

Delivery of Genomic Medicine for Common Chronic Adult Diseases

The greatest public health benefit from increased understanding of the human genome will probably come from translating advances in basic and clinical science into effective care for common chronic diseases, such as cardiovascular disease, diabetes, and cancer. Is the U.S. health care system ready for the translation? To answer this question, RAND Corporation researchers reviewed the relevant scientific literature published between January 2000 and February 2008. Three themes emerged from the review:

- **The health care workforce is not adequately prepared to help integrate genomics into routine clinical practice.** There are too few genetic specialists for common chronic diseases. Other health professionals, such as primary care clinicians and nurses, lack the knowledge and confidence to provide genetic services, including recognition of familial patterns of disease and ordering and interpreting genetic tests.
- **Consumers are optimistic yet cautious about genomic medicine.** Consumers know little about genetics/genomics, but they are optimistic that genomic medicine will help identify and manage common chronic diseases for which they and their families are at risk. But consumers are also concerned that genetic information could be used to discriminate against them in health insurance or employment.
- **There is limited evidence about the health outcomes of genomic medicine for common chronic diseases.** Most studies assessed the psychological well-being associated with genomic medicine; few focused on clinical outcomes. Among studies that focused on outcomes, there is no evidence that genetic counseling and testing cause psychological harm. Some studies identified health benefits from genetic information, such as preventive surgery for women with BRCA mutations (inherited alterations in specific genes that are involved in many cases of hereditary breast and ovarian cancer) and greater weight loss when diet recommendations are informed by genetic tests.

RAND researchers recommend the following methods to help prepare the health care system for genomic medicine for common chronic diseases:

Workforce

- Educate the primary care workforce.
- Train more genetics professionals.

Consumers

- Create programs to educate consumers about genomic medicine.
- Enact and enforce legislation to protect consumers from misuse of genetic information.

Outcomes

- Conduct studies to understand the physical outcomes of genomic medicine.
- Integrate successful models of genomic medicine into clinical practice.

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