

Clinician Decision Support (CDS) Dashboard: Extracting value from Electronic Medical Records

ICCHA SETHI

Thesis submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Science
in
Computer Science

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Description of item under review for fair use: Figure 1. Potential Efficiency Savings With Adoption Of Electronic Medical Record (EMR) Systems [Hillstead et al. 2005] SOURCE: F. Girosi et al., Extrapolating Evidence of Health Information Technology Savings and Costs, Pub. no. MG-410 (Santa Monica, Calif.: RAND, 2005), sec. 4.2.6.

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Description of item under review for fair use: Figure 2. Net Potential Savings (Efficiency Benefits Over Adoption Costs) For Hospital And Physician Electronic Medical Record (EMR) Systems Adoption During A Fifteen- Year Adoption Period (2004–2018) [Hillstead et al. 2005] SOURCE: F. Girosi et al., Extrapolating Evidence of Health Information Technology Savings and Costs (Santa Monica, Calif.: RAND, 2005)

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Description of item under review for fair use: Figure 5. Overview of Taxonomy Axes. This figure illustrates how the 24 taxonomy axes are related to the CDSS workflow and to each other. The symbols denote human and possible human roles respectively [Sim et. al 2003].

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Description of item under review for fair use: Figure 6. Description of the categories of the taxonomy of clinical decision support systems [Sim et. al 2003; Berlin et. al 2006].

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Description of item under review for fair use: Figure 7. The diagram demonstrates the flow of control and flow of information within the MYCIN System. The three subprogram components are enclosed in boxes. Control passes from one sub program to another as shown by heavy arrows. Light arrows indicate program access to information used by the system. The program's knowledge base is contained in a corpus of rules shown on the right [Shortliffe et. al 1976; Buchanan et. al 1984].

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Description of item under review for fair use: Figure 8. Flow chart describing the rule MONITOR which analyzes a rule and decides whether it applies in the clinical situation under consideration. Each condition in the PREMISE of the rule references some clinical parameter, and all such conditions must be true for the rule to be accepted [Shortliffe et. al 1976; Buchanan et. al 1984].

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Description of item under review for fair use: Figure 9. Typical DXplain session. The program first asks the user some basic questions and then the medical terms related to the patient's condition. The show command is used to display the list of diseases which may explain these symptoms or terms [Barnett et. al 1987].

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Description of item under review for fair use: Figure 10. User Input screen where user can enter all the clinical features for the patient [Ramnarayan et. al 2003].

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Description of item under review for fair use: Figure 11. Output screen where all the differential diagnoses are listed [Ramnarayan et. al 2003].

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