Evidence-Based Evaluation of Genetic Testing
The EGAPP Initiative

Alfred O. Berg and Celia Kaye for the EGAPP Working Group
Linda Bradley, Denise Casey, W. David Dotson, Michael Douglas, Sheri Jordan, Stephanie Melillo, and Muin J. Khoury

Overview

Rationale: Why focus on genetic testing?

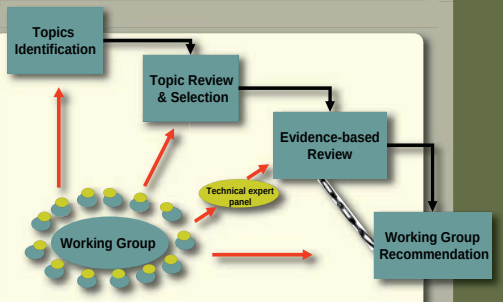
- Over 1000 genetic tests are available for clinical use, most for diagnosis of rare single-gene disorders.
- A growing number of tests have potential for broad public health impact. These include predictive tests for determining risk of common diseases and pharmacogenomic tests to help physicians choose the right drug and dosage for individual patients.
- Health care providers, consumers, and policy makers need evidence-based information to help determine which genetic tests are safe and effective, and provide guidance on their appropriate use.

EGAPP: Evaluation of Genomic Applications in Practice and Prevention

- CDC established the EGAPP initiative to develop and test a systematic, evidence-based process for evaluating genetic tests and other applications of genomic technology in transition from research to clinical practice.
- The focus of EGAPP activities is an independent, multidisciplinary Working Group, established in 2005. The Working Group develops recommendations for selected genetic tests.
- Stakeholders provide input and feedback on EGAPP processes, products, and impact.

EGAPP Review Process

- Identify, prioritize, and select topics
- Develop and optimize methods for collecting and grading evidence on genomic tests
- Consider specific family or societal outcomes in addition to clinical outcomes
- Assess usefulness of modeling
- Submit recommendations for peer review
- Provide recommendations with linkage to the evidence



Topics

EGAPP reviews focus on

- Tests recognized as having wide population application
  - e.g., higher disorder prevalence or frequency of test use
- Tests with the potential to impact clinical and public health practice
  - e.g., tests used in a specific clinical scenario to guide intervention and tests for risk prediction or population screening

Topics Currently Under Review or Completed

Disorder/Effect	Test to be Assessed	Clinical Scenario	
		Target Population	Intended Use
Breast Cancer	Gene expression profile	Women diagnosed with breast cancer	Treatment and recurrence risk
Cardiovascular Disease	Multigene panels	General population	Risk prediction or nutritional/lifestyle management
Colorectal Cancer (CRC)	UGT1A1	Individuals diagnosed with CRC	Treatment with irinotecan
Depression	CYP450	Individuals diagnosed with depression	Treatment with SSRI drugs
Hereditary Nonpolyposis Colorectal Cancer (HNPCC)	Mismatch repair gene mutations	Individuals diagnosed with CRC and their family members	Management of individuals and early detection/prevention for family members
Ovarian Cancer	Genomic Tests	1) General population of women and; 2) women at increased risk for ovarian cancer	1) and 2) Detection and management
Venous Thromboembolism (VTE)	Factor V Leiden and Prothrombin	1) Personal and/or family history of venous thromboembolism, or 2) family history of Factor V Leiden mutation	Diagnosis and management for individuals; prevention for family members

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Evidence to Practice
EGAPP
Evaluation of Genomic Applications in Practice and Prevention

Products

Working Group Recommendation Statements

- First recommendation statement published December 2007. **Recommendations from the EGAPP Working Group: testing for cytochrome P450 polymorphisms in adults with nonpsychotic depression treated with selective serotonin reuptake inhibitors.** *Genetics in Medicine* 2007:9(12):819-825.
- Working Group recommendation statements are intended to provide guidance on the appropriate use of genetic tests in specific clinical scenarios, and highlight critical knowledge gaps.
- Conclusions are based on EGAPP-commissioned evidence reports and on subsequent analysis and deliberations by the Working Group on the strength of evidence and potential clinical and social impact of using the tests in practice.

EGAPP-Commissioned Evidence Reports

- **Impact of Gene Expression Profiling Tests on Breast Cancer Outcomes.** Johns Hopkins University AHRQ Evidence-based Practice Center | January 2008
- **Hereditary Nonpolyposis Colorectal Cancer: Diagnostic Strategies and Their Implications.** Tufts New England Medical Center Evidence Based Practice Center | May 2007
- **Testing for Cytochrome P450 Polymorphisms (CYP450) in Adults with Non-Psychotic Depression Prior to Treatment with Selective Serotonin Reuptake Inhibitors (SSRIs).** Duke University AHRQ Evidence-based Practice Center | January 2007
- **Genomic Tests for Ovarian Cancer Detection and Management.** Duke University AHRQ Evidence-based Practice Center | October 2006

Working Group Website
www.egappreviews.org

EGAPP Process Publications

Coming Soon

Three publications are in preparation that describe the EGAPP initiative and Working Group

- An overview of EGAPP processes and their rationale
- A description of Working Group review methodology
- A discussion of clinical and social contextual outcomes of genetic testing considered by the Working Group

Translational Materials for Providers and Consumers

Coming Soon

Materials based on EGAPP Working Group informational messages will be developed with input from the EGAPP Stakeholders Group (ESG).

Stakeholder Involvement

Genetic testing stakeholders include health care providers and payers, policy makers, public health professionals, educators, and consumers. These and other stakeholders are engaged in numerous ways in EGAPP processes, products, and evaluation.

- **EGAPP Stakeholders Group (ESG).** The 35-member ESG was established in October 2007 to provide input on products and on the best approaches for disseminating and translating key messages from EGAPP evidence reviews. The first ESG meeting was held in January 2008.
- **Surveys.** EGAPP will survey stakeholders to obtain feedback on the processes, products, and impact of the early phase of the EGAPP initiative.
- **Reviewers.** Stakeholders may be recruited by the Working Group as expert or peer reviewers for evidence reports or recommendation statements.
- **Meetings.** Meetings of the ESG and EGAPP Working Group provide opportunities for stakeholder comments and questions.
- **Topic suggestions.** Stakeholders are welcome to suggest topics and comment on EGAPP processes or products via the EGAPP Working Group website (www.egappreviews.org).