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Development of a tool to assess the trustworthiness of clinical decision support systems

Clinical Decision Support (CDS) systems support healthcare providers and their patients in the process of clinical decision-making. **Recommendations** from guidelines or nonguideline evidence-based practice (EBP) information are combined with **patient data** and converted into **clinical decision rules** to propose one or several patient tailored treatment options.

Methods A systematic search was executed in Medline to identify existing tools for evaluation of trustworthiness of decision rules. After critical appraisal, only one tool was selected for further use. A team of methodologists experienced in guideline and EBP-source assessment defined in consensus the criteria for 1, 2 and 3 based on the retrieved tool and their own expertise.

Evaluation of the trustworthiness of a CDS-system



Evaluation of the recommendations used as source information

with validated instruments:

- CAPOCI-tool for non-guideline EBP-info
 - AGREE II for guidelines

decision support for

- treatment
- diagnosis
- screening

• ...

prescription

- 2 Evaluation of the methods used to translate recommendations into decision rules
 - 3 criteria developed for evaluation of the evidence-to-decision process

3 Evaluation of the **decision rules**

OUDES-checklist for evaluation of CDS-systems

Conclusion The developed criteria and procedure may support validation teams in the assessment of the trustworthiness of CDS-systems. It may also provide guidance to developers of CDS-systems and present an added value to an evidence based clinical decision-making process.

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