EMR Integration and Genomic Medicine Implementation

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Current and Planned eMERGE Efforts

• Pharmacogenomics integration into EHR
• Infobutton project
• Actionable CDS
• Use of PHRs/Patient portals for education
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Clinical Decision Support

**Reminders/order sets**
- Obtain genetic test

**Interpretations**
- Explanation of meaning of results
- May also include information about the science

**Alerts/Recommendations**
- Prescribe alternative therapy
Challenges of CDS for Genomic Medicine

• Data from EHR
  – Standards
  – Structure
• Distribution
• Accuracy across cases
• Impact on outcomes
• Reinterpretation, revision and maintenance
  – Reinterpretation of genomic analyses, patient data
  – CDS revision and versioning
• Implementation challenges
Implementation Issues

Reminders/order sets
- Automatic
- Clinician understands test and results
- Chooses whether to do it
- Key issue: Workflow

Interpretations
- Automatic or on-demand
- Provides explanation for clinicians who are unfamiliar with data
- Key Issue: Ease of access and use

Alerts/Recommendations
- Automatic or on-demand
- Clinician may be knowledgeable
- Key issues: Workflow, ease of use, consequences
Portals and PHRs

• Portal use increasing because of meaningful use requirements
  – Tethered PHR
• PHRs may increase too, but not currently used much
• Information complexity a challenge for both patients and physicians
• Cannot be the only source of information
Conclusion

• CDS and patient portals for non-genomic medicine will become a routine part of care
• Can learn from non-genomic CDS implementation approaches
• Need for clinician education and complexity of information is a challenge for automation
• Plan for regular review, reinterpretation and revision at multiple levels—genomic interpretation, patient data, CDS