Evaluating Online Diagnostic Decision Support Tools for the Clinical Setting

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Diagnostic Errors

• Approximately 16% of hospitalised patients suffer an adverse event:
  50% of these are preventable

• 15% of diagnoses are wrong, missed, or delayed
Clinical Information Access Portal

- Medicines Resources
- Citation databases
- Evidence Based Medicine
- Decision Support Tools
- Online Journals and Books
Four out of five medical web sites disagree with your diagnosis.
Diagnostic Decision Support Definition

“A product that allowed text searching to be performed, based on entering descriptive words to describe clinical presentations, and provides diagnostic information supported by clinical evidence”.
Evaluation Methodology - Criteria

- General Information
- Content
- Quality Control
- Search
- Clinical Results
- Other Features
1. General Information

• Subscription model – free / individual subscription / institutional subscription

• Cost – statewide licence

• Reference Sites
2. Content

• Scope – breadth / depth / drug information

• Images – embedded within topic / separate search

• Clinical Pathways
3. Quality Control

- Authorship – transparency / references cited
- Updating – last update / frequency of review and updates
- Bias
4. Searching

• Types of searches – keyword / browse topics / drug search / suggested spelling / natural language

• Usability – navigation / content layout / output features / help screens
5. Results

• Clinical Scenarios
• Presentation of Results
• Ranking of Results
• Clinical Information
• References
5. Results – clinical scenario

• 34 year old female with abdominal pain and shortness of breath

Diagnosis – Acute Coronary Syndrome
6. Other Features

• Customisation
• Integrations with Technologies
• Unique Features
• Upcoming Features
Results

• Evaluated 11 DDS tools
• Only 5 tools met DDS tool definition
• One tool consistently performed better
• Methodology transferable to other evaluation scenarios
Limitations and Next Steps

• Small Sample Size

• Translating impact on physician performance and clinical outcomes

• Pilot the integration of DDS tools within the CPOE (Cerner)
Questions