William Blair

Foundation Medicine, Inc.

Play on Monetization of "Big Data" in Genomics; Initiating Coverage With a Market Perform Rating

Investment in Workflow and Analytics Yields Differentiated Platform. Foundation Medicine is the first lab to offer next-generation-sequencing–based genomic profiling assays: one for solid tumors (FoundationOne), launched in June 2012, and one for hematological malignancies (FoundationOne Heme), launched in December 2013. The assay represents the most comprehensive set of genes and alteration types and is thus able to identify more actionable alterations than other assays on the market. In addition, the company is monetizing access to centralized, molecular information; Foundation's database includes not only test results, but also external data from clinical trials and published literature, which only becomes more powerful as more data is created.

Clinical Markets Represent a Large Yet Relatively Untapped Opportunity. Foundation has achieved a meaningful acceleration in adoption in its clinical business. We expect a continuing increase to be driven by physician adoption as the company expands its salesforce and reach. While Foundation's theoretical addressable market would include all patients with metastatic cancer globally, using its current sales-and-marketing focus, we peg its near-term addressable market at 1 million patients (935,732 for FoundationOne and 95,275 for Heme). This implies a potential market opportunity of $2.8 billion (we assume the company reaches market penetration of 7% by 2016).

Base Pharmaceutical Business Provides a Stable Revenue Stream. Half of the company's revenue (49% in 2013) is generated from pharmaceutical companies. Foundation has 18 pharmaceutical clients, which use the company's proprietary molecular information platform to enhance the development of targeted therapeutics. We expect revenue from the clinical diagnostics business to far exceed clinical trials as a percentage of the total; however, the pharmaceutical relationships provide a level of support and a more predictable revenue stream.

Valuation and Stock Thoughts. The stock trades at an enterprise value of 6 times our 2015 sales estimate, well above other proprietary diagnostic services companies. While we believe that the bear thesis as it relates to competition is perhaps misguided given the advantages Foundation has with its comprehensive assay/database offering, we believe valuation already incorporates robust expectations for market share and reimbursement. We are therefore initiating coverage with a Market Perform rating; however, we would be buyers to the extent the stock pulls back below a $450 million enterprise value.

Key risks include: 1) potential reimbursement pressure as the company goes in network, 2) competition (perceived), and 3) potential of increased FDA regulation.

Foundation Medicine is a CLIA-certified lab that generates revenue from its molecular information platform. Foundation leverages next-generation sequencing technology to provide genomic profiles of cancer, offering physicians individualized information about actionable alterations specific to each patient's tumor, enabling optimization of treatment.

Amanda Murphy
+1 312 364 8951
amurphy@williamblair.com

JP McKim
+1 312 364 8991
jpmckim@williamblair.com

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Basic Report (14-047)

Stock Rating:	**Market Perform**
Company Profile:	**Aggressive Growth**
Symbol:	FMI (NASDAQ)
Price:	$24.97 (52-Wk.: $20–$42)
Market Value (mil.):	$703
Fiscal Year End:	December
Long-Term EPS Growth Rate:	NM
Dividend/Yield:	None

Estimates	**2013A**	**2014E**	**2015E**
EPS FY	-$1.57	-$1.96	-$1.66
Sales (mil.)	$29	$58	$105
Valuation			
EV/Sales	20x	10x	6x
P/Sales	24x	12x	7x

Trading Data	
Shares Outstanding (mil.)	28
Float (mil.)	12
Average Daily Volume	255,901
Financial Data	
Book Value Per Share	5x
Enterprise Value (mil.)	$580

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Executive Summary

Foundation Medicine is a CLIA-certified lab located in Cambridge, Massachusetts. The company was founded by members of some of the leading cancer institutes, including the Broad Institute, the Dana-Farber Cancer Institute, Harvard Medical School, and the Massachusetts Institute of Technology. Foundation's goal is to leverage its proprietary molecular information platform to facilitate a more individualized (and effective) approach for the treatment of cancer. In 2013, the company generated $29 million in annual revenue, which includes sales to pharmaceutical customers (49% of revenue) as well as via its CLIA-certified lab (51%).

The existing approach to treatment of metastatic cancer is to identify tumor with tissue of origin (e.g., breast, lung) and treat with cytotoxic chemotherapy. As platforms have evolved to enable analysis of larger amounts of data (e.g., via massively parallel sequencing, or next generation sequencing [NGS]), scientists have increasingly been able to catalog both germline and somatic base substitutions, copy number, and structural alterations within tumors as well as identify the pathways affected. In addition, pharma/biotech has been able to develop more-targeted treatment approaches based on the molecular profile of the cancer. Well-publicized examples include Herceptin (trastuzumab) in ERBB2 (known as HER2-amplified breast cancer), use of Gleevec (imatinib) in Philadelphia chromosome-positive chronic myelogenous leukemia, use of Tarceva (erlotinib) in non–small-cell lung cancer patients with EGFR alterations, and use of Zelboraf (vemurafenib) in patients with BRAF-mutated melanoma.

This has led to a flurry of introductions of companion diagnostic lab tests, which are based on a wide variety of platforms and target a variety of markers (genetic, gene expression, and proteomic). Most of the clinical assays on the market analyze one or two genes via gene sequencing (e.g., Sanger sequencing) or polymerase chain reaction (PCR) and are relatively expensive (each test can be $2,000 to $3,000). Fluorescence in situ hybridization (FISH) can also be used to detect chromosomal-level alterations. With the broad availability of high-throughput NGS platforms (e.g., Illumina's HiSeq) as well as increased efforts on the part of platform vendors to simplify up-front sample prep/content solutions for NGS clinical assays (e.g., Illumina TruSeq, Ion Torrent Ampliseq, and RainDance ThunderStorm), a number of labs have launched NGS-based panel approaches for use in oncology. These cancer panels are typically targeted to "hotspots," or areas of the genome with known somatic base substitutions or abnormal changes in single base pairs associated with cancer progression and resistance to therapy.

Foundation's Differentiators Include Assay Comprehensive Facilitated by Investment in Workflow, Analytics, and Consolidation of Data

Foundation is the first lab to offer NGS-based, comprehensive commercial genomic profiling assays: one for solid tumors (FoundationOne), launched in June 2012, and one for hematological malignancies (FoundationOne Heme), launched in December 2013. Foundation leverages NGS technology to provide genomic profiles of cancer, offering physicians individualized information about actionable alterations specific to each patient's tumor and enabling optimization of treatment. Actionable alterations are defined as those associated with: 1) an FDA-approved targeted therapy in the tumor type, 2) an FDA-approved targeted therapy in another tumor type, and/or 3) a clinical trial that is linked to the alteration via mechanism of action to the therapy under study.

FoundationOne analyzes 236 cancer-related genes as well as 47 introns from 19 genes for a total of 1.5 megabases of sequence; many other labs focus on 50 genes or fewer, with lower coverage and in some cases a more limited portion of those genes. In addition, the company evaluates multiple types of genomic alterations, including base substitutions, inserts/deletions (indels), copy number variation, and gene fusions. FoundationOne Heme evaluates 405 cancer-related genes (and some specific introns of 31 genes involved in rearrangements) and RNA sequencing to analyze 265 genes to identify gene fusions. The company has also invested in workflow, including sample prep (ability

to analyze small amount of samples from fixed formalin paraffin-embedded [FFPE] tissue) as well as proprietary data analytics (variant-calling algorithms and ability to correlate variants to clinical trials/therapies).

Thus, Foundation's assay identifies a high number of clinically actionable alterations in each sample; according to the most recent data published by the company (in its S-1 filing), FoundationOne identified actionable alterations in 82% of 3,936 specimens received up to mid-May 2013. In addition, Foundation is able to identify clinically relevant alterations that would not have been found via traditional diagnostic approaches or "hotspot" cancer panels. For example, of the 1,614 samples with an actionable alteration, 62% had at least actionable alteration that would not have been found with commonly available NGS hotspot tests based on sample prep methodologies such as Ampliseq, TruSeq (Illumina), and RainDance's Cancer Hotspot Panel (data presented at the American Society of Clinical Oncology, or ASCO, in 2013).

Foundation provides a report to the physician, which includes relevant therapies and clinical trials accessible, as well as physician access to an online portal, called the Interactive Cancer Explorer. This portal provides test results as well as a user interface to the company's database, which includes not only internally generated data, but also external data related to clinical trials and published literature. There is the opportunity for someone to act as a consolidator of "big data" in genomics, particularly in oncology, which can be leveraged to develop better therapeutics and diagnostics. As Foundation builds its database of genetic variation related to oncology, it is trying to do just that by leveraging the power of network effect, fostering increased "stickiness" with users, and creating a stronger moat around its business. Foundation is also working to expand its physician portal to include treatment and clinical outcomes data.

Clinical Markets Represent a Large Yet Relatively Untapped Opportunity
Because Foundation offers the most sophisticated cancer assay available, the company has experienced a meaningful increase in adoption in its clinical business, performing 1,750 FoundationOne clinical tests in 2012, 9,095 in 2013 (up 420%), and another 24,082 in 2014 (up 165%), according to our estimates. We expect the acceleration to be driven by continuing physician adoption as the company expands its salesforce and reach; Foundation had 26 reps as of the end of 2013 (up from 2 in mid-2012), which is expected to grow to 45 to 50 by the end of the year and ultimately to 80 to 120 over the longer term.

Foundation's theoretical addressable market would include all patients with metastatic tumors globally and, now with the launch of FoundationOne Heme, all blood-based cancer patients. The market opportunity reaches nonsensical sizes when considering that an assay is priced in the thousands of dollars and can be used for the majority of cancer patients and possibly if used for earlier-stage cancers, not just once, but on a repeat basis as doctors monitor rapidly mutating cancers. In the United States alone, according to the National Cancer Institute, there are 13 million people living with cancer and an estimated 1.6 million people diagnosed with cancer in 2013. There are roughly 3 million people living with stage IV (metastatic) cancer and 334,795 diagnosed with stage IV in 2013.

Focusing on a more realistic near-term market, including all new stage IV cases diagnosed each year, all rare or aggressive cancers of all stages, assumptions of penetration of prior diagnosed (prevalence) stage IV cases, penetration of people currently living with rare or aggressive cancer, and newly diagnosed cancers that will metastasize, we calculate the market opportunity for FoundationOne solid tumor to be just short of 940,000 patients in the United States (or roughly $2.8 billion). The introduction of the FoundationOne Heme assay expands the company's addressable market by roughly 100,000 patients annually. We estimate the company had 1% of the market in 2013, which we project will expand to 2.3% in 2014 and 4.3% in 2015.

Base Pharmaceutical Business Provides a Stable Stream of Revenue

Although we expect this to shift more toward clinical revenue over time, the majority of the company's revenue (75% in 2012) has been generated from pharmaceutical companies. Foundation has 18 pharmaceutical clients, which use the company's proprietary molecular information platform to enhance the development of targeted therapeutics. We expect revenue from the clinical diagnostics business to far exceed revenue from clinical trials as a percentage of total; however, the company's pharmaceutical relationships provide a level of support. Pharmaceutical business drove $8 million of revenue in 2012 and $14 million in 2013 (growth of 77%, 49% of revenue) and is expected to contribute $17 million in 2014 (growth of 17%, 29% of revenue) and $19 million in 2015 (growth of 12%, 18% of revenue).

Key Risks Include Reimbursement and (At Least Perceived) Competition

Foundation is early in the commercial launch of its clinical assay for solid tumors and even more so for its Heme assay; the company does not yet have contracts with private payers or Medicare. Therefore, although we (and, we believe, consensus) have incorporated at least some revenue benefit from positive reimbursement decisions (particularly from Medicare), reimbursement represents a key risk, in our view. We assume a positive coverage decision from Medicare in mid-2015 such that 75% Medicare claims submitted beginning in the third quarter of 2015 are paid at an average selling price of $3,000.

Exhibit 1
Summary of 2016 Upside Potential

	7%	15%	20%	25%
Total Revenue (current model)	$191,961	$191,961	$191,961	$191,961
Commercial Third Party Not Paid Goes In Coverage (%)	$3,938	$7,959	$10,612	$13,264
Medicare Retroactively Pays for Tests Already Performed.	$41,368	$41,368	$41,368	$41,368
Revenue Upside Potential	$45,306	$49,327	$51,980	$54,632
Total Revenue with Upside	$237,266	$241,288	$243,941	$246,593
Current Enterprise Value	$580	$580	$580	$580
4x Upside Revenue Discounted 20%	$659	$670	$678	$685

Sources: Company reports and William Blair & Company, L.L.C estimates

Foundation began submitting claims to Medicare at the end of 2013, currently leveraging a miscellaneous CPT code methodology, and has submitted an application for a Z-Code with the McKesson Diagnostics Exchange. While broad Medicare and private payer reimbursement could ultimately prove to be upside to numbers, and Palmetto's award of the Z-Code to Foundation bodes well given Palmetto's leadership in molecular diagnostics, it could take longer than expected to obtain coverage/payment from Foundation's local Medicare administrative contractor (MAC), National Government Services.

After implementing new molecular pathology codes in 2013, the American Medical Association's Molecular Pathology (MoPath) committee is now refocusing its sights on developing a CPT coding infrastructure for NGS assays. While implementation of codes for NGS panels could also be a positive for Foundation to the extent that the company begins to be reimbursed more sustainably for Medicare samples, broader NGS CPT codes are unlikely to incorporate the full complexity of Foundation's tests, in our view. Thus, Foundation could face lower-than-expected payments and/or fallout from logistical issues as payers adopt any new coding infrastructure.

To date, payers have been reluctant to cover genetic-based tests without extensive—in some cases prospective—evidence of clinical utility. Payers are also focused on the impact of utilization (and subsequently cost) driven by rapid innovation of genetic tests. Insurers refer to professional organization guidelines and peer-reviewed publications as well as recommendations from agencies evaluating the clinical utility of genetic tests. The vast majority of existing peer-reviewed research supports the clinical application of single genes or a few multigene-based diagnostics. Payers cover some sequencing-based tests (such as BRCA1/2 and MLH1/2) and a limited number of array-based tests (a standard cystic fibrosis panel, for example) if the member displays clinical features or is at risk of developing disease.

In terms of cancer research, we are still in very early stages of understanding genetic variability/commonality between phenotypes of disease. Therefore, while there is an argument that is more cost effective to evaluate alterations in a panel format (versus on a test-by-test basis), it is not clear whether whole genome sequencing, exome sequencing, pan-cancer panels, or targeted panels are the best diagnostic approach and for which cancers. In addition, it is not clear whether actionable mutations should be defined as those which point to a specific therapeutic or those that point to clinical trials. Thus, payers may fail to cover comprehensive NGS-based panels without more evidence of clinical utility or cost/benefit analysis. Alternatively, if Foundation is successful in going in network with payers, the company may obtain lower-than-expected reimbursement or fail to negotiate agreeable terms.

In our opinion, the complexity of NGS-based assays, particularly the workflow (sample prep and required bioinformatics), is underappreciated by investors. At present, competition is limited to companies offering single marker or limited hotspot panels (which focus on base pair substitutions and specific gene alterations and are unable to detect copy number alterations and sometimes indels). Still, a number of platform vendors, for example, have introduced comprehensive hotspot panels, including the AmpliSeq panel by Life Technologies/Ion Torrent, Illumina's TruSeq Amplicon Cancer Panel, and RainDance's Hotspot panel.

Illumina is a powerful platform supplier that maintains a leadership position in large-scale NGS. Illumina has chosen to be the arms dealer in the clinical markets of oncology-based NGS and is therefore incented to enable its clinical customers to commercialize NGS-based assays. Ultimately, the market for NGS-based oncology is large. Thus, while Foundation's assay carries technical advantages and may be more robust, the company will inevitably face real or perceived competition. As more labs offer somatic alteration panels, this could heighten concerns about Foundation's ability to secure market share and/or maintain reimbursement to the extent competitors compete on price.

Valuation and Stock Thoughts

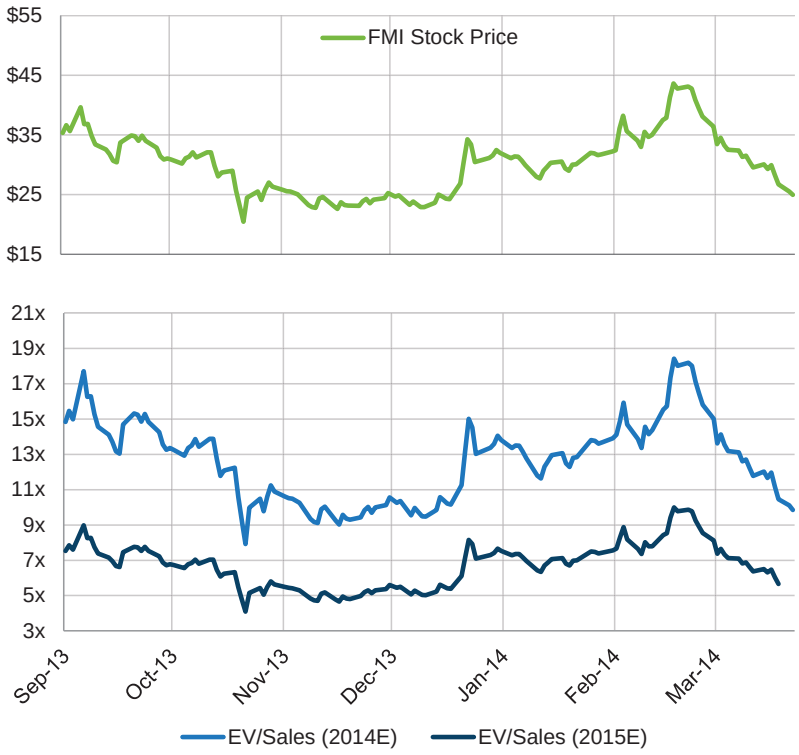
Based on the initial salesforce focus, we calculate a clinical market opportunity of $2.8 billion (using an ASP of $3,000); our revenue estimates suggest the company secures about 7% of this market by 2016. Our model also assumes Foundation is successful obtaining Medicare coverage in mid-2015 at an ASP of $3,000 for 75% of Medicare claims submitted and that the company obtains some payment from private in pay—with revenue ramping up to $105 million in 2015 (about in line with consensus estimates, representing growth of 82%) and $192 million in 2016 (representing growth of 83%).

We believe that given complexity of next generation sequencing assays/workflow/bioinformatics, this type of testing will remain centralized and with specialized service providers such as Foundation Medicine for the next few years. While competition is likely to increase, we believe Foundation's alteration database represents a competitive advantage and that its workflow investments should enable it to remain a forerunner in the space as cancer genomics testing becomes more and more complex (e.g., evolving into larger panels, clinical exome sequencing, and ultimate potentially whole genome sequencing).

The stock trades at an enterprise value of 6 times our 2015 sales estimate, well above other proprietary diagnostic companies. Foundation is an emerging growth company facing a large market opportunity with limited competition. Perhaps multiples for mature, lower-growth companies are not relevant comparisons. Still, assuming an enterprise value of 4 times projected forward sales (which is at the high end of what we consider a reasonable multiple for a proprietary diagnostic services company) and a 20% discount rates suggests that the market anticipates revenue of about $210 million in 2016 compared with our $191 million estimate.

Therefore, while we believe that the bear thesis related to competition is perhaps misguided given the advantages Foundation has with its comprehensive assay/database, it seems valuation incorporates a decent amount of market share gains and already assumes some revenue benefit from potential Medicare coverage. We are initiating coverage with a Market Perform rating. To the extent that the stock pulls back below a $450 million enterprise value (roughly $20), we would be buyers.

Exhibit 2
Foundation Medicine, Inc.
Stock Performance and Valuation



Sources: Company reports, William Blair & Company, L.L.C. estimates, and FactSet

Exhibit 3
Foundation Medicine, Inc.
Valuation Based on Discounted 2016 Sales

	Sales	Cash	Debt	Shares
WB Estimates	$192	$124	$1.5	28

Enterprise Value					
NTM Multiple	**10%**	**15%**	**20%**	**25%**	**30%**
3.0x	$476	$436	$400	$369	$341
3.5x	$555	$508	$467	$430	$398
4.0x	$635	$581	$533	$492	$454
4.5x	$714	$653	$600	$553	$511
5.0x	$793	$726	$667	$614	$568
5.5x	$873	$798	$733	$676	$625
6.0x	$952	$871	$800	$737	$682

Share Price					
NTM Multiple	**10%**	**15%**	**20%**	**25%**	**30%**
3.0x	$21.38	$19.93	$18.66	$17.54	$16.55
3.5x	$24.21	$22.52	$21.04	$19.74	$18.58
4.0x	$27.04	$25.11	$23.42	$21.93	$20.60
4.5x	$29.88	$27.71	$25.80	$24.12	$22.63
5.0x	$32.71	$30.30	$28.18	$26.32	$24.66
5.5x	$35.54	$32.89	$30.57	$28.51	$26.69
6.0x	$38.38	$35.48	$32.95	$30.71	$28.72

Note that x represents EV/Sales multiple and % is discount rate
Sources: Company reports and William Blair & Company, L.L.C. estimates

Exhibit 4
Comparable Company Analysis

		Market	Revenue (m)		Earnings		EV/Sales		Price/Sales	
Name	**Ticker**	**Cap (m)**	**2014E**	**2015E**	**2014E**	**2015E**	**2014E**	**2015E**	**2014E**	**2015E**
Genomic Health, Inc.	GHDX	$825	$282	$302	-$0.83	-$0.22	2.5x	2.4x	3.0x	2.8x
Sequenom, Inc.	SQNM	$293	$214	$257	-$0.40	-$0.05	1.7x	1.4x	1.4x	1.1x
Myriad Genetics, Inc.	MYGN	$2,781	$744	$686	$2.09	$1.59	3.3x	3.5x	4.3x	4.7x
Veracyte Inc	VCYT	$280	$40	$71	-$1.31	-$0.94	5.3x	3.0x	6.9x	3.9x
Foundation Medicine, Inc.	**FMI**	**$703**	**$58**	**$105**	**-$1.96**	**-$1.66**	**10.0x**	**5.5x**	**12.1x**	**6.7x**
	Average	*$977*	*$268*	*$284*	*-$0.48*	*-$0.26*	*4.6x*	*3.2x*	*5.5x*	*3.8x*

Sources: Company reports, William Blair & Company, L.L.C. estimates, and FactSet

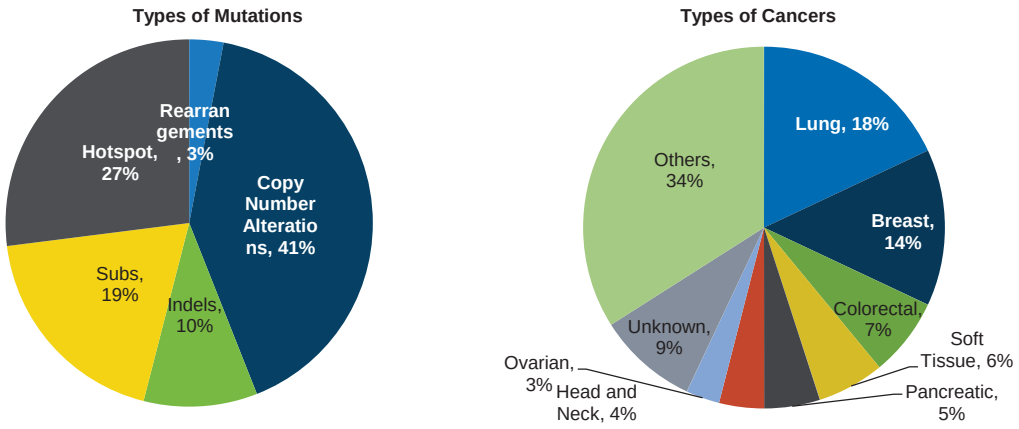
Investment Highlights

First-Mover Advantage and Comprehensiveness of Assay Yield Competitive Advantage
The standard of care for cancer treatment has been to treat the tumor based on anatomic site of origin (e.g., lung, breast, colon, and skin). As the capabilities and scale of NGS technology have improved and cost per base has declined, researchers have increasingly been able to analyze the molecular profiles of individual tumors, which has led to discoveries enabling better-targeted and more-effective treatment. Foundation's goal is to broaden this concept in the clinic; the company represents the only lab that offers a commercialized diagnostic assay covering all types of alterations across all known cancer-related genes via its FoundationOne product.

One of Foundation's key differentiators is its comprehensive approach; for its solid tumor assay, the company tests 236 genes, including all types of alterations (single base pair substitutions, indels, copy-number variants, focal gene amplifications, and homozygous gene deletions) in addition to 47 introns from 19 genes; existing diagnostic assays are more targeted and limited. The recently introduced Heme assay for blood-based cancer leverages both DNA sequencing to analyze 405 cancer-related genes (and some specific introns of 31 genes involved in rearrangements) and RNA sequencing to analyze 265 genes to identify gene fusions. This approach enables Foundation to find clinically relevant alterations that would not have been found via traditional diagnostic approaches or via "hotspot" cancer panels, which analyze fewer genes (on average 50, versus Foundation's at 230-plus), with lower coverage and in some cases less of them.

The company identifies a high number of clinically actionable alterations as defined by the company. For example, at the American Society of Clinical Oncology (ASCO) meeting in 2013, Foundation presented its analysis of the first 2,112 samples received; Foundation's assay found an actionable alteration in 76% of the samples. In its S-1 filing, the company updated this based on analysis of samples processed up to mid-May 2013 and found actionable alterations in 82% of 3,936 specimens received. In addition, the test identifies alterations that would not have been identified through classic diagnostic approaches. In the 2,112 sample study, of the 1,614 samples with an actionable alteration (ASCO data), for example, 62% of had one actionable alteration that would not have been found with commonly available NGS hotspot tests.

Exhibit 5
Foundation Medicine, Inc.
Actionable Alterations Found That Are Not Found by "Hotspot" Tests



Based on analysis of initial 2,200 cases evaluated by the company
Source: Company reports

Exhibit 6
Foundation Medicine, Inc.
Success and Actionability Rates

Number of samples	2,211
Success rate	2,112 (95.1%)
Number of samples with at least one actionable alteration	1,614 (76%)
Mean number of alterations per sample	3.06 [Range: 0-23]
Mean number of actionable alterations per sample	1.57 [Range: 0-16]

Notes:
Excludes 4.5% of samples with insufficient material
Success rate is the percentage of samples for which sufficient tissue was delivered to Foundation Medicine, and Foundation Medicine thereafter completed testing and reported results.
Excludes roughly 4.9% failed samples
Source: Company reports

Short interest in the stock has increased since the company's September 2013 initial public offering (latest data suggests 51% of the float is short). We believe that this is in part because of reimbursement questions, but also due to concerns that while Foundation maintains a first-mover advantage, its benefit may quickly erode as a result of competition. In our opinion, this market is far from commoditized. Foundation should continue to maintain a market-leading position for a longer time than the bear cases assume given its technical advantages. First, the company has made significant investments in workflow (which enables it to perform analysis on small sample sizes of FFPE tissue with relatively low tumor burden), yielding high sensitivity and specificity. Second, Foundation has developed proprietary analytics capabilities, delivered via a Web-based doctor interface, with molecular/clinical data that create a feedback-loop/network effect.

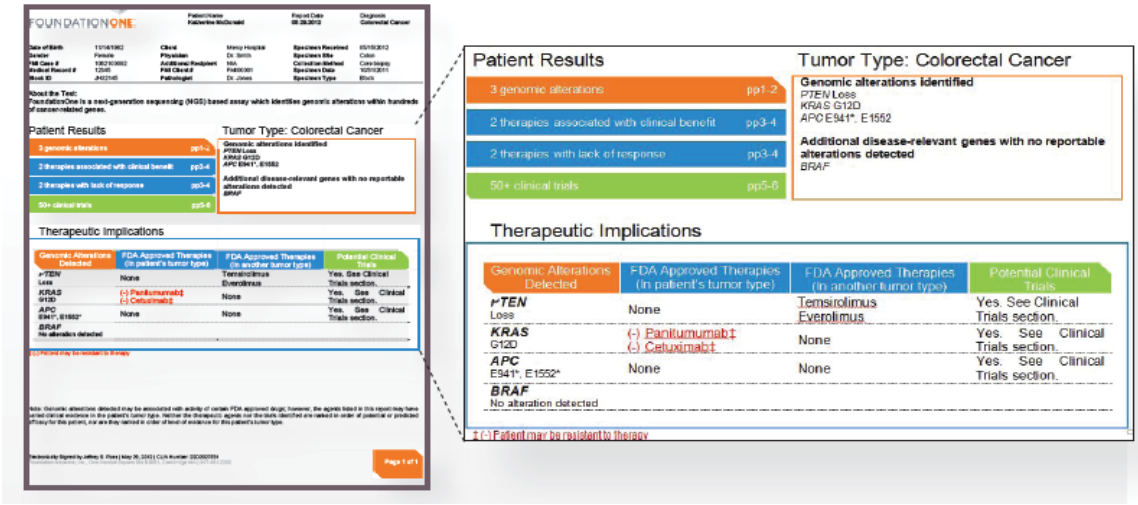
Ability to handle real-world clinical samples is not an insurmountable obstacle for competition. FFPE fixation technologies often cause damage to DNA, so analysis of FFPE tissue requires robust DNA extraction and library construction methodologies. In addition, sampling technologies (including small-core needle biopsies, fine-needle aspirations, and cell blocks prepared from malignant pleural, pericardial, or peritoneal effusions) leverage limited amount of tissue and DNA. Foundation has also developed a competency in analyzing heterogeneous samples. In some needle biopsies, for example, tumor burden can be as low as 20%; clinical samples inherently have low tumor burden given the heterogeneity of tissue. Low coverage sequencing can miss low alteration allele frequency, and thus uniformly high sequence coverage and rigorous algorithms are required.

Information database ("big data" of genomics) and bioinformatics capabilities; network effect/feedback-loop model. Foundation provides a report to the physician, which includes relevant therapies and clinical trials and is accessible via an online portal, called the Interactive Cancer Explorer. Actionable alterations are defined as being associated with: 1) an FDA-approved targeted therapy in the tumor type, 2) an FDA-approved targeted therapy in another tumor type, and/or 3) a clinical trial that is linked to the alteration via mechanism of action to the therapy under study. The company also reports any alterations that are associated with a pathway that has been identified to be an unambiguous driver of cancer based on published research; some of these pathways may be biologically relevant but not yet have a targeted therapy available.

The report includes clinically relevant alterations on the first page, and in some cases pertinent negatives (such as KRAS and EGFR). Results can be classified as variants of unknown significance (an alteration that has not been adequately characterized in the literature), equivocal (some but not unambiguous evidence of evidence of amplification or homozygous loss of a gene), and subclonal (the FoundationOne assay has identified the presence of an alteration in less than 10% of the tumor DNA).

In addition to test results, the Interactive Cancer Explorer provides a user interface to the company's database allowing click-throughs to relevant scientific references and clinical trials. Foundation's database includes not only internally generated data but also external data related to clinical trials and published literature. This not only drives stickiness with customers, but also enables the company to benefit from a network effect; the more data submitted into the database, the more powerful it becomes. Foundation is also working to expand its physician portal to include treatment, clinical outcomes data, and longitudinal data as well as bidirectional information flow.

Exhibit 7
Foundation Medicine, Inc.
FoundationOne Report



Source: Company reports

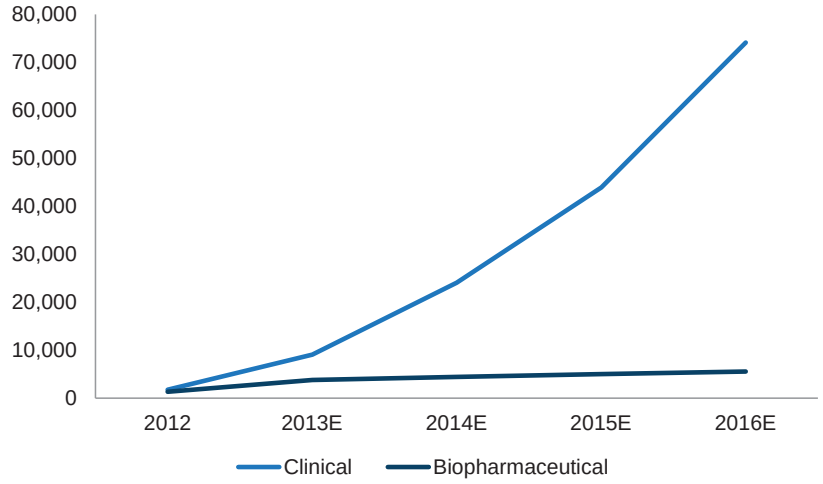
Expansion Into Clinical Yields a Meaningful Yet Relatively Untapped Opportunity

In addition to traditional diagnosis methods (morphology, staging, etc.), oncologists are increasingly relying on molecular profiling of tumors. For example, in colorectal cancer, screening for alterations in the KRAS, BRAF, and PI3KCA genes can identify up to 70% of tumors unlikely to respond to anti-EGFR therapies (a common treatment strategy). From a clinical application standpoint, the goal is to enhance molecular profiling of tumors in an effort to stratify patients who might benefit from specific therapeutics and, ultimately, to identify novel drug targets.

The market for comprehensive testing is early but large and is drawing increased attention from physicians; Foundation offers a sophisticated assay with limited competition. Consequently, the company has achieved meaningful growth in its clinical business, performing 1,750 FoundationOne clinical tests in 2012, 9,095 in 2013 (up 420%), and another 24,082 in 2014 (up 165%), according to our estimates, as the company continues to expand its salesforce and reach.

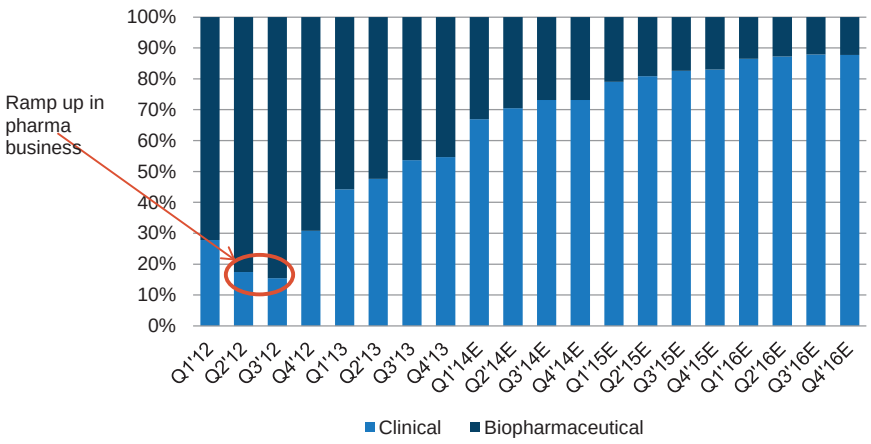
While clinical revenue represented 25% of sales in 2012, this increased to 51% in 2013 and we estimate will continue to rise to 71% in 2014. Moreover, the company has reported continued strength in adoption of the test by community practices (as well as academic medical centers). In the most recent quarter, 55% came from community doctors, versus 45% from academic centers. The majority of doctors who order the test each week have ordered the test once before, suggesting success for the company in generating repeat business.

Exhibit 8
Foundation Medicine, Inc.
Annual Volume



Sources: Company reports and William Blair & Company, L.L.C estimates

Exhibit 9
Foundation Medicine, Inc.
Quarterly Revenue Breakdown



Sources: Company reports and William Blair & Company, L.L.C estimates

Foundation's theoretical addressable market would include all patients with metastatic tumors globally and, now with the launch of FoundationOne Heme, all blood-based cancer patients. The market opportunity reaches nonsensical sizes when considering that an assay is priced in the thousands of dollars and can be used for the majority of cancer patients and if used for earlier-stage cancer, not just once, but on a repeat basis as doctors monitor rapidly mutating cancers. In the United States alone, according to the National Cancer Institute, there are 13 million people living with cancer and an estimated 1.6 million people diagnosed with cancer in 2013. There are roughly 3 million people living with stage IV (metastatic) cancer and 334,795 diagnosed with stage IV in 2013.

In its S-1 filing, Foundation sized its addressable market for FoundationOne solid tumor at 1 million patients in the United States. This is based on a narrower (and more realistic) focus in terms of patient population (based on Foundation's existing sales-and-marketing capabilities). This includes: 1) patients who had tested negative under existing hotspot tests for their tumor type,

2) patients with not enough tissue to perform multiple hotspot tests (e.g., non–small-cell lung cancer), 3) patients who have tried standard treatments that have failed and whose cancer is progressing, 4) patients with rare or uncommon tumors (e.g., certain sarcomas or non-colon/small-bowel gastrointestinal tumors) for which a standard treatment approach does not exist, and 5) patients with aggressive disease. This market could expand by another 800,000 patients as Foundation's sales-and-marketing efforts expand to patients with earlier-stage cancers and awareness for use of molecular assays increases.

Our understanding is that this analysis was based on some public data, but also surveys and other primary research conducted by the company, which will be difficult to replicate. We attempted to validate this market size by using data available for patients with stage IV (metastatic disease), rare cancers, and estimated penetration of prevalence populations (those living with cancer). Using data from the National Cancer Institute, which provides cancer-by-cancer statistics on new cases and stages, we estimate the annual market opportunity to be 935,732 patients for FoundationOne and 95,275 for Heme (see exhibit 9) from analyzing each cancer's stage distribution, prevalence, new cases, and survival rate. Assuming an ASP of $3,000 suggests a market opportunity of $2.8 billion in the United States for FoundationOne. We estimate the company had 1% of the market in 2013, which we project to expand to 2.3% in 2014, 4.3% in 2015, and 7.2% in 2016.

Exhibit 10
Clinical Patient Penetration Assuming 1,031,007 Market Opportunity

	2012	2013	2014E	2015E	2016E
Volume	1,750	9,095	24,082	43,916	74,104
Penetration (%)	0.2%	0.9%	2.3%	4.3%	7.2%

Source: William Blair & Company, L.L.C estimates

More specific, we segmented the annual market opportunity for FoundationOne in solid tumors into five addressable patient types (excluding hematological cancers like leukemia, myeloma, and lymphoma): 1) all new stage IV cases diagnosed each year, which we estimate to be 275,860; 2) all rare or aggressive cancers of all stages determined by frequency and survival rates (excluding stage IV to avoid double counting), like pancreas, liver, esophagus, lung, and stomach, 284,032; 3) 10% penetration of prior diagnosed (prevalence) stage IV cases, 128,542; 4) 10% penetration of people living with rare or aggressive cancer, 50,593; and 5) current cancer cases that metastasize, which we estimated by taking each cancer's five-year mortality rate and assumed those patients likely have metastatic disease. Then, we assumed a 10% penetration of those cases, 196,705. Exhibit 10 shows our detailed analysis by cancer type; it is important to note that the asterisks identify the rare or aggressive cancers.

Exhibit 11
Estimated Annual Market Opportunity

	Estimated New Cases		Regional		Distant		Prevalence		Estimated Deaths		5 yr	Estimated
	% Total	Both Sexes	%	Cases	%	Cases	Cases	Distant	% Total	Both Sexes	Survival	Deaths
All Sites	**100%**	**1,660,290**	**21%**	**342,164**	**20%**	**334,795**	**13,027,914**	**3,009,848**	**100%**	**580,350**	**62%**	**2,322,761**
Oral cavity and pharynx	2.5%	41,380	47%	19,449	17%	7,035	275,193	46,783	1.4%	7,890	62%	104,023
Tongue	0.8%	13,590	NM	NM	NM	NM	NM	NM	0.4%	2,070	NM	NM
Mouth	0.7%	11,400	NM	NM	NM	NM	NM	NM	0.3%	1,800	NM	NM
Pharynx	0.8%	13,930	NM	NM	NM	NM	NM	NM	0.4%	2,400	NM	NM
Other oral cavity*	0.1%	2,460	NM	NM	NM	NM	NM	NM	0.3%	1,640	NM	NM
Digestive system	17.5%	290,200	31%	89,135	26%	75,163	1,343,602	347,997	24.9%	144,570	NM	NM
Esophagus*	1.1%	17,990	30%	5,397	36%	6,476	33,839	12,182	2.6%	15,210	17%	27,985
Stomach*	1.3%	21,600	30%	6,480	34%	7,344	72,269	24,571	1.9%	10,990	28%	52,250
Small intestine*	0.5%	8,810	36%	3,172	27%	2,379	NM	NM	0.2%	1,170	65%	NM
Colon	6.2%	102,480	36%	36,893	20%	20,496	828,436	165,687	8.8%	50,830	65%	290,781
Rectum	2.4%	40,340	36%	14,522	20%	8,068	326,045	65,209	0.0%		65%	114,442
Anus, anal canal, and anorectum	0.4%	7,060	31%	2,189	13.0%	918	NM	NM	0.2%	880	66%	NM
Liver and intrahepatic bile duct*	1.8%	30,640	27%	8,273	18%	5,515	41,404	7,453	3.7%	21,670	16%	34,738
Gallbladder and other biliary	0.6%	10,310	NM	NM	NM	NM	NM	NM	0.6%	3,230	NM	NM
Pancreas*	2.7%	45,220	27%	12,209	53%	23,967	41,609	22,053	6.6%	38,460	6%	39,112
Other digestive organs*	0.3%	5,750	NM	NM	NM	NM	NM	NM	0.4%	2,130	NM	NM
Respiratory system	14.8%	246,210	21%	52,654	54%	132,275	488,460	262,423	28.2%	163,890	NM	NM
Larynx	0.7%	12,260	20%	2,452	18%	2,207	89,029	16,025	0.6%	3,630	61%	35,077
Lung & bronchus*	13.7%	228,190	22%	50,202	57%	130,068	399,431	227,676	27.5%	159,480	17%	333,125
Other respiratory organs*	0.3%	5,760	NM	NM	NM	NM	NM	NM	0.1%	780	NM	NM
Bones and joints*	0.2%	3,010	NM	NM	NM	NM	NM	NM	0.2%	1,440	66%	NM
Soft tissue*	0.7%	11,410	NM	NM	NM	NM	NM	NM	0.8%	4,390	NM	NM
Skin	5.0%	82,770	8%	6,902	4%	3,068	921,780	34,163	2.2%	12,650	NM	NM
Melanoma - skin	4.6%	76,690	9%	6,902	4%	3,068	921,780	36,871	1.6%	9,480	91%	80,195
Other nonepithelial skin*	0.4%	6,080	NM	NM	NM	NM	NM	NM	0.5%	3,170	NM	NM
Breast	14.1%	234,580	32%	75,066	5%	11,729	2,829,041	141,452	6.9%	40,030	89%	305,536
Genital system	20.5%	339,810	15%	49,871	9%	29,741	3,874,682	339,122	10.1%	58,480	NM	NM
Uterine cervix	0.7%	12,340	36%	4,442	12%	1,481	249,496	29,940	0.7%	4,030	68%	80,088
Uterine corpus	3.0%	49,560	20%	9,912	8%	3,965	600,346	48,028	1.4%	8,190	82%	111,064
Ovary*	1.3%	22,240	18%	4,003	61%	13,566	186,138	113,544	2.4%	14,030	NM	NM
Vulva	0.3%	4,700	31%	1,457	5%	235	NM	NM	0.2%	990	71%	NM
Vagina and other genital, female*	0.2%	2,890	NM	NM	NM	NM	NM	NM	0.1%	840	NM	NM
Prostate	14.4%	238,590	12%	28,631	4%	9,544	2,617,682	104,707	5.1%	29,720	99%	20,941
Testis	0.5%	7,920	18%	1,426	12%	950	221,020	26,522	0.1%	370	95%	10,388
Penis and other genital, male*	0.1%	1,570	NM	NM	NM	NM	NM	NM	0.1%	310	NM	NM
Urinary system	8.5%	140,430	12%	16,155	10%	13,978	905,145	90,097	5.1%	29,790	NM	NM
Urinary bladder	4.4%	72,570	7%	5,080	4%	2,903	563,640	22,546	2.6%	15,210	78%	124,564
Kidney & renal pelvis	3.9%	65,150	17%	11,076	17%	11,076	341,505	58,056	2.4%	13,680	72%	96,304
Ureter and other urinary organs*	0.2%	2,710	NM	NM	NM	NM	NM	NM	0.2%	900	NM	NM
Eye and orbit	0.2%	2,800	NM	NM	NM	NM	NM	NM	0.1%	320	NM	NM
Brain and other nervous system*	1.4%	23,130	16%	3,701	2%	463	141,553	2,831	2.4%	14,080	34%	94,133
Endocrine system	3.8%	62,710	24%	15,055	4%	2,409	534,973	20,549	0.5%	2,770	NM	NM
Thyroid	3.6%	60,220	25%	15,055	4%	2,409	534,973	21,399	0.3%	1,850	98%	12,304
Other endocrine*	0.1%	2,490	NM	NM	NM	NM	NM	NM	0.2%	920	NM	NM
Lymphoma	4.8%	79,030	18%	14,177	48%	37,703	690,993	329,652	3.5%	20,200	NM	NM
Hodgkin lymphoma	0.6%	9,290	40%	3,716	38%	3,530	181,928	69,133	0.2%	1,180	85%	27,107
Non-Hodgkin lymphoma	4.2%	69,740	15%	10,461	49%	34,173	509,065	249,442	3.3%	19,020	69%	157,810
Myeloma	1.3%	22,350	0%	0	95%	21,233	77,617	73,736	1.8%	10,710	43%	44,086
Leukemia	2.9%	48,610	NM	NM	NM	NM	287,963	NM	4.1%	23,720	56%	126,704
Acute lymphocytic leukemia	0.4%	6,070	NM	NM	NM	NM	NM	NM	0.2%	1,430	NM	NM
Chronic lymphocytic leukemia	0.9%	15,680	NM	NM	NM	NM	NM	NM	0.8%	4,580	NM	NM
Acute myeloid leukemia	0.9%	14,590	NM	NM	NM	NM	NM	NM	1.8%	10,370	NM	NM
Chronic myeloid leukemia	0.4%	5,920	NM	NM	NM	NM	NM	NM	0.1%	610	NM	NM
Other leukemia	0.4%	6,350	NM	NM	NM	NM	NM	NM	1.2%	6,730	NM	NM
Other and unspecified primary sites*	1.9%	31,860	NM	NM	NM	NM	NM	NM	7.8%	45,420	NM	NM
Total Excl. Leukemia, Myeloma, Lymphoma		**1,510,300**	**22%**	**327,987**	**18%**	**275,860**	**11,314,429**	**1,285,417**	**82%**	**474,150**	**61%**	**1,967,053**

Addressable by FoundationOne	
1. Stage IV (Distant) New Cases	275,860
2. Rare/Aggressive New Cases (Excl. Stage IV)	284,032
3. Old Stage IV Cases (Assume 10% a Year)	128,542
4. Old Rare/Aggressive Cases (Assume 10% a Year)	50,593
5. Old Cases That Progress (Estimated Deaths x 10%)	196,705
Total	**935,732**

Addressable by FoundationOne Heme	
1. Stage IV (Distant) Myeloma and Lymphoma Cases	58,935
2. Leukemia (AML, CLL, ALL)	36,340
Total	**95,275**

*Rare/Aggressive

Sources: American Cancer Society, National Cancer Institute, and William Blair & Company L.L.C. estimates

Introduction of the FoundationOne Heme assay expands the company's addressable market. The company developed FoundationOne Heme in conjunction with Memorial Sloan Kettering Cancer Center and is leveraging RNA-based sequencing technology to analyze additional gene fusions found in hematologic malignancies. After presenting data at the American Society of Hematology annual meeting in early December, the company launched the assay in December 2013 with an estimated annual 100,000 addressable patients. According to the National Cancer Institute, there were 36,340 people diagnosed with (acute lymphocytic, chronic lymphocytic, and acute myeloid) leukemia, 21,233 with stage IV myeloma, and 37,703 with stage IV lymphoma in 2013, totaling 95,275. So we view the company's 100,000-patient market opportunity as reasonable.

Foundation plans to introduce an expanded FoundationOne assay in the first half of 2014 and is also analyzing the use of circulating tumor cells and cell-free plasma DNA (DNA that circulates in blood plasma outside cells) that could expand the company's offering into epigenetics.

Clinical Trials Business Provides Base Source of Revenue

The majority of the company's revenue (75% in 2012) has been generated from pharmaceutical companies. Foundation has 18 pharmaceutical clients, which use Foundation's proprietary molecular information platform to enhance the development of targeted therapeutics. We expect revenue from the clinical diagnostics business to far exceed clinical trials as a percentage of total; however, the company's pharmaceutical relationships provide a level of support. Pharmaceutical business drove $8 million of revenue in 2012 and $14 million in 2013 (growth of 77%, representing 49% of the total) and is expected to contribute $17 million of revenue in 2014 (growth of 17%, representing 29% of the total) and $19 million in 2015 (growth of 12%, representing 18% of the total).

The company generates revenue on a per-test basis or based on agreements to provide certain testing volume or other deliverables over defined periods. More of the company's pharmaceutical revenue has become structured on a deliverable basis (based on allocated lab capacity, for example), which has driven more stability and predictability for the pharmaceutical revenue stream. For example, about $4.4 million (or 41% of total revenue) in 2012 and $8.9 million in 2013 was for minimum guarantees under contracts that were not negotiated on a per-test basis. ASPs tend to be higher for pharmaceutical business (with a realized ASP closer to $4,000 in recent quarters), although we expect that to trend down to $3,700 as adoption increases.

Clinical trials customers include Agios Pharmaceuticals, Ariad Pharmaceuticals, Array BioPharma, AstraZeneca, Celgene Corporation, Clovis Oncology, Eisai, Johnson & Johnson, Novartis, and Sanofi. Pharmaceutical companies mostly use Foundation's test to help identify target patients for clinical trials and throughout the clinical trials process. Biopharmaceutical customers have also begun to leverage Foundation's data to alter the direction of clinical trials. For example, one customer's Phase II trial failed to meet its primary endpoint. After leveraging Foundation One's assay, the customer revised its Phase III target population.

Foundation's relationship with Novartis has been a success; a pilot program was established in January 2011 and expanded via a three-year agreement in mid-2012 to include guaranteed quarterly minimum payments by Novartis for allocation of capacity within Foundation, to perform a maximum number of tests. The collaboration was extended and expanded in January 2014 and now runs through September 2016 with an option to extend the term for two years. The new agreement includes committed capacity at Foundation that will be used to provide genomic profiling of genomic samples from Novartis's clinical trials as well as access to Foundation's molecular information database. As of the latest filings, Novartis represents more than 10% of the company's revenue.

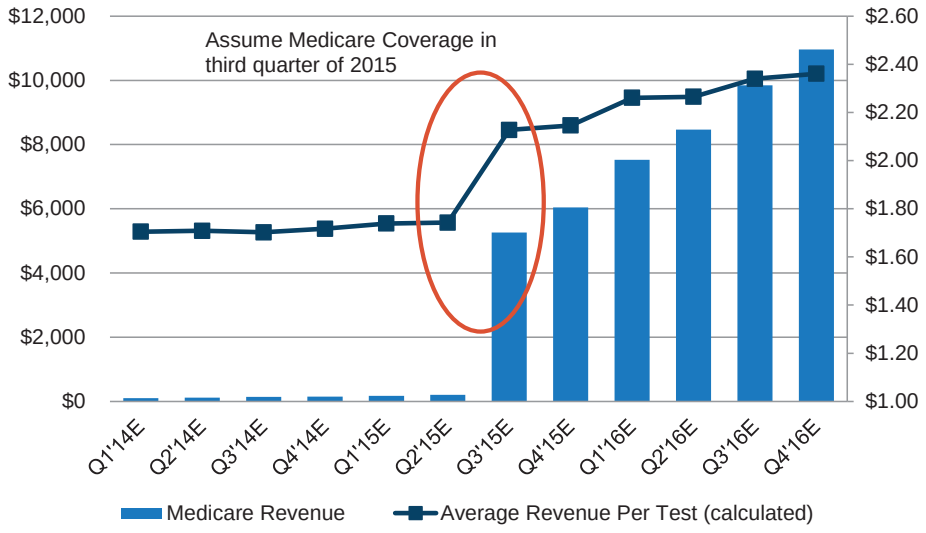
Another example is the company's relationship with the Friends of Cancer Research, which is enrolling patients in a Phase II-III trial with squamous cell lung carcinoma. FoundationOne will be used to stratify patients into specific target populations.

Investment Risks

Given Foundation's Early Stage, Private and Public Reimbursement Remains the Key Risk
Foundation is early in the commercial launch of its clinical assay for solid tumors and even more so for its Heme assay; the company does not yet have contracts with private payers or Medicare.

Foundation began submitting claims to Medicare at the end of 2013 and is leveraging a miscellaneous CPT code methodology. FoundationOne's list price is $5,800. The average revenue per test for the clinical version FoundationOne assay is $3,400 as of the most recent quarter (which includes tests that met the company's revenue-recognition criteria and so excludes tests billed to third-party and government payers). We assume an increase in realized ASP from $1,717 in 2013 to $2,307 in 2016, driven by improved contracting terms and coverage and assume the company receives Medicare coverage in mid-2015. Failure to obtain positive payer terms (particularly from Medicare) could be a risk to our estimates.

Exhibit 12
Medicare Coverage Bumps Average Revenue Per Test (Calculated)



Dollars in thousands
Source: Company reports and William Blair & Company L.L.C estimates

To date, payers have been reluctant to cover genetic-based tests without extensive—in some cases prospective—evidence of clinical utility. Insurers refer to professional organization guidelines (the National Comprehensive Cancer Network, American Congress of Obstetricians and Gynecologists, and American College of Medical Genetics, for example) and peer-reviewed publications, as well as recommendations from agencies evaluating the clinical utility of genetic tests, including the Agency for Healthcare Research and Quality, U.S. Preventive Services Task Force, Blue Cross Blue Shield Association Technology Evaluation Center, and Evaluation of Genomic Applications in Practice and Prevention working group recommendations.

Although vendors continue to push down the cost of sequencing toward the $1,000 per genome mark (via Illumina's X Ten platform) and researchers continue to make progress in understanding human genetic variation, we have yet to identify the genetic basis of most diseases. Consequently, the vast majority of existing peer-reviewed research supports the clinical application of single-gene

or a few multigene-based diagnostics. Payers cover some sequencing-based tests (such as BRCA1/2, MLH1/2) and a limited number of array-based tests (a standard cystic fibrosis panel, for example) if the member displays clinical features or is at risk of developing disease.

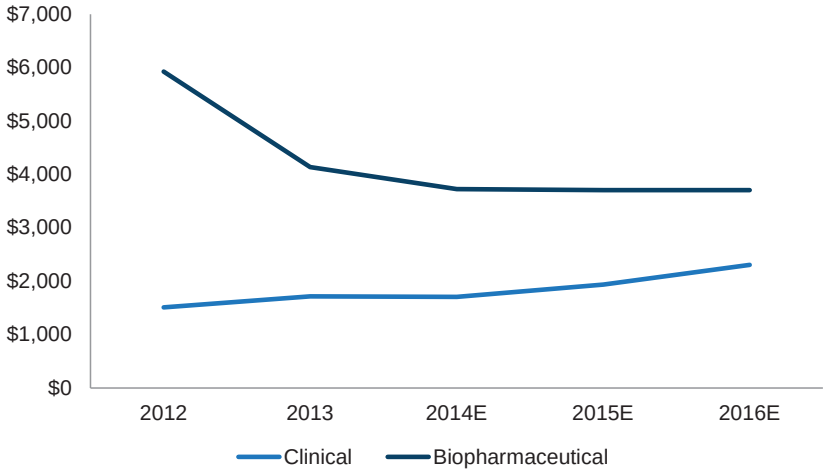
In terms of cancer research, we are still in very early stages of understanding genetic variability/commonality between phenotypes of disease. Therefore, while there is an argument that it is more cost effective to evaluate alterations in a panel format (versus on a test by test basis), it is not clear whether whole genome sequencing, exome sequencing, pan-cancer panels, or targeted panels are the best diagnostic approach and for which cancers. In addition, it is not clear whether actionable mutations should be defined as those which point to a specific therapeutic or those that point to clinical trials. We note that Foundation does not provide a breakdown of which mutations that the company classifies as actionable are correlated to specific therapeutics versus clinical trials. Thus, payers may fail to cover comprehensive NGS-based panels without more evidence of clinical utility or cost/benefit analysis. Alternatively, if Foundation is successful in going in network with payers, the company may obtain lower-than-expected reimbursement or fail to negotiate agreeable terms.

Payers are also focused on the impact of utilization driven by rapid innovation of genetic tests, particularly those that are billed on a per-analyte basis versus per-sample. As a consequence, the American Medical Association in conjunction with the Centers for Medicare & Medicaid Services (CMS) has revamped the procedural terminology (CPT) coding infrastructure to allow increased visibility into genetic testing, which has subsequently led to some payers denying or delaying payment. New CPT codes for molecular pathology were implemented and priced in 2013 in an effort to replace the prior methodology of code stacking. In addition to reimbursement cuts (relative to what labs were getting paid via a stacked methodology), this has resulted in payment delays and denials for many labs, which has negatively affected revenue and cash collections.

After implementing new molecular pathology codes in 2013, the MoPath committee is now refocusing its sights on developing a CPT coding infrastructure for NGS assays. The project was targeted for implementation in 2014 but was delayed with the passing of Dr. Jeffrey A. Kant, who was responsible for beginning the NGS draft for the Association for Molecular Pathology (AMP). The AMP developed a proposal framework for CPT coding of NGS assays, which it submitted for review to the AMA. The AMP coined the term "genomic sequencing procedures (GSPs)." The AMP suggested pricing of new codes, including testing for aortic dysfunction, nonsyndromic hearing loss, X-linked intellectual disability, fetal aneuploidy, colon cancer panel, whole mitochondrial genome, targeted solid organ tumor neoplasm somatic alterations, and whole exome/genome.

The company has been proactively working to obtain Z-Codes for its tests, which have been more broadly adopted by local MAC Palmetto (considered to be a thought leader in molecular diagnostic reimbursement), and it has submitted an application on the McKesson Diagnostic Exchange. While implementation of codes for NGS panels could also be a positive for Foundation, to the extent the company begins to be reimbursed more sustainably for Medicare samples, it could also result in lower-than-expected payments and/or fallout from logistical issues as payers adopt any new coding infrastructure. Broader CPT codes are unlikely to incorporate the full complexity of Foundation's tests and would likely undergo a gap fill process to establish reimbursement, which would imply local MACs would establish pricing (Foundation's local MAC is National Government Services). Moreover, implementation of broader NGS CPT codes could result in reimbursement for (and increased competition from) hotspot panel tests.

Exhibit 13
Foundation Medicine, Inc.
Annual Realized ASP



Sources: Company reports and William Blair & Company, L.L.C estimates

While Foundation Does Not Have Direct Competition, We Expect Increased Market Entry Over Time

In our opinion, the complexity of comprehensive (across all alteration types) NGS-based assays, particularly the workflow (sample prep and required bioinformatics), is underappreciated by investors. Foundation, for example, has published data suggesting that its assay successfully identifies clinically relevant alterations that could not be identified via existing tests (including more targeted hotspot tests; see exhibit 14 for more details).

Alteration frequencies can vary across nucleotide sequences such that oftentimes somatic alterations that are associated with cancer progression and treatment response can be aggregated at certain locations, called hotspots. In some cases, DNA sequences can have a high susceptibility to alterations given some inherent instability such as chemical predisposition to single nucleotide substitutions.

A number of sequencing platform vendors have introduced hotspot panels, including the AmpliSeq panel by Life Technologies/Ion Torrent, Illumina's TruSeq Amplicon Cancer Panel, and RainDance's Hotspot panel. Life Technologies offers a cancer hotspot panel; it requires 10 nanograms of starting DNA, which analyzes 50 genes at, on average, 1,400 coverage. Labs have leveraged these sample prep/content products to launch hotspot somatic alteration panels as lab-developed tests. For example, LabCorp in December 2013 launched its IntelliGEN assay, which assesses 2,600 alterations in 50 oncogenes (base technology undisclosed). ARUP Laboratories also offers a NGS-based panel that tests for alterational hotspots in 48 genes; its sensitivity its 5% for mutant alleles.

Exhibit 14
Labs with Somatic Cancer Panel Assays

Laboratory	Test	Number of Markers	Platform	Launched	Stated Turnaround
LabCorp	IntelliGen	2,600 mutations; 50 genes	NM	Dec-13	Less than 14 days
University of Washington	OncoPlex	194	ILMN	Aug-12	8 weeks
Memorial Sloan Kettering	In development	212 hotspots/48 genes	ILMN/TruSeq Amplicon	NM	NM
Baylor College of Medicine	Cancer Gene Mutation Panel Version 2	2,855 mutations in 50 genes	Ampliseq/Ion Torrent	NM	14 days
Washington University	Comprehensive Cancer Gene Set	42 genes	Illumina HiSeq	February 2013; first generation launched a year prior	4 to 5 weeks
Knight Diagnostic Labs (Oregon Health & Science University)	GeneTrails	37 genes	Ion Torrent/AmpliSeq	NM	10 to 14 days
Arup Labs	Solid Tumor Mutation Panel by Next Generation Sequencing	hotspot panel for 48 genes	NM	NM	12 to 14 days
Univ. of Pittsburgh Medical Center	Personalized Cancer Mutation Panel (PCMP)	2,800 mutations in 50 genes	Ion Torrent/AmpliSeq	NM	7 to 14 days
Bio-Reference Labs	OnkoMatch	68 mutations; 14 genes	NM	NM	NM

Sources: Company reports

Ultimately, the market for NGS-based oncology is large; Illumina, for example, has pointed to a $20 billion addressable market, and Foundation has cited a 1 million patient opportunity annually for its solid tumor assay alone. Therefore, Foundation will inevitably face real or perceived competition, which could heighten concerns about the company's ability to secure market share and/or maintain reimbursement levels to the extent competitors compete on price.

FDA Increasing Oversight of Lab-Developed Tests (LDTs)

Although technically under the purview of the FDA, LDTs have historically been regulated by the CMS (based on the Clinical Laboratory Improvement Amendments [CLIA], which were passed by Congress in 1988 to establish quality standards for all laboratory testing). Some form of increased regulation by the FDA is inevitable, in our view, and will likely increase both cost and time to market for diagnostic vendors and laboratories.

Diagnostic products sold as IVD test kits are subject to FDA regulatory approval; most are cleared through the 510(k) process, which is less arduous than the more intense PMA process. While IVD test kits are common, the CLIA validation process is much less arduous than the 510(k) or PMA process, and thus many innovators bring new tests to market via the CLIA mechanism. As a result, there has been a significant increase in not only the number of recent LDT introductions, but also the complexity of these tests and their use in influencing treatment decisions.

The FDA has specifically expressed concern that the existing LDT regulatory framework neither provides significant assurance of reagent quality and consistency nor effectively analyzes the clinical data supporting claims to clinical validity (which the FDA indicated is the largest gap). These shortfalls have become an issue in an environment where tests are no longer used for just diagnosis and monitoring, but to predict drug response and risk of disease, and in the cases where results are delivered directly to the patient, without clinician involvement. In the past, the agency has focused on in vitro diagnostic multivariate index assays (IVDMIAs), cytogenetics arrays, and direct-to-consumer genetic tests, indicating that these test categories are classified as "devices" and therefore required FDA clearance. Despite its prior deference of regulation of LDTs to CLIA, however, through its issuance of the IVDMIA and analyte-specific reagent guidance documents and various public commentary, the FDA indicated that some LDT-based testing should be regulated as a medical device.

The agency has also expressed concern that the LDT pathway is being used as a commercialization loophole—a way to bring tests to market faster without validation of their clinical claims—and has acknowledged the view (as stated in Genentech's 2008 citizen petition) that the existing bifurcated

regulatory approach may not create a level playing field for laboratories and diagnostic manufacturers. In 2010, the agency said it was again revisiting the policy and held a public workshop on the topic in July of that year. In mid-June 2013, FDA Commissioner Margaret Hamburg indicated that the FDA has a risk-based framework of LDT regulation under development. She expressed concern that LDTs do not require premarket approval and are in many cases being used to guide treatment therapy or preventive action.

The FDA's ability to implement regulation (from a resource standpoint) as well as the impact it will have on labs that offer LDTs and manufacturers that leverage the LDT process to commercialize assays remains unclear. Although the specific framework that the FDA will employ is unclear, the agency has mentioned a number of times that its intention is not to disrupt critical testing (it could use existing CLIA inspectors, for example) and that it recognizes the need to foster innovation despite increased oversight. The FDA has also frequently reiterated its view that LDTs as a class of test are critical (and potentially the only option in the case of many specialty LDTs that require significant technical expertise and training and thus would not easily translate into commercially distributed kits). Therefore, we expect the LDT pathway to remain an option, especially since such tests are often developed to address unmet needs and rare diseases. We believe the focus will be on high-risk tests (e.g., those that guide treatment) and direct-to-consumer–based testing. We expect the FDA will likely take a phase-in approach (address the highest-risk tests first), and some form of test registration seems probable (whether the NIH's existing genetic test registry effort will be sufficient is unclear).

Ultimately, we suspect that the FDA will prioritize its resources in the nearer term on areas receiving the most attention, such as genetic tests provided directly to the consumer without physician intervention or genetic counseling. Still, we believe that increased oversight of LDTs is ultimately a risk for the space.

Company Overview

Brief History

The company was founded by members (founding advisors) of the Broad Institute, the Dana-Farber Cancer Institute, Harvard Medical School, and the Massachusetts Institute of Technology and Alexis Borisy of Third Rock Ventures. Foundation began operations in November 2009. The company launched its FoundationOne for solid tumors assay in June 2012 and its FoundationOne assay for hematological cancers in December 2013. Private-equity backers include Third Rock Ventures (owns 23%); Kleiner, Perkins Caufield and Byers (owns 13%); Google Ventures (owns 9%); Gates Ventures (owns 4%); and jVen Capital, which together still own 49% of the company. LabCorp also has a large investment in the company (owns 4%). Foundation priced roughly $6.7 million shares in an upsized IPO at $18.00 a share, raising slightly more than $120 million.

Management

Foundation has an experienced team of executives with extensive medical backgrounds, many of whom have worked together in previous capacities. One of the company's co-founders, Mark Levin, who is a partner at Third Rock Ventures L.L.C., used to be CEO of Millennium Pharmaceuticals. Chief Operating Officer Steven Kafka and Medical Director Jeffrey Ross worked at Millennium Pharmaceuticals as well. Michael Pellini, chief executive officer, worked at Clarient and Genomics Collaborative and received his M.D. from Thomas Jefferson University. Ronald Collette, chief information officer, also worked at Clarient as the chief information officer. Kevin Krenitsky, chief commercial officer, worked at Genomics Collaborative and received an M.D. from Jefferson Medical College. Chief Medical Officer Vincent Miller once served as chief medical resident in internal medicine at Thomas Jefferson University Hospital. The majority of the executives have either an M.D. or Ph.D.

Michael Pellini, M.D., is president and chief executive officer of Foundation Medicine and joined the company in May 2011. Dr. Pellini has prior experience at Clarient (acquired by GE Healthcare), Safeguard Scientifics, Lakewood Pathology Associates (acquired by Water Street Healthcare Partners), BioAdvance, and Genomics Collaborative (acquired by SeraCare Life Sciences). Dr. Pellini brings experience in life sciences, clinical diagnostics, and building an attractive company for acquirers.

Steven Kafka, Ph.D., is chief operating officer and joined the company in January 2013. Dr. Kafka has prior experience at Aileron Therapeutics, Infinity Pharmaceuticals, and Millennium Pharmaceuticals. Dr. Kafka brings experience in investor relations, targeted therapies in oncology, and overall business strategy.

Kevin Krenitsky, M.D., is chief commercial officer and senior vice president, international strategy. He joined the company in June 2011. Dr. Krenitsky has prior experience at Enzo Clinical Labs, BioServe Biotechnologies, Parkway Clinical Laboratories, and Genomics Collaborative. Dr. Krenitsky brings experience in international strategy and commercializing esoteric LDTs.

Ronald Collette is chief information officer and joined the company in January 2012. Mr. Collette has prior experience at Clarient (acquired by GE Health), Traxx Consulting (a founding partner), Fluor Corporation, Pacific Life, Countrywide Mortgage, and the Resolution Trust Corporation. He is a regular speaker at security and IT events and a regular columnist for *Computer Economics,* and he co-authored two books on information security that are used in advanced educational programs. Mr. Collette brings experience in data security and information security, which is essential for Foundation's molecular information platform.

Vincent Miller, M.D., is chief medical officer and joined the company in October 2011. Dr. Miller has prior experience at Memorial Sloan Kettering Cancer Center, and is considered a world expert in lung cancer and clinical trial design and interpretation. Dr. Miller's work in lung cancer research and clinical and translational research provides a strong background in working with small samples sizes, given the mechanism used to obtain lung disease tissue.

Product Overview

The company's FoundationOne assay for solid tumors is a pan-cancer genomic profile that evaluates 236 cancer genes plus 47 introns from 19 genes at average depth of coverage of 250 times (including copy number alterations, insertions, deletions, and rearrangements) with a turnaround time of 14 to 17 days. FoundationOne is a targeted assay based on NGS platforms (Illumina) and can be performed on FFPE samples or needle biopsies. FoundationOne has analytical sensitivity and specificity of greater than 99% to call mutant alleles at 5% frequency of below.

In early December, Foundation launched its FoundationOne test for hematological cancers (leukemia, lymphoma, and myeloma), sarcomas, and pediatric cancers, which it developed in collaboration with Memorial Sloan Kettering Cancer Center. The Heme assay for blood-based cancer leverages both DNA sequencing to analyze 405 cancer-related genes (and some specific introns of 31 genes involved in rearrangements) and RNA sequencing to analyze 265 genes to identify gene fusions.

The company presented data demonstrating the utility of the Heme assay via 10 studies presented at the 2013 American Society of Hematology annual meeting in December. Researchers from Sloan Kettering analyzed 400 patient samples; samples were blood (150) and bone marrow aspirates (142) and FFPE samples (57), and libraries were sequenced to an average depth of 590 times. Greater than 20% tumor burden was present in 91% of samples and 885 alterations were identified (at an average 3.1 alterations per gene).

Comparison of detected alterations to traditional methods suggests a 97% sensitivity rate for the Heme assay based on initial studies; the assay was able to detect 99% of known gene fusions at 20% tumor content and 70% of gene fusions at tumor content of 10%. In addition, the assay identified clinically relevant alterations that would not have been detected via standard clinical assays, including alterations in JAK2, FLT3, and IDH2.

Both assays can be performed on FFPE samples, needle biopsies (in the case of solid tumors), and bone marrow/blood samples (in the case of the Heme assay). Test sensitivity for both assays is 95% to 99% (99% for base substitutions, 98% for indels, and greater than 95% for CNAs) with high specificity (positive predictive value greater than 99%).

Clinical utility. In Foundation's validation study for its solid tumor assay, it presented data from 2,221 specimens; of these, the company successfully tested 2,112 (or 95%) at mean coverage of 1,134 times. The company defines alterations in this case as known somatic alterations, truncations, or homozygous deletions of known tumor suppressor genes, as well as known amplifications of oncogenes and gene fusions known to be rearranged in solid tumors. Alterations were reported in 174 of 189 (92%) tested genes with an average of 3 alterations per sample (range of 0 to 23). The average number of alterations was 1.6 when just looking at clinically actionable alterations (those with a clinically available targeted treatment option or mechanism-driven clinical trial), with 76% of samples containing at least one clinically actionable alterations.

The number of actionable alterations per sample was low (average 1.57); a wide range of alterations was identified, with 1,579 total unique alterations reported across all the samples. Frequency showed a long-tail distribution with a handful of common alterations in cancer accompanied by rarer events, further supporting the notion that hotspot tests will miss a number of actionable results.

The company also saw a number of examples where alterations for proven therapy targets were seen in other solid tumor types not currently tested for. EBRR2 (HER2), for example, is clinically validated for breast and gastro-esophageal cancer. Foundation, however, identified HER2 alterations in 12 additional tumor types in 5% of cases, suggesting Herceptin should be considered for these patients. Forty percent of HER2 alterations were point alterations or indels not located in regions currently targeted using current testing methodologies

Of all of the alterations detected, 27% would have been detected with an NGS hotspot test (including SNaPshot, OncoCarta/OncoMap (Sequenom), HER2, and ALK FISH.

Within the 2,200 samples tests, the most common tumor types were lung, breast, and colorectal cancers. More than one-third of the samples were rare tumors (including neuroendocrine tumors, salivary gland tumors, adrenal tumors, melanomas, skin appendage tumors, non–large-bowel GI tumors, neuroblastomas, and others).

FoundationOne Workflow

The following provides an overview of the company's laboratory workflow as outlined in published validation studies; elements of the process may have changed, since this was written as of a static point.

DNA Extraction and Library Prep. DNA is extracted using 0.6 mm^3 of tissue; tumor burden greater than 20% is required. DNA is fragmented to 180 to 200 base pairs using sonication (via Covaris). Whole-genome shotgun library construction is performed (using New England Biolabs kits and Agilent's Bravo BenchBot); greater than 50 nanograms of double stranded (ds) DNA is required for library prep. Based on published validation data, the company has a failure rate of 5% (failure considered to be samples that do not get sequenced because they less than 50 nanograms of extracted DNA or 500 nanograms of library, or 4nM of captured library). Indexed libraries are amplified using PCR.

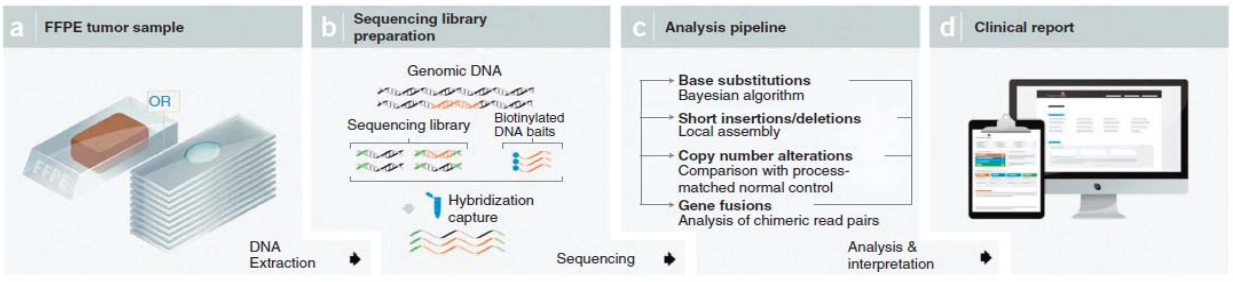
Hybrid Capture and DNA Sequencing. Hybrid capture is performed using 23,685 120 base pair oligonucleotide baits (Integrated DNA Technology). Earlier hybrid capture used Agilent SureSelect methodologies and thus some of Foundation's validation data includes this methodology. Library-bait complexes are captured on Invitrogen streptavin beads and amplified via PCR. This process yields 4,557 exons from 287 cancer-related genes and 47 introns from 19 genes frequently rearranged in cancer; target sequence is 1.5 megabases in length. Hybrid-capture-selected libraries are sequenced using Illumina HiSeqs (4 equivalent of 12 samples per lane) to uniform depth (500 times coverage for non-PCR duplicate read pairs, with greater than 99% of exons at 100 times coverage, and 49x49 base pair reads).

Data Analysis. Sequence data is mapped to the human reference using the BWA aligner (allows indels in alignment); local alignment optimization was performed by GATK (developed by the Broad) as well as Foundation's own local assembly approach. Variant calling is performed only in regions targeted by the test.

Foundation Medicine has developed a proprietary variant calling method, which enables identification of alterations at low allele frequencies and use of local assembly to identify longer insertion/deletion (indels) events. The company uses a Bayesian statistical model, which allows for identification of novel alterations at low frequencies and increased sensitivity for hotspot sites by leveraging tissue-specific prior expectations. De novo local assembly is required to enable reconstruction and identification of longer indel events; Foundation uses the de Bruijn approach. This requires: 1) collecting all read-pairs for which at least one read maps to the target region and 2) decomposing each read into k-mers and constructing a graphic representation of all potential nonreference haplotypes present. Best matches are then determined. CNAs are detected using a comparative genome hybridization-like method. Genomic rearrangements (gene fusions) are identified by reading chimeric pairs (read pairs for which reads map to separate chromosomes at a distance of over 10 megabases). Clusters containing at least 10 chimeric pairs were identified as rearrangement candidates; filtering was performed by mapping quality and distribution of alignment positions.

Reporting. Detected alterations are annotated according to clinical significance and reported. Germline variants from the 1000 Genomes Project are removed and known driver alterations (from the Catalogue of Somatic Alterations in Cancer database) are highlighted as biologically significant.

Exhibit 15
Foundation Medicine, Inc.
FoundationOne Workflow



Sample requirements

- Surface area: ≥25 mm^2
- Sample volume: ≥1 mm^3
- Nucleated cellularity: ≥80% or ≥30,000 cells
- Tumor content: ≥20%

Fraction of patients with tissue insufficient for analysis: 10–15%

Laboratory process highlights

- Requires ≥50 ng of dsDNA (quantified by PicoGreen)
- Fragmentation by sonication (Covaris) and 'with-bead' library construction
- Hybridization capture with biotinylated DNA oligonucleotides
- 49 × 49 paired-end sequencing on the Illumina HiSeq platform to >500× average unique coverage, with >100× at >99% of exons

Analysis methods highlights

- Sensitivity to variants present at any mutant allele frequency
- Detection of long (1–40 bp) indel variants using de Bruijn graph–based local assembly
- CGH-like analysis of read-depth for CNAs assessment

Reporting approach

Interpretation without a matched normal

- Germline variants from 1000 Genomes Project (dbSNP135) removed
- Known driver alterations (COSMIC v62) highlighted as biologically significant

A concise summary of the biomedical literature and current clinical trials is provided for each highlighted alteration

Source: Company reports

Clinical Validation
The company validated its assay against other methodologies (PCR fragment gel-sizing and Sequenom mass spectrometry genotyping). In addition, the company tested its assay on separate aliquots of the same tumor DNA to ensure reproducibility. The following provides more specifics about validation of the company's variant calling methodology.

Base substitution accuracy. Foundation created two pools of 10 normal cell lines from the 1000 Genomes Project; the pools contained 2,057 known base germline substitutions (including variants across the targeted exons, which span a range of mutant allele frequencies [MAF], 5% to 100%). The two pools had median exon sequencing coverage of 738 times and 580 times, with greater than 99% of the exons covered at greater than 250 times.

Foundation's process was able to detect greater than 99% of base substitutions expected at MAF greater than 10% (1,036 of 1,036) and greater than 99% at MAF less than 10% (1,013 of 1,021). Positive predictive value was greater than 99% (2,577 of 2,579 with two false positive calls with MAF below 5%). The company also down-sampled data (reduced coverage of the two pools from 500 times to 150 times, in increments of 50 times). Detection sensitivity dropped as coverage was reduced, particularly for alterations with frequency below 10% with a marked reduction below 100 times; high sensitivity was seen down to 250 times coverage.

To validate indels, Foundation mixed tumor cell lines with known somatic alterations into variably sized pools to represent both a range of MAFs (5% to 100%) and indel length (1 to 40 base pairs). The company used 28 tumor cell lines with 47 known somatic indel alterations in 22 genes. Average sequence of 667 times was obtained on resulting 41 pools with 99% of exons covered at 250 times. Foundation's workflow detected 92 of 94 indels at MAF greater than 20%, 71 of 73 at MAF between 10% and 20%, and 53 of 60 at MAF between 5% and 10%. PPV was greater than 99% (875 of 878, with false positive calls occurring at MAF below 20%).

To validate Foundation's variant-calling approach, the company compared existing analytical tools to its customized variant-calling pipeline, including SAMtools, a widely used software package for sequence data manipulation and germline genotype analysis, and Dindel, an available indel detection algorithm.

SAMtools was able to detect substation variants down to MAF of 20% (636/650), but was less successful with MAFs below 10%. SAMtools successfully called 97 of 386 variants at MAF between 10% and 20% and no variants (0 of 1,021) below MAF of 10%. Dindel successfully called 80% of indel events (217 of 272) but none greater than 23 base pairs. Nearly all SAMtools calls were also seen in Foundation results, whereas Dindel calls outnumbered Foundation's indel calls by sevenfold.

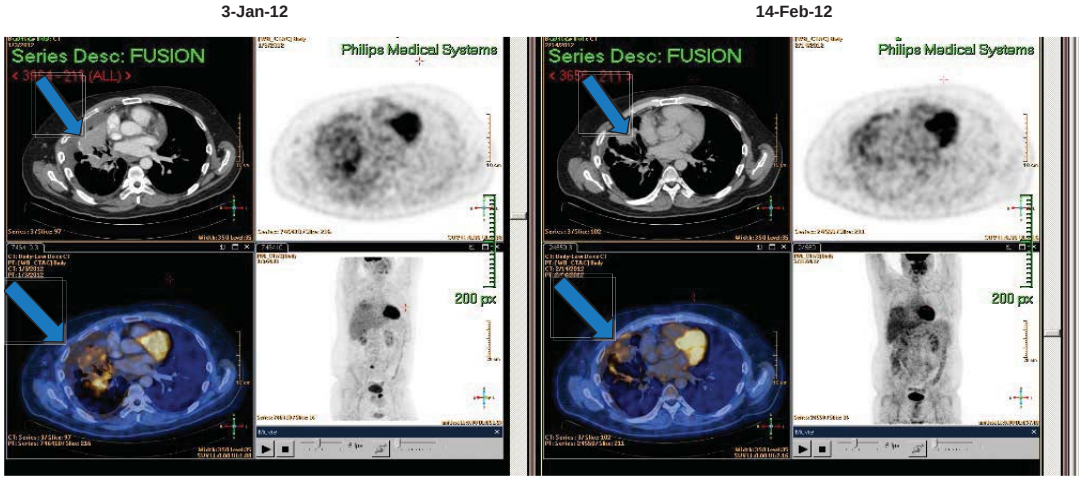
To validate CNA detection, the company pooled seven tumor cell lines, which included 19 focal gene amplifications and 9 homozygous gene deletions, with their normal cell lines in ratios ranging from low (20%) to high (75%) tumor content. FoundationOne detected high-level amplifications (copy number greater than or equal to 8) and homozygous deletions at low tumor purity (30%) at sensitivity of 99% and PPV of 99%. Performance was lower for lower CNAs (6 to 7 copies) and lower purities (20% to 30%) with sensitivity of 80%. Heterozygous loss is an area of potential improvement for the test.

Case Studies

Case study No. 1: 43-year-old patient with metastatic adenocarcinoma of the lung. Patient was diagnosed with metastatic adenocarcinoma of the lung involving bone and pleura. Traditional tests, including FISH, identified no actionable alterations. Chemotherapy was given without a noticeable benefit and poor tolerance by the patient.

Via FoundationOne, an ALK fusion alteration was detected, which had not been identified previously. The patient was treated with Xalkori (crizotinib), which inhibits the activity of the ALK fusion protein and is prescribed only on confirmation of the ALK fusion alteration. The patient saw a reduction in the tumor and experienced near-complete resolution of the disease in 16 months. The patient has seen some disease progression in one area and is continuing on Xalkori.

Exhibit 16
Foundation Medicine, Inc.
Case Study No. 1: Patient Response After Treatment With Crizotinib



Source: Company reports

Case study No. 2: middle-aged patient with metastatic inflammatory breast cancer shows alteration typically found in lung cancer. A middle-aged woman was diagnosed with metastatic inflammatory breast cancer. The patient had received a combination of chemotherapy and Herceptin (trastuzumab) but saw disease progression after a year. Via FoundationOne, an EGFR point alteration was identified, which is associated with high sensitivity to tyrosine kinase inhibitors targeting EFFR (e.g., Iressa [gefitinib] and Tarceva [erlotinib]). These alterations occur in 20% of lung adenocarcinomas but not in other cancer types, and thus would have unlikely been included in a breast cancer panel. The patient saw symptomatic and radiographic benefit that lasted eight months.

Financials

On its most recent earnings call, the company reiterated guidance for 2014. It expects to report 22,000 to 25,000 clinical tests and revenue of $52 million to $58 million. Operating expenses are pegged at $85 million to $92 million.

Revenue

For its clinical business, the company generates revenue on a per-test basis and recognizes revenues upon cash receipt for sales generated from commercial third-party payers and patients who make co-payments or deductible or other payments that Foundation is unable to collect from payers. The average revenue per test for clinical FoundationOne assays is $3,500 (based on tests that met the company's revenue-recognition criteria and so excluding tests billed to third-party and government payers). The company performed 1,750 clinical tests in 2012 (suggesting a realized ASP of $1,511) and 9,095 in 2013 (suggesting a realized price of $1,717). We project 24,082 tests in 2014 at a realized ASP of $1,708; guidance is for 22,000 to 25,000.

The company did not recognize revenue for roughly 1,039 FoundationOne tests billed to third-party/government payers in 2012, and 5,043 for 2013. Of these, the company has not recognized revenue for 2,080 tests performed for Medicare. Although Foundation has begun billing Medicare for tests, we have not assumed the company receives payment until mid-2015 at a price of $3,000. We ran an analysis of FoundationOne tests performed for patients covered by Medicare before obtaining coverage (exhibit 17) and ran a scenario analysis of the percent billable for prior tests. For example, if 10% of prior tests are collectible from Medicare before 2015, that would add $0.08 to EPS. Obtaining Medicare coverage is an important step for the company since it represents roughly 22% of clinical test volume. Exhibit 18 provides potential upside to our model to the extent that private payers begin to reimburse. For example, if Foundation obtains coverage from Medicare in mid-2015 followed by private payers in 2016 and 2017 at an ASP of $3,000 that would add roughly $0.37 to our 2017 EPS estimate assuming 20% private payer coverage of those currently not paying.

Exhibit 17
Potential EPS Impact From Medicare Coverage For Tests Already Performed

	2012	Q1'13	Q2'13	Q3'13	Q4'13	Q1'14E	Q2'14E	Q3'14E	Q4'14E	Q1'15E	Q2'15E
Total Revenue	$10,645	$5,200	$5,920	$8,208	$9,662	$11,619	$13,205	$15,292	$17,616	$19,488	$22,035
Cumilitive Medicare Volume	398	623	1,009	1,582	2,478	3,431	4,569	5,880	7,306	12,134	13,789
Potential Revenue ($3,000 ASP)	$1,194	$1,869	$3,027	$4,746	$7,434	$10,293	$13,708	$17,641	$21,919	$36,403	$41,368
EPS Impact (28mm Shares)											
Percent Collectable 10%	$0.00	$0.01	$0.01	$0.02	$0.03	$0.04	$0.05	$0.06	$0.08	$0.13	$0.15
20%	$0.01	$0.01	$0.02	$0.03	$0.05	$0.07	$0.10	$0.13	$0.16	$0.26	$0.30
30%	$0.01	$0.02	$0.03	$0.05	$0.08	$0.11	$0.15	$0.19	$0.23	$0.39	$0.44
40%	$0.02	$0.03	$0.04	$0.07	$0.11	$0.15	$0.20	$0.25	$0.31	$0.52	$0.59
50%	$0.02	$0.03	$0.05	$0.08	$0.13	$0.18	$0.24	$0.32	$0.39	$0.65	$0.74
60%	$0.03	$0.04	$0.06	$0.10	$0.16	$0.22	$0.29	$0.38	$0.47	$0.78	$0.89
70%	$0.03	$0.05	$0.08	$0.12	$0.19	$0.26	$0.34	$0.44	$0.55	$0.91	$1.03
80%	$0.03	$0.05	$0.09	$0.14	$0.21	$0.29	$0.39	$0.50	$0.63	$1.04	$1.18
90%	$0.04	$0.06	$0.10	$0.15	$0.24	$0.33	$0.44	$0.57	$0.70	$1.17	$1.33
100%	$0.04	$0.07	$0.11	$0.17	$0.27	$0.37	$0.49	$0.63	$0.78	$1.30	$1.48

Source: Company reports and William Blair & Company L.L.C estimates

Exhibit 18
Private Pay Coverage Adoption

	Q1'16E	Q2'16E	Q3'16E	Q4'16E	2016E	Q1'17E	Q2'17E	Q3'17E	Q4'16E	2017E
Total Revenue (current model)	$40,260	$44,915	$50,273	$56,512	$191,961	$61,169	$66,334	$74,434	$80,993	$282,929
Billed to Commercial Third Party Not Paid	4,358	4,761	4,053	4,513	17,686	4,703	4,603	4,478	4,212	17,996
Commercial Coverage (%)	5%	5%	10%	10%	7%	15%	20%	20%	25%	20%
Potential Revenue ($3,000 ASP)	$654	$714	$1,216	$1,354	$3,938	$2,116	$2,762	$2,687	$3,159	$10,724
Total Revenue (with commercial adoption)	$40,914	$45,629	$51,489	$57,866	$195,899	$63,285	$69,095	$77,120	$84,152	$293,653
Cost of Goods Sold	$12,078	$12,576	$13,071	$13,563	$51,288	$14,680	$15,257	$16,375	$17,818	$64,131
Operating Expenses	$34,624	$36,381	$38,207	$39,559	$148,771	$43,430	$44,444	$47,638	$49,406	$184,917
Other Expenses	$11	$10	$10	$11	$42	$13	$15	$18	$21	$67
Net Income (current model)	-$6,452	-$4,053	-$1,016	$3,380	-$8,141	$3,045	$6,619	$10,403	$13,747	$33,814
Net Income (with commercial adoption)	-$5,799	-$3,338	$200	$4,734	-$4,203	$5,162	$9,380	$13,090	$16,907	$44,538
Shares	28,530	28,605	28,680	28,755	28,642	28,830	28,905	28,980	29,055	28,942
EPS (current model)	-$0.23	-$0.14	-$0.04	$0.12	-$0.28	$0.11	$0.23	$0.36	$0.47	$1.17
EPS (with commercial adoption)	-$0.20	-$0.12	$0.01	$0.16	-$0.15	$0.18	$0.32	$0.45	$0.58	$1.54
EPS Impact	$0.02	$0.02	$0.04	$0.05	$0.14	$0.07	$0.10	$0.09	$0.11	$0.37

Source: Company reports and William Blair & Company L.L.C estimates

Biopharmaceutical revenue recognition is on a per-test basis or based on agreements to provide certain testing volume or other deliverables over defined periods. More of the company's pharmaceutical revenue has become structured on a deliverable basis, which has resulted in more stability and predictability for the pharmaceutical revenue stream. We estimate realized ASP to be roughly $3,700. In our model, we forecast biopharmaceutical revenue of $17 million in 2014, $19 million in 2015, and $21 million in 2016.

Cost of Goods Sold (COGS)

COGS comprises personnel expenses, including salary, bonuses, employee benefits, and stock-based compensation expense; cost of labor supplies; depreciation of lab equipment; shipping costs; and some overhead expense allocation. Expenses are recorded as tests are completed; thus, the company should report an improvement in gross margin over time as cash collections improve and/or a switch to accrual-based accounting occurs. We project gross margin of 60% in 2014, 67% in 2015, and 73% in 2016. Management believes that over time, through public and private payer coverage, the company can get to 70% to 85% gross margins.

Sales-and-Marketing Expenses

Sales-and-marketing expenses include costs associated with sales (direct and sales management), client services, marketing, reimbursement, and business-development personnel. Sales-and-marketing expenses should increase in absolute terms as additional sales staffers are hired in and outside the United States and additional marketing efforts are undertaken to drive further penetration; the number of direct sales reps rose to 26 as of the end of 2013 (up from 2 in mid-2012) and are expected to grow to 45 to 50 by the end of this year. Foundation's long-term target is to expand the salesforce to 80 to 120 reps. As a percent of revenue, we estimate sales-and-marketing expenses to be 45% in 2014, 37% in 2015, and 27% in 2016.

General and Administrative (G&A) Expenses

G&A expenses include costs associated with salaries, bonuses, employee benefits, travel, and stock-based compensation for the company's executive, accounting and finance, legal, and human resources personnel. We expect G&A expenses to increase over time given legal and accounting requirements of a public company as well as executive compensation, the investor relations function, and travel. As a percent of revenue, we peg G&A expenses at 54% in 2014, 36% in 2015, and 25% in 2016.

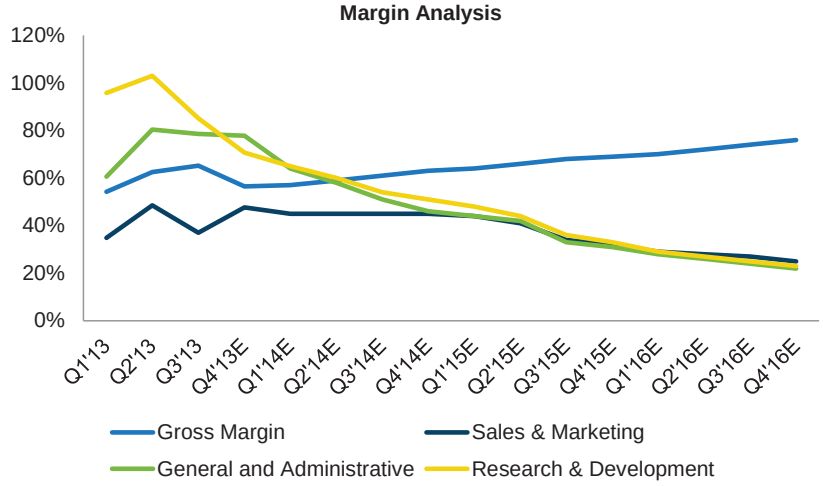
Research and Development (R&D) Expenses

R&D expenses consist of costs incurred for new product development, improvements to existing products, clinical trials, and technology for the company's genomic and clinical database and applications for Interactive Cancer Explorer. Given the continuing advancements in genomic research and applications, we expect R&D expenses to increase over time in a manner to keep Foundation at the forefront of molecular technology. Efficient R&D spending is critical in the market of innovative proprietary diagnostics. As a percent of sales, we expect R&D expenses to be 57% in 2014, 39% in 2015, and 26% in 2016.

Interest and Other Expenses

Interest and other expenses include interest earned on cash and interest paid. The company entered a loan agreement with Lighthouse Capital Partners in November 2010; as of the latest quarterly filing, Foundation had a remaining balance of $1.5 million.

Exhibit 19
Foundation Medicine, Inc.
Margin Analysis



Sources: Company reports and William Blair & Company L.L.C estimates

Exhibit 20
Foundation Medicine, Inc.
Projected Income Statement and Revenue Build

	FY 2011	FY 2012	Q1'13	2013 Q2'13	Q3'13	Q4'13	FY 2013	Q1'14E	Q2'14E	2014 Q3'14E	Q4'14E	FY 2014E	FY 2015E	FY 2016E	FY 2017E
Revenues	$2,057	$10,645	$5,200	$5,920	$8,208	$9,662	$28,990	$11,619	$13,205	$15,292	$17,616	$57,732	$105,040	$191,961	$282,929
Clinical Physicians		$2,645	$2,300	$2,820	$4,408	$5,280	$14,808	$7,774	$9,305	$11,184	$12,883	$41,147	$86,415	$171,287	$259,981
Biopharmaceutical		$8,000	$2,900	$3,100	$3,800	$4,382	$14,182	$3,845	$3,900	$4,108	$4,733	$16,586	$18,625	$20,674	$22,948
Cost of Goods Sold	$258	$5,681	$2,378	$2,219	$2,858	$4,204	$11,659	$4,996	$5,414	$5,964	$6,518	$22,892	$34,493	$51,288	$64,131
Gross Profit	$1,799	$4,964	$2,822	$3,701	$5,350	$5,458	$17,331	$6,623	$7,791	$9,328	$11,098	$34,840	$70,548	$140,672	$218,798
Operating Expenses															
Sales & Marketing	$1,555	$3,454	$1,811	$2,875	$3,038	$4,602	$12,326	$5,229	$5,942	$6,881	$7,927	$25,980	$38,524	$51,953	$66,151
General and Administrative	$6,992	$8,644	$3,150	$4,755	$6,448	$7,512	$21,865	$7,436	$7,659	$7,799	$8,103	$30,998	$38,109	$47,449	$55,445
Research & Development	$9,023	$14,777	$4,982	$6,097	$6,988	$6,834	$24,901	$7,553	$7,923	$8,258	$8,984	$32,717	$40,895	$49,369	$63,321
Total Operating Expenses	$17,570	$26,875	$9,943	$13,727	$16,474	$18,948	$59,092	$20,218	$21,524	$22,938	$25,014	$89,694	$117,529	$148,771	$184,917
Operating Income	-$15,771	-$21,911	-$7,121	-$10,026	-$11,124	-$13,490	-$41,761	-$13,595	-$13,733	-$13,610	-$13,916	-$54,854	-$46,981	-$8,099	$33,881
Interest Expense	$421	$421	$76	$65	$61	$33	$235	$31	$28	$25	$22	$106	$62	$42	$67
Other Non-Operating Expenses	$845	$61	$6	$96	$1,278	-$432	$948	$0	$0	$0	$0	$0	$0	$0	$0
Net Income/Loss	-$17,037	-$22,393	-$7,203	-$10,187	-$12,463	-$13,091	-$42,944	-$13,625	-$13,761	-$13,635	-$13,939	-$54,960	-$47,043	-$8,141	$33,814
Convertible Preferred Stock	$296	$286	$50	$42	$47	$0	$139	$0	$0	$0	$0	$0	$0	$0	$0
Net Income Common Shareholders	-$17,333	-$22,679	-$7,253	-$10,229	-$12,510	-$13,091	-$43,083	-$13,625	-$13,761	-$13,635	-$13,939	-$54,960	-$47,043	-$8,141	$33,814
Basic & Diluted EPS	-$0.62	-$0.83	-$0.27	-$0.37	-$0.46	-$0.48	-$1.57	-$0.49	-$0.49	-$0.49	-$0.50	-$1.96	-$1.66	-$0.28	$1.17
Weighted Avg. Shares - Basic & Diluted	28,138	27,230	27,355	27,405	27,455	27,505	27,430	28,005	28,055	28,105	28,155	28,080	28,342	28,642	28,942
Margin Analysis:															
Gross Margin	**87%**	**47%**	**54%**	**63%**	**65%**	**56%**	**60%**	**57%**	**59%**	**61%**	**63%**	**60%**	**67%**	**73%**	**77%**
Sales & Marketing	76%	32%	35%	49%	37%	48%	43%	45%	45%	45%	45%	45%	37%	27%	23%
General and Administrative	340%	81%	61%	80%	79%	78%	75%	64%	58%	51%	46%	54%	36%	25%	20%
Research & Development	439%	139%	96%	103%	85%	71%	86%	65%	60%	54%	51%	57%	39%	26%	22%
Interest Expense	7%	0.8%	0.6%	0.6%	0.7%	0.1%	0.5%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Operating Income	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**12%**
Net Income/Loss	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**	**13%**
Growth Metrics:															
Revenue	NM	418%	750%	226%	170%	87%	172%	123%	123%	86%	82%	99%	82%	83%	47%
Clinical Physicians	NM	NM	1253%	790%	838%	231%	460%	238%	230%	154%	144%	178%	110%	98%	52%
Biopharmaceutical	NM	NM	556%	107%	48%	22%	77%	33%	26%	8%	8%	17%	12%	11%	11%
Cost of Goods Sold	NM	2102%	235%	98%	60%	104%	105%	110%	144%	109%	55%	96%	51%	49%	25%
Gross Profit	NM	176%	-3009%	432%	329%	75%	249%	135%	111%	74%	103%	101%	102%	99%	56%
Sales & Marketing	NM	222%	360%	341%	358%	366%	357%	289%	207%	227%	172%	211%	148%	135%	127%
General and Administrative	NM	124%	188%	235%	302%	267%	253%	236%	161%	121%	108%	142%	123%	125%	117%
Research & Development	NM	164%	165%	169%	196%	149%	169%	152%	130%	118%	131%	131%	125%	121%	128%
Operating Income	NM	39%	35%	73%	110%	144%	91%	91%	37%	22%	3%	31%	-14%	-83%	-518%
Net Income/Loss	NM	31%	32%	73%	127%	135%	92%	89%	35%	9%	6%	28%	-14%	-83%	-515%
EPS	NM	35%	30%	70%	123%	132%	89%	83%	31%	6%	4%	25%	-15%	-83%	-511%
FoundationOne Tests	**2011**	**2012**	**Q1'13**	**Q2'13**	**Q3'13**	**Q4'13E**	**2013E**	**Q1'14E**	**Q2'14E**	**Q3'14E**	**Q4'14E**	**2014E**	**2015E**	**2016E**	**2017E**
Clinical Volume	NM	1,750	1,140	1,626	2,577	3,752	9,095	4,560	5,447	6,571	7,504	24,082	43,916	74,104	107,160
Y/Y Growth	NM	NM	738%	566%	424%	327%	420%	300%	235%	155%	100%	165%	82%	69%	45%
Q/Q Growth	NM	99%	30%	43%	58%	46%	142%	22%	19%	21%	14%	221%	227%	245%	256%
Average Revenue Per Test (calculated)		$1,511	$2,018	$1,734	$1,711	$1,407	$1,717	$1,705	$1,708	$1,702	$1,717	$1,708	$1,939	$2,307	$2,422
Y/Y Growth	NM	NM	61%	33%	79%	(23%)	14%	(16%)	(2%)	(1%)	22%	(1%)	14%	19%	5%
Average Revenue Per Test (reported)	NM	$3,800	$3,600	$3,700	$3,300	$3,400	$3,500	$3,403	$3,403	$3,327	$3,289	$3,346	$3,277	$3,179	$2,966
Clinical Revenue	NM	**$2,552**	**$2,300**	**$2,820**	**$4,408**	**$5,280**	**$14,808**	**$7,774**	**$9,305**	**$11,184**	**$12,883**	**$41,147**	**$86,415**	**$171,287**	**$259,981**
Percent of Total	NM	24%	44%	48%	54%	55%	51%	67%	70%	73%	73%	71%	82%	89%	92%
														21%	23%
Medicare Not Submitted	NM	398	225	386	573	896	2,080	0	0	0	0	0	0	0	0
Percent of Physician Volume	NM	23%	20%	24%	22%	24%	22%	0%	0%	0%	0%	0%	0%	0%	0%
Medicare Submitted	NM	0	0	0	0	0	0	1,003	1,198	1,380	1,501	5,082	8,783	14,821	21,432
Percent of Physician Volume	NM		0%	0%	0%	0%		22%	22%	21%	20%		20%	20%	20%
Reported Not Billed	NM	28	29	26	59	84	198	91	103	118	128	441	793	1,482	2,143
	NM	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Billed to Commercial Third Party Not Paid	NM	641	510	594	609	1,250	2,963	1,368	1,634	1,971	2,251	7,225	13,040	17,686	17,996
	NM	37%	45%	37%	24%	33%	33%	30%	30%	30%	30%	30%	30%	24%	17%
Prior Period Reported Billed Current Period	NM	NM	263	142	0	31	436	137	163	191	218	708	1,112	1,510	2,186
	NM	NM	23%	9%	0%	1%	5%	3%	3%	3%	3%	3%	3%	2%	2%
Paid For Tests	NM	NM	639	762	1,336	1,553	4,290	2,285	2,734	3,361	3,917	12,297	26,368	53,889	87,644
Medicare ASP	NM	NM	NM	NM	NM	NM	NM	$2,000	$2,000	$2,000	$2,000	$2,000	$2,500	$3,000	$3,000
% of Medicare Claims Paid	NM	NM	NM	NM	NM	NM	NM	5%	5%	5%	5%	5%	40%	83%	93%
Medicare Revenue	NM	NM	NM	NM	NM	NM	NM	$100	$120	$138	$150	$508	$11,684	$36,794	$59,608
Percent of Clinical Revenue	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	*14%*	*21%*	*23%*
Other Volume (non Medicare)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	17,585	39,068	66,212
Other ASP	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	$18,063	$13,894	$12,146
Other Revenue	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	$74,732	$134,493	$200,373
Percent of Clinical Revenue	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	*86%*	*79%*	*77%*
Not Paid Tests	NM	NM	764	1,006	1,241	2,230	5,241	2,412	2,876	3,401	3,805	12,494	18,659	21,724	21,702
Biopharmaceutical Volume	NM	1,350	600	618	965	1,593	3,776	1,020	1,051	1,110	1,274	4,455	5,026	5,579	6,192
Y/Y Growth			362%	77%	214%	182%	180%	70%	70%	15%	-20%	18%	13%	11%	11%
Average Revenue Per Test (calculated)	NM	$5,926	$4,833	$5,016	$3,938	$2,751	$4,135	$3,770	$3,712	$3,702	$3,714	$3,724	$3,705	$3,705	$3,705
Y/Y Growth	NM		42%	17%	-53%	-57%	(30.2%)	(22.0%)	(26.0%)	(6.0%)	35.0%	(9.9%)	(0.5%)	0.0%	0.0%
Average Revenue Per Test (reported)	NM	$3,700	$3,800	$3,800	$3,700	$3,700	$3,700								
Biopharmaceutical Revenue	NM	**$8,000**	**$2,900**	**$3,100**	**$3,800**	**$4,382**	**$14,182**	**$3,845**	**$3,900**	**$4,108**	**$4,733**	**$16,586**	**$18,625**	**$20,674**	**$22,948**
Percent of Total	NM	75%	56%	52%	46%	45%	49%	33%	30%	27%	27%	29%	18%	11%	8%

(In thousands, except share and per share amounts)
Sources: Company reports and William Blair & Company L.L.C estimates

Exhibit 21
Foundation Medicine, Inc.
Projected Cash Flow Statement

	FY 2011	FY 2012	2013 Q1'13	2013 Q2'13	2013 Q3'13	2013 Q4'13	FY 2013	2014 Q1'14E	2014 Q2'14E	2014 Q3'14E	2014 Q4'14E	FY 2014E	FY 2015E	FY 2016E	FY 2017E
Cash From Operating Activities															
Net Income/Loss	-$17,037	-$22,393	-$7,203	-$10,187	-$12,463	-$13,091	-$42,944	-$13,625	-$13,761	-$13,635	-$13,939	-$54,960	-$47,043	-$8,141	$33,814
Depreciation Expense	$1,520	$2,894	$1,030	$1,043	$1,086	$1,847	$5,006	$1,139	$1,122	$1,193	$1,321	$4,775	$5,917	$6,719	$7,416
Stock Based Compensation	$73	$1,535	$686	$1,309	$2,985	$2,336	$7,316	$2,693	$2,773	$2,753	$2,995	$11,213	$14,975	$18,128	$23,909
Other Non-Cash Items	$1,212	$235	$26	$116	$1,299	$440	$1,881	$0	$0	$0	$0	$0	$0	$0	$0
Working Capital		$480	-$1,233	$703	$57	-$1,552	-$2,025	$272	-$289	-$206	-$349	-$571	-$2,223	-$1,374	-$3,307
Accounts Receivable	$973	-$1,917	-$932	-$987	-$323	-$1,825	-$4,067	-$193	-$734	-$796	-$822	-$2,546	-$4,049	-$1,586	-$6,256
Inventories	-$318	-$485	$7	$71	-$217	-$821	-$960	$153	-$135	-$111	-$172	-$265	-$668	-$318	-$946
Other Current Assets	-$8	-$227	-$402	-$48	$23	-$117	-$544	$0	$0	$0	$0	$0	$0	$0	$0
Accounts Payable	-$338	$147	-$228	$628	$130	$1,142	$1,672	-$68	$279	$402	$346	$959	$1,294	-$671	$2,695
Accrued Expenses	$580	$1,447	-$298	$365	$533	$915	$1,515	$380	$300	$300	$300	$1,280	$1,200	$1,200	$1,200
Deferred Rent	$376	-$109	-$29	$785	$897	-$434	$1,219	$0	$0	$0	$0	$0	$0	$0	$0
Deferred Revenue	-$1,096	$1,624	$649	-$111	-$986	-$412	-$860	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash Flows From Operations	-$14,133	-$17,249	-$6,694	-$7,016	-$7,036	-$10,020	-$30,766	-$9,521	-$10,155	-$9,895	-$9,971	-$39,543	-$28,373	$15,332	$61,833
Cash From Investing Activities															
Capital Expenditures	-$5,410	-$3,183	-$170	-$1,128	-$2,493	-$3,139	-$6,930	-$1,500	-$1,500	-$1,500	-$1,500	-$6,000	-$6,000	-$6,000	-$8,000
Other Investing Activities	$0	$0	-$1,725	$0	$0	$161	-$1,564	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash Flows From Investing	-$5,410	-$3,183	-$1,895	-$1,128	-$2,493	-$2,978	-$8,494	-$1,500	-$1,500	-$1,500	-$1,500	-$6,000	-$6,000	-$6,000	-$8,000
Cash from Financing Activities															
Stock Proceeds and Options	$114	$70	-$1,556	-$1,292	$113,474	-$196	$110,430	$0	$0	$0	$0	$0	$0	$0	$0
Issuance of Preferred Stock	$26,338	$65,917	$0	-$10	$0	$0	-$10	$0	$0	$0	$0	$0	$0	$0	$0
Notes Payable	$2,974	-$1,569	-$413	-$421	-$431	-$440	-$1,705	-$400	-$400	-$400	-$299	-$1,499	$0	$0	$0
Total Cash Flows From Financing	$28,986	$64,418	-$1,969	-$1,723	$113,043	-$636	$108,715	-$400	-$400	-$400	-$299	-$1,499	$0	$0	$0
Net Change In Cash	$9,443	$43,986	-$10,558	-$9,867	$103,514	-$13,634	$69,455	-$11,421	-$12,055	-$11,795	-$11,770	-$47,042	-$34,373	$9,332	$53,833
Beginning of Period	$1,409	$10,852	$54,838	$44,280	$34,413	$137,927	$54,838	$124,293	$112,872	$100,816	$89,021	$124,293	$77,251	$42,877	$52,209
End of Period	$10,852	$54,838	$44,280	$34,413	$137,927	$124,293	$124,293	$112,872	$100,816	$89,021	$77,251	$77,251	$42,877	$52,209	$106,043

(In thousands, except share and per share amounts)
Sources: Company reports and William Blair & Company L.L.C estimates

Exhibit 22
Foundation Medicine, Inc.
Projected Balance Sheet

	FY 2011	FY 2012	2013 Q1'13	2013 Q2'13	2013 Q3'13	2013 Q4'13	FY 2013	2014 Q1'14E	2014 Q2'14E	2014 Q3'14E	2014 Q4'14E	FY 2014E	FY 2015E	FY 2016E	FY 2017E
Assets															
Cash and Equivalents	$10,852	$54,838	$45,832	$35,965	$138,088	$124,293	$124,293	$112,872	$100,816	$89,021	$77,251	$77,251	$42,877	$52,209	$106,043
Accounts Receivable	$278	$2,195	$3,127	$4,114	$4,437	$6,262	$6,262	$6,455	$7,189	$7,986	$8,808	$8,808	$12,857	$14,442	$20,698
Inventories	$318	$803	$796	$725	$942	$1,763	$1,763	$1,610	$1,745	$1,855	$2,028	$2,028	$2,696	$3,014	$3,960
Prepaid Expenses and Other	$313	$550	$953	$1,004	$950	$992	$992	$992	$992	$992	$992	$992	$992	$992	$992
Total Current Assets	$11,761	$58,386	$50,708	$41,808	$144,417	$133,310	$133,310	$121,929	$110,742	$99,855	$89,079	$89,079	$59,422	$70,657	$131,692
Property Plant & Equipment (Net)	$6,106	$7,465	$7,560	$7,260	$19,480	$22,104	$22,104	$22,465	$22,843	$23,150	$23,329	$23,329	$23,412	$22,694	$23,278
Restricted Cash	$161	$161	$1,886	$1,886	$1,725	$1,725	$1,725	$1,725	$1,725	$1,725	$1,725	$1,725	$1,725	$1,725	$1,725
Other Noncurrent Assets	$37	$27	$26	$1,315	$54	$129	$129	$129	$129	$129	$129	$129	$129	$129	$129
Total Assets	$18,065	$66,039	$60,180	$52,269	$165,676	$157,268	$157,268	$146,248	$135,439	$124,859	$114,261	$114,261	$84,688	$95,205	$156,824
Liabilities															
Accounts Payable	$1,369	$1,609	$2,336	$2,109	$3,339	$7,007	$7,007	$6,939	$7,219	$7,621	$7,966	$7,966	$9,260	$8,590	$11,285
Accrued Expenses and Other	$1,039	$3,463	$3,165	$3,530	$5,022	$5,168	$5,168	$5,548	$5,848	$6,148	$6,448	$6,448	$7,648	$8,848	$10,048
Unearned Revenue	$154	$1,622	$2,427	$2,090	$1,304	$918	$918	$918	$918	$918	$918	$918	$918	$918	$918
Deferred Rent	$109	$132	$137	$141	$149	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167
Notes Payable	$1,569	$1,704	$1,739	$1,712	$1,540	$1,499	$1,499	$1,099	$699	$299	$0	$0	$0	$0	$0
Total Current Liabilities	$4,240	$8,530	$9,804	$9,582	$11,354	$15,759	$15,759	$15,671	$15,851	$16,153	$16,499	$16,499	$18,993	$19,523	$23,418
Deferred Revenue	$0	$156	$0	$226	$26	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-Term Payable	$3,041	$1,441	$1,012	$634	$397	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-Term Deferred Rent	$419	$287	$253	$1,504	$11,147	$9,710	$9,710	$9,710	$9,710	$9,710	$9,710	$9,710	$9,710	$9,710	$9,710
Other Noncurrent Liabilities	$213	$364	$363	$434	$107	$88	$88	$88	$88	$88	$88	$88	$88	$88	$88
Total Liabilities	$7,913	$10,778	$11,432	$12,380	$23,031	$25,557	$25,557	$25,469	$25,649	$25,951	$26,297	$26,297	$28,791	$29,321	$33,216
Equity															
Common Stock	$0	$0	$0	$0	$3	$3	$3	3	3	3	3	$3	$3	$3	$3
Convertible Preferred Stock	$32,455	$98,658	$98,701	$98,740	$0	$0	$0	0	0	0	0	$0	$0	$0	$0
Additional Paid In Capital	$2,123	$3,422	$4,069	$5,358	$219,314	$221,471	$221,471	$224,164	$226,937	$229,690	$232,684	$232,684	$247,660	$265,788	$289,697
Retained Earnings (Accumulated Deficit)	-$24,426	-$46,819	-$54,022	-$64,209	-$76,672	-$89,763	-$89,763	-$103,388	-$117,150	-$130,785	-$144,723	-$144,723	-$191,766	-$199,907	-$166,092
Total Shareholders Equity	$10,152	$55,261	$48,748	$39,889	$142,645	$131,711	$131,711	$120,779	$109,790	$98,908	$87,964	$87,964	$55,897	$65,884	$123,608
Total Liabilities and Shareholders Equity	$18,065	$66,039	$60,180	$52,269	$165,676	$157,268	$157,268	$146,248	$135,439	$124,859	$114,261	$114,261	$84,688	$95,205	$156,824

(In thousands, except share and per share amounts)
Sources: Company reports and William Blair & Company L.L.C estimates

IMPORTANT DISCLOSURES

William Blair & Company, L.L.C. is a market maker in the security of this company and may have a long or short position.

William Blair & Company, L.L.C. intends to seek investment banking compensation in the next three months from the subject company covered in this report.

Within the past 12 months William Blair & Company, L.L.C. has provided or is providing investment banking services to or has an investment services relationship with the subject company covered in this report.

Additional information is available upon request.

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DJIA:	16,262.56
S&P 500:	1,842.98
NASDAQ:	4,034.16

The prices of the common stock of other public companies mentioned in this report follow:

Agilent Technologies Inc.	$53.11
Agios Pharmaceuticals, Inc.	$40.00
ARIAD Pharmaceuticals, Inc. (Outperform)	$6.70
Array BioPharma Inc. (Outperform)	$3.85
AstraZeneca plc	$62.52
Celgene Corporation (Outperform)	$139.84
Clovis Oncology Inc.	$56.27
Fluor Corporation (Outperform)	$75.84
Illumina, Inc. (Outperform)	$131.05
Infinity Pharmaceuticals Inc.	$9.79
Johnson & Johnson	$99.20
Laboratory Corporation of America Holdings (Market Perform)	$101.56
McKesson Corporation	$168.31
Novartis AG	$83.79
Safeguard Scientifics, Inc.	$20.17
Sanofi S.A.	$51.54
Sequenom, Inc. (Market Perform)	$2.50

Current Ratings Distribution (as of 3/31/14)

Coverage Universe	Percent	Inv. Banking Relationships*	Percent
Outperform (Buy)	65%	Outperform (Buy)	13%
Market Perform (Hold)	32%	Market Perform (Hold)	2%
Underperform (Sell)	1%	Underperform (Sell)	0%

* Percentage of companies in each rating category that are investment banking clients, defined as companies for which William Blair has received compensation for investment banking services within the past 12 months.

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Equity Research Directory

John F. O'Toole, Partner Manager and Director of Research +1 312 364 8612
Kyle Harris, CFA, Partner Operations Manager +1 312 364 8230

CONSUMER

Sharon Zackfia, CFA, Partner +1 312 364 5386
Group Head–Consumer
Apparel and Accessories, Leisure, Restaurants

Jon Andersen, CFA, Partner +1 312 364 8697
Consumer Products

Daniel Hofkin +1 312 364 8965
Hardlines, Specialty Retail

Mark Miller, CFA, Partner +1 312 364 8498
E-commerce, Broad Assortment and Hardlines, Health and Beauty

Amy Noblin +1 415 248 2874
Apparel and Accessories

FINANCIAL SERVICES AND TECHNOLOGY

Adam Klauber, CFA +1 312 364 8232
Co-Group Head–Financial Services and Technology
Insurance Brokers, Property & Casualty Insurance

Robert Napoli, Partner +1 312 364 8496
Co-Group Head–Financial Services and Technology
Business Development Companies, Financial Technology, Specialty Finance

Christopher Shutler, CFA +1 312 364 8197
Asset Management, Financial Technology

GLOBAL INDUSTRIAL INFRASTRUCTURE

Nick Heymann +1 212 237 2740
Co-Group Head–Global Industrial Infrastructure
Multi-industry

Larry De Maria, CFA +1 212 237 2753
Co-Group Head–Global Industrial Infrastructure
Capital Goods

Nate Brochmann, CFA +1 312 364 5385
Commercial Services, Logistics/Transportation

Brian Drab, CFA, Partner +1 312 364 8280
Filtration and Water Management, Industrial Technology

Chase Jacobson +1 212 237 2748
Engineered Equipment, Engineering and Construction

Ryan Merkel, CFA +1 312 364 8603
Commercial Services, Industrial Distribution

GLOBAL SERVICES

Brandon Dobell, Partner +1 312 364 8773
Group Head–Global Services
Energy Services, Information Services, Marketing Services, Real Estate Services and Technology

Timo Connor, CFA +1 312 364 8441
Education Services and Technology

Timothy McHugh, CFA, Partner +1 312 364 8229
Consulting, HR Technology, Information Services, Staffing

HEALTHCARE

Ben Andrew, Partner +1 312 364 8828
Group Head–Healthcare
Medical Devices

Ryan Daniels, CFA, Partner +1 312 364 8418
Healthcare Information Technology, Healthcare Services

Margaret Kaczor +1 312 364 8608
Medical Devices

John Kreger, Partner +1 312 364 8597
Distribution, Outsourcing, Pharmacy Benefit Management

Tim Lugo +1 415 248 2870
Therapeutics

Amanda Murphy, CFA +1 312 364 8951
Diagnostic Services, Life Sciences, Pharmacy Benefit Management

Matthew O'Brien +1 312 364 8582
Medical Devices

John Sonnier, Partner +1 312 364 8224
Biotechnology

Brian Weinstein, CFA +1 312 364 8170
Diagnostic Products

Y. Katherine Xu, Ph.D. +1 212 237 2758
Biotechnology

TECHNOLOGY, MEDIA, AND COMMUNICATIONS

Jason Ader, CFA, Partner +1 617 235 7519
Co-Group Head–Technology, Media, and Communications
Hardware and Software Infrastructure

Bhavan Suri, Partner +1 312 364 5341
Co-Group Head–Technology, Media, and Communications
IT and Business Process Services, Software, Software as a Service

Rahul Bhangare +1 312 364 5066
IT and Business Process Services

Jim Breen, CFA +1 617 235 7513
Internet Infrastructure and Communication Services

Anil Doradla +1 312 364 8016
Semiconductors and Wireless

Justin Furby, CFA +1 312 364 8201
Software as a Service

Jonathan Ho +1 312 364 8276
Cybersecurity, Security Technology

Dmitry Netis +1 212 237 2714
Communications Equipment

Ralph Schackart III, CFA, Partner +1 312 364 8753
Digital Media, Internet

EDITORIAL

Steve Goldsmith, Head Editor +1 312 364 8540
Maria Erdmann +1 312 364 8925
Beth Pekol Porto +1 312 364 8924
Kelsey Swanekamp +1 312 364 8174
Lisa Zurcher +44 20 7868 4549

William Blair