

A microscopic view of various cells, including red blood cells and white blood cells, rendered in a blue color scheme. The cells are scattered across the frame, with some in sharp focus and others blurred in the background.

Microeconomics of Personalized Medicine

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McKinsey and Company

Tomorrow's promise and today's challenge

“Numerology” for personalized medicine

- Adverse drug events in U.S. \$45 billion-135 billion
- Percent avoidable 20-35%
- 2008 Rx spend in U.S. \$292 billion
- Percent Rx not effective 20-90% (average 50%)
- Percent of care decisions informed by diagnostics 70%
- Diagnostics as percent of healthcare market 3-4%

Questions

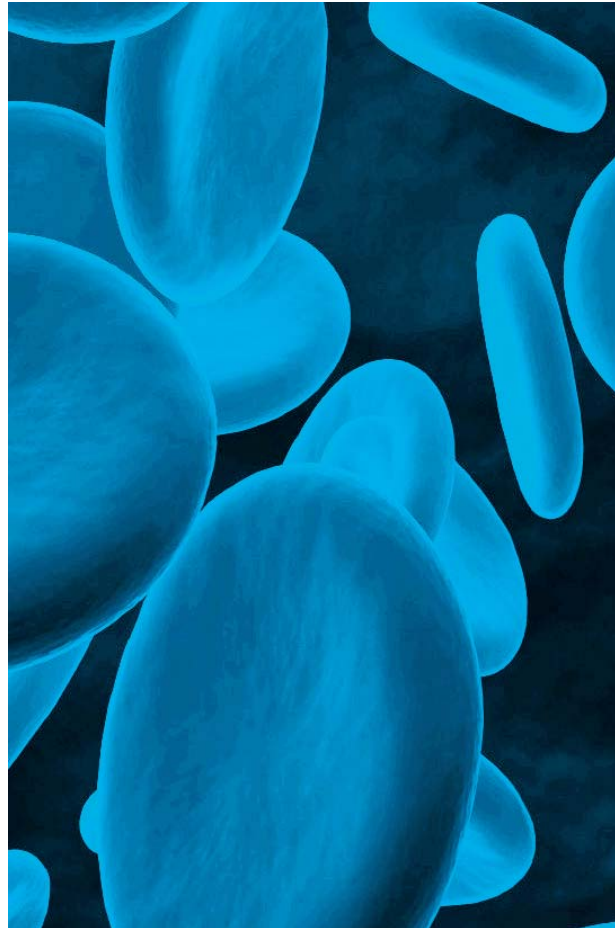
Why aren't pharmaceutical companies more aggressively pursuing companion diagnostics?

Why aren't payors actively driving the adoption of personalized medicine?

Why has physician adoption of some clinically validated tests been slow (and required a large sales force)?

Are stakeholder incentive challenges impeding the development and adoption of personalized medicine?

McKinsey study on personalized medicine



- Assembled a panel of ~30 experts across stakeholders
- Interviewed ~100 stakeholders
 - ~25 pharmaceutical manufacturers
 - ~20 payors and regulators
 - ~20 academics/academic medical centers
 - ~15 Dx manufacturers
 - ~10 analysts
 - ~5 VC investors
- Conducted extensive literature review and analysis of stakeholder microeconomics
- Brought panel together to debate findings

Microeconomics for payors and providers



- **Perspective summary:**
 - **Payors**
 - Measured skepticism
 - Low priority
 - Adoption driven by image before economics
 - **Providers**
 - Variable interest

- **Incentives**
 - **Payor**
 - Lack of information on cost efficacy
 - Problem of longitudinal accounting
 - **Provider incentives**
 - Reimbursement is activity/procedure based
 - Billing not standardized/scalable

Microeconomics for pharmaceutical manufacturers



- **Perspective summary:**
 - Steady increase in use of PM
 - Pockets of opportunity
 - Investment level varies across companies

- **Incentives**
 - Cost savings in development is unlikely
 - Market share is the largest swing factor
 - Pricing upside potential

Microeconomics for Dx manufacturers



- **Perspective summary:**
 - Excitement about molecular diagnostics
 - Investment in targeted areas
 - Focus on capturing elusive “full value”

- **Incentives**
 - Companion diagnostic model - lower relative value captured
 - “Stand-alone” model - higher risk
 - High upfront investment
 - Uncertain approval timing
 - Uncertain payor adoption

Catalysts to accelerate development of the personalized medicine market



- Approval process clarity



- Appropriate coverage



- Aligned provider incentives



- Long-term view