where health is at least partly funded by national solidarity, it might be the more pragmatic way to return value to patients. Perhaps the health-care systems do understand this reality, but if they do not implement it in the current momentum of increasingly relevant artificial intelligence applications, our means will be too limited to meet our expectations, which are almost limitless in the field of health care.

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investor in approximately 30 digital companies (medical device companies and biotech companies) and a limited partner in investment funds. J-DZ is also a shareholder and advisory board member in several medical device companies (MyRobotics, Allurion Technologies, Implicity, Wandercraft). J-DZ reports being cofounder and shareholder of Inato, a digital company involved in clinical research, which has pharmaceutical companies as customers. PR is a minority shareholder of Inato.

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