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Purpose/Objective of Presentation: Many different types of health information systems are being increasingly used across the healthcare spectrum with the expectation of improved clinical care and outcomes. At a governmental or organizational level, a major concern is whether the significant investments being put into these systems are resulting in adequate value for money. How is value for money measured? To answer this question, we set out to conduct a scoping review to explore economic evaluations of health information systems that have been done so far in published studies. We focus on the context of the evaluation including the objective, type of system being evaluated, the methods used, and metrics for input costs and outcomes. This presentation will provide an introduction to our review and present some preliminary findings.

Methodology/Approach: The search strategy included a database search of Ovid MEDLINE and Business Source Complete, hand-searching of collected material, and references from articles retrieved. The database search was limited to English-language papers and included articles published between January 2000 and December 2010. Three inclusion criteria were used: the paper had to (1) be a primary study, (2) involve a computerized system for health information processing, decision support, or management reporting and (3) include an economic evaluation. Exclusion criteria included systems that were (1) telemedicine/telehealth applications, (2) digital devices, (3) used by patients, and (4) used for provider education. Selection was based on a review of titles and abstracts, and performed by three reviewers through consensus. Data related to study characteristics, metrics, methods, type of economic evaluation, and findings were extracted. Classifications of papers as economic analyses (i.e., cost minimization, cost consequence, cost-effectiveness, cost-utility, and cost-benefit) were based on Roberts’ chapter on “Economic Aspects to Evaluation” (in Evaluation Methods in Biomedical Informatics, 2006).

Findings/Results: Thirty-seven papers have been selected for this review. The papers cover a range of health information systems including patient centered information systems (e.g. electronic medical records), administrative information systems, departmental clinical information systems, clinical decision support systems, computerized provider order entry systems, and health information exchange. We have identified papers that (1) provide input costs, (2) focus on cost-related outcomes, or (3) consider both input costs and outcomes in some type of comparison which qualify them as at least a partial economic analysis. In terms of methods, the majority involve the creation of a model to project economic impact. Input metrics are commonly associated with system implementation, operation and maintenance costs while outcome metrics range from financial and time savings to clinical benefits.

Conclusions/Implications/Recommendations: Demonstrating value for money is not a clear concept. Our review shows there is a plethora of methods that can be used to demonstrate aspects of economic impact. In order to be considered a true economic analysis, there are certain components that should be present. In this review, we identify these key components and provide examples of metrics which can guide future economic analyses for evaluating health information systems.