IMPROVING QUALITY OF LIFE THROUGH QUALITY OF SCIENCE

Jefferies 2014 Global Healthcare Conference - NYC
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June 3, 2014
Forward-looking statements

Except for historical information, matters set forth in this presentation, including statements regarding Sequenom’s plans, potential, opportunities, financial or other expectations, projections, goals, objectives, milestones, strategies, market growth, timelines, product pipeline, clinical studies, product development, and the potential benefits of its products and products under development, are forward-looking statements within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially, including the risks and uncertainties associated with Sequenom’s operating performance and financial position, the market demand for and acceptance of Sequenom’s and Sequenom Laboratories’ products and services, research, development and commercialization of new products, reliance upon the collaborative efforts of others, competition, intellectual property rights, government regulation, obtaining or maintaining regulatory approvals, litigation, and other risks detailed in Sequenom’s SEC filings. These forward-looking statements are based on current information that is likely to change, speak only as of the date hereof, and Sequenom undertakes no obligation to revise or update such statements.
QUALITY OF SCIENCE

At the core of Sequenom’s success in genetics-based products is a single uncompromising principle: **Quality of Science**

- Content company: unlocking the secrets of human genetics
- Based in research, translational research and clinical applications
Sequenom Bioscience

Completed sale of business on Friday, May 30

- Transaction completed for a purchase price of $31.8 million, subject to certain adjustments
- Contingent consideration of up to an additional $4 million
- Assumed certain liabilities related to Bioscience business, including the lease of its San Diego facility
- Buyer is Agena Bioscience, a portfolio company of Telegraph Hill Partners
- Transaction enables the Company to focus on the diagnostics business exclusively
Sequenom, Inc.
Discovery, Develop and Enable

- Best-in-class laboratory clinical diagnostic services with a focus on prenatal testing and conditions.
  - San Diego, CA; Grand Rapids, MI and Morrisville, NC
- MaterniT21™ PLUS: pioneer, first-to-market and leader in the noninvasive prenatal laboratory-developed test (NIPT) for pregnant women at increased risk for fetal aneuploidies
- Among largest US laboratories utilizing next-gen sequencing for clinical use
Q1 2014 Highlights

- Q1 2014
  - Sequenom Laboratories revenue up 27%
  - Approximately 50,000 tests accessioned including 39,800 MaterniT21™ PLUS samples

- Cash burn increased slightly to $15.5 million for Q1 2014 due to timing of annual royalty of $4.8 million and semi-annual debt service payments of $3.3 million, compared to cash burn of $13.6M in Q4 2013

- Signed additional agreements, bringing the number of covered lives to more than 118 million in the US, including two of the top five national payors

- Two additional international license agreements were signed
Highlights for 2013

- Sequenom Laboratories revenue up from $46.5M to $119.6M Y/Y, accounting for 74% of total revenue
  - More than 185,000 tests accessioned including 148,500 MaterniT21™ PLUS samples
- Reduced cash burn to $13.6M in Q4 2013 from $23.1M in Q3 2013
- Expanded technology partnerships utilizing superior technology (IP) and know-how with license agreements in Germany and France
- Clinical permit from the NY Department of Health for MaterniT21 PLUS test. CLIA registration and CAP accreditation for new NC laboratory
- MaterniT21 PLUS Enhanced Sequencing Series introduced in October
The Science of Performance

Sequenom Laboratories Revenue ($M)
TRADITIONAL PRENATAL TESTING

- High-risk pregnancies traditionally required invasive surgical procedures
- High requirement for medical management and genetic counseling
- 97% of invasive procedures have normal results
- Invasive testing costly and introduces additional risk
The key for Sequenom Laboratories and millions of expectant mothers

MaterniT21™
PLUS

A noninvasive laboratory-developed test (LDT) to identify pregnancies at increased risk for fetal chromosomal abnormalities
THE EVOLUTION OF THE MATERNIT21™ PLUS TEST

- The journey began with trisomy 21 in Q4 2011
- Included trisomy 18, 13, multiple gestations and Y chromosome in 2012
- Included sex aneuploidies in Q1 2013
- Enhanced Sequencing Series was launched in October 2013 and moves towards content available by microarray
  - Dr. Wapner’s paper highlighted value of microarrays for specific high-risk pregnancies
  - ACOG and SMFM endorsed microarray for high-risk pregnancies
- Premium content will continue to expand

1 New England Journal of Medicine; Chromosomal Microarray versus Karyotyping for Prenatal Diagnosis; December 6, 2012; Volume 367 No. 23
2 ACOG Committee on Genetics Society for Maternal-Fetal Medicine; Committee Opinion Number 581; December 2013
MaterniT21™ PLUS LDT

As the market grows, so does the opportunity

US 2007 total births: ~ 4.3M

High risk ~750K

Low risk ~3.55M

Market opportunities
- The % of US pregnancies that are high risk is rapidly expanding
- Low-risk pregnancies represent an untapped, emerging market but is currently not supported by guidelines or being reimbursed by payors
- >208M pregnancies each year globally

Comparable diagnostics, US
- High-risk market is a large addressable market
  - Greater than the annual newly diagnosed breast (232,000) & prostate (239,000) cancers combined

1 National Center for Health Statistics, National Vital Statistics Reports; www.cdc.gov/nchs
3 http://www.cancer.org/cancer/breastcancer/detailedguide/breast-cancer-key-statistics
Payors enforce compliance to medical policies on laboratory tests (do not reimburse low risk today)

We follow guidelines established by ACOG¹ and SMFM² and perform the test only on women at increased risk for fetal chromosomal abnormalities.

We are able to demonstrate to payors that our test follows the guidelines.

¹ACOG is the American Congress of Obstetricians and Gynecologists
²SMFM is the Society for Maternal-Fetal Medicine
MaterniT21™ PLUS LDT
Substantially reducing the number of invasive procedures with high-impact data

Results of testing
Updated May 2014

- 97.98% Negative
- 1.40% Positive trisomy 21
- 0.43% Positive trisomy 18
- 0.19% Positive trisomy 13

Normal representation of trisomy 21, 18 and 13
Sequenom Laboratories test portfolio

Growing prenatal franchise

- **HerediT™**
- **MaterniT21™ PLUS**
- **SensiGene® RHD**
- **NextView™**

* Other tests (HerediT™ AJP, SMA, Fragile X) and NextView™ tests are performed by partner laboratories under agreements.

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Sequenom Laboratories test portfolio
MaterniT21™ PLUS test samples

- International volume is growing, and increased to 10% of accessions in Q1 2014

- We reduced the number of Medicaid tests as we increased focus on profitable tests
  - 13 states now reimburse for our tests
  - Working with remaining states to adopt coverage policies and reimbursement
Payor mix - US

Hospital births > age 35

- Signed agreement with two large national payors
- Positive technology assessments from ACOG/SMFM, BCBS, ISPD and CTAF
- Favorable national coverage decisions from Anthem/Wellpoint, Aetna, UnitedHealth, Cigna
- Agreements covering 118 million lives (May 1, 2014), negotiations with others ongoing
- Reduced Medicaid to 14% of total volume in Q4 2013 from 25% in Q1 2013; increased to 16% in Q1 2014

* Source: NHDS 2008
Sequenom Laboratories collections progress

Diagnostics revenue is recorded primarily on a cash basis

- Coding change effective January 1, 2013 caused significant payment challenges which appeared in Q213
- Amounts do not include estimated accounts receivable of $42 to $46 million as of March 31, 2014

Collections for services in prior periods
Collections and revenue accrued for services in the period
MaterniT21™ PLUS LDT

Market leadership

- The first product to market in this category
- Estimated >60%* unit share in high-risk pregnancy testing without the benefits of our patents being recognized
- >250,000 commercial samples
- Unparalleled accuracy with short turn-around time (<7 days)
- Industry leading content
- Growing base of new and repeat physicians
- Expanding international presence
- Robust infrastructure, network and logistics
  - > 2,000 draw sites
  - Distribution agreements with hospitals, regional labs and draw centers

* Market research, June 2013
**Financial highlights**

*$ Millions

**Available cash***

<table>
<thead>
<tr>
<th>Year</th>
<th>Available Cash</th>
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<tbody>
<tr>
<td>2010</td>
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<td>2013</td>
<td>$70.9</td>
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<td>Q1 14</td>
<td>$55.6</td>
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**Revenues***

- **2010**: $3
- **2011**: $8
- **2012**: $46
- **2013**: $120
- **2014 Q1**: $37

**Cash burn**

- **Q1 13**: $26
- **Q2 13**: $44
- **Q3 13**: $23
- **Q4 13**: $14
- **Q1 14**: $16 **

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**Q1 14 cash burn includes annual royalty payments of $4.8 million and semi-annual debt service payments of $3.3 million.

*** Revenues adjusted to exclude Sequenom Bioscience, a discontinued operation.

Revenue and cash burn do not reflect unrecorded accounts receivable estimated at $42 to $46 million as of March 31, 2014.
SEQUENOM
THE NEW FRONTIERS

- Achieve quarterly break-even and positive cash flow Q4 2014
- Expand the NIPT menu with the development of a low cost test on an alternative platform by year-end
  - Facilitates international access and potential future entry into the low-risk market
TO UNLOCK THE SECRETS OF THE HUMAN GENOME TO BENEFIT ALL

- Actualizing the genetics revolution for commercial success
- Innovating progressive concepts and tools for healthcare
- Improving the quality of life for millions around the globe