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Decision Support for Quality Improvement

Unit 6.2: Clinical Decision Support Systems that Help Improve Quality

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Objective

- Compare decision support tools that help improve quality

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Clinical Decision Support Meaningful Use

"...advanced EHR systems with CDS functionalities have the potential to offer numerous benefits to the safety and quality of patient care, including improving the rate at which patients receive preventive services recommended by clinical guidelines, as well as the potential to facilitate superior financial performance, based on the best return on investment models currently available. While the promise of CDS is great, trials of CDS have produced mixed results and a number of challenges in implementing CDS remain unresolved. Nevertheless, the potential of CDS to improve health care outcomes affirms that truly meaningful use of electronic health records includes the meaningful use of effective CDS."

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Types of CDS

- Relevant data displays
- Smart documentation forms
- Order facilitators (order sets, order consequents, order modifiers)
- Extended-time guideline and protocol followers
- Targeted reference, including contextually relevant medical references or info buttons
- Reactive alerts

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Types of CDS

- Task assistants for tasks such as drug dosing and acknowledging laboratory results
- Diagnostic suggestions
- Patient summaries for hand-offs between clinicians
- Procedure refreshers, training, and reminders
- Performance dashboards with prompts for areas needing attention
- Tracking and management systems that facilitate task prioritization and whole-service management

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CDSS that Support Quality Patient Safety

Meaningful Use: Improve Quality, Safety, and Efficiency.	<ul style="list-style-type: none">• Drug-Drug Interaction• Drug-Allergy Interaction• Drug-Diagnosis Interaction
IOM: Health Care Should Be Safe	<ul style="list-style-type: none">• Weight-based dosing• Physiology-based dosing• Age-based dosing

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CDSS that Support Quality Effectiveness

Meaningful Use: Improve Quality, Safety, and Efficiency.

- Preventive care reminders
- Medical Formula Calculators
- Clinical guideline repository
- Medical image repository

IOM: Health Care Should Be Effective

- Intelligent algorithm-guided order sets
- MEDLINE access
- Reference texts

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CDSS that Support Quality Patient Centeredness

Meaningful Use: Improve Quality, Safety, and Efficiency.

- Rules based on language, gender, race, sex, ethnicity
- Translation of medical language into patient friendly language
- Rules that create clinical summaries for patients based on documented information
- Rules that minimize patient identification errors

IOM: Health Care Should Be Patient-Centered

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CDSS that Support Quality Timeliness

Meaningful Use: Improve Quality, Safety, and Efficiency.

- Reminders of drug doses due
- Appointment reminders
- Follow-up testing reminders

IOM: Health Care Should Be Timely

- Rules that reschedule medications based on new information

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**CDSS that Support Quality
Efficiency**

**Meaningful Use:
Improve Quality,
Safety, and
Efficiency.**

- Rules that trigger alerts for high cost drugs and suggest lower cost alternatives
- Duplicate testing alerts
- Rules that support appropriate medical coding
- Algorithms that calculate risk and generate preventive recommendations

**IOM: Health Care
Should Be Efficient**

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**CDSS that Support Quality
Equity**

**Meaningful Use:
Improve Quality,
Safety, and
Efficiency.**

- Rules that identify vulnerable populations so that disparities can be monitored
- Clinical decision support applied regardless of patient sex, age, race, ethnicity, or socioeconomic status

**IOM: Health Care
Should Be Equitable**

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Unintended Consequences of CDS

- Content
 - Elimination or changing of roles of clinicians and staff
 - Currency of CDS content
 - Wrong or misleading CDS content
- Presentation
 - Rigidity of systems
 - Alert fatigue
 - Sources of potential error

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Summary

- Meaningful use of EHRs must include meaningful use of CDS.
- CDS supports quality, safety, efficiency, effectiveness, timeliness, and equity of care.
- Examples of CDS that support patient safety include: rules that alert the prescriber to drug-drug/allergy and drug-diagnosis interactions and rules that support weight-based, physiology-based, and age-based dosing.
- There may be unintended consequences of CDS that relate to both content and presentation.
