

An effective Clinical Decision Support System

Diagnostics Problems in Hospitals

24% Diagnostic error rate of hospitals

79% Misdiagnoses involve cognitive errors by physicians

46% Physicians showing at least one symptom of burnout

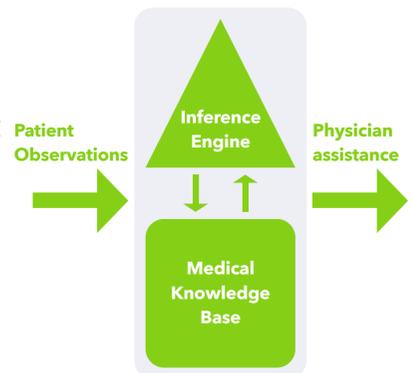


20% of current CDSSs influence clinical outcome

Clinical Decision Support System (CDSS)

Definition:

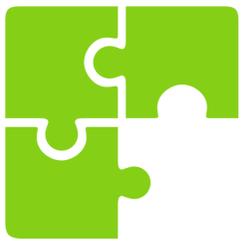
CDSS links patient observations with health knowledge to assist clinicians in making informed health choices for better care.



CDSS empowers physicians to spend more time on finding the right diagnosis.

Problems of current CDSS

Incomplete Patient Data



Physician does not have access to patient's medical information from other physicians. Unstructured data from text sources cannot be processed.

Solutions of an effective CDSS

Mobile Patient Data Integration



CDSS has complete access to patient data repository, e.g. Apple Health. Unstructured data can be analyzed with information extraction techniques using medical ontologies, e.g. SNOMED CT.

Clinical and Scientific Data Silos



Physician does not have access to recent medical scientific publications. Researchers do not have access to clinical data.

Outdated medical knowledge

Clinical and Scientific Data Exchange



CDSS integrates existing scientific databases, literature and clinical trials to update knowledge base. CDSS channels anonymized clinical data to research. Data exchange happens via web-hooks and streaming APIs.

Workflow Interruptions



Physician switches to CDSS, types in patient information, selects analysis and executes query.

Additional time overhead

Seamless Workflow Integration



CDSS and physician interact with each other over audio and voice control. CDSS has access to data via Health Level 7 (HL7) and FHIR data exchange protocols. Diagnostic results are automatically added to patient's EHR.

Complex Tools



Physician needs to learn CDSS's complex queries and visualizations.

Additional complexity

Intuitive and Self-Learning Tools



CDSS recommends and assists in diagnostic process and visualization by using medical guidelines, physician CDSS interaction and patient data. CDSS focuses on pre-attentive visual attributes visualization.