Developing an e-health infrastructure that offers potential for AI applications

Turkey's 11th Development Plan aims to digitalize the country's public services and has established a Digital Transformation Office (DTO). The DTO, whose president also serves as the government's Chief Digital Officer, is currently preparing a national AI strategy in collaboration with knowledge institutes, the private sector and NGOs. As well as use cases across various sectors, the strategy will focus on ethics & law, the effect on labor, the relationship between AI and people, and AI's impact on education and human rights.

Health sector use case

One such use case is the health sector. Achieving an e-health system for Turkey is part of the Health Trans-formation Program launched by the government in 2003. The goals of this e-health system are to ensure the standardization of data used in healthcare and create an Electronic Health Record for citizens. This would enable healthcare data analysis that can support managers, speed up the flow of information between stakeholders, and save resources and increase efficiencies within the healthcare system.

Various elements are already in existence. These include the Health-Net, a software cluster that enables the transfer of information between family doctors, hospitals, pharmacies, operating rooms, etcetera; the Pharma-ceutical Tracking System, which tracks medicines from manufacturer to citizen; a central physician appointment system; and a decision-support system that uses aggregated data to help the Ministry in developing policy.

Public-private initiatives

There is also E-Pulse, a personal health record app that makes the information in these systems accessible to citizens and healthcare professionals. E-Pulse collects healthcare data from different health institutes and facilitates communication between patient and physician. This process is helped by the ongoing digitization of Turkish hospitals that is taking place. The E-pulse app is the result of a public-private collaboration involving the government, Turk Telekom and others.
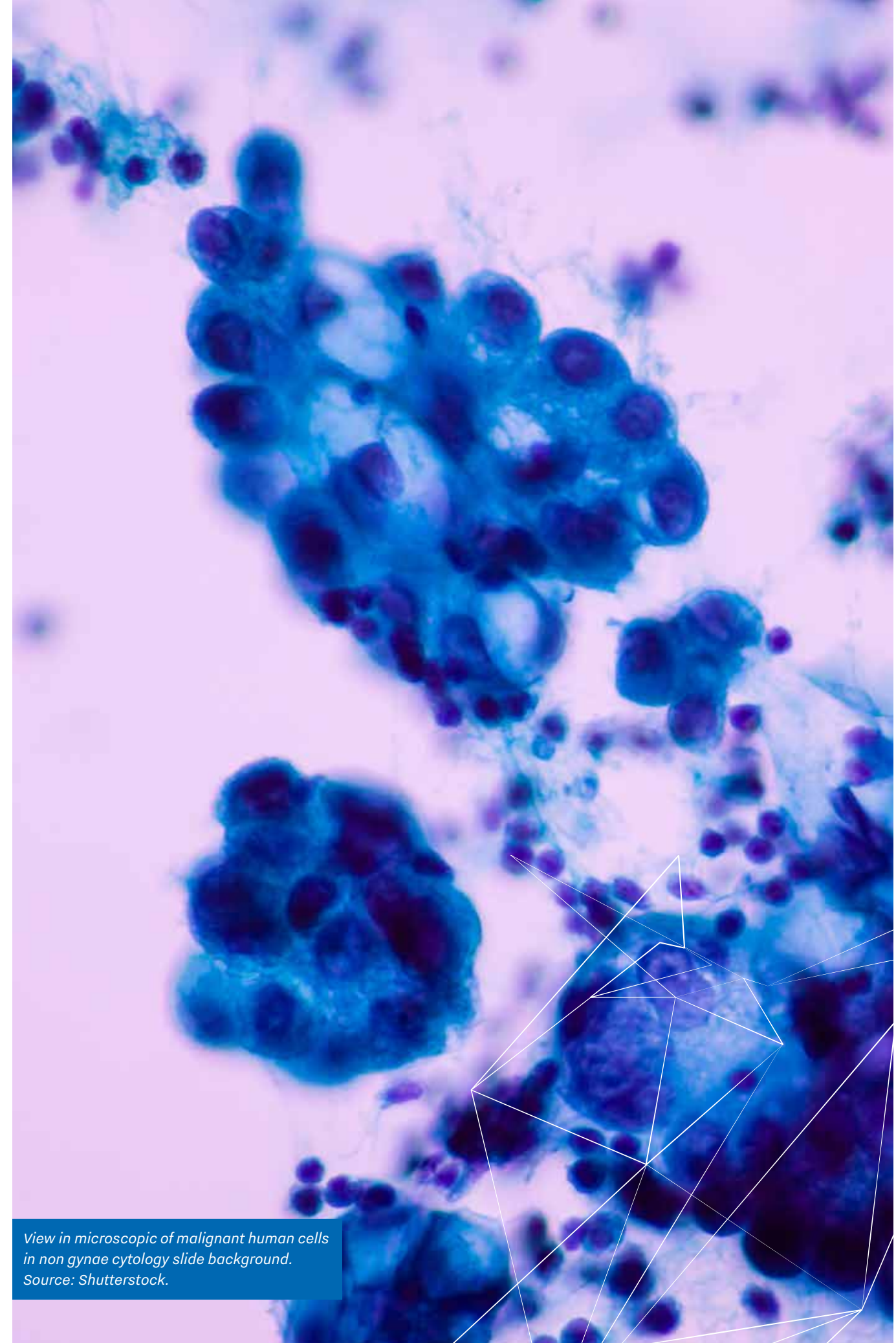
Wide-ranging applications

To realize the many benefits AI can offer the Turkish health sector, the Health Institutes of Turkey (TUSEB) has established the Institute of Medical Data Mining & Artificial Intelligence Applications, which carries out research itself as well as collaborating with universities to develop AI applications to aid everything from diagnosis and treatment to cost savings and control.

The Institute is currently supporting projects by some 30 research groups at 20 different universities. Examples include an automated medical imaging system that pre-checks radiological images and forwards reports to the doctor. And an app called 'What have I got?' being developed by the Ministry of Health. Using underlying data regarding symptoms, the app asks up to 22 questions before advising the patient which medical specialist to see, as 60% of patients in Turkey go to the wrong doctor for their initial consultation.

Turkish-Dutch collaboration

In 2019, the Netherlands Organization for Scientific Research (NWO) launched the Science for Diplomacy fund with a specific focus on collaboration with Turkish researchers. This allows Dutch researchers to connect with colleagues from Turkish universities & institutes, but also enables Turkish institutes to participate in Horizon 2020 and Horizon Europe. The NIN in Turkey can help Dutch parties find the right contacts at knowledge institutes and government agencies to explore potential areas of collaboration.

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View in microscopic of malignant human cells in non gynae cytology slide background. Source: Shutterstock.