

# Clinical decision support system

[Business](#), [Management](#)



Some successful systems such as 'Explain' and 'QMR' originating in the 1980s were successfully commercialized. There is compelling evidence for the effectiveness of CDSS for improved patient safety and improved quality of care. CDSS has been portrayed in a positive light by the majority of reviews.

The basic components of a CDSS include a medical knowledge base and an inference mechanism. It could be based on Expert systems or artificial neural networks or both. The computing techniques that are used to create CDSS are divided into two broad categories:

Machine Learning and Adaptive Computing

Inductive Tree Methods

Case-Based Reasoning

Artificial Neural Networks

Expert Systems - Knowledge-based Methods

Rule-based Systems

For a clinically useful CDSS, the knowledge system should be based on the best evidence and it should fully cover the problem. Also, it requires the capability to update the knowledge base. The system should be easy to use and its performance should be validated rigorously. A medical practitioner needs to deal with different kinds of data and knowledge and no single DSS model has the ability to manage all of them. In any advanced DSS model, data and knowledge are complementary; both are useful to take an appropriate decision in a complex domain like medicine.

Due to heavy investment in IT infrastructure and expensive maintenance/update of software, the cost of implementing a CDSS may be

substantial. In addition, many of the systems need to be integrated with the medical record system. Despite these concerns, there is no doubt about its feasibility and will likely become even more so as practitioner shift to computerized medical record systems.