Integrating the Doctor Evidence Technology Platform into Kaiser Permanente Guideline Development Processes

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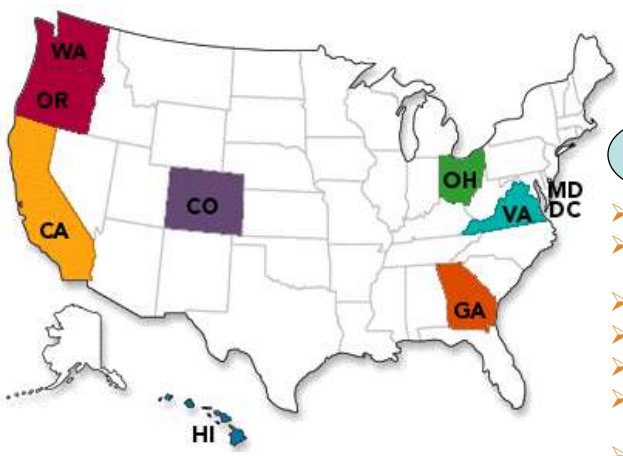
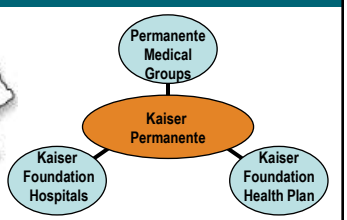
Kaiser Permanente: Largest Non-Profit Health Care Program in the United States





- Founded in 1945
- 8 regions in 9 states and District of Columbia
- 8.6 million members (as of 12/09)
- 15,129 physicians (as of 12/09)
- 164,098 employees (as of 12/09)
- KP Care Management Institute (CMI)
- KP National Guideline Program (NGP)

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Doctor Evidence: Overview

- Founded in 2002
- The Doctor Evidence mission is to improve clinical outcomes by finding, delivering, and making relevant and readable medical evidence that enables clinicians to support informed decisions
- Doctor Evidence clients include leading healthcare providers, payers, academic institutions & manufacturers
- Distinctive competencies are integrating leading EBM methodologies into one unified technology platform

Challenges in Systematic Review (SR) & Clinical Practice Guideline (CPG) Development

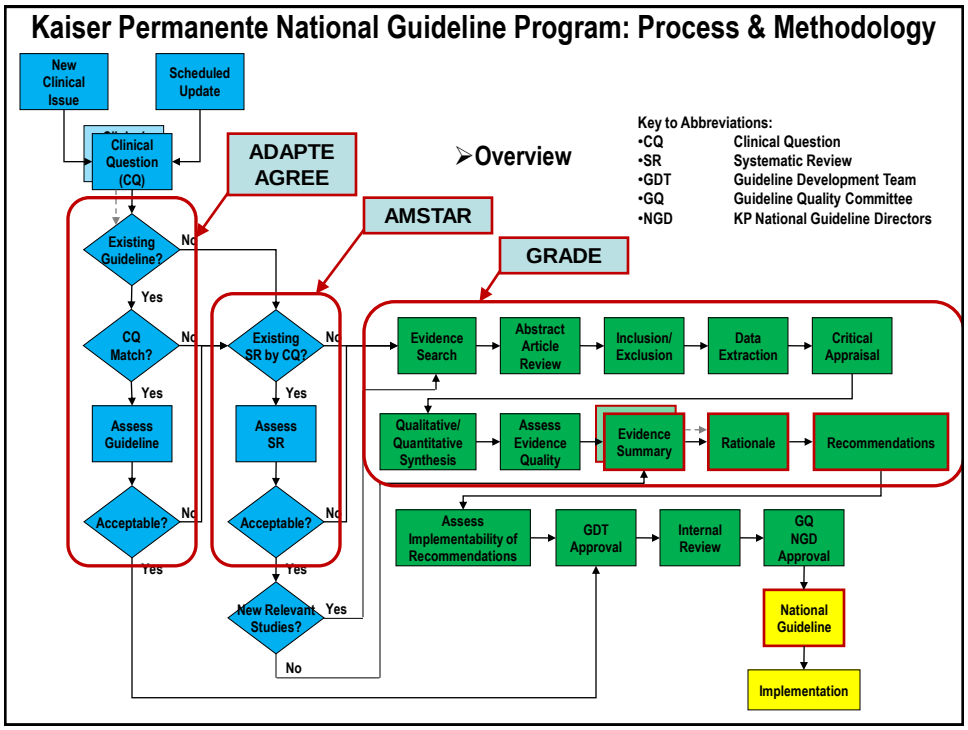
- CPGs not transparent to clinicians
  - Evidence basis not always explicitly linked
  - Difficult to assess rigor of development
- Very resource-intensive
  - Infinite needs - Finite resources
  - Balance between efficiency versus rigor
  - Investment in developing expertise & infrastructure
  - Updating SRs & CPGs
    - Every 2 years?
    - Dynamic updating, based on evidence & impact?
- A robust technology platform can help address these needs

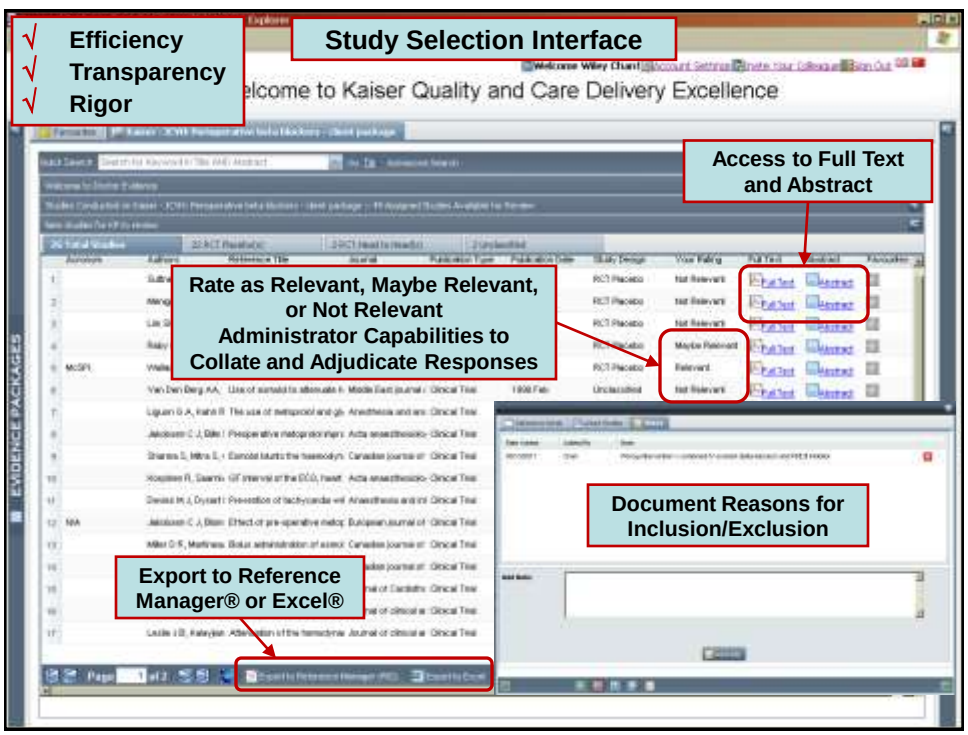
Learning Objectives

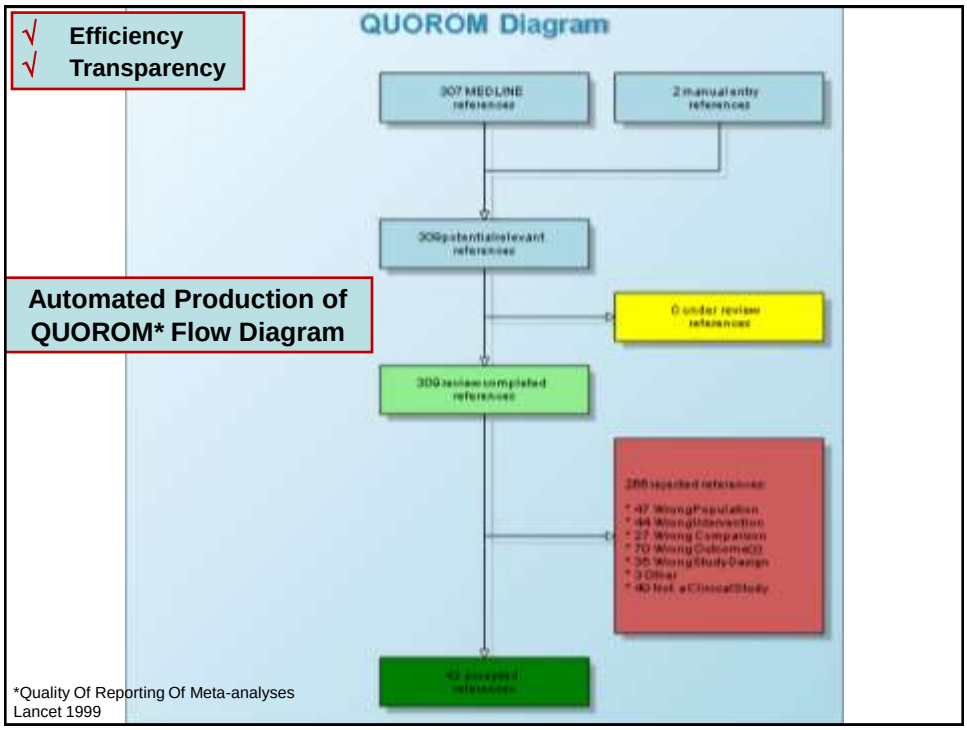
- After this session, attendees will be able to:
  - Describe the challenges in developing SRs and CPGs and how a technology platform can help address them
  - List five factors that are required for success in integrating a technology platform
  - Explore the pros and cons of integrating a technology platform supporting SR and CPG development in their own systems

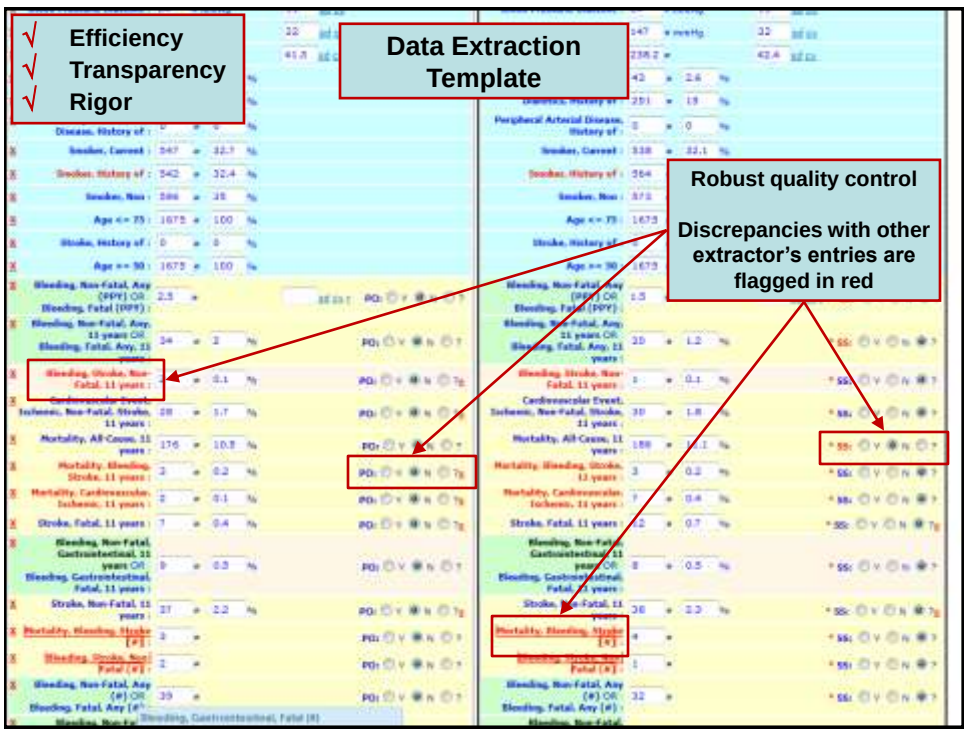
Desired Outcomes For Technology Platform

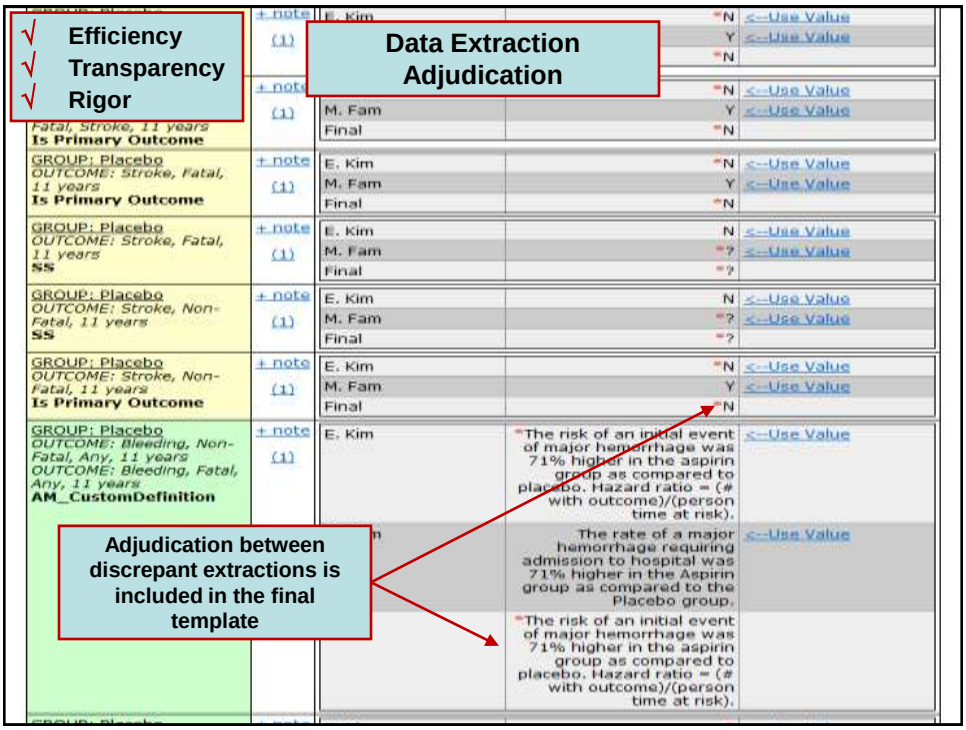
- Improved SR & CPG development processes
  - Efficiency
  - Transparency
  - Rigor
- Devote more energy to CPG implementation
  - Embedding practices into standard workflows
  - Clinical Decision Support in Electronic Health Record
  - Collaborate with performance metric developers
- Collaborate with other SR & CPG developers
  - Share data extractions?

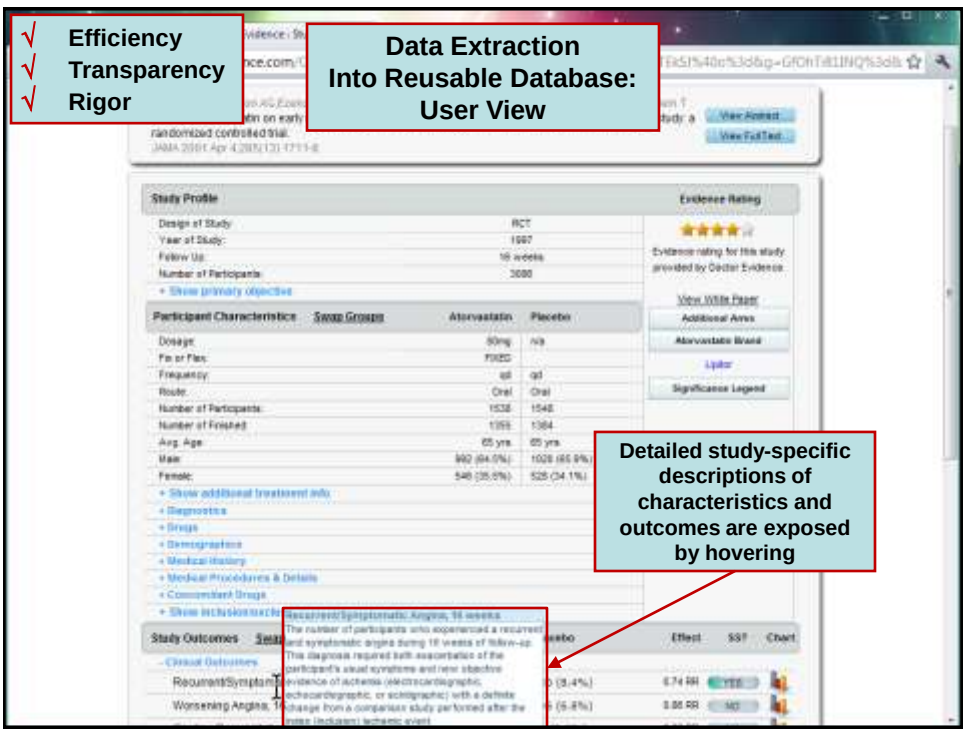

Kaiser Permanente National Guideline Program: Process & Methodology
New Clinical Issue
Scheduled Update
Clinical Question (CQ)
ADAPTE
AGREE
AMSTAR
GRADE
➢Overview
Key to Abbreviations:
•CQ Clinical Question
•SR Systematic Review
•GDT Guideline Development Team
•GQ Guideline Quality Committee
•NGD KP National Guideline Directors
Existing Guideline?
No
Yes
CQ Match?
Assess Guideline
Acceptable?
Existing SR by CQ?
Assess SR
New Relevant Studies?
Evidence Search
Abstract Article Review
Inclusion/ Exclusion
Data Extraction
Critical Appraisal
Qualitative/ Quantitative Synthesis
Assess Evidence Quality
Evidence Summary
Rationale
Recommendations
Assess Implementability of Recommendations
GDT Approval
Internal Review
GQ NGD Approval
National Guideline
Implementation

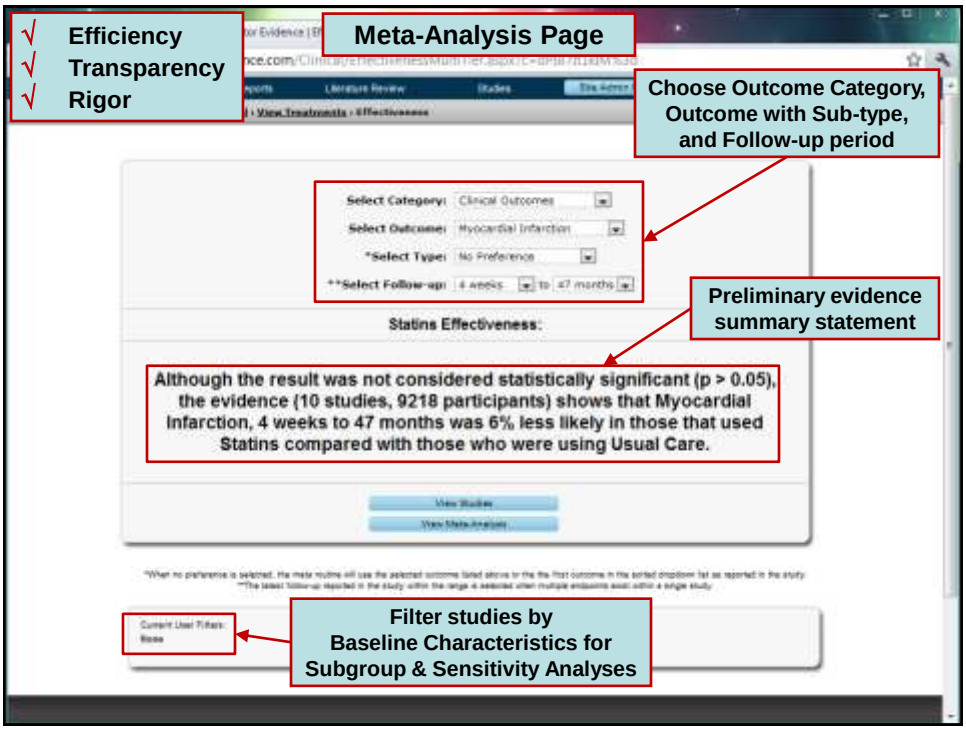

√ Efficiency
√ Transparency
√ Rigor
Study Selection Interface
elcome to Kaiser Quality and Care Delivery Excellence
Access to Full Text and Abstract
Rate as Relevant, Maybe Relevant, or Not Relevant
Administrator Capabilities to Collate and Adjudicate Responses
Document Reasons for Inclusion/Exclusion
Export to Reference Manager® or Excel®

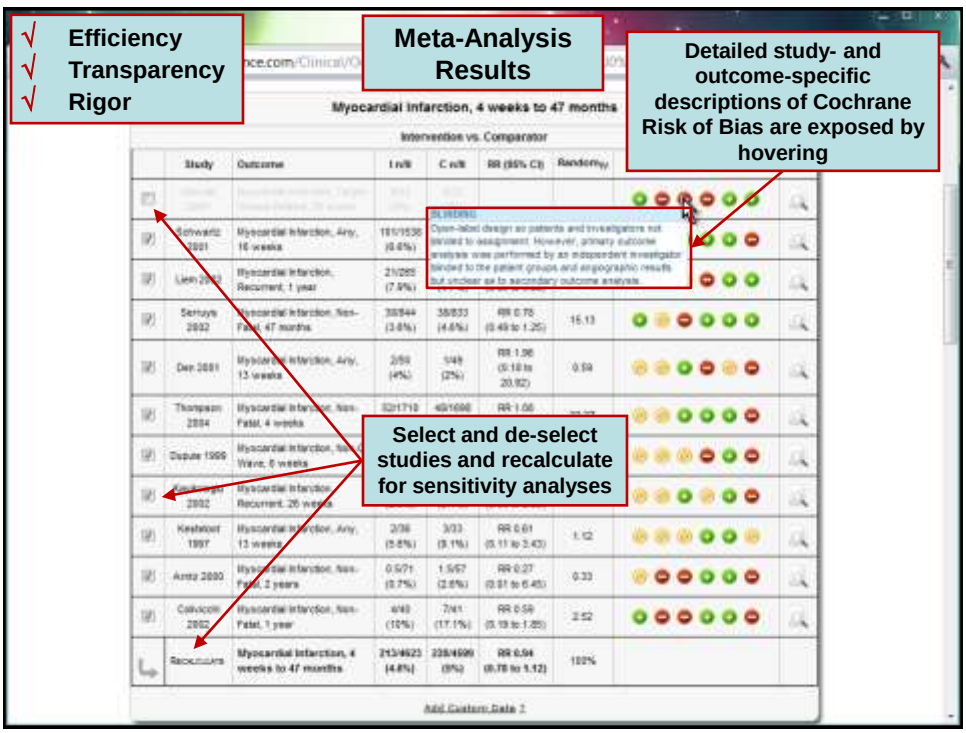

√ Efficiency
√ Transparency
QUOROM Diagram
307 MEDLINE references
2 manual entry references
309 potential relevant references
0 under review references
309 review completed references
288 rejected references
43 accepted references
Automated Production of QUOROM* Flow Diagram
*Quality Of Reporting Of Meta-analyses Lancet 1999


√ Efficiency
√ Transparency
√ Rigor
Data Extraction Template
Robust quality control
Discrepancies with other extractor's entries are flagged in red


√ Efficiency
√ Transparency
√ Rigor
Data Extraction Adjudication
Adjudication between discrepant extractions is included in the final template

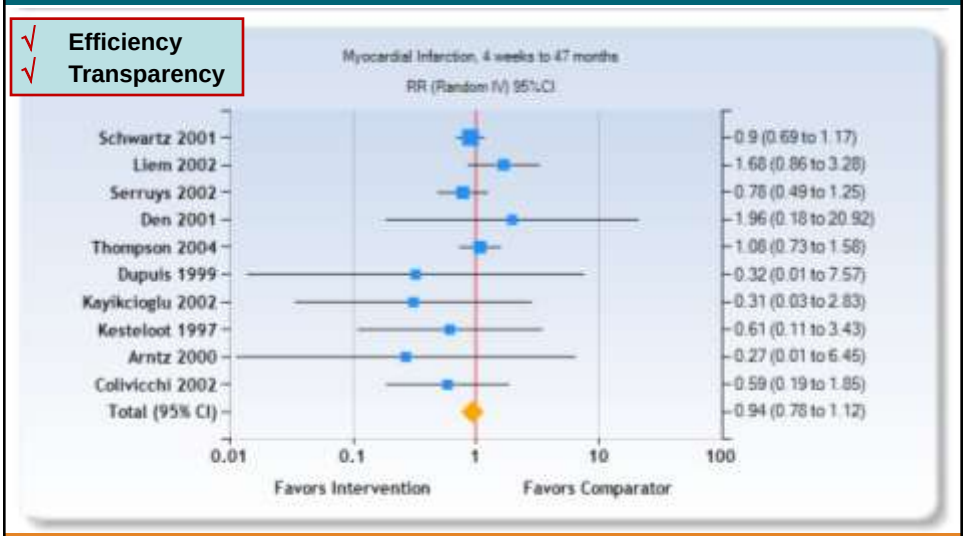

√ Efficiency
√ Transparency
√ Rigor
Data Extraction Into Reusable Database: User View
Detailed study-specific descriptions of characteristics and outcomes are exposed by hovering


√ Efficiency
√ Transparency
√ Rigor
Meta-Analysis Page
Choose Outcome Category, Outcome with Sub-type, and Follow-up period
Select Category: Clinical Outcomes
Select Outcome: Myocardial Infarction
*Select Type: No Preference
**Select Follow-up: 4 weeks to 47 months
Preliminary evidence summary statement
Statins Effectiveness:
Although the result was not considered statistically significant (p > 0.05), the evidence (10 studies, 9218 participants) shows that Myocardial Infarction, 4 weeks to 47 months was 6% less likely in those that used Statins compared with those who were using Usual Care.
Filter studies by Baseline Characteristics for Subgroup & Sensitivity Analyses


√ Efficiency
√ Transparency
√ Rigor
Meta-Analysis Results
Detailed study- and outcome-specific descriptions of Cochrane Risk of Bias are exposed by hovering
Myocardial Infarction, 4 weeks to 47 months
Intervention vs. Comparator
Select and de-select studies and recalculate for sensitivity analyses

Meta-Analysis Results: Forest Plot

√ Efficiency
√ Transparency



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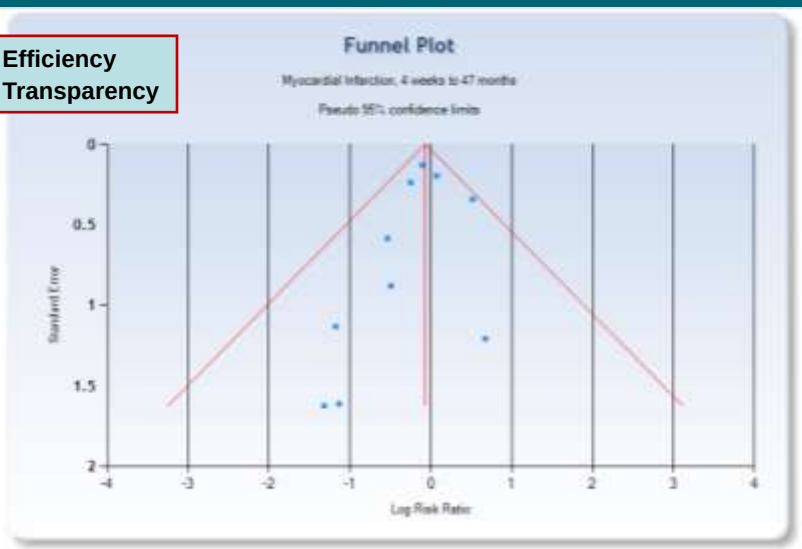
Meta-Analysis Results: Funnel Plot

√ Efficiency
√ Transparency



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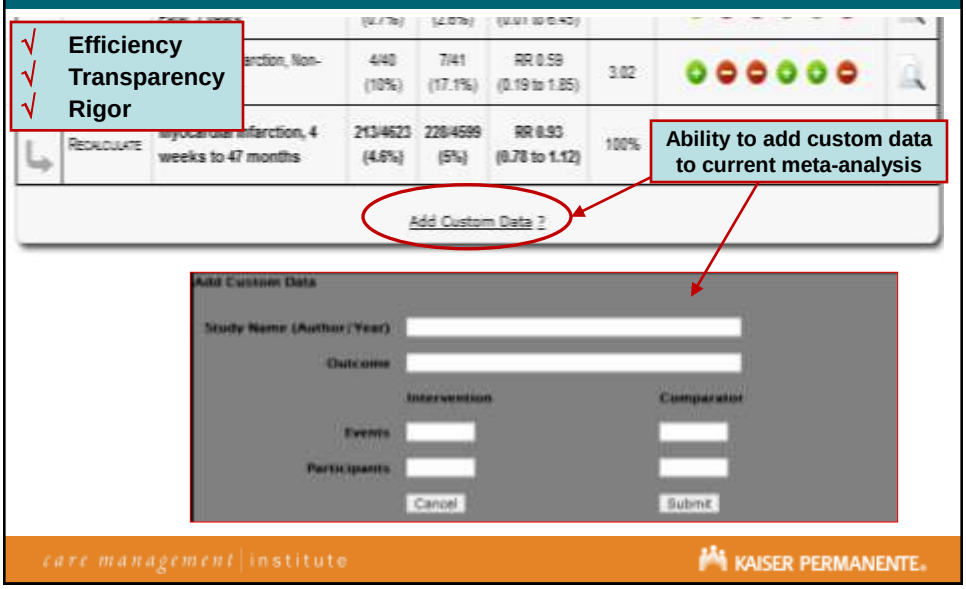
Meta-Analysis: Adding Custom Data



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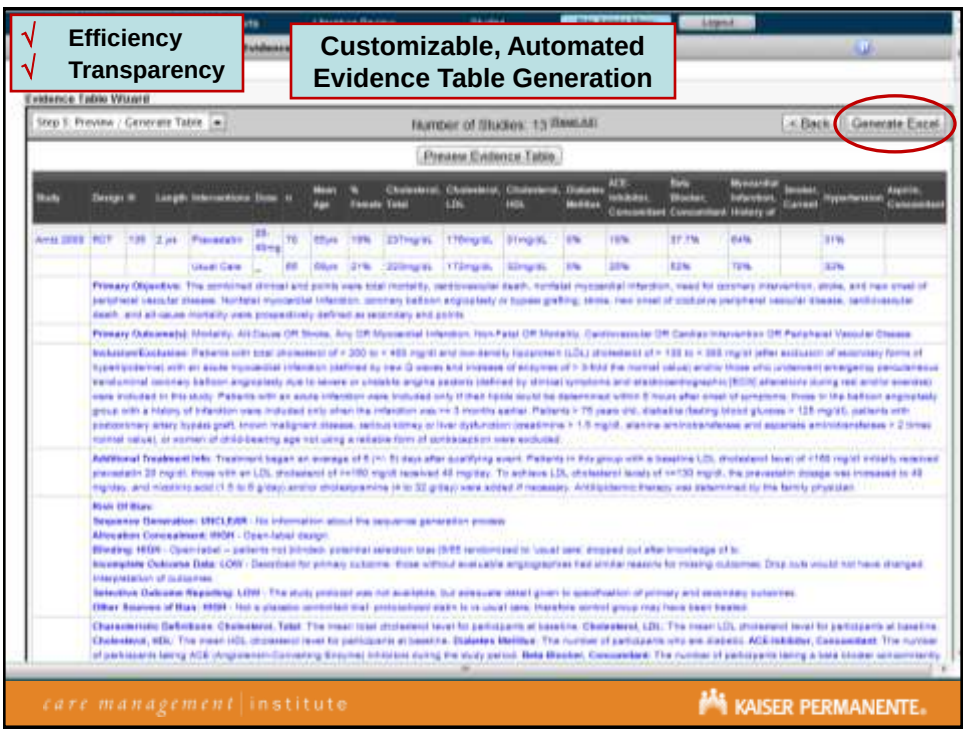

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Doctor Evidence Functionality in Development

- GRADEpro Replication
  - Summary of Findings tables
  - Evidence grading across outcomes
  - Strength of recommendation
- Virtual Collaborative Work Space
  - Integrate all SR & CPG activities into a single platform
  - Manage & track assignments & workflows
- "Late Binding" to an Ontology
- Cost-Benefit Calculator
- Network Meta-Analysis

Elements for Successful Integration Client

- Strong sponsorship from Senior Leaders
  - Commitment to Evidence-Based Medicine (EBM)
  - Willingness to fund innovative projects
- Technical skill
  - Experience in SRs and EBM
  - Vision for platform requirements
- Strong focus on implementation
  - Full intention to use the platform in operations
  - Prioritization of development of new functionality

Elements for Successful Integration Client

- Potential for multiple users outside EBM
  - Pharmacy
  - Purchasing
  - New Technology Assessment
  - Center for Effectiveness & Safety Research
- Commitment to excellence
  - Willingness to commit substantial energy & resources for potential future gains

Elements for Successful Integration Vendor

- Strong sponsorship from Senior Leaders
  - Commitment to Evidence-Based Medicine (EBM)
- Technical skill
  - Existing, robust platform
  - Ability to quickly transform client's requirements into functionality in the platform
- Flexibility & enthusiasm to enhance the platform
- Commitment to excellence
  - Willingness to commit substantial energy & resources for potential future gains

Conclusions: Integrating a Technology Platform for SR & CPG Development

- A well-constructed technology platform can address many of the critical challenges in SR & CPG development
- Successful implementation requires:
  - Operational needs to be addressed
  - Strong sponsorship from Senior Leaders
  - Good technical skills
  - Commitment to excellence
  - Flexible, cooperative client-vendor relationship

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Integrating a Technology Platform for SR & CPG Development

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