PROS OF USING AI IN MEDICINE

Diagnostic assistance.

When a patient's case is complex, rare or the person making the diagnosis is simply inexperienced, an expert system can help come up with likely diagnoses based on patient data.

Medical Theraphy

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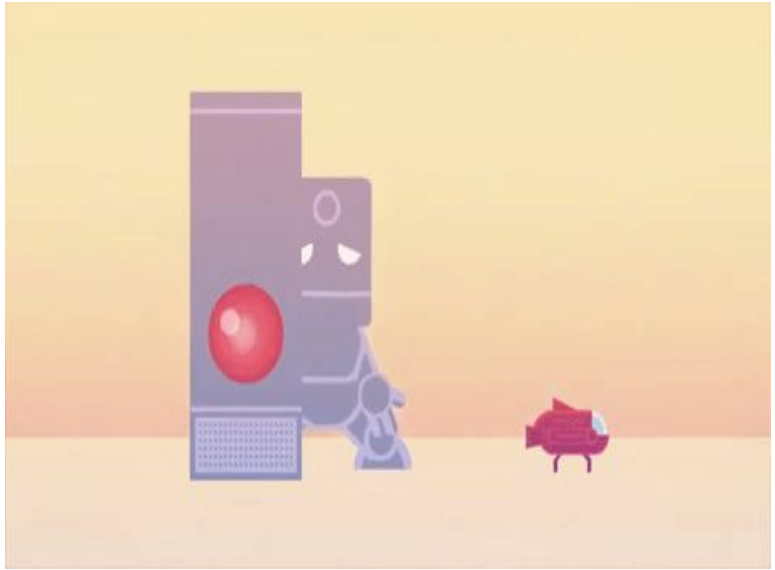


Machine learning has a potential role to play in the development of clinical guidelines. It is often the case that there are several alternate treatments for a given condition, with slightly different outcomes.

AI can meet the growing demands of the health service.

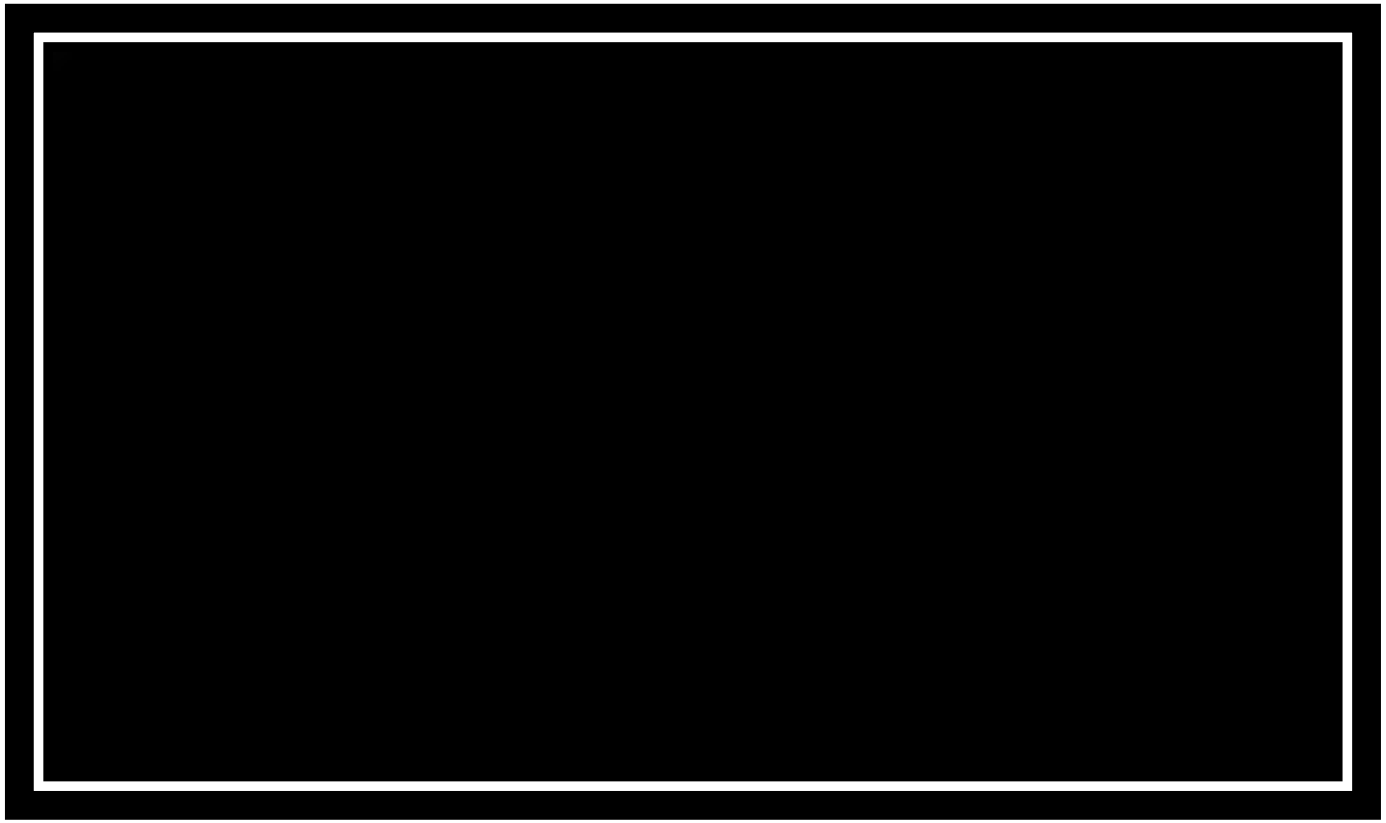
Ideally we'd have a fully trained, very attentive doctor or nurse there with every single patient as they're dying to walk them through every stage of the process, but that's just impractical and it's not happening now, so if we can get closer to that world by using some partnership of AI and humans that seems like a more moral and more just system.

USING DECISION SUPPORT TO HELP EXPLAIN CLINICAL MANIFESTATIONS OF DISEASE.

Here is just an example of man and machine coming together in the world of medicine.

DXplain is a decision support system-

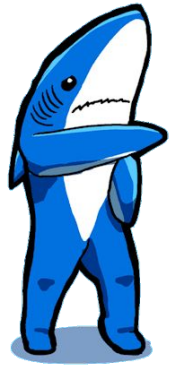
In its reference or case analysis mode, DXplain accepts a set of clinical findings (signs, symptoms, laboratory data) to produce a ranked list of diagnoses which might explain (or be associated with) the clinical manifestations.



DXplain provides justification for why each of these diseases might be considered, suggests what further clinical information would be useful to collect for each disease, and lists what clinical manifestations, if any, would be unusual or atypical for each of the specific diseases.

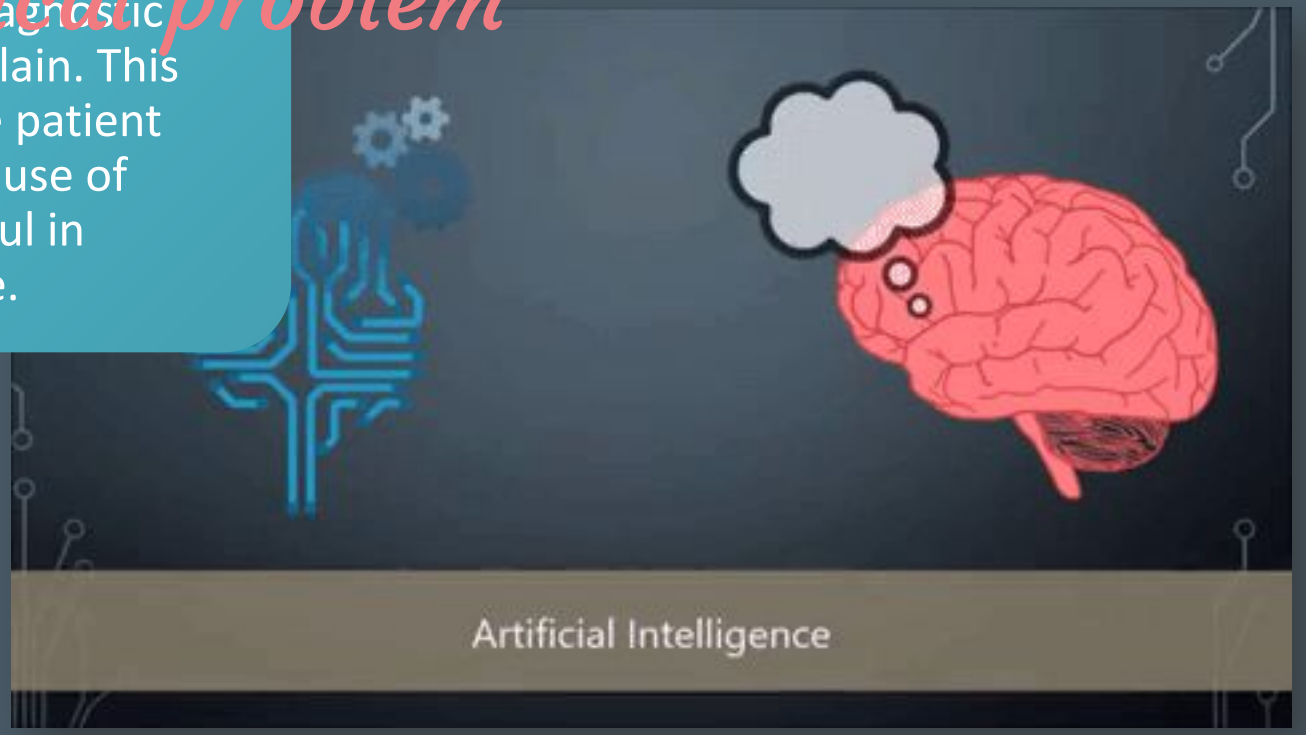
DXplain can provide a description of over 2400 different diseases, emphasizing the signs and symptoms that occur in each disease, the etiology, the pathology, and the prognosis.

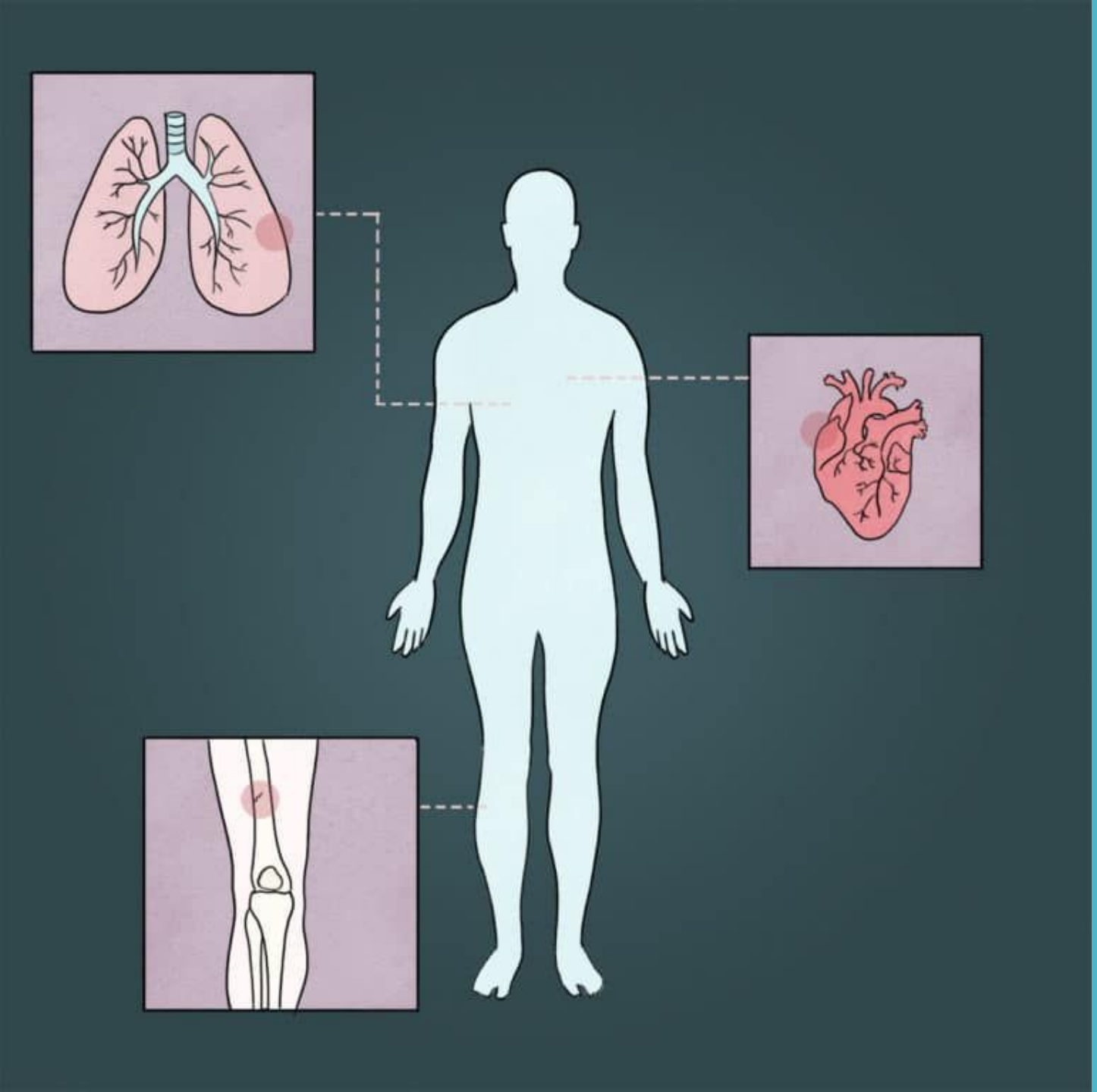
DXplain also provides up to 10 references for each disease, selected to emphasize clinical reviews where these were available. In addition, DXplain can provide a list of diseases which should be considered for any one of over 5000 different clinical manifestations (signs, symptoms, and laboratory examinations).



DXplain *is in routine use at a number of hospitals and medical schools for clinical education and as an educational aid in clinical problem solving.*

Family medicine residents have appropriate diagnostic accuracy that can improve with the use of DXplain. This could help decrease diagnostic errors, improve patient safety and the quality of medical practice. The use of clinical decision support systems could be useful in educational interventions and medical practice.





The impact of AI on cancer detection

Researchers have found that AI is able to detect cancer (and other diseases) earlier than possible through standard diagnostic methods

Moreover the accurac
y of detection is sagnifi
cantly increased

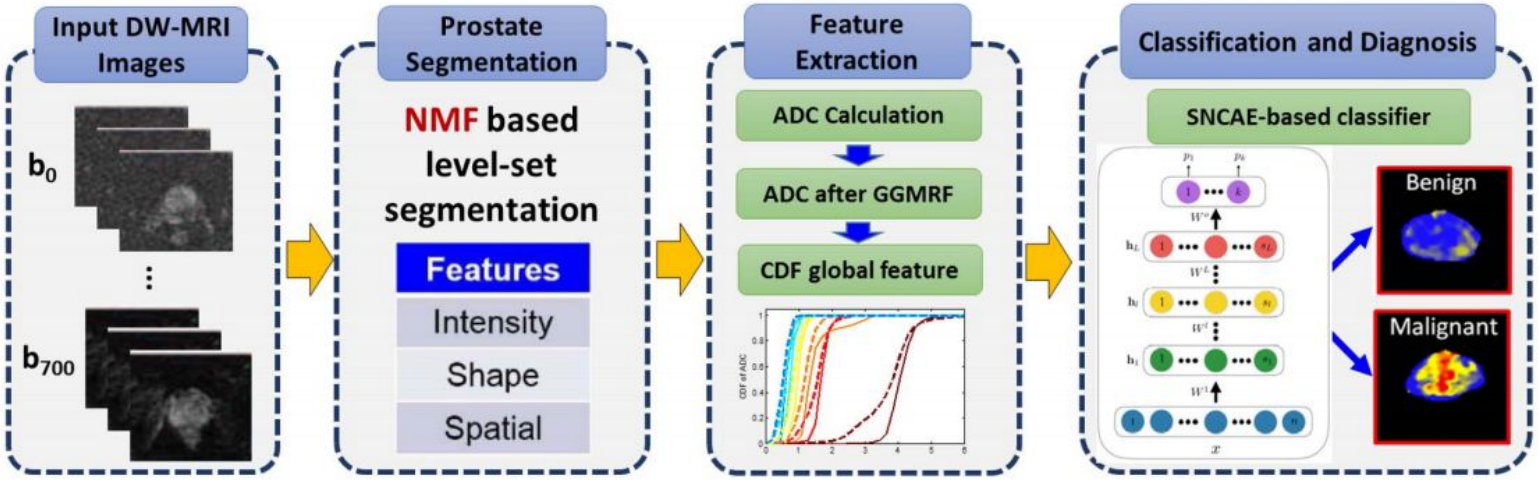
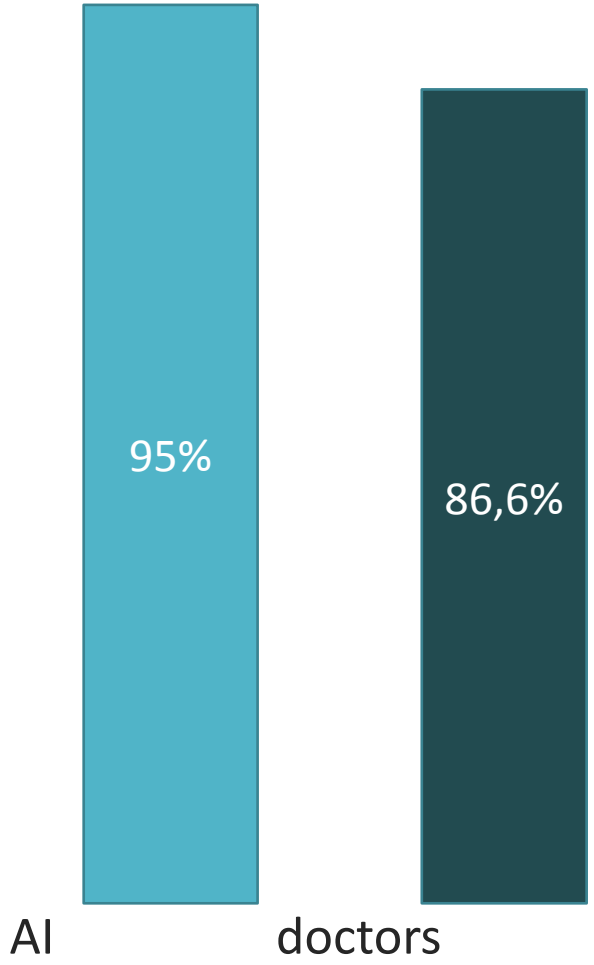


Fig. 1. Framework of the DW-MRI CAD system for early diagnosis of prostate cancer.

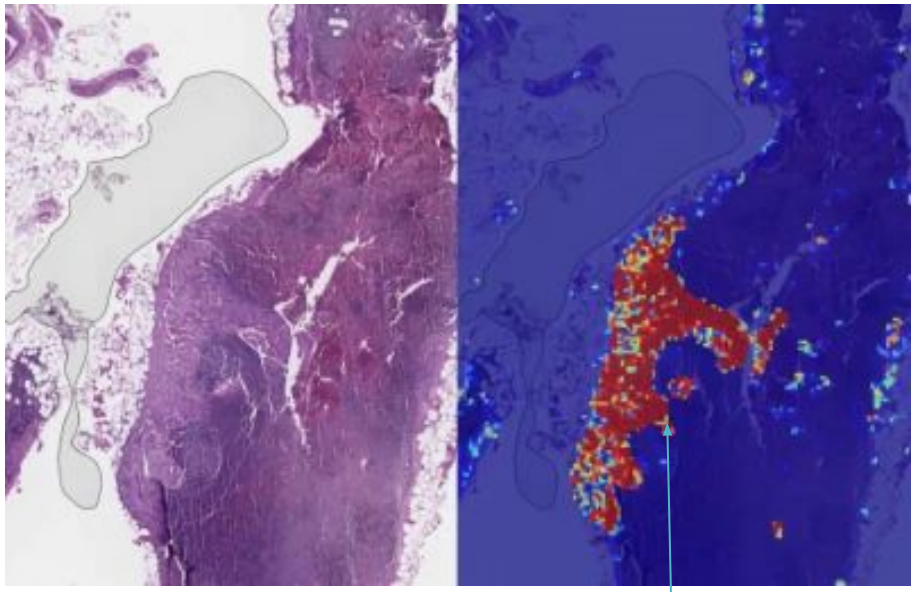


Every individual is unique

Why are many cancer patients provided with the same treatment as the next person?

Specialized treatment plans

Much less painful experience for patients



Cancer tissue

The da Vinci® Surgical System

The da Vinci Surgical System enables surgeons to perform operations through a few small incisions and features several key features, including:

Magnified vision system that gives surgeons a 3D HD view inside the patient's bodyErgonomically designed console where the surgeon sits while operatingPatient-side cart where the patient is positioned during surgeryWristed instruments that bend and rotate far greater than the human hand

The da Vinci System has brought minimally invasive surgery to more than **3 million** patients worldwide.

da Vinci technology – changing the experience of surgery for people around the world

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THE
END