Clinical Decision Support Maintenance and Optimization: A Systematic Review

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Introduction

A lack of process and governance for creating or maintaining Clinical Decision Support (CDS) in an Electronic Health Record (EHR)
- Out-of-date content that is not evidence based.
- No organized way to manage the creation, maintenance and optimization of clinical content
- No standard intake process. Requests for changes and new content comes from many directions without one group being responsible for the oversight and approval

Methods

Literature Search
A literature review was conducted to survey best practice recommendations for management and optimization of Clinical Decision Support knowledge management. This was conducted in PubMed, Google Scholar, EMBASE, and by snowball technique from January 1, 2007 through the current year 2015.

Inclusion Criteria
- Full text articles with abstracts
- In English
- Published: 2007-2015
- Search terms: governance, clinical decision support optimization, knowledge management

Exclusion Criteria
- Publication greater than 8 years
- From non-westernized countries
- Non-English language text

Results
- Search yielded 5500 articles
- 29 articles remained for final analysis.
- Level III-V evidence:
  - Themes around people, process and technology for optimization of knowledge management and clinical decision support.
  - Adequate knowledge management (KM) processes and resources are necessary to develop CDS content.
  - CDS has been developed and implemented rapidly making tracking difficult.
  - Need for CDS to be continually evaluated and fine-tuned after implementation.
  - Governance and intake processes helps with review.
  - Lack of governance practices cause a reverse benefit of CDS.
  - High quality collaborative for knowledge management are needed.
  - Organizations must have processes in place to handle requests for new CDS interventions.

Discussion

Limitations/Gaps
- Sample size
- Population of organizations who are already doing clinical decision support well.

Gaps:
- Optimization recommendations and strategies.
- The importance of governance and knowledge management processes are discussed and its need to continue after implementation, but details of the makeup, or the tasks are not well outlined.

Conclusions

Evidence supports further investigation of CDS maintenance and optimization. Including:
1. People - those responsible for review
2. Process - logistics and flow of requests
3. Technology - order-set design
4. Governance - development of policies to support process and governance.

In literature, it is imperative that CDS remains up-to-date by being reviewed on a consistent basis, by the right people.

Out-of-date content that is not evidence based.

Adequate knowledge management (KM) processes and resources are necessary to develop CDS content.

References