

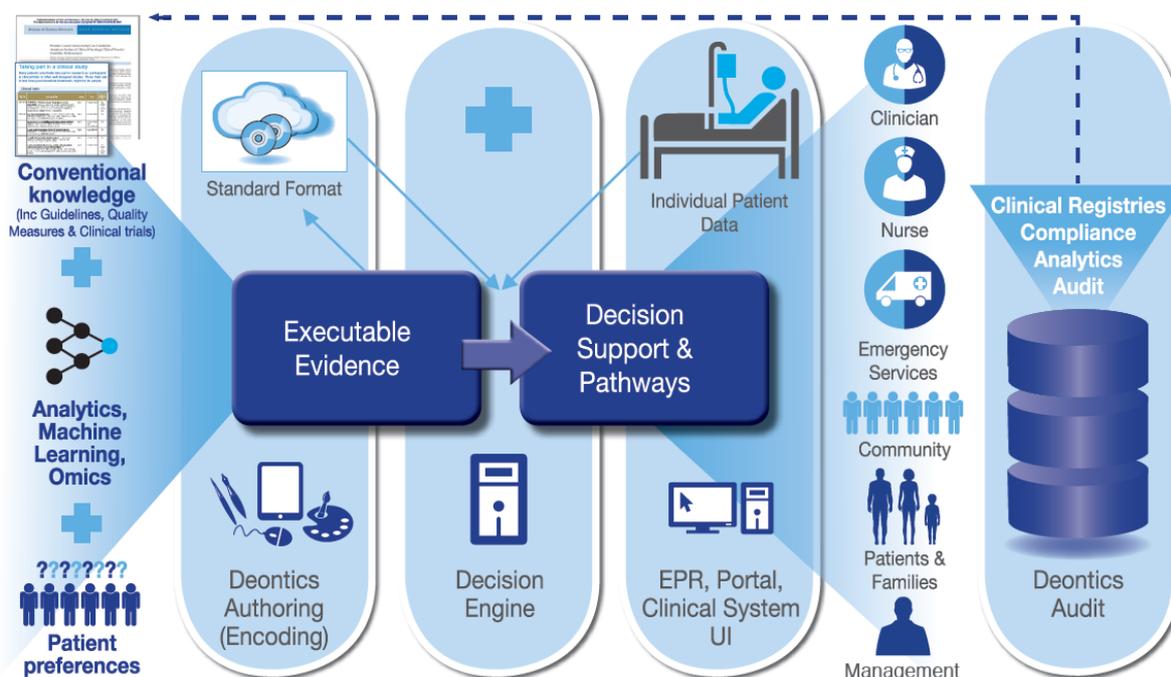
Deontics

Clinical Futures

Deontics is an Artificial Intelligence (AI) company with world-leading clinical pathway, workflow and clinical decision support technologies that not only improve the quality of care offered to patients but reduce treatment costs through improved efficiency. Our platform stems from 25 years of development in conjunction with Carnegie Mellon University, Medical Research Council UK, Cancer Research UK, University College London and University of Oxford.

In summary Deontics offers:

- an authoring tool for quickly capturing evidence based knowledge (guidelines, research papers, etc) and making them executable.
- an advice tool that offers treatment options based off the evidence based knowledge, analytical data and the patients electronic health record to provide individualised care to patients.
- a monitoring tool that audits clinical decisions ensuring maximised adherence to knowledge based evidence which in turn will offer the best possible care to a patient.



Deontics solutions take into account conventional knowledge (such as guidelines, quality measures and clinical trials), analytical data (i.e. statistical and clinical trends), patient preferences re treatment (i.e. don't want to lose hair) and individual patient data from electronic patient record solutions and provide personalised evidenced based options for clinicians to assist in the decision making process.

Data/documents can be captured in whatever format using our authoring tools and encoded into a standard electronic format to be shared with all concerned. Sections of documents can be linked as evidence to pathways and highlighted should conflicts occur.

Pathways can be configured to meet specific discipline requirements but also provide standardisation throughout. Functionality is shared across acute and primary care sectors as well as with patients, carer's and family members to empower all involved in the treatment of a patient's condition to have an input.

All actions taken are audited and stored within the Deontics database enabling analysis i.e. compliance to guidelines over a given period, etc. Such information can also be fed back to conventional knowledge databases to provide vital information to improve the quality of care and associated pathways in the future

Unique advantages over alternative CDSS solutions

- Dynamic reasoning over the course of disease: taking account of where a patient is on a pathway or in a disease progression when determining clinical recommendations.
- Handling conflicting guidance: sometimes, different guidelines make different recommendations a NICE guideline might not be fully consistent with guidelines from one of the Royal Colleges. The Deontics platform recognises this situation, and highlights the potential conflict to the clinician.
- Representation of uncertainty: the Deontics platform enables guidelines to be developed that take into account uncertain recommendations, without needing to resort to constructs that are not always clinically useful (such as “this drug is 38% likely to have side-effects”).
- Tolerance of missing data: real-world medicine often entails decision-making in the absence of a perfect data set. The Deontics platform is designed to make full use of any available data, without halting reasoning if some data elements are missing.
- Nonlinear progression through a pathway: patients are notoriously unpredictable; they don't always follow the ideal flow through a standard care flowchart. The Deontics platform is designed to handle this fact, and enable multiple paths through the clinical guidance.
- Easier knowledge base maintenance: traditional decision support systems are difficult to create, extend, manage and maintain. With Deontics, additional statements of clinical guidance (e.g. “if this patient is asthmatic, avoid beta blockers”) can be added to an existing pathway model without the need to adjust and revise existing guidance.

Value to Healthcare Organisations and Patients

- Getting it right first time. Improving the quality of care provided to patients, not to mention clinical performance, by reducing variation in treatment through greater compliance to knowledge based evidence including guidelines, quality measures, clinical trials and research.
- More effective triage of patients to reduce unnecessary admissions and ensure the right patients get priority. Improvements in perceived quality of care whilst streamlining throughput to maximise bed space and resources.
- Improvement in the quality of treatment and the efficiency of throughput of patients once admitted thereby maximising throughput and improving patient outcomes
- Improved resource management by enabling nurses and junior doctors to clinically manage patients requiring routine treatments thereby releasing senior clinicians time to those that need it most.
- Reduction in re-admissions through improved quality of care across acute and community.
- Improvements in meeting Government targets through timely treatment following greater compliance to clinically proven guidelines and subsequent release of bed space
- Patient empowerment and guidance to make their own decisions as an enhancement
- Reduced risk to patients with associated reductions in mortality figures and medical legal costs
- Potential for revenue generation from suitable selection of patients meeting certain criteria for clinical trials
- Improvements in conventional knowledge through analysis and feedback of data regarding guidelines, pathways, outcomes and quality measures.
- As an added value our engine can be utilised retrospectively over data from previous years to identify previous variance in compliance to guidelines and associated outcomes, mortality and morbidity rates, previous performance criteria i.e. length of stay, % readmission's, fines, medical legal costs, etc to act as a benchmark for future comparison of improvements if our solution was to be implemented

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