

Clinical Decision Support System definition: *Provide clinicians or patients with computer-generated clinical knowledge and patient-related information, intelligently filtered or presented at appropriate times, to enhance patient care”*

-CDS can help provides alerts and reminders.

- **CDSS in Patient Monitoring Systems** (ex. ECG that gives out warning.)
- **CDSS embed in EMR and CPOE** (ex. Send reminders/warnings in test results, drug-drug interaction, dosage errors etc.)
- **Formulating Diagnosis**
- **Formulating Treatment**
- **CDSS in Prescription** (Guiding prescribing practices - Flagging adverse drug reactions Identify duplication of therapy)

Elements of clinical Decision Support System:

-Knowledge. Provide evidence to meet physician information needs - Meta-analysis of Randomized Controlled trials as evidences

-Patient-specific Information. (Medication List- Problem Lists- Lab results and other clinical data)

- Filtered. (Gathering and presenting pertinent data)

- Presented at appropriate time. (Provider able and ready to act on the information)

- Enhance patient care. (Error prevention- Quality improvement - Lab results and other clinical data)

Constructing Decision support system:

1- Elicitation of Medical Knowledge 2- Reasoning and Representation

3- Validation of System Performance 4- Integration of CDSS Tools.

Why Clinical decision system?

قالت هذي مهمة اعرفوها لان ممكن يجي سيناريو و يقولوا هذا ايش ان مت انفورميشن ولا ان ساتيسفايد ركزت على هالاثنين

1. Questions * Unanswered Questions * Some doubts

2. Information

* Unmet information need - ماتلقين معلومات للشئ الي تحتاجينه **unmet** ال

* Cannot process information

* Lack of time

* Unsatisfied information need - تلقين معلومات بس ماتعجبك **unsatisfied** ال

* Unrecognized information need

3. Inquiry

* Needs time

* Resource Intensive (Evidence, Literature, Knowledge)

Mycin:

- Gives ADVICE to clinicians. -Used Artificial Intelligence.

- Production Rules– knowledge gathered from discussions among experts.

Example: Rule 507. Comprised of conditional statement (IF-THEN).

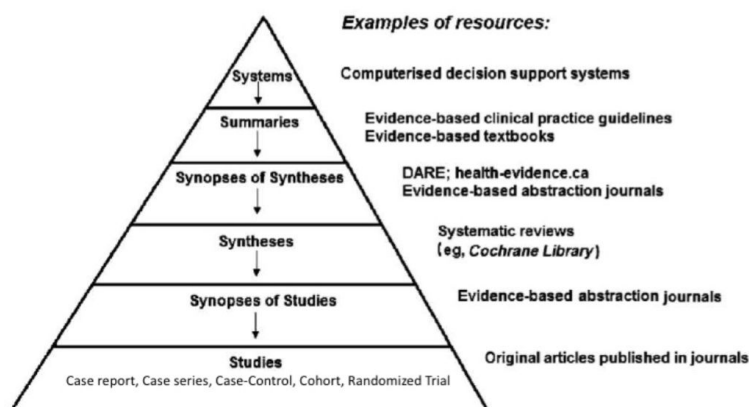
Types of CDSS:

(IMP) You will be asked about the different types

and subtypes.

Type	Subtype
1- Documentation Tool * Provide complete documentation *Well-designed order form * Required fields & Proper information * Reduce error of Omission by providing selection * Provide coded data for CDSS	1.1 Patient Assessment Form 1.2 Nursing Patient Assessment Form 1.3 Clinical Encounter Patient Form 1.4 Departmental/multidisciplinary clinical documentation forms 1.5 Data Flowsheets
2. Relevant Data Presentation *Display relevant data –including costs *Pertinent Data are displayed *Complex Data – to show overall picture *To highlight needed ACTIONS	2.1 Relevant data for ordering 2.2 Choice list 2.3 Practice status display 2.4 Retrospective/aggregate reporting/filtering 2.5 Environment parameter report
3. Order Creation Facilitators	3.1 Single-order completers- consequent orders 3.2 Order sets 3.3 Tools for complex ordering
4. Time-based checking & protocol/pathway support	4.1 Stepwise processing of multi-step protocol 4.2 Support for managing clinical problems
5. Reference Information and guidance	5.1 Context-insensitive 5.2 Context-sensitive
6. Reactive Alerts & Reminders	Alerts to prevent potential errors

Searching for evidence



DiCenso A, Bayley L, Haynes RB. Accessing preappraised evidence: fine-tuning the 5S model into a 6S model. ACP Journal Club, 2009

- A summary Done by: Areeb AIOgaiei.
- It includes 95% of the informations in the Lecture and the important informations highlighted.
- Good luck!