Who Pays for Personalized Medicine? A Conversation With Industry Insiders

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Speakers

- **Aidan Toombs**, Attorney, Crescendo Bioscience
- **Judy Waltz**, Partner and Co-Chair, Life Sciences Industry Team
- **Antoinette Konski**, Session Moderator, Partner and member, Chemical, Biotechnology & Pharmaceutical Practice

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Crescendo Bioscience Overview

Molecular diagnostic services company
Focus on rheumatology, autoimmune, inflammatory diseases
Initial disease target - rheumatoid arthritis (RA)
Multi-disciplinary research & development
Building direct sales force to call on MD's
Efficient, automated, centralized CLIA operations
First product launch mid – 2010
Based in SF Bay area, venture capital funded

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A diagnosis of RA triggers a challenging and uncertain future

- 500 new patients diagnosed daily in the US
- 1.4 million US patients living with disease
- Poor tools to diagnose, select therapy, monitor ongoing disease, predict flare
- Disease marked by inflammation, erosion
- Significant disability, co-morbidities
- Economic burden; high patient co-pays

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Tools today hold value but can be improved

- Subjective
- Variable
- Signs and symptoms
- Time consuming
- Little information on biology

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Complexity of RA has defied simple solutions; effective diagnostics must interrogate multiple pathways

- Previous attempts to develop lab tests focused on looking for *single* biomarker solutions for IVD kits
- Crescendo is building a comprehensive disease model for RA to support product development and enhance our growing collaborations with researchers
- We have found that protein analysis is the most promising approach for clinical diagnostics in RA

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Goal is to transform rheumatology by "turning the lights on" at the molecular level for *each patient*

- Reveal the individual patient's underlying biology
- Multiple integrated biomarkers and algorithms
- Quantitative, objective, reproducible test results
- Timely, dynamic specific insights into disease activity & trajectory
- Able to select & monitor optimal therapy for each individual patient
- Precise indication of bone and cartilage erosive activity (not discernable by existing tools)
- Predict patient reaction to treatment options and risk of co-morbidities such as cardiovascular disease

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First product: VECTRA·DA es directly to the goal of Clinical Remission

Quantitative, objective test based on measurement of 12 serum proteins, covering key biological pathways of RA, correlated to *Disease Activity*, in our dedicated CLIA lab

- Baseline assessment of disease activity
- Ongoing monitoring, trend, velocity, AUC ("area under the curve")
- Assessment immediately prior to therapy
- Post therapy shift in disease activity
- Reveal patients with subclinical disease
- Identifying patients prior to disease flare

US Product Launch Planned: 2010

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Second product: VECTRA-SD
Ties directly to the goal of Radiographic Remission

Quantitative, objective test based on measurement of serum proteins correlated to *Structural Damage* and predicting RA progression

- Baseline assessment of erosive activity
- Assessment immediately prior to therapy
- Post therapy shift in erosive activity
- Ongoing monitoring, tracking cumulative AUC
- Defining true remission

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Additional areas of interest/research

Elucidation of relevant biology looking at proteins, RNA and DNA for

- Cardiovascular disease in rheumatoid arthritis patients
- Therapy sensitivity
- Differential diagnosis
- Subtyping and prognosis
- Other rheumatic diseases; e.g., SLE, PsA, AS

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Our Launch Plan Addresses All Critical Commercial Success Factors

Powerful, Published Validation Data	▪ Published Validation Data at launch ▪ ACR Presentations/EULAR ▪ Expanded studies, utilities, case studies
Favorable Reimbursement	▪ CMS Strategy ▪ Private Payer Contracts ▪ Reimbursement Support
Rheumatology Opinion Leaders	▪ Leverage Collaborators ▪ Beta Launch Strategy ▪ Advisory Boards
Patient Advocacy Support	▪ Professional Societies (ACR/EULAR) ▪ Arthritis Foundation ▪ Online Communities
Effective Branding/Key Messages	▪ Branded Assay & Reporting Platform ▪ Web Strategy with Content Integration ▪ Targeted CME & Tradeshow Presence ▪ Sales Tools based on Case Studies
Experienced Sales Team	▪ Clinical Experience ▪ Diagnostic Experience ▪ Customer Service Excellence
Targeted PR/IR Strategy	▪ Timing ▪ Extended Reach ▪ Focus on Select Audiences

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Challenges a Small Dx Company Faces in Developing a Successful PM Test

- Finding the right target (unmet medical needs)
- Partner with pharma or not
  - Long drug D&D cycle
  - Fee-for-service and cost-plus-test pricing
  - Make CLIA model work for global trials
- Regulatory requirements: LDT vs. IVD
- Reimbursement hurdles
  - What FDA requires for 510k or PMA approval is not sufficient to get payer reimbursement
  - Conduct post-launch clinical utility studies
  - Delayed payment cycles
- Physician education
- Guideline incorporation

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What is "Personalized Medicine"

- Personalized health care describes medical practices that are targeted to individuals based on their specific genetic code in order to provide a tailored approach. These practices use preventive, diagnostic, and therapeutic interventions that are based on genetic tests and family history information. The goal of personalized health care is to improve health outcomes and the health care delivery system, as well as the quality of life of patients everywhere.

- *Source:* http://www.hhs.gov/myhealthcare/glossary/glossary.html

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2010 Affordable Care Act (ACA)

- Patient Protection and Affordability Act and Health Care and Education Reconciliation Act (Pub.L. 111-148, a/k/a H.R. 3590, and Pub. L. 111-152, a/k/a H.R. 4872) – finalized by President Obama's signatures on March 23 and 30, 2010
- Consolidated language compiled by the House Legislative Counsel now available at http://www.premierinc.com/about/advocacy/issues/10/healthcarereform/PPACA-CONSOLIDATED.pdf
- Foley.com/HCReform (resouce site)

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HHS Personalized Health Care Initiative (Longstanding)

- The Personalized Health Care Initiative will improve the safety, quality and effectiveness of healthcare for every patient in the US. By using "genomics", or the identification of genes and how they relate to drug treatment, personalized health care will enable medicine to be tailored to each person's needs.
- Healthcare that is proactive, instead of reactive, gives the patient the opportunity to become more involved in their own wellness. The US Department of Health and Human Services seeks to advance this Initiative through two guiding principles:
  - Provide federal leadership supporting research addressing individual aspects of disease and disease prevention with the ultimate goal of shaping preventive and diagnostic care to match each person's unique genetic characteristics.
  - Create a "network of networks" to aggregate anonymous health care data to help researchers establish patterns and identify genetic "definitions" to existing diseases.
- ***Source:*** http://www.hhs.gov/myhealthcare/index.html

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Medicare - Introduction

- **Medicare** is a federal program which covers the aged and disabled based on quarters of coverage from employment or length of disability. Expenditures of $468.1 billion in 2008.
  - Part A – Institutional care (e.g. hospital) – 45 million beneficiaries in 2008
  - Part B – Certain medical services (e.g. physician) and supplies (e.g. DME) – 42 million beneficiaries in 2008
  - Part C – Managed Care
  - Part D · Prescription Drugs · 32 million beneficiaries in 2008
- **Medicaid** (Medi-Cal in California) is a needs and categorically-based program unique to each state which is partially funded by the federal government.

Source: *Brief Summaries of Medicare and Medicaid (as of November 1, 2009), available at* http://www.cms.gov/MedicareProgramRatesStats/Downloads/MedicareMedicaidSummaries2009.pdf

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Medicare as an Unlikely Forum for Personalized Medicine?

- Generally no reproductive care or services are covered under Medicare.
- Given the aged nature of the population, with multiple co-morbidities, and multiple drug usage, genetic testing and counseling may be considered of limited value (although no consensus).
- CMS historical focus on PERSONAL, rather than FAMILY, history, rules out some tests as "screening."
- BUT – many private payers follow Medicare's lead for coverage decisions; Medicare beneficiaries may benefit from some such tests and/or counseling (and there are a LOT of beneficiaries).

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Medicare (cont.)

- ***Problem Statement: Problems with coverage and reimbursement of genetic tests and services are limiting their accessibility and integration into the health care system.***

- Source: Secretary's Advisory Committee on Genetics, Health and Society (2006)

- Medicare generally covers only services and supplies which are reasonable and necessary for the diagnosis or treatment of illness or injury, absent specific statutory authorization

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ACA Defines "Preventive"

- Specific services listed by statute with exclusion of ECG
- Initial preventive physical exam
- Annual wellness visit

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Medicare Preventive Care

- Statutory exceptions required for very limited preventive care currently provided
  - Abdominal Aortic Aneurysm Screening
  - Adult Immunizations
  - Bone Mass Measurements
  - Cancer Screenings
  - Cardiovascular Screening
  - Diabetes Screening
  - Diabetes Supplies
  - Diabetes Self-Management Training
  - Medical Nutrition Therapy (for Medicare beneficiaries with diabetes or renal disease)
  - Glaucoma Screening
  - Initial Preventive Physical Exam ("Welcome to Medicare" Physical Exam)
  - Smoking and Tobacco-Use Cessation Counseling

Quick Reference Information: Medicare Preventive Services, available at http://www.cms.gov/MLNProducts/downloads/MPS_QuickReferenceChart_1.pdf

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Medicare Coverage for Genetic Tests

Considerations in seeking coverage:

- ✓ Provide adequate evidence that
- ✓ The incremental information obtained by new diagnostic technology compared to alternatives
- ✓ Changes physician recommendations
- ✓ Resulting in changes in therapy
- ✓ That improve clinically meaningful health outcomes
- ✓ In Medicare beneficiaries

Source: CMS (James Rollins and Jeffrey Roche) Presentation to Personalized Medicine Coalition, entitled *"Evidence, Medicare Coverage and Diagnostic Genetic Testing,"* discussing MEDCAC's Recommendations to CMS (March 2010)

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ACA Provisions – Covered Complex Diagnostic Tests (Section 3113)

- Authorizes the Secretary to conduct a demonstration project to allow separate payment under Medicare Part B
- Limited to covered complex diagnostic tests (as defined by the Act) that link a patient's genetic makeup to a cancer chemotherapy where no alternative test is available having equivalent performance characteristics, under certain limited circumstances
- Payment rates to be determined by the Secretary
- Limited to tests on patient samples collected during hospitalization but performed after hospitalization
- Will ultimately result in a report to Congress with an assessment of the project's impact on access to care, quality of care, health outcomes, and Medicare expenditures (including savings)

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ACA Provisions - Medicare Annual Wellness Visit (Section 4103)

- Medicare will provide coverage for an annual "wellness visit" (previously just a "Welcome to Medicare" visit)
- The annual wellness visit should include a personalized prevention plan for an individual that takes into account the results of a health risk assessment.
- The prevention plan should provide personalized health advice aimed at reducing identified risk factors and improving self-management of an individual's health care and treatment.
- Health risk assessments will be based on guidelines developed by the Secretary. The assessments will identify chronic diseases, modifiable risk factors, and emergency or urgent health needs. (Guidelines not yet done as of release of Physician Fee Schedule in June 2010.)

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"Family History" Defined

- "Medical events experienced by the beneficiary's parents and any siblings and children, including diseases that may be hereditary or place the individual at increased risk."
- ***Source: Proposed 42 C.F.R. 410.15 (from Proposed Physician Fee Schedule)***

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Predictions

- FDA and CMS will increase their efforts to share information.
- CMS will look for specific evidence relative to its population to support coverage.
- Cost containment issues will be considered, overtly or covertly.

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