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## Foundation Medicine (FMI - OUTPERFORM): Call with Memorial Sloan Kettering Encouraging on Reimbursement - Competitively Slightly Less Positive, But Nothing Alarming - Reaffirming OUTPERFORM

Price: \$30.14

12-Month Price Target: \$50

- **Call with Memorial Sloan Kettering, thought leader, provides insight into top cancer center's approach to deep tumor profiling.** As a reminder, FMI has a close relationship with Memorial Sloan Kettering (MSK) Cancer Center, the 2nd ranked cancer center (according to US News and World Report). FMI's Chief Medical Officer, Vince Miller M.D. spent 20 years at MSK serving as attending physician and the two organizations co-developed FMI's FoundationOne Heme test for hematological malignancies. We hosted a call this past week with Marc Ladanyi M.D., MSK's Acting Chief of Molecular Diagnostics Services and the William J. Ruane Chair in Molecular Oncology. Dr. Ladanyi believes that in a few years, the vast majority of rare, recurring and/or aggressive tumors will be sequenced. Although he believed that "there will be a lot of competition", he felt that FMI has a "nice lead" and "a well done highly sophisticated assay" and he happens to own shares of FMI.
- **MSK is live with its own FoundationOne knock-off test, somewhat sooner than we had expected. No impact on financials or commercial launch, in our view.** According to Dr. Ladanyi, MSK has recently begun to offer its own solid tumor profiling test which is similar to FoundationOne, but sequences more genes (341 versus ~250 now [expected to expand in 2Q14]) and compares tumor sequences to a patient normal sample, which may help to identify cancer-related mutations versus harmless germline mutations. We suspect that some of the oncology groups within MSK are still sending solid tumor and heme samples to FMI. We believe a potential 2Q14 falloff in MSK-related volume will likely be unnoticeable in FMI's near-term financials due to the exponential growth happening within the company's community oncology business. Dr. Ladanyi stressed that a very significant investment in equipment and staff is required for an academic medical center to develop this type of test in house and he believes that only a handful of institutions have the capabilities. Additionally, it does not appear to us that MSK is planning to aggressively market its test to oncologists outside of certain areas of New York and Connecticut.
- **MSK expressed optimism on reimbursement, consistent with our view and last week's positive check related to UNH.** According to Dr. Ladanyi, while reimbursement payment is "in flux due to changes in CPT codes in recent years", they have not experienced "a priori negative reaction from the payors" regarding deep tumor profiling. He feels that all of the academic medical centers and key opinion leaders are making the case that ultimately sequencing-based tumor analysis is cheaper than multiple single gene tests billed individually. Dr. Ladanyi did not have direct insight into CMS's process for determining coverage for multigene panel tests, but said that other people at MSK had contact with Medicare management that was "not negative". As a reminder, documents we discovered last week suggested to us that UnitedHealth may be more open to covering FoundationOne sooner (for an initial 3-year period. See Figure 1) than investors realize and that the threshold for cost or outcome improvement may be as low as 10%.
- **Given the pullback, the recently filed offering appears to be on hold for now.** As a reminder, the company filed an S-1 on 3/20/14 for a \$150 MM offering with a mix of secondary and primary shares. We believe the company is unlikely to move forward with the offering at current levels following a 28% sell-off since 3/20. We estimate that the company had over \$110 MM exiting 1Q14 and has enough runway to be opportunistic about raising capital over the next two years.
- **Reaffirming OUTPERFORM.** We believe the IPO lockup on 3/24, potential financing (\$150 MM S-1 filed on 3/20, mix of primary vs. secondary unknown), Aetna policy bulletin and market shift away from high-multiple and high-beta healthcare stocks has combined to drive the 25% sell-off in FMI shares over the last month (versus a 14% decline in the BTK index and ~2% S&P 500 decline). We arrive at our \$50 price target through an EV/sales valuation framework, assuming a ~9x 2016E EV/sales multiple with \$31 MM in net cash and 29 MM shares outstanding, discounted back at 15%. This multiple is justified to us given our view of FMI's growth profile (~89% 3-year CAGR, +70% in 2016), cancer focus and very early penetration story (~10% share in 2016). On a 2015E EV/sales multiple basis, shares of FMI are trading a premium to the current group median (6.5x vs 3.7x).

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## Risks

Risks to attainment of our price target include a fiercely competitive diagnostics and lab service market. Additionally, clinical adoption for new paradigms of testing in diagnostics is difficult to predict and private payor as well as Medicare reimbursement for *FoundationOne* and *FoundationOne Heme* could prove to be more challenging than expected.

FMI is dependent on Illumina (ILMN, NEUTRAL) for equipment and other materials related to next-generation sequencing. If ILMN were to stop supplying the material or were to enter the space as a competitor, it could lead to an interruption in FMI's ability to perform its menu of tests. The near-term risk of this has been mitigated through a five-year supply agreement FMI signed with ILMN in July 2013.

The company operates a CLIA certified lab at its Cambridge, MA headquarters where it conducts *FoundationOne*. Operating as a CLIA lab allows the company to avoid the FDA regulatory 510(k)/PMA pathway for diagnostic devices. The FDA could more tightly regulate CLIA lab-based tests as medical devices, which would likely cause significant disruption to the business.

**Figure 1: Genome Based Diagnostics Workshop Summary Excerpt**

Asked if standardization might limit the potential benefits of personalized care, Dr. Newcomer responded that the two approaches to treatment are not at odds with each other. "I'd argue that standardization is highly tailored care: You are finding the best therapy for that particular patient's set of circumstances." In response to a question about the impact of the Patient Protection and Affordable Care Act (PPACA) on the rollout of new payment models, Dr. Newcomer said that new initiatives will continue to evolve with the changing landscape, with some surviving and others not. "We are looking at a period of great experimentation with innovation."

Newcomer made what he called a "blue sky" proposal at the workshop wherein a new diagnostic or drug would need to lower the cost of care by 10 percent or improve an outcome by 10 percent to demonstrate its value. That bar is high, Newcomer noted, because most advances produce an improvement on the order of only 1 percent or so.

To help facilitate the development of evidence to meet this goal, he proposed that a laboratory that has developed an analytically and clinically valid test could have the test covered by all payers for a 3-year period at a price that would cover some of the costs of using and continuing to develop the test. If the test achieves the 10 percent hurdle by the end of that 3-year period, it will be accepted. If it does not, it will not be accepted. Newcomer also emphasized that the manufacturer would still need to provide and analyze the necessary data. The payers should not be trying to determine whether a test is useful. Payers could work with physicians, for example, to identify patients who have had particular responses, and the analysis could be conducted by a neutral third party, with protections for privacy. The manufacturer would work with that group to direct the study and bring out an unidentified or de-identified result. This type of system would represent a major departure from current procedures. It would require that payers collaborate to offer provisional coverage, which would probably require an antitrust exemption. In the past, such collaboration has not been allowed, "but this may be a new world," said Newcomer. Also, the customers of the payers, most of which are self-funded businesses, would need to agree to such a system, because they would be the ultimate funders of such an approach. Finally, current health care legislation limits payers to using 15 percent of premium revenues for administrative costs, and if the provisional funding were considered an administrative cost rather than a medical cost, it probably would not be a viable option. These obstacles are substantial, said Newcomer, but they are all surmountable. And such a program would manage budgetary constraints while allowing biomedical advances to proceed. "We need to collaborate. We need to think about new models. I also think it is entirely possible," he said. One of the reasons Newcomer made his proposal, he noted, is that "it's going to happen no matter what." Payers, providers, and patients are going to have to find the advances of highest value if health care is to continue to progress. "The more we can begin to find those things of highest value," he said, "the better off we will all be." Newcomer concluded by stating that he is trying to bend the cost curve. "There are an awful lot of coded technologies whose value whose value is quite uncertain, yet we pay for them," he said.

Source: Company data, Wedbush Securities, Inc.

**Figure 2: Potential Catalysts**

Catalyst	Timing
Earnings	May-14
AACR	Apr-14
ASCO publications	Jun-14
Clinical decisions studies	3Q14
Additional product launches/enhancements	2014
CMS coverage decision	??

Source: Company data, Wedbush Securities, Inc.

**Figure 3: Income Statement**

	2011	2012	1Q13	2Q13	3Q13	4Q13	2013	1Q14E	2Q14E	3Q14E	4Q14E	2014E	2015E	2016E
Product Revenue	2,057	10,645	5,200	5,920	8,208	9,662	28,990	11,021	13,599	16,421	19,547	60,589	115,838	197,057
Total Revenues	2,057	10,645	5,200	5,920	8,208	9,662	28,990	11,021	13,599	16,421	19,547	60,589	115,838	197,057
Cost of revenues	258	5,681	2,378	2,219	2,858	4,204	11,659	4,298	5,032	5,747	5,864	20,942	34,284	56,478
COGS as % of sales			46%	37%	35%	44%	36%							
Gross profit	1,799	4,964	2,822	3,701	5,350	5,458	17,331	6,723	8,568	10,673	13,683	39,647	81,554	140,580
Gross Margins	87.5%	46.6%	54.3%	62.5%	65.2%	56.5%	59.8%	61.0%	63.0%	65.0%	70.0%	65.4%	70.4%	71.3%
Selling and Marketing	1,555	3,454	1,811	3,057	3,038	4,602	12,508	5,511	6,120	6,897	7,819	26,346	41,254	60,887
General and administrative	6,992	8,644	3,150	4,755	6,448	7,512	21,865	7,700	7,900	8,200	8,500	32,300	34,950	35,200
Research and development	9,023	14,777	4,982	6,097	6,988	6,834	24,901	7,100	7,300	7,600	8,000	30,000	35,000	35,900
Total operating expenses	17,570	26,875	9,944	13,910	16,475	18,948	59,275	20,311	21,320	22,697	24,319	88,646	111,204	131,987
Operating Income	(15,771)	(21,911)	(7,122)	(10,209)	(11,125)	(13,490)	(41,944)	(13,588)	(12,752)	(12,023)	(10,636)	(48,999)	(29,650)	8,593
Interest income	(421)	(421)	(76)	(65)	(1,278)	(33)	(1,452)	311	286	251	216	1,064	570	272
Other	(845)	(61)	(6)	(96)	(61)	432	269	0	0	0	0	0	0	0
Income before taxes	(17,037)	(22,393)	(7,204)	(10,370)	(12,464)	(13,091)	(43,127)	(13,277)	(12,466)	(11,773)	(10,420)	(47,935)	(29,080)	8,865
Provision for income taxes	0	0	0	0	0	0	-	0	0	0	0	0	0	576
Tax Rate														0
Net income	(17,037)	(22,393)	(7,204)	(10,370)	(12,464)	(13,091)	(43,129)	(13,277)	(12,466)	(11,773)	(10,420)	(47,935)	(29,080)	8,288
Accretion of convertible preferred stock	(296)	(286)	(50)	(42)	(47)	0	(139)	0	0	0	0	0	0	0
Net Income	(17,333)	(22,679)	(7,254)	(10,412)	(12,511)	(13,091)	(43,268)	(13,277)	(12,466)	(11,773)	(10,420)	(47,935)	(29,080)	8,288
GAAP EPS -Basic	(\$3.52)	(\$0.41)	(\$0.64)	(\$0.52)	(\$0.46)	(\$0.48)	(\$2.09)	(\$0.48)	(\$0.45)	(\$0.43)	(\$0.38)	(\$1.74)	(\$1.05)	\$0.30
GAAP EPS -Diluted	(\$3.52)	(\$0.41)	(\$0.64)	(\$0.52)	(\$0.44)	(\$0.48)	(\$2.08)	(\$0.48)	(\$0.45)	(\$0.43)	(\$0.38)	(\$1.74)	(\$1.05)	\$0.30
Non-GAAP EPS -Diluted	(\$3.52)	(\$0.41)	(\$0.64)	(\$0.52)	(\$0.44)	(\$0.48)	(\$2.08)	(\$0.48)	(\$0.45)	(\$0.43)	(\$0.38)	(\$1.74)	(\$1.05)	\$0.30
Weighted average shares - basic	4,930	55,642	11,339	20,129	27,336	27,505	21,577	27,560	27,601	27,643	27,684	27,622	27,864	28,046
Weighted average shares - diluted	4,930	55,642	11,339	20,129	28,138	27,505	21,778	27,560	27,601	27,643	27,684	27,622	27,864	28,046
		proforma												
Cash and Equivalents	10,852	54,838	45,832	35,965	138,088	124,293	124,293	114,507	100,283	86,413	70,422	70,422	28,964	17,789
Net Cash	10,852	54,838	45,832	35,965	138,088	124,293	124,293	114,507	100,283	86,413	70,422	70,422	28,964	17,789
Net Cash/share			4	2	5	5	5	4	4	3	3	3	1	1
NOLs			(39,900)	(52,991)	(52,991)	(52,991)	(52,991)	(66,268)	(78,734)	(90,506)	(100,926)	(100,926)	(130,006)	(121,718)
% of Sales														
Gross Margins	87%	47%	54%	63%	65%	56%	60%	61%	63%	65%	70%	65%	70%	71%
Sales and Marketing	76%	32%	35%	52%	37%	48%	43%	50%	45%	42%	40%	43%	36%	31%
General and administrative	340%	81%	61%	80%	79%	78%	75%	70%	58%	50%	43%	53%	30%	18%
Research and development	439%	139%	96%	103%	85%	71%	86%	64%	54%	46%	41%	50%	30%	18%
Total operating expenses	854%	252%	191%	235%	201%	196%	204%	184%	157%	138%	124%	146%	96%	67%
EBIT	-767%	-206%	-137%	-172%	-136%	-140%	-145%	-123%	-94%	-73%	-54%	-81%	-26%	4%
Tax rate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Net income	-843%	-213%	-139%	-176%	-152%	-135%	-149%	-120%	-92%	-72%	-53%	-79%	-25%	4%
Free Cash Flow	-1015%	-199%	0%	0%	-89%	-95%	-122%	-77%	-93%	-73%	-71%	-78%	-27%	2%
y/y Δ														
Total Revenues	NA	418%	750%	226%	170%	87%	172%	112%	130%	100%	102%	109%	91%	70%
Cost of revenues	NA	2102%	235%	98%	60%	104%	105%	81%	127%	101%	39%	80%	64%	65%
Gross Margins	NA	-47%	-442%	63%	59%	-6%	28%	12%	1%	0%	24%	9%	8%	1%
Sales and Marketing	NA	122%	260%	262%	258%	266%	262%	204%	100%	127%	70%	111%	57%	48%
General and administrative	NA	24%	88%	135%	202%	167%	153%	144%	66%	27%	13%	48%	8%	1%
Research and development	NA	64%	65%	69%	96%	49%	69%	43%	20%	9%	17%	20%	17%	3%
Total operating expenses	NA	53%	92%	115%	152%	119%	121%	104%	53%	38%	28%	50%	25%	19%
EBIT	NA	39%	35%	77%	110%	144%	91%	91%	25%	8%	-21%	17%	-39%	-129%
Tax rate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Net income	NA	31%	31%	74%	125%	134%	91%	83%	20%	-6%	-20%	11%	-39%	-129%

Source: Company data, Wedbush Securities, Inc.

**Figure 4: Balance Sheet**

	2011	2012	2013E	2014E	2015E	2016E
<b>Current assets:</b>						
Total Cash and Cash Equivalents	10852	54,838	124,293	74,859	37,883	31,232
Accounts Receivable	278	2,195	6,262	9,774	17,852	29,623
Inventory	318	803	1,763	1,629	2,975	4,937
Prepaid expenses and other Current Assets	313	550	992	992	992	992
<b>Total current assets</b>	<b>11,761</b>	<b>58,386</b>	133,310	87,254	59,702	66,785
Property, Plant and Equipment	7,902	12,154	22,104	25,133	30,925	40,778
Accumulated Depreciation	(1,796)	(4,689)		(4,613)	(10,018)	(16,853)
Restricted cash and other non-current assets	198	188	1,854	1,854	1,854	1,854
<b>Total assets</b>	<b>18,065</b>	<b>66,039</b>	157,268	109,629	82,464	92,563
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>						
<b>Current liabilities:</b>						
Accounts Payable and accrued expenses	2,408	5,072	7,007	7,286	9,140	10,848
Deferred revenue and Other Current Liabilities	1,832	3,458	8,752	8,752	8,752	8,752
<b>Total current liabilities</b>	<b>4,240</b>	<b>8,530</b>	15,759	16,038	17,892	19,600
<b>Long-term liabilities:</b>						
Long Term Debt	3,041	1,441	0	0	0	0
Other long term liabilities	632	807	9,798	9,798	9,798	9,798
<b>Total liabilities</b>	<b>7,913</b>	<b>10,778</b>	25,557	25,836	27,690	29,398
<b>Stockholders' equity:</b>						
Preferred Stock	32,455	98,658	0	0	0	0
Common Stock, APIC, RE	(22,303)	(43,397)	131,711	83,793	54,774	63,165
<b>Total liabilities and stockholders' equity</b>	<b>18,065</b>	<b>66,039</b>	157,268	109,629	82,464	92,563

Source: Company data, Wedbush Securities, Inc.

**Figure 5: Cash Flow Statement**

	2011	2012	2013	2014E	2015E	2016E
<b>Cash Flows from Operating Activities:</b>						
Net (loss) income	(17,037)	(22,393)	(42,944)	(47,918)	(29,019)	8,391
Depreciation	1,520	2,894	5,006	4,613	5,405	6,836
change in FV of investor rights obligation	1,067	0	0	0	0	0
change in FV of warrant liability	34	131	1,380	0	0	0
Stock-based compensation expense	73	1,535	7,316	0	0	0
common stock issued for services	0	0	4	0	0	0
non-cash interest expense/impairment	111	104	497	0	0	0
Change in working capital	99	480	(2,025)	(3,099)	(7,570)	(12,025)
<b>Net cash provided by operating activities</b>	<b>(14,133)</b>	<b>(17,249)</b>	<b>(30,766)</b>	<b>(46,405)</b>	<b>(31,184)</b>	<b>3,202</b>
<b>Cash Flows from Investing Activities:</b>						
Purchase of property and equipment	(5,410)	(3,183)	(6,930)	(3,029)	(5,792)	(9,853)
increase in restricted cash	0		(1,564)	0	0	0
<b>Net cash used in investing activities</b>	<b>(5,410)</b>	<b>(3,183)</b>	<b>(8,494)</b>	<b>(3,029)</b>	<b>(5,792)</b>	<b>(9,853)</b>
<b>Cash Flows from Financing Activities:</b>						
Proceeds from Issuance of Restricted Stock	114	70	49	0	0	0
proceeds from issuance of preferred stock	26,338	65,917	(10)	0	0	0
proceeds from issuance of common stock	0	0	110,381	0	0	0
change in notes payable	2,534	(1,569)	(1,705)	0	0	0
<b>Net cash provided by financing activities</b>	<b>28,986</b>	<b>64,418</b>	<b>108,715</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>9,443</b>	<b>43,986</b>	<b>69,455</b>	<b>(49,434)</b>	<b>(36,976)</b>	<b>(6,651)</b>
<b>Cash and cash equivalents, beginning of period</b>		<b>10,852</b>	<b>54,838</b>	<b>124,293</b>	<b>74,859</b>	<b>37,883</b>
<b>Cash and cash equivalents, end of period</b>	<b>10,852</b>	<b>54,838</b>	<b>124,293</b>	<b>74,859</b>	<b>37,883</b>	<b>31,232</b>

Source: Company data, Wedbush Securities, Inc.

Company	Ticker	Rating	Price Target	Current Price
Illumina	ILMN	NEUTRAL	\$140	\$136
UnitedHealth Group	UNH	OUTPERFORM	\$89	\$80
Aetna	AET	NEUTRAL	\$73	\$72



### Analyst Certification

I, Zarak Khurshid, certify that the views expressed in this report accurately reflect my personal opinion and that I have not and will not, directly or indirectly, receive compensation or other payments in connection with my specific recommendations or views contained in this report.

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### Investment Rating System:

**Outperform:** Expect the total return of the stock to outperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

**Neutral:** Expect the total return of the stock to perform in-line with the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

**Underperform:** Expect the total return of the stock to underperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

The Investment Ratings are based on the expected performance of a stock (based on anticipated total return to price target) relative to the other stocks in the analyst's coverage universe (or the analyst's team coverage).\*

Rating Distribution (as of March 31, 2014)	Investment Banking Relationships (as of March 31, 2014)
Outperform: 54%	Outperform: 22%
Neutral: 43%	Neutral: 2%
Underperform: 3%	Underperform: 0%

The Distribution of Ratings is required by FINRA rules; however, WS' stock ratings of Outperform, Neutral, and Underperform most closely conform to Buy, Hold, and Sell, respectively. Please note, however, the definitions are not the same as WS' stock ratings are on a relative basis.

The analysts responsible for preparing research reports do not receive compensation based on specific investment banking activity. The analysts receive compensation that is based upon various factors including WS' total revenues, a portion of which are generated by WS' investment banking activities.

### Wedbush Equity Research Disclosures as of April 10, 2014

Company	Disclosure
Foundation Medicine	1
Illumina	1
Unitedhealth Group	1
Aetna	1

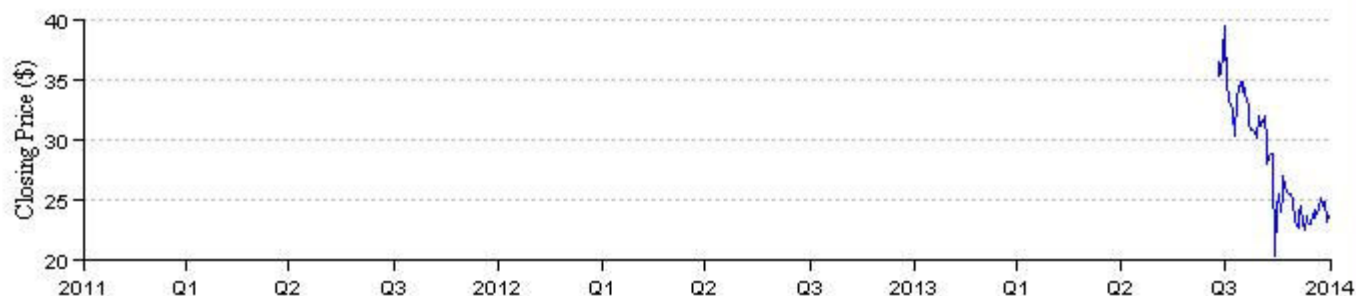
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1. WS makes a market in the securities of the subject company.
2. WS managed a public offering of securities within the last 12 months.
3. WS co-managed a public offering of securities within the last 12 months.
4. WS has received compensation for investment banking services within the last 12 months.
5. WS provided investment banking services within the last 12 months.
6. WS is acting as financial advisor.
7. WS expects to receive compensation for investment banking services within the next 3 months.
8. WS provided non-investment banking securities-related services within the past 12 months.
9. WS has received compensation for products and services other than investment banking services within the past 12 months.
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12. The analyst maintains Contingent Value Rights that enables him/her to receive payments of cash upon the company's meeting certain clinical and regulatory milestones.

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Wedbush disclosure price charts are updated within the first fifteen days of each new calendar quarter per FINRA regulations. Price charts for companies initiated upon in the current quarter, and rating and target price changes occurring in the current quarter, will not be displayed until the following quarter. Additional information on recommended securities is available on request.

FMI



AET

1) 02/07/11	2) 03/07/11	3) 04/11/11	4) 04/28/11	5) 07/14/11	6) 07/27/11	7) 10/27/11	8) 04/08/12
NEUTRAL \$40	NEUTRAL \$41	NEUTRAL \$42	NEUTRAL \$44	NEUTRAL \$45	NEUTRAL \$46	NEUTRAL \$48	NEUTRAL \$54
9) 04/30/13	10) 07/01/13	11) 07/30/13	12) 10/18/13	13) 10/29/13			
NEUTRAL \$62	NEUTRAL \$66	NEUTRAL \$68	NEUTRAL \$72	NEUTRAL \$70			



ILMN

1) 02/04/11	2) 04/27/11	3) 07/27/11	4) 10/07/11	5) 01/25/12	6) 02/08/12
OUTPERFORM \$75	OUTPERFORM \$80	OUTPERFORM \$78	OUTPERFORM \$35	OUTPERFORM \$50	OUTPERFORM \$65
7) 04/24/12	8) 01/04/13	9) 04/23/13	10) 07/24/13	11) 10/15/13	12) 10/22/13
OUTPERFORM \$52	NEUTRAL \$52	NEUTRAL \$55	NEUTRAL \$60	NEUTRAL \$65	NEUTRAL \$72



# UNH

1) 01/13/11 OUTPERFORM \$48	2) 04/12/11 OUTPERFORM \$51	3) 04/21/11 OUTPERFORM \$54	4) 07/14/11 OUTPERFORM \$57	5) 07/19/11 OUTPERFORM \$54	6) 01/19/12 OUTPERFORM \$60
7) 04/08/12 OUTPERFORM \$66	8) 07/04/12 OUTPERFORM \$70	9) 07/19/13 OUTPERFORM \$79	10) 10/17/13 OUTPERFORM \$85	11) 12/05/13 OUTPERFORM \$89	



\* WS changed its rating system from (Strong Buy/Buy/Hold/Sell) to (Outperform/ Neutral/Underperform) on July 14, 2009.

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