

## Personalized Medicine by the Numbers

13 prominent examples of personalized medicine drugs, treatments and diagnostics products available in 2006<sup>1</sup>

72 prominent examples of personalized medicine drugs, treatments and diagnostics products available in 2011<sup>2</sup>

\$300,000,000 cost of sequencing a human genome in 2001<sup>2</sup> \$5,000 cost of sequencing a human genome in 2011<sup>2</sup>

4% U.S. hospitals with fully operational electronic health records in 2008<sup>3</sup>
22% U.S. hospitals with fully operational electronic health records in 2009<sup>4</sup>
50% U.S. population that had medical information recorded in electronic health records in some form in 2010<sup>3</sup>

1% of marketed drugs have a companion diagnostic<sup>5</sup>
10% of marketed drugs inform or recommend genetic testing for optimal treatment<sup>6</sup>
33 pharmacogenomic biomarkers are included on FDA-approved drug labels<sup>6</sup>

30% of all treatments in late clinical development rely on biomarker data<sup>7</sup> 50% of all treatments in early clinical development rely on biomarker data<sup>7</sup> 60% of all treatments in preclinical development rely on biomarker data<sup>7</sup>

30% of all biopharmaceutical companies surveyed require all compounds in development to have a biomarker<sup>5</sup>
50% of all clinical trials collect DNA from patients to aid in biomarker development<sup>5</sup>
75% increase in personalized medicine investment by industry over the last 5 years<sup>7</sup>

34% reduction in chemotherapy use would occur if women with breast cancer receive a genetic test prior to treatment<sup>8</sup>
17,000 strokes could be prevented each year if a genetic test is used to properly dose the blood thinner warfarin<sup>9</sup>
\$604,000,000 annual cost savings to the health care system if patients with metastatic colorectal cancer receive a genetic test for the KRAS gene prior to treatment<sup>10</sup>

20 members of the Personalized Medicine Coalition in 2004<sup>11</sup>
200 members of the Personalized Medicine Coalition in 2011<sup>11</sup>



- <sup>1</sup> Personalized Medicine Coalition. The Case for Personalized Medicine. 2006.
- <sup>2</sup> Personalized Medicine Coalition. The Case for Personalized Medicine. 2011.
- <sup>3</sup> Hsiao CJ, Hing E, Socey TC, *et al.* Centers for Disease Control, National Center for Health Statistics, 2010. Division of Health Care Statistics Electronic Medical Record/Electronic Health Record Systems of Office-based Physicians: United States, 2009 and Preliminary 2010 State Estimates. CDC web site. (Available at: http://www.cdc.gov/nchs/data/hestat/emr\_ehr\_09/emr\_ehr\_09.pdf)
- <sup>4</sup> Health Information and Management System Society (HIMSS) 2011 Leadership survey. HIMSS web site. (Available at: http://www.himss.org/2011Survey/healthcareCIO\_final01.asp)
- <sup>5</sup> Tufts Center for the Study of Drug Development. Lack of Clinically Useful Diagnostics Hinder Growth in Personalized Medicines. *Impact Report*, 13 (July/August 2011): 4.
- <sup>6</sup> U.S. Food and Drug Administration. Table of Pharmacogenomic Biomarkers in Drug Labels. FDA web site. (Available at http://www.fda.gov/Drugs/ScienceResearch/ResearchAreas/Pharmacogenetics/ucm083378.htm)
- <sup>7</sup> Tufts Center for the Study of Drug Development. Personalized Medicine Is Playing a Growing Role in Development Pipelines. *Impact Report*, 12 (November/December 2010): 6.
- <sup>8</sup> Genomic Health. Economic Validity. Genomic Health web site. (Available at: http://www.genomichealth.com/en-US/sitecore/content/Home/Breast/ManagedCareOrgs/EconomicValidity.aspx)
- 9 McWilliam A, Lutter R, Nardinelli C. AEI-Brookings Joint Center for Regulatory Studies Health Care Savings from Personalizing Medicine Using Genetic Testing: The Case of Warfarin. 2006 AEI-Brookings Joint Center; AEI-Brookings Joint Center for Regulatory Studies 2006.
- <sup>10</sup> Shankaran V. Conference presentation at the Gastrointestinal Cancers Symposium. January 2009. Medscape web site. (Available at: http://www.medscape.com/viewarticle/586946)
- 11 Personalized Medicine Coalition. PMC Membership. PMC web site. (Available at: http://www.personalizedmedicinecoalition.org/)

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