

Equity Research

HEALTH CARE

Life Sciences/Diagnostics

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Ticker: BSTE  
Price: \$34.82  
52-week: \$12-\$36

Stock Rating:  
**Outperform**

Company Profile:  
**Core Growth**

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# Biosite Incorporated

## Bring on the BNP Competition: Outlook for Biosite Remains Favorable Despite Relative Risks

Despite the market entry of Roche and likely Bayer, we believe Biosite will place Triage BNP into approximately 2,000 hospitals, or 40% of the market, by the end of 2003. This estimate is based on continued strong clinical demand for BNP testing, a shorter selling cycle compared with competing platforms, and the superiority of Biosite's assay and the BNP molecule.

We expect Biosite to obtain a CLIA waiver from the FDA in early 2003 for Triage BNP. Although this would be a positive catalyst for the stock, we believe the physician office lab (POL) market opportunity represents new risks, such as determining the optimal sales and distribution strategy, and controlling unexpected expenses not present in the hospital market.

Our favorable outlook assumes a few important risks. Although BNP clinical studies and evidence could temper utilization, and/or increasing competition could reduce pricing, we believe Biosite's long-term success will depend on a strong product pipeline and not just BNP.

*Biosite is a leading supplier of rapid assays to the more than \$2 billion immunodiagnostic market. We believe Biosite's prospects are promising, based on strong sales of its Triage products—including BNP for congestive heart failure (CHF), Cardiac for heart attacks, and DOA for drugs of abuse—the potential of Biosite Discovery, and new products expected to launch by 2004. The revenues generated by ongoing Diagnostic and Discovery sales, as well as new products, should result in earnings growth of at least 50% in 2003, as well as strong cash flow and a solid balance sheet.*

### FINANCIAL SUMMARY

Fiscal Year Ends:	December	Book Value Per Share (9/30/02):	\$5.65
Long-term EPS Growth Rate:	35%	Dividend/Yield:	NA
1999-2002E EPS Growth Rate:	102%	Diluted Common Shares:	15.5 million
Net Debt/Total Cap. (9/30/02):	4%	Market Value:	\$519 million
ROE (2002E):	13%	Insider Ownership:	15%

FISCAL YEAR	2001A	2002E	2003E
<b>ESTIMATES</b>			
Earnings Per Share	\$0.44	\$0.84	\$1.32
Earnings Growth	7%	91%	57%
Free Cash Flow (mil.)	\$4.6	\$1.1	\$6.6
Revenue (mil.)	\$66	\$103	\$143
Revenue Growth	19%	58%	38%

VALUATION	2001A	2002E	2003E
Price/Earnings Ratio	79.1x	41.0x	26.4x

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Please consult the last page of this report for all disclosures.

## Summary

**Although we continue to expect Biosite shares to be fairly volatile due to inconsistent investor sentiment, we still value the company's shares at about \$40 based on cash flow and earnings.** Consequently, for intermediate- to long-term holders, we would suggest purchase at current prices; for short-term holders, we would recommend the stock on weakness, perhaps near \$30 per share.

**Through February 2003, we anticipate only two potential short-term positive catalysts:** the announcement of a clinical laboratory improvement amendment (CLIA) waiver from the FDA, allowing Biosite to market Triage BNP in nonlaboratory settings, such as physician offices or even home use, and the fourth-quarter earnings report, which we expect to be strong due to continued robust demand and increased utilization from existing accounts. However, these events could be overshadowed by an announcement of FDA clearance of Bayer's BNP assay, or further competitive announcements from Roche.

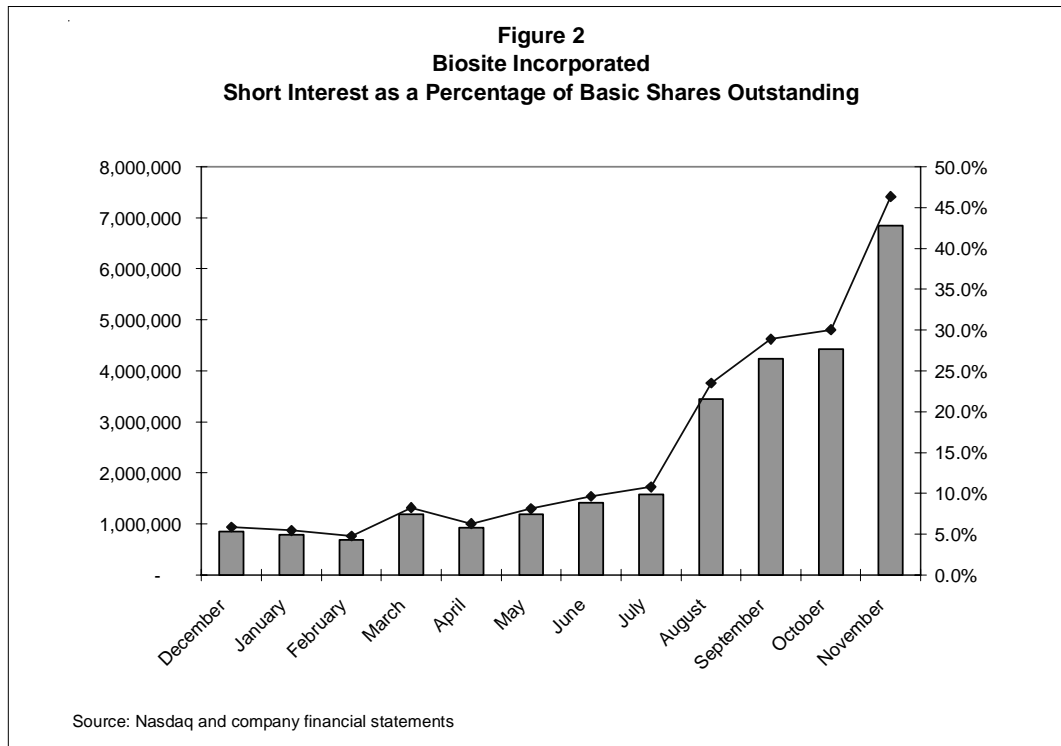
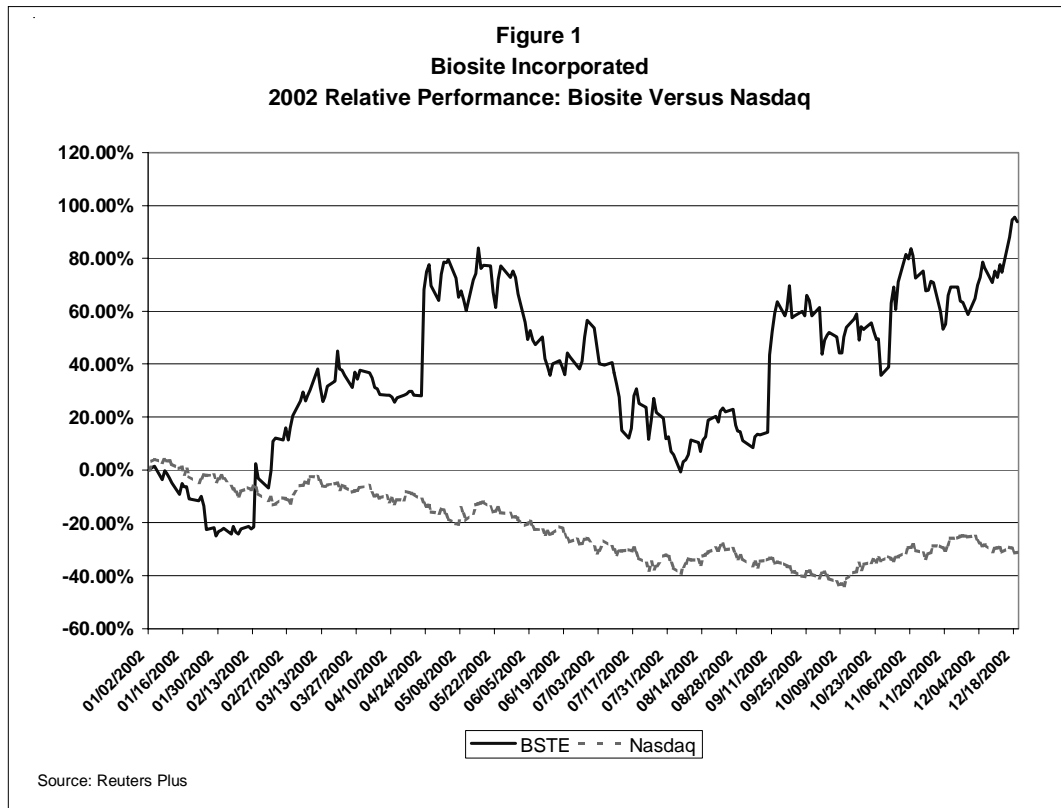
**At last count, there were approximately 7 million Biosite shares short, or about 50% of basic shares outstanding.** We believe this represents a potential trading opportunity based on expected strong fourth-quarter results.

**There have been several expected developments and events regarding Biosite and BNP:** the American Heart Association (AHA) annual meeting, the FDA clearance of Roche's NT-proBNP test, the Centers for Medicare and Medicaid Services' (CMS) approval of a \$47 reimbursement code for BNP, and Biosite's AHA analyst meeting.

**We do not expect increasing competition to substantially derail Biosite's hospital business in the next two years, but the POL market presents challenges.** We have developed detailed forecasts for both an aggressive and conservative BNP market size. Even assuming a smaller BNP market and conservative market share for Biosite, we estimate that future annual BNP sales potential could exceed the \$100 million peak in 2005 that we estimate in our current earnings model.

**Regarding comparisons between BNP and NT-proBNP, we believe the key question is not which marker is better, but whether NT-proBNP will be as good as BNP.** Although early data for new applications are very positive for BNP, it still is too early to draw definite conclusions. We believe the clinical merits and standard of care for the use of BNP versus NT-proBNP will be determined from clinical studies and market use over the next one to two years. In our view, the more important near-term issues are the lack of standardization, the multiple cut-off values of NT-proBNP, and the significantly different selling strategy of the Triage meter versus large, expensive central lab analyzers.

**We are no longer concerned about Biosite's manufacturing capacity for BNP.** As of November, the company had doubled its previous capacity by converting its pilot production capacity to commercial products from research.



## Investment Risks

We believe it is important to distinguish between risks that affect only Biosite's stock price versus longer-term fundamental risks to Biosite's future business opportunities. In our opinion, the fundamental risks include the depth of Biosite's product pipeline and the difficulty in pursuing the POL market. Short-term events that we believe could affect the stock price include competitive announcements from Roche or Bayer, or a failure to get a CLIA waiver from the FDA.

<b>Stock Price Risk</b>	<b>Fundamental Risk</b>
FDA clearance of Bayer BNP assay Roche's outlicensing of NT-proBNP to other manufacturers No CLIA waiver for BNP Other competitive CHF diagnostic product developments	Depth of product pipeline Profitability of physician office lab market BNP pricing/utilization Manufacturing capacity for BNP

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

In short, the future growth prospects for BNP will be determined by new uses or indications for the test, utilization of the test, and pricing. Currently, BNP is FDA-cleared only for use as an aid to diagnose CHF. Although we present a long list of clinical studies investigating new applications near the end of this report, the FDA has not yet formally cleared any of these uses. In particular, using BNP to monitor drug treatment could have the largest potential market size, but many more clinical studies need to be conducted before this would be accepted into clinical practice. Furthermore, it is not yet known if the optimal protocol for monitoring patients will consist of one BNP test daily, or several tests per hour. Because Biosite has a point-of-care platform for the test, it cannot yet be determined if this platform will help or hinder Biosite's BNP test to monitor patients. Lastly, if the central lab versions of the test (Roche, Bayer, and Abbott) begin to aggressively compete on price, Biosite could be affected negatively.

From a longer-term perspective, we believe the most significant risk to Biosite is the lack of visibility for a pipeline of new, novel diagnostic products. Although we believe that Biosite has several promising products under development, such as those for stroke and acute coronary syndromes, delays in the commercialization of these products could adversely affect Biosite's growth prospects. We expect to hear more about Biosite's pipeline at the end of January 2003 when the company provides formal financial guidance for 2003.

## How Much BNP Market Share Can Biosite Capture?

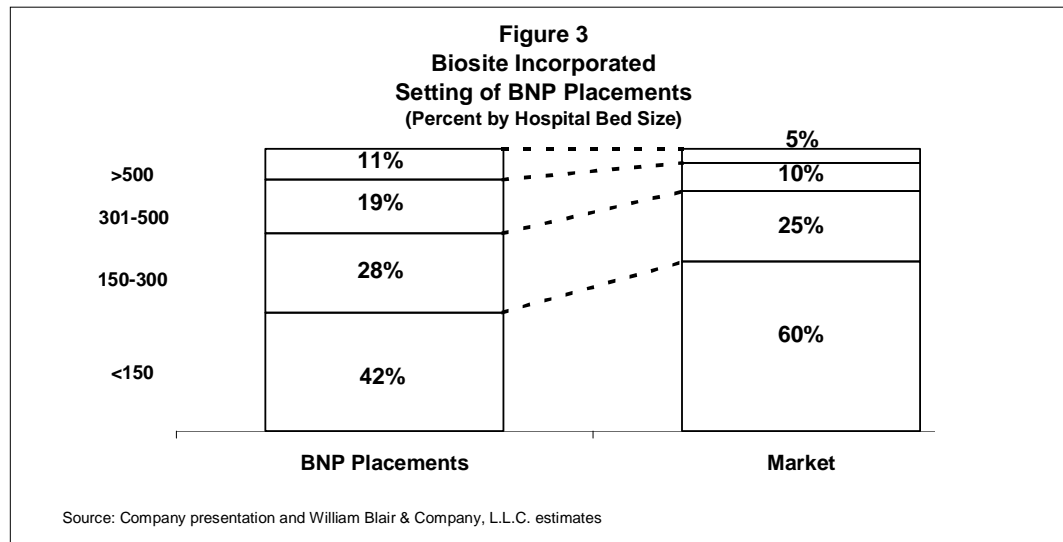
Currently, it is difficult to estimate with much certainty the exact size of the market for BNP testing. Our projections include varying assumptions for utilization, pricing, and competitive factors. All these factors potentially could change significantly depending on the outcome of various clinical studies or a change in medical opinion from cardiologists, internists, and emergency medicine specialists. Therefore, we have approached estimating the size of the market from two perspectives. The first is total market potential from three distinct BNP market segments: emergency department (ED) testing, inpatient monitoring, and outpatient monitoring. The second is total estimated hospital placements. From these two approaches we devised three scenarios: 1) aggressive testing, stable pricing, and strong Biosite market share; 2) moderate testing, weakened pricing, and modest Biosite market share; and 3) reasonable, best estimates based on estimates from both scenarios. These three estimates are detailed in tables 8-10 following the text of this report.

From a total U.S. market segment perspective, we estimate that the BNP market could be as large as \$1 billion or as small as \$350 million. From a hospital installed-base perspective, we estimate the total U.S. market could be as large as \$600 million or as small as \$200 million. Using both approaches and our own estimates, we estimate a total BNP market size of approximately \$450 million. Our ED market size estimate range is from \$65 million to \$150 million; our best estimate is \$70 million. Our inpatient-monitoring segment estimate range is from \$50 million to \$400 million; our best estimate is \$120 million. Lastly, our outpatient testing market size estimate range is from \$200 million to \$600 million; our best estimate is \$300 million.

Our specific assumptions are detailed in the table 10. In summary, there are only a few key factors that could vary considerably. In the ED market, we believe that the biggest variable is price. Although pricing could be as strong as \$22 per test (as it is today), our best estimate assumes gradual erosion to \$12 per test by 2007. Inpatient testing volume will be dependent on future clinical trials to determine how useful BNP is to guide treatment or titrate drug amounts. This could even result in hourly BNP testing during the first 12-24 hours of treatment—especially for Natrecor—to monitor and maintain peak BNP concentration in the blood, but we only assume an average of two tests per day during an average length of stay of 5 days. Given this high volume, we believe inpatient testing will be the most competitive market segment, and, therefore, the potential for price erosion is great. We estimate pricing could be as low as \$8 within five years. Lastly, the outpatient testing market will be dependent on how many offices offer the test, how often CHF patients visit per year, and how stable pricing will remain. Our \$300 million market size estimate is based on a \$22 price point, one test per visit, and two visits annually.

### Quarterly BNP Placements in Hospitals Should Decline

We believe there is overblown concern among some investors regarding the future rate of BNP placements into hospitals. In the third quarter alone, Biosite placed BNP into 340 new hospital accounts. Biosite’s installed base of BNP accounts is now more than 1,000 hospitals, or approximately 20% of the total market. Moreover, Biosite has successfully been placing instruments in large hospitals, as shown in figure 3. Although the detailed market size estimates in tables 8-10 are useful to estimate potential revenues, our current favorable BNP sales forecast is based on a lower rate of hospital placements. Our earnings estimates do not assume that Biosite places BNP in 300 hospitals in a single quarter ever again; even if placements are as low as 150-200 in any given quarter for the next year and a half, we would not be overly concerned.



**Table 2  
Biosite Incorporated  
Estimated Future BNP Placements**

	1Q01	2Q01	3Q01	4Q01	1Q02	2Q02	3Q02	4Q02	1Q03	2Q03	3Q03	4Q03	1Q04	2Q04	3Q04
<b>Actual New Placements</b>	6	47	86	113	161	251	340								
<b>Actual Installed Base</b>	6	53	139	252	413	664	1,004								
<b>Actual Market Share</b>	0%	1%	3%	5%	8%	13%	20%								
<b>Actual Total Revenue</b>	177	513	900	1,830	4,123	8,143	9,787								
<b>Actual Average Revenue / Hospital</b>	29.5	9.7	6.5	7.3	10.0	12.3	9.7								
<b>Estimated New Placements</b>	39	78	117	156	195	234	273	234	247	251	244	247	248	0	
<b>Estimated Installed Base</b>								1,238	1,485	1,736	1,980	2,228	2,476	2,476	2,476
<b>Estimated Market Share</b>								25%	30%	35%	40%	45%	50%	50%	50%
<b>Estimated Average Revenue / Hospital</b>								10.0	10.0	10.0	10.0	10.0	10.0	10.1	10.1
<b>Estimated Total Revenue</b>								12,380	14,850	17,363	19,804	22,279	24,756	24,879	25,000
<b>Model Placements</b>	39	78	117	156	195	234	273	312	351	390	429	468	507	546	585
<b>Model Base</b>	39	117	234	390	585	819	1,092	1,404	1,755	2,145	2,574	3,042	3,549	4,095	4,680
<b>Model Market Share</b>	1%	2%	5%	8%	12%	16%	22%	28%	35%	43%	51%	61%	71%	82%	94%
<b>Model Average Revenue / Hospital</b>								12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
<b>Model Total Revenue</b>								17,031	21,288	26,019	31,223	36,900	43,050	49,673	56,700
<b>Revenue Estimate Used</b>								12,380	14,850	17,363	19,804	22,279	24,756	24,879	25,000
<i>Inventory Adjustment</i>								1,713							
								14,093							

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

Calculating an exponential linear rate of placements, Biosite still exceeded our estimate, as well as the higher calculated exponential placements, in both the second and third quarters of 2002. However, our \$70 million revenue estimate for BNP in 2003 assumes quarterly placements lower than the past two quarters. If Biosite were able to continue to exceed our estimate, the company would have placements in 3,000 hospitals by year-end 2003 (60% market share). Our revenue estimate is based on placements in 2,000 hospitals by the end of 2003, or a 40% market share.

Despite the competition from Roche and its NT-proBNP test, we believe the above hospital placement estimates are reasonable, and we expect Biosite to continue to have a considerable advantage in competing with Roche and later Bayer. This primarily is due to the significant differences in selling (relatively) inexpensive point-of-care instruments like Biosite's Triage meter, compared with the large central lab analyzers from Roche, Bayer, Abbott, and others.

## Selling Cycle of Central Lab Analyzers Is Key Competitive Consideration

There recently has been much investor speculation regarding impending BNP competition, technical differences between testing platforms, and the clinical differences between BNP and NT-proBNP. We believe the most important competitive factor in favor of Biosite today is the unique selling dynamics of central lab analyzer systems (which will run competitive BNP or NT-proBNP tests) and Biosite's point-of-care Triage meter.

Our field research indicates that in addition to the more than \$100,000 price (compared with \$4,000 for a Triage meter), there are several differences between the selling strategies of the central lab systems and of Biosite. Less than 20% of the installed base of large instruments is up for replacement each year, which also involves a selling cycle that can last up to two years. These sales are based on a very extensive menu of tests and the instrument's potential to reduce labor costs of running thousands of tests. While we believe both Roche and Bayer quickly might convert much of their existing systems to their own CHF tests, in contrast to Biosite, we would not expect dramatically incremental quarterly placements similar of their large instrument systems.

**Table 3**  
**Biosite Incorporated**  
**Purchasing Behavior for Mainframe Immunodiagnostic Analyzers**

- 5- to 6-year repurchase cycle
- 12- to 24-month selling cycle
- Labor savings (2/3 of cost)
  - Laboratory automation
  - Ease of use
  - Easy maintenance / reliability
- Menu should cover 90%+ of volume
- Important analytes on the menu:  
Troponin I, HbA1c, high-sensitivity TSH and HCG

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

In short, Biosite has been able to sell BNP rapidly into 1,000 hospitals for several reasons. First, BNP is a novel, compelling product with several clinical applications. Second, the company has had the only test available. Lastly, the Triage meter is inexpensive and easy to use. With the launch of NT-proBNP from Roche, none of those factors changes. Bayer also will have a BNP assay soon, but we do not expect that product to receive FDA clearance until early next year.

We already assume that both Bayer and Roche will sell their own BNP product to 100% of their installed base in 2003. This would represent 20% of the market, leaving plenty of room for Biosite to achieve the 40% market share required to achieve our forecast estimates. Given the strong clinical evidence and heavy publicity of BNP testing, we believe that at least 60% of hospitals will offer BNP by the end of 2003. We assume Roche will double its market share for the Elecsys from 8% to 16% in five years. This would require quarterly placements of 100 instruments. We estimate Bayer will double its market share from 12% to 24% in five years. This would require quarterly placements of 150 instruments. We believe these competitive expectations themselves are extremely aggressive.

## **POL Market Presents Revenue Opportunity but Profit Risks**

We believe there has been much investor enthusiasm lately regarding the potential of selling BNP directly to physician offices, mostly due to the lack of competition, since Biosite's point-of-care platform is the only product on the market. However, before this market opportunity can be pursued, the company needs improved reimbursement and a CLIA waiver. Biosite recently received a new CPT code, 83880, which improved reimbursement for BNP to \$47. A CLIA waiver, needed to perform tests outside a certified laboratory, was filed with the FDA in October.

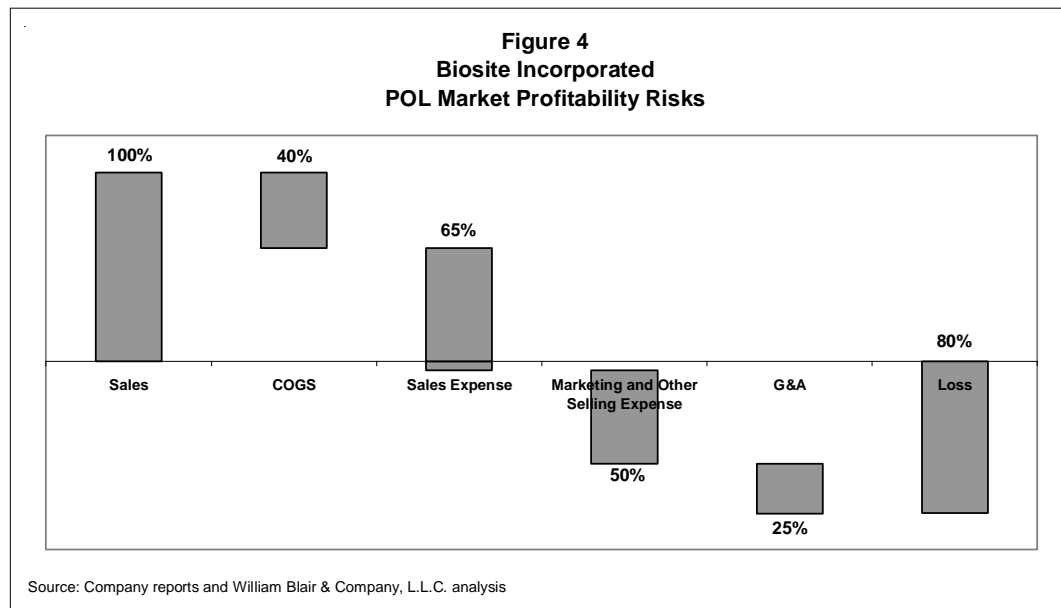
Specifically, according to the regulations, waived tests are defined as simple laboratory examinations and procedures that are cleared by the FDA for home use, employ methodologies that are so simple and accurate as to render the likelihood of erroneous results negligible, and pose no reasonable risk of harm to the patient if the test is performed incorrectly.

We expect Biosite to get a CLIA waiver early next year, and believe this announcement will be a positive catalyst for the stock. However, we also believe there are certain risks associated with this market that could cause execution pressure on Biosite's efforts to penetrate the POL market.

Using data from a case study that analyzed companies pursuing the POL market with a similar product, we recognized several risks. In one specific company example, the net loss was almost as great as the new sales generated, even using a superior gross margin such as that achieved by Biosite. In addition to the cost of goods sold, there are several other expenses involved in the POL market that could temper profitability, including the selling expense to cover a very large number of sites that may not generate sufficient revenue per site. Moreover, identifying hot versus cold leads could be difficult, in our opinion. As such, while there may be initial demand from physicians who request the test, we believe this might be only a temporary (a few quarters) phenomenon.

There also are trade-offs involved in determining the optimal sales and distribution strategy for the POL market. In our opinion, using distributors is a high-cost alternative: their penetration into offices is high, but the quality as defined by the ability to close sales of this type is low, in our opinion. We believe that using the existing direct salesforce would offer high quality but much lower coverage, and thus could be a costly strategy for all but the largest potential accounts.





Another distribution option could be through a commercial laboratory partner. We believe these labs currently charge more than \$100 for a BNP test. Quest Diagnostics recently announced it would use Roche's NT-proBNP at a price in excess of \$140 per test. Now that reimbursement has been set at \$47, we expect this price to drop to allow physicians to profitably order the test. However, this new price (an estimated \$30) may not cover the commercial labs' full costs beyond reagent and hardware expenses—such as transportation to and from the physicians' offices, labor to process the test, and variable administration costs. Consequently, a commercial lab may be a possible distribution partner for Biosite. Biosite could pay a royalty on these sales to the commercial lab partner, which in turn would promote and sell the BNP tests on a Triage meter for physicians to do in their own offices.

Although Biosite currently is increasing its number of sales representatives, we would prefer that the company continue to focus on the hospital market and solidifying its strong and expanding market share.

## **BNP Versus NT-proBNP: Will NT-proBNP Be as Good as BNP?**

As expected, at the end of November Roche received FDA clearance of NT-proBNP, a similar, but different, market for CHF. Although there is much early speculation regarding whether BNP or NT-proBNP is the superior marker, we believe that it is too early to determine; several clinical studies still need to be completed, and the key question is not which marker is better, but whether NT-proBNP is as good a marker as BNP. At the November AHA meeting, a total of 36 abstracts were presented: 28 on BNP and 8 on NT-proBNP. In our opinion, as we detailed above, currently the most significant difference between the two tests is the differing platforms on which they are run. There also are three important known differences between the two markers: 1) lack of standardization, 2) the multiple cut-off values for NT-proBNP, and 3) the implications for patients with renal failure.

### **Standardization**

For medical purposes, the numerical reading from an NT-proBNP test does not correlate with BNP, nor does it match the NYHA scale for severity of CHF, as does BNP. For example, if someone has a BNP of 300 pg/ml and an NT-proBNP of 300 pg/ml, the two values are not equivalent. This always has been an issue for other immunodiagnostic laboratory tests, such as Troponin for heart attacks. There are several manufacturers of Troponin I,

but Roche markets a proprietary test for Troponin T. Troponin T never has gained its expected market share in the United States, mostly because the majority of hospitals decided to stay with Troponin I, even though Troponin T also can be used to properly diagnose heart attacks and may have some diagnostic advantages. Standardization on Troponin I appears to have had more impact on use than possible clinical differences.

**Table 4**  
**Biosite Incorporated**  
**2002 American Heart Association Meeting Summary of BNP Abstracts**

Abstract Number	Title (Paraphrased)	BNP/NT-proBNP
1977	BNP comparison with Tissue Doppler Imaging Recording	BNP
1992	NT-proBNP as an outcome predictor in patients with unstable coronary artery disease	NT-proBNP
1997	Risk Score Correlation with BNP	BNP
2263	BNP elevated in outpatients with Atrial Fibrillation	BNP
2257	NT-proBNP predicts survival in patients with ACS	NT-proBNP
2337	BNP as a predictor of Outcome in patients admitted for CHF	BNP
2304	Relationship of mitral inflow pattern to changes in BNP levels	BNP
2359	The effect of Hypertension on BNP levels in patients with acute dyspnea	BNP
2238	Concentrations of NT-proBNP in healthy children and children with heart diseases	NT-proBNP
2439	NT-proBNP identifies patients with unstable coronary artery disease	NT-proBNP
2525	Endothelin Receptor Antagonism Reduces BNP levels?	BNP
2500	BNP in patients with mitral regurgitation	BNP
2756	Is Wall Motion Score Index a Valid Measure of LVSD in a normal Population?	NT-proBNP
2757	Correlation of BNP to mechanical function in LVSD	BNP
2804	Nesiritide in patients with renal insufficiency	BNP
3030	BNP as a predictor of Outcome (Val-Heft)	BNP
3036	LV filling pressure is a determinant of BNP levels	BNP
2789	BNP levels fall in respond to treatment, prognostic marker?	BNP
2790	The effect of pre-existing Ischemia on BNP levels	BNP
2791	The effects of Nesiritide on BNP levels	BNP
2792	BNP levels in patients with sleep apnea	BNP
2905	Reduction of NT-proBNP following percutaneous coronary intervention	NT-proBNP
3155	Prognostic value of Natriuretic peptides in Aortic Stenosis	BNP
3190	BNP and Doppler Echocardiography for patient with Normal EF	BNP
3191	BNP levels to differentiate between CHF and ARDS	BNP
3222	Right heart overload and BNP elevation in patients with cardiomyopathy	BNP
3108	BNP Limits Infarction Size, Implications in Myocardial Ischemia	BNP
3368	Can physical examination distinguish Systolic from Diastolic CHF	BNP
3369	Comparison of BNP to Chest Radiographs for patients with Dyspnea	BNP
3371	NT-proBNP as a marker for LV dysfunction	NT-proBNP
3372	Comparison of BNP and NT-proBNP	BNP
3377	OVERTURE: Enalapril or Omapatrilat impact on neurohormonal changes	BNP
3485	Clinical and Echocardiographic correlation to BNP	BNP
3487	Can BNP be used to monitor response to Carvedilol	NT-proBNP
1595	BNP Modulation by Statin Therapy	BNP
3546	BNP in differentiating CHF from Lung disease in pediatric patients	BNP

Source: American Heart Association, 2002

Importantly (and possibly ironically), FDA clearance of the Bayer BNP test should lead to even greater standardization on BNP, potentially blocking the broad use of NT-proBNP. We believe that this likely still would be true even if Roche successfully licenses NT-proBNP to others. By the time licensees could get to market in 18 to 36 months, we strongly believe that most hospitals already would be using BNP, some for about five years. In our opinion, it would take substantial, positive clinical difference for NT-proBNP to make inroads in that environment.

### Multiple Cut-off Values

Biosite's BNP test has a convenient cut-off value of 100 pg/ml, which was verified by both the FDA and the large-scale BNP study published this past summer in the *New England Journal of Medicine*. If patients have a BNP value below 100 pg/ml, they do not have heart failure. Roche's test for NT-proBNP has two cut-off values: 125 pg/ml for patients younger than 75, and 450 pg/ml for patients over 75. The large difference in value is mostly due to

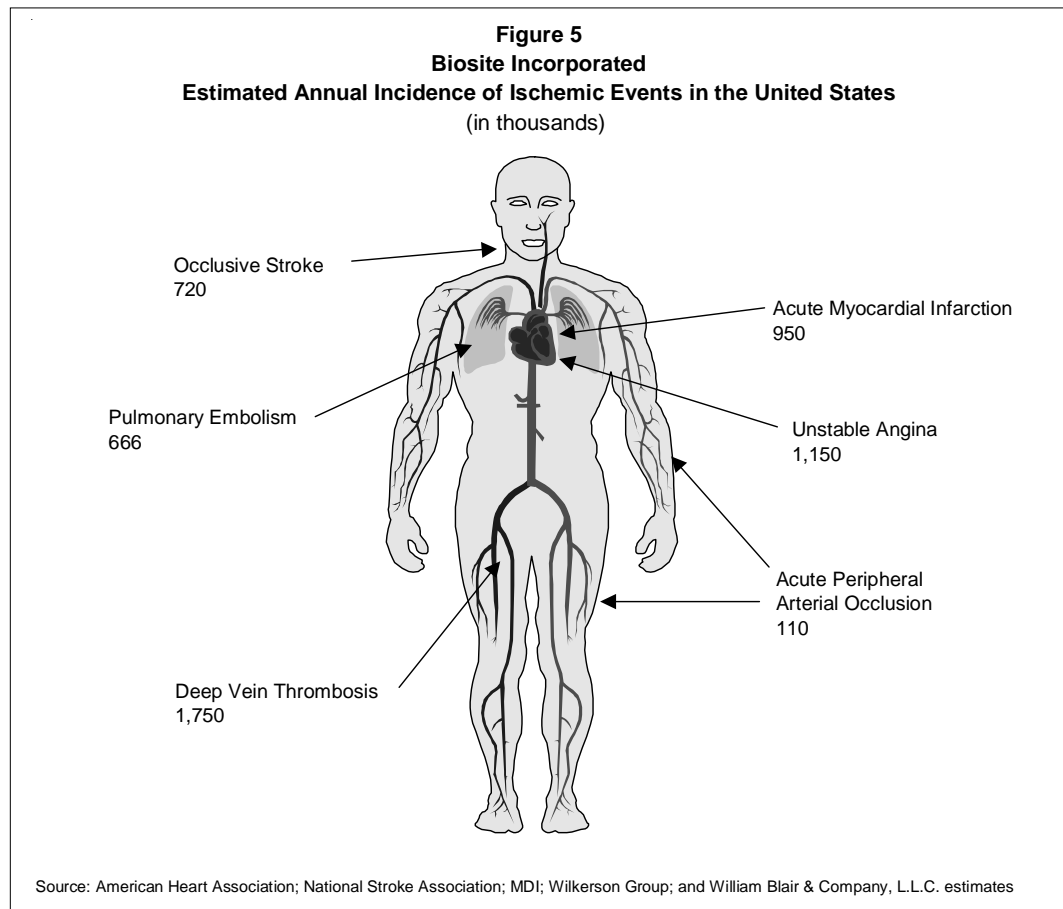
age-related declining kidney function. Although physicians can learn new cut-off values and determine the age of their patients, we believe Biosite's convenient cut-off value of 100 pg/ml is easy to use and has been used for two years now.

**Renal Failure Issue**

In short, BNP is an active protein, and NT-proBNP is an inactive protein. NT-proBNP is cleared from the body via the kidneys, which appears to lead to NT-proBNP values that are elevated in patients with kidney failure. In contrast, BNP is metabolized (broken down after use) and not cleared through the kidneys. We estimate that renal failure occurs in approximately 30%-50% of the CHF patient population. For patients with renal dysfunction or with worsening kidney function, NT-proBNP could become a useless marker of CHF severity.

**New Products Expected to Garner More Attention Next Summer**

In summary, we believe the excitement and scrutiny surrounding Biosite and BNP testing are justified given the product's substantial potential. Biosite was the first company with a BNP product on the market, and we expect that first-mover advantage to persist until at least early 2004. However, Biosite has other products in development, in particular a novel panel of five markers to aid in the diagnosis of stroke. We expect more information on this product in early 2003, and a clinical trial should begin by mid-2003. This product could have just as much hype, excitement, and medical potential as BNP. Moreover, by the middle of the first quarter next year, we expect an announcement of other new diagnostic products that Biosite Discovery has brought into development. We believe these products could be other markers for ischemia (lack of oxygen, often caused by a blood clot—thrombosis), potentially in deep-vein thrombosis or pulmonary emboli, as shown in figure 5. We expect investors to begin to shift their attention to new products such as stroke or others beginning in mid-2003.



## Valuation and Conclusion

During the first few weeks of December, Biosite stock's reacted strongly, mostly due to technical factors and possible short covering, in our opinion. However, given the large short position in the stock, we expect this volatility to continue until Biosite reports fourth quarter 2002 earnings on January 27, 2003. We continue to estimate that the stock is worth \$40 per share based on cash flow and earnings growth. Although upside appreciation to the stock could be modest at current levels, we believe the fundamentals should remain strong throughout 2003, and we would recommend the stock for long-term holders. Our 2003 EPS estimate of \$1.32 represents estimated earnings growth of 57%. Our long-term growth rate estimate for Biosite is 35%. Therefore, \$40 per share would represent a PEG ratio of 0.9 times, and we believe Biosite could trade at a PEG ratio of 1.0 to 1.5 times if earnings exceed expectations in the first few quarters of 2003.

Additional information is available upon request.

The full text of this report is available in electronic form to registered users via R\*Docs™ at [www.rdocs.com](http://www.rdocs.com) or [www.williamblair.com](http://www.williamblair.com).

DJIA:	8447.35
S&P 500:	891.12
NASDAQ:	1361.51

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

Roche	\$70.50
Bayer	\$22.19
Abbott	\$40.77
Quest	\$57.81

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**Table 5  
Biosite Incorporated  
Revenue Model**

Revenue Model	2000	1Q01	2Q01	3Q01	4Q01	2001	1Q02	2Q02	3Q02	4Q02E	2002E	1Q03	2Q03	3Q03	4Q03	2003E
DOA (inc. Tox)	35,171	8,614	9,138	9,583	9,335	36,670	8,588	8,707	10,100	9,099	36,494	8,459	9,023	9,125	8,810	35,417
C. difficile	2,471	685	956	1,012	814	3,467	943	926	960	935	3,764	932	918	936	934	3,720
Parasite	709	198	182	212	222	814	197	200	200	202	799	206	204	202	202	814
Cardiac	12,087	4,387	4,332	4,036	4,210	16,965	3,427	4,193	5,894	4,612	18,126	4,900	5,135	4,882	4,973	19,890
BNP	130	177	513	900	1,830	3,420	4,123	8,143	9,789	14,093	36,148	14,850	17,363	19,804	22,279	74,297
Meters	1,099	136	218	198	267	819	516	948	1,160	1,054	3,678	1,107	1,081	1,094	1,087	4,368
<b>Total Product Revenues</b>	<b>51,667</b>	<b>14,197</b>	<b>15,339</b>	<b>15,941</b>	<b>16,678</b>	<b>62,155</b>	<b>17,794</b>	<b>23,117</b>	<b>28,103</b>	<b>29,996</b>	<b>99,010</b>	<b>30,453</b>	<b>33,725</b>	<b>36,043</b>	<b>38,286</b>	<b>138,507</b>
Discovery	3,318	954	877	1,066	588	3,485	854	1,838	823	900	4,415	875	950	1,025	1,100	3,950
<b>Total Revenues</b>	<b>54,985</b>	<b>15,151</b>	<b>16,216</b>	<b>17,007</b>	<b>17,266</b>	<b>65,640</b>	<b>18,648</b>	<b>24,955</b>	<b>28,926</b>	<b>30,896</b>	<b>103,425</b>	<b>31,328</b>	<b>34,675</b>	<b>37,068</b>	<b>39,386</b>	<b>142,457</b>
<b>Year-over-year Growth</b>																
DOA (inc. Tox)	4.1%	2.5%	7.6%	3.1%	4.0%	4.3%	-0.3%	-4.7%	5.4%	-2.5%	-0.5%	-1.5%	3.6%	-9.7%	-3.2%	-3.0%
C. difficile	17.6%	30.7%	57.0%	51.3%	21.7%	40.3%	37.7%	-3.1%	-5.1%	14.9%	8.6%	-1.2%	-0.8%	-2.5%	-0.1%	-1.2%
Parasite	25.5%	40.4%	-30.0%	65.6%	23.3%	14.8%	-0.5%	9.9%	-5.7%	-8.9%	-1.8%	4.3%	2.2%	0.8%	0.1%	1.8%
Cardiac	117.7%	52.2%	25.1%	34.8%	53.3%	40.4%	-21.9%	-3.2%	46.0%	9.6%	6.8%	43.0%	22.5%	-17.2%	7.8%	9.7%
BNP	4233.3%	1164.3%	1669.0%	3650.0%	2804.8%	2530.8%	2229.4%	1487.3%	987.7%	670.1%	957.0%	260.2%	113.2%	102.3%	58.1%	105.5%
Meters	10.0%	-42.4%	-21.9%	-8.8%	-27.2%	-25.5%	279.4%	334.9%	485.9%	294.8%	349.1%	114.5%	14.0%	-5.7%	3.1%	18.8%
<b>Total Product Revenues</b>	<b>20.1%</b>	<b>16.4%</b>	<b>16.8%</b>	<b>19.6%</b>	<b>28.2%</b>	<b>20.3%</b>	<b>25.3%</b>	<b>50.7%</b>	<b>76.3%</b>	<b>79.9%</b>	<b>59.3%</b>	<b>71.1%</b>	<b>45.9%</b>	<b>28.3%</b>	<b>27.6%</b>	<b>39.9%</b>
Discovery	372%	33%	183%	1%	-53%	5%	-10%	110%	-23%	53%	27%	2%	-48%	25%	22%	-11%
<b>Total Revenues</b>	<b>26%</b>	<b>17%</b>	<b>21%</b>	<b>18%</b>	<b>21%</b>	<b>19%</b>	<b>23%</b>	<b>54%</b>	<b>70%</b>	<b>79%</b>	<b>58%</b>	<b>68%</b>	<b>39%</b>	<b>28%</b>	<b>27%</b>	<b>38%</b>
<b>% of Total Revenues</b>																
DOA (inc. Tox)	64.0%	56.9%	56.4%	56.3%	54.1%	55.9%	46.1%	34.9%	34.9%	29.5%	35.3%	27.0%	26.0%	24.6%	22.4%	24.9%
C. difficile	4.5%	4.5%	5.9%	6.0%	4.7%	5.3%	5.1%	3.7%	3.3%	3.0%	3.6%	3.0%	2.6%	2.5%	2.4%	2.6%
Parasite	1.3%	1.3%	1.1%	1.2%	1.3%	1.2%	1.1%	0.8%	0.7%	0.7%	0.8%	0.7%	0.6%	0.5%	0.5%	0.6%
Cardiac	22.0%	29.0%	26.7%	23.7%	24.4%	25.8%	18.4%	16.8%	20.4%	14.9%	17.5%	15.6%	14.8%	13.2%	12.6%	14.0%
BNP	0.2%	1.2%	3.2%	5.3%	10.6%	5.2%	22.1%	32.6%	33.8%	45.6%	35.0%	47.4%	50.1%	53.4%	56.6%	52.2%
Meters	2.0%	0.9%	1.3%	1.2%	1.5%	1.2%	2.8%	3.8%	4.0%	3.4%	3.6%	3.5%	3.1%	3.0%	2.8%	3.1%
<b>Total Product Revenues</b>	<b>94.0%</b>	<b>93.7%</b>	<b>94.6%</b>	<b>93.7%</b>	<b>96.6%</b>	<b>94.7%</b>	<b>95.4%</b>	<b>92.6%</b>	<b>97.2%</b>	<b>97.1%</b>	<b>95.7%</b>	<b>97.2%</b>	<b>97.3%</b>	<b>97.2%</b>	<b>97.2%</b>	<b>97.2%</b>
Discovery	6.0%	6.3%	5.4%	6.3%	3.4%	5.3%	4.6%	7.4%	2.8%	2.9%	4.3%	2.8%	2.7%	2.8%	2.8%	2.8%
<b>Total Revenues</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Table 6**  
**Biosite Incorporated**  
**Earnings Model**

Income Statement Model	2001	1Q02	2Q02	3Q02	4Q02E	2002E	1Q03E	2Q03E	3Q03E	4Q03E	2003E
Net Sales	\$ 65,640	\$ 18,648	\$ 24,955	\$ 28,926	\$ 30,896	\$ 103,425	\$ 31,328	\$ 34,675	\$ 37,068	\$ 39,386	\$ 142,457
Diagnostics	62,155	17,794	23,117	28,103	29,996	99,010	30,453	33,725	36,043	38,286	138,507
Discovery	3,485	854	1,838	823	900	4,415	875	950	1,025	1,100	3,950
COGS	17,644	5,702	7,165	8,794	9,299	30,960	9,440	10,455	11,173	11,869	42,937
Gross Profit	47,996	12,946	17,790	20,132	21,597	72,465	21,888	24,220	25,895	27,517	99,520
SG&A	22,864	6,064	7,851	8,983	9,710	32,608	9,835	10,806	11,500	12,372	44,513
R&D	13,946	3,577	3,876	4,636	4,943	17,032	5,013	5,548	5,931	6,302	22,793
Other (Legal, ETC)	3,204	1,317	1,498	1,228	150	4,193	300	300	300	300	1,200
Total Operating Expense	40,014	10,958	13,225	14,847	14,803	53,833	15,148	16,654	17,731	18,974	68,506
Income From Operations	7,982	1,988	4,565	5,285	6,794	18,632	6,740	7,566	8,164	8,544	31,014
Interest and Other Income	2,577	624	617	572	668	2,481	611	634	668	694	2,606
Nonoperating Income (Expense)	2,577	624	617	572	668	2,481	611	634	668	694	2,606
Earnings Before Income Taxes	10,559	2,612	5,182	5,857	7,462	21,113	7,351	8,200	8,832	9,238	33,620
Provision (Benefit) for Income Taxes	3,833	978	2,058	2,189	2,910	8,135	2,867	3,198	3,444	3,603	13,112
Net Income	\$6,726	\$1,634	\$3,124	\$3,668	\$4,552	\$12,978	\$4,484	\$5,002	\$5,387	\$5,635	\$20,508
Net Income Per Diluted Share	\$0.44	\$0.11	\$0.20	\$0.24	\$0.29	\$0.84	\$0.29	\$0.32	\$0.35	\$0.36	\$1.32
Weighted Average Shares Outstanding	15,410	15,223	15,570	15,464	15,518	15,444	15,509	15,546	15,573	15,555	15,546
<b>Year-over-year Growth</b>											
Total Revenue	19%	23%	54%	70%	79%	58%	68%	39%	28%	27%	38%
Diagnostic Revenue	20%	25%	51%	76%	80%	59%	71%	46%	28%	28%	40%
Gross Profit	22%	20%	50%	57%	73%	51%	69%	36%	29%	27%	37%
Income From Operations	5%	3%	83%	91%	757%	133%	239%	66%	54%	26%	66%
Net Income	9%	7%	63%	72%	296%	93%	174%	60%	47%	24%	58%
EPS	8%	8%	65%	72%	285%	93%	169%	60%	46%	24%	57%
100% Income Statement	2001E	1Q02	2Q02	3Q02	4Q02E	2002E	1Q03E	2Q03E	3Q03E	4Q03E	2003E
Net Sales	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Diagnostics	94.7%	95.4%	92.6%	97.2%	97.1%	95.7%	97.2%	97.3%	97.2%	97.2%	97.2%
Discovery	5.3%	4.6%	7.4%	2.8%	2.9%	4.3%	2.8%	2.7%	2.8%	2.8%	2.8%
COGS (% of Diagnostics)	28.4%	32.0%	31.0%	31.3%	31.0%	31.3%	31.0%	31.0%	31.0%	31.0%	31.0%
Gross Margin (% of Diagnostics)	71.6%	68.0%	69.0%	68.7%	69.0%	68.7%	69.0%	69.0%	69.0%	69.0%	69.0%
SG&A	34.8%	32.5%	31.5%	31.1%	31.4%	31.5%	31.4%	31.2%	31.0%	31.4%	31.2%
R&D	21.2%	19.2%	15.5%	16.0%	16.0%	16.5%	16.0%	16.0%	16.0%	16.0%	16.0%
Other (Legal, ETC)	4.9%	7.1%	6.0%	4.2%	0.5%	4.1%	1.0%	0.9%	0.8%	0.8%	0.8%
Total Operating Expense	61.0%	58.8%	53.0%	51.3%	47.9%	52.1%	48.4%	48.0%	47.8%	48.2%	48.1%
Income From Operations	12.2%	10.7%	18.3%	18.3%	22.0%	18.0%	21.5%	21.8%	22.0%	21.7%	21.8%
Interest and Other Income	3.9%	3.3%	2.5%	2.0%	2.2%	2.4%	1.9%	1.8%	1.8%	1.8%	1.8%
Contract Revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nonoperating Income (Expense)	3.9%	3.3%	2.5%	2.0%	2.2%	2.4%	1.9%	1.8%	1.8%	1.8%	1.8%
Earnings Before Income Taxes	16.1%	14.0%	20.8%	20.2%	24.2%	20.4%	23.5%	23.6%	23.8%	23.5%	23.6%
Provision (Benefit) for Income Taxes	36.3%	37.4%	39.7%	37.4%	39.0%	38.5%	39.0%	39.0%	39.0%	39.0%	39.0%
Net Income	10.2%	8.8%	12.5%	12.7%	14.7%	12.5%	14.3%	14.4%	14.5%	14.3%	14.4%

**Table 7**  
**Biosite Incorporated**  
**Annual Balance Sheet and Cash Flow**

	Dec-99	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
<b>ASSETS</b>	32,271,524	36,200,000	55,497,000	66,017,883	79,855,601	101,124,694	121,204,884
<b>Current assets:</b>							
Cash and Cash Equivalents	\$ 4,594,217	\$ 1,800,000	\$ 13,011,000	\$ 21,017,883	\$ 34,855,601	\$ 56,124,694	\$ 76,204,884
Marketable Securities	27,677,307	34,400,000	42,486,000	45,000,000	45,000,000	45,000,000	45,000,000
Accounts Receivable	6,192,161	11,794,000	8,254,000	9,898,640	12,634,276	13,475,111	14,888,807
Income Taxes Receivable	-	1,083,000	155,000	-	-	-	-
Inventory	6,058,856	6,445,000	7,117,000	11,623,404	14,835,703	15,823,047	17,483,069
Deferred Income Taxes	1,165,000	2,337,000	1,329,000	-	-	-	-
Prepaid Expenses and Other Current Assets	1,484,607	2,228,000	1,450,000	2,488,000	2,642,242	2,661,529	2,663,252
<b>Total current assets</b>	<b>47,172,148</b>	<b>60,087,000</b>	<b>73,802,000</b>	<b>90,027,926</b>	<b>109,967,823</b>	<b>133,084,381</b>	<b>156,240,012</b>
Plant, Property, and Equipment							
Net PP&E	9,936,429	10,681,000	13,840,000	16,495,690	19,411,858	22,604,083	26,088,771
Deferred Income Taxes	3,186,000	3,182,000	4,207,000	-	-	-	-
Patents and License Rights	7,555,771	8,614,000	9,208,000	8,080,100	7,452,827	6,874,250	6,340,590
Deposits and Other Assets	297,632	450,000	1,683,000	7,063,540	6,253,301	5,536,003	4,900,983
<b>Total Assets</b>	<b>68,147,980</b>	<b>83,014,000</b>	<b>102,740,000</b>	<b>121,667,256</b>	<b>143,085,809</b>	<b>168,098,717</b>	<b>193,570,356</b>
<b>LIABILITIES AND EQUITY</b>							
<b>Current Liabilities</b>							
Accounts Payable	1,831,282	1,293,000	2,326,000	3,951,957	5,044,139	5,379,836	5,944,244
Accrued Salaries and Other	3,423,541	3,103,000	3,953,000	5,921,258	7,589,423	8,343,926	9,560,626
Accrued Contract Payable	-	-	-	-	-	-	-
Accrued Settlement of Patent Matters	-	-	-	-	-	-	-
Income Taxes Payable	-	-	-	-	-	-	-
Deferred Revenue from Stockholder	-	-	-	-	-	-	-
Current Portion of Long-term Obligations	1,939,372	2,024,000	2,008,000	2,217,325	1,227,060	679,051	375,784
<b>Total Current Liabilities</b>	<b>7,194,195</b>	<b>6,420,000</b>	<b>8,287,000</b>	<b>12,090,541</b>	<b>13,860,623</b>	<b>14,402,813</b>	<b>15,880,654</b>
Long-term Commitments and Contingencies	4,068,814	3,708,000	3,542,000	4,031,500	2,231,018	1,234,638	683,244
<b>Total Liabilities</b>	<b>11,263,009</b>	<b>10,128,000</b>	<b>11,829,000</b>	<b>16,122,041</b>	<b>16,091,641</b>	<b>15,637,451</b>	<b>16,563,898</b>
<b>STOCKHOLDERS' EQUITY</b>							
Convertible Preferred Stock							
Common Stock	131,413	141,000	146,000	148,222	149,113	150,010	150,912
Additional Paid-in Capital	55,398,048	65,085,000	75,891,000	77,950,151	78,889,771	79,840,716	80,803,125
Unrealized Net Gain (loss) on Marketable Securities	(131,416)	(83,000)	405,000	-	-	-	-
Deferred Compensation	(93,086)	-	-	-	-	-	-
Retained Earnings (Deficit)	1,580,012	7,743,000	14,469,000	27,446,843	47,955,285	72,470,540	96,052,421
<b>Total Stockholders' Equity</b>	<b>56,884,971</b>	<b>72,886,000</b>	<b>90,911,000</b>	<b>105,545,216</b>	<b>126,994,169</b>	<b>152,461,266</b>	<b>177,006,458</b>
<b>Total Liabilities and Equity</b>	<b>68,147,980</b>	<b>83,014,000</b>	<b>102,740,000</b>	<b>121,667,256</b>	<b>143,085,809</b>	<b>168,098,717</b>	<b>193,570,356</b>
<b>Cash Flow Statement</b>							
<b>STATEMENT OF CASH FLOWS</b>	<b>Dec-99</b>	<b>Dec-00</b>	<b>Dec-01</b>	<b>Dec-02</b>	<b>Dec-03</b>	<b>Dec-04</b>	<b>Dec-05</b>
<b>Cash from Operating Activities:</b>							
Net Income	1,103,830	6,163,000	6,726,000	12,977,843	20,508,442	24,515,255	23,581,881
Reconciliation of Net Income to Net Cash:							
Depreciation and Amortization	3,660,580	4,108,000	4,173,000	4,256,460	4,341,589	4,428,421	4,516,989
Amortization of Deferred Compensation	95,206	214,000	50,000	-	-	-	-
Deferred Income Taxes	(325,000)	1,159,000	532,000	5,691,000	-	-	-
Changes in Operating Assets and Liabilities:							
Accounts Receivable	381,574	(5,601,839)	3,540,000	(1,644,640)	(2,735,636)	(840,835)	(1,413,696)
Receivable from Stockholders	-	(379,000)	-	-	-	-	-
Inventory	(1,694,489)	(386,144)	(672,000)	(4,506,404)	(3,212,300)	(987,344)	(1,660,022)
Prepaid Expenses and Other Current Assets	94,474	-	5,450,000	(1,038,000)	(154,242)	(19,287)	(1,723)
Accounts Payable	327,928	(538,282)	1,033,000	1,625,957	1,092,182	335,697	564,408
Accrued Liabilities	719,687	(141,000)	850,000	1,968,258	1,668,165	754,503	1,216,700
Deposits and Other Assets	-	-	-	(5,380,540)	810,239	717,299	635,019
Deferred Revenue From Stockholders	-	-	-	-	-	-	-
<b>Net Cash Provided by Operating Activities</b>	<b>4,363,790</b>	<b>4,597,735</b>	<b>21,682,000</b>	<b>13,949,935</b>	<b>22,318,439</b>	<b>28,903,709</b>	<b>27,439,556</b>
<b>Cash From Investing Activities</b>							
Proceeds from Sales of Marketable Securities	29,082,267	27,220,000	44,865,000	-	-	-	-
Purchase of Marketable Securities	(23,570,536)	(33,863,000)	(52,136,000)	-	-	-	-
Net Proceeds (purchase) of Marketable Securities	5,511,731	(6,643,000)	(7,271,000)	(2,919,000)	-	-	-
Purchase of Property, Equipment and Leasehold Improvements	(5,179,893)	(4,098,000)	(6,583,000)	(6,912,150)	(7,257,758)	(7,620,645)	(8,001,678)
Patents, License Rights Deposits and Other Assets	(2,172,648)	(1,966,000)	(2,576,000)	1,127,900	627,273	578,577	533,661
<b>Net Cash Provided by Investing Activities</b>	<b>(1,840,810)</b>	<b>(12,707,000)</b>	<b>(16,430,000)</b>	<b>(8,703,250)</b>	<b>(6,630,484)</b>	<b>(7,042,069)</b>	<b>(7,468,017)</b>
<b>Financing Activities:</b>							
Proceeds From the Issuance of Convertible Debt	-	-	-	-	-	-	-
Proceeds From Loans Payable	2,093,464	1,841,000	1,951,000	489,500	(1,800,482)	(996,380)	(551,393)
Principal Payments Under Long-term Obligations	(1,759,987)	(2,117,000)	(2,133,000)	209,325	(990,265)	(548,009)	(303,266)
Proceeds From Issuance of Stock, Net	1,334,064	5,591,000	6,141,000	2,061,373	940,511	951,843	963,311
Repurchase of common stock, Net	(358,641)	-	-	-	-	-	-
<b>Net Cash Provided by Financing Activities</b>	<b>1,308,900</b>	<b>5,315,000</b>	<b>5,959,000</b>	<b>2,760,198</b>	<b>(1,850,236)</b>	<b>(592,547)</b>	<b>108,651</b>
<b>Increase in Cash and Cash Equivalents</b>	<b>3,831,880</b>	<b>(2,794,265)</b>	<b>11,211,000</b>	<b>8,006,883</b>	<b>13,837,718</b>	<b>21,269,093</b>	<b>20,080,189</b>
Cash and Cash Equivalents at Beginning of Period	762,337	4,594,217	1,800,000	13,011,000	21,017,883	34,855,601	56,124,694
<b>Cash and Cash Equivalents at End of Period</b>	<b>4,594,217</b>	<b>1,799,952</b>	<b>13,011,000</b>	<b>21,017,883</b>	<b>34,855,601</b>	<b>56,124,694</b>	<b>76,204,884</b>

**Table 8**  
**Biosite Incorporated**  
**BNP Market Size and Market Share Estimates**

<b>Aggressive Testing, Stable Pricing, Strong BSTE Market Share</b>							
<b>Hospital ED</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Annual Visits (000)	5,000	5,150	5,305	5,464	5,628	5,796	5,970
Tests/Visit	1	1	1	1	1	1	1
Price	25	20	30	28	26	24	22
Total Market Size	125,000	103,000	159,135	152,982	146,316	139,113	131,346
Estimated BSTE Share	5.0%	25.0%	45.0%	55.0%	65.0%	75.0%	85.0%
<b>BSTE Sales Potential</b>	<b>6,250</b>	<b>25,750</b>	<b>71,611</b>	<b>84,140</b>	<b>95,105</b>	<b>104,335</b>	<b>111,644</b>
<b>Inpatient Monitoring</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Annual Visits (000)	1,000	1,060	1,120	1,180	1,240	1,300	1,360
Average Length of Stay (Days)	5	5	5	5	5	5	5
Tests/Day	2	3	4	4	4	4	4
Price	25	20	19	18	17	16	15
Total Market Size	250,000	318,000	425,600	424,800	421,600	416,000	408,000
Estimated BSTE Share	5.0%	25.0%	40.0%	35.0%	35.0%	35.0%	35.0%
<b>BSTE Sales Potential</b>	<b>12,500</b>	<b>79,500</b>	<b>170,240</b>	<b>148,680</b>	<b>147,560</b>	<b>145,600</b>	<b>142,800</b>
<b>Outpatient Monitoring</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
CHF Patients in U.S.	5,000	5,300	5,600	5,900	6,200	6,500	6,800
Visits/Year	4	4	4	4	4	4	4
Tests/Visit	1	1	1	1	1	1	1
Price	25	20	30	28	26	24	22
Total Market Size	500,000	424,000	672,000	660,800	644,800	624,000	598,400
Estimated BSTE Share	0.0%	0.0%	10.0%	20.0%	30.0%	40.0%	50.0%
<b>BSTE Sales Potential</b>	<b>0</b>	<b>0</b>	<b>67,200</b>	<b>132,160</b>	<b>193,440</b>	<b>249,600</b>	<b>299,200</b>
<b>Total Market Size</b>	<b>875,000</b>	<b>845,000</b>	<b>1,256,735</b>	<b>1,238,582</b>	<b>1,212,716</b>	<b>1,179,113</b>	<b>1,137,746</b>
<b>Total BSTE Sales Potential</b>	<b>18,750</b>	<b>105,250</b>	<b>309,051</b>	<b>364,980</b>	<b>436,105</b>	<b>499,535</b>	<b>553,644</b>

<b>Overall Hospital Market</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Total Number of U.S. Hospitals	5,000	5,000	5,000	5,000	5,000	5,000	5,000
BSTE	252	1,350	2,450	2,850	3,050	3,250	3,450
Roche			400	500	600	700	800
Bayer			600	750	900	1,050	1,200
Abbott			0	500	1,100	1,700	2,300
Other				20	50	75	100
BSTE	5.0%	27.0%	49.0%	57.0%	61.0%	65.0%	69.0%
Roche	0.0%	0.0%	8.0%	10.0%	12.0%	14.0%	16.0%
Bayer	0.0%	0.0%	12.0%	15.0%	18.0%	21.0%	24.0%
Abbott	0.0%	0.0%	0.0%	10.0%	22.0%	34.0%	46.0%
Other	0.0%	0.0%	0.0%	0.4%	1.0%	1.5%	2.0%
<b>Total % of Hospitals with BNP</b>	<b>5.0%</b>	<b>27.0%</b>	<b>69.0%</b>	<b>92.0%</b>	<b>113.0%</b>	<b>134.0%</b>	<b>155.0%</b>

<b>Revenue Estimates</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<i>Kits Per Month (25 tests/kit)</i>							
BSTE	7	9	10	11	12	12	12
Roche			6	11	12	13	15
Bayer			4	15	17	19	21
Abbott				12	17	19	21
Other				6	13	13	13
<i>Average Price</i>							
BSTE	25	20	25	23	22	20	19
Roche			20	19	16	14	12
Bayer			20	20	18	16	14
Abbott				20	18	16	14
Other				19	16	14	12
<i>Estimated Potential Revenue</i>							
BSTE	13,230,000	72,900,000	180,075,000	216,315,000	236,070,000	234,000,000	229,770,000
Roche				31,350,000	34,560,000	38,220,000	43,200,000
Bayer				67,500,000	82,620,000	95,760,000	105,840,000
Abbott				36,000,000	100,980,000	155,040,000	202,860,000
Other				684,000	3,120,000	4,095,000	4,680,000
<b>Total</b>	<b>13,230,000</b>	<b>72,900,000</b>	<b>180,075,000</b>	<b>351,849,000</b>	<b>457,350,000</b>	<b>527,115,000</b>	<b>586,350,000</b>

**Market Segment Assumptions**

**Hospital Emergency Department (ED):**

- \* Admissions growth based on a 3% population growth rate.
- \* Biosite will be the overwhelming leader in this market segment, as the sole provider of BNP testing for the vast majority of hospital EDs that adopt it.
- \* Possible that POC testing could warrant a premium price; however, recall that reimbursement effective starting 2003 is \$47.

**Inpatient Monitoring:**

- \* Assumes 20% of CHF patients will be hospitalized at least once during any given year.
- \* ALOS is based on MEDPAR data from 2000 for DRG 127, heart failure and shock.
- \* Difficult to estimate at this point how many BNP tests will be utilized for a typical inpatient, more clinical data needed.
- \* If BNP used to titrate drugs, BNP may be measured every 1 hour for the first 12 hours, resulting in higher test volume.
- \* This will be the most competitive market segment and likely most sensitive to pricing.

**Outpatient Monitoring:**

- \* Biosite will offer the only BNP testing platform for the physician office lab (POL) market segment.
- \* Growth of CHF patients assumes 600,000 new patients per year, adjusted for mortality.
- \* Difficult to estimate how many physician office visits a CHF patient makes per year.
- \* Pricing estimates assume a reimbursement of \$47, which goes into effect in January.
- \* Assumes POL testing will take place in 2003.

**Overall Hospital Market Assumptions**

**Hospital Placements:**

- \* Biosite will achieve peak market penetration of nearly 70% in five years
- \* All Roche customers today will use proBNP by 2003, installed base will grow aggressively, market share will double in 5 years.
- \* All Bayer customers today will use BNP by 2003, installed base will grow aggressively, market share will double in 5 years.
- \* Abbott will have highest share in five years, although BNP test will not launch until 2004.

**Utilization:**

- \* Central lab systems will have higher utilization, due to their use for inpatient monitoring of drug therapies.
- \* Current kits/month usage for BSTE is 9, we expect significant increases in future utilization of BNP.
- \* We expect many hospitals to use both Biosite's BNP and a central lab BNP.
- \* We estimate higher utilization of BNP compared to proBNP (Roche).

**Pricing:**

- \* We assume proBNP will be priced less expensively than BNP
- \* Biosite will command a slight premium as a POC test.
- \* BSTE price is the average of the ED price and the inpatient monitoring price.

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



**Table 9**  
**Biosite Incorporated**  
**BNP Market Size and Market Share Estimates**

Moderate Testing, Weakened Pricing, Modest BSTE Market Share							
Hospital ED	2001	2002	2003	2004	2005	2006	2007
Annual Visits (000)	5,000	5,150	5,305	5,464	5,628	5,796	5,970
Tests/Visit	1	1	1	1	1	1	1
Price	25	20	19	17	15	13	11
Total Market Size	125,000	103,000	100,786	92,882	84,413	75,353	65,673
Estimated BSTE Share	5.0%	25.0%	45.0%	50.0%	48.0%	46.0%	44.0%
<b>BSTE Sales Potential</b>	<b>6,300</b>	<b>25,750</b>	<b>45,353</b>	<b>46,441</b>	<b>40,518</b>	<b>34,862</b>	<b>28,896</b>
Inpatient Monitoring	2001	2002	2003	2004	2005	2006	2007
Annual Visits (000)	1,000	1,060	1,120	1,180	1,240	1,300	1,360
Average Length of Stay (Days)	5	5	5	5	5	5	5
Tests/Day	1	1	1	1	1	1	1
Price	25	20	19	15	12	10	8
Total Market Size	125,000	106,000	106,400	88,500	74,400	65,000	54,400
Estimated BSTE Share	5.0%	25.0%	40.0%	35.0%	30.0%	25.0%	20.0%
<b>BSTE Sales Potential</b>	<b>6,250</b>	<b>26,500</b>	<b>42,560</b>	<b>30,975</b>	<b>22,320</b>	<b>16,250</b>	<b>10,880</b>
Outpatient Monitoring	2001	2002	2003	2004	2005	2006	2007
CHF Patients in U.S.	5,000	5,300	5,600	5,900	6,200	6,500	6,800
Visits/Year	2	2	2	2	2	2	2
Tests/Visit	1	1	1	1	1	1	1
Price	25	20	25	23	21	19	17
Total Market Size	250,000	212,000	280,000	271,400	260,400	247,000	231,200
Estimated BSTE Share	0.0%	0.0%	10.0%	15.0%	20.0%	25.0%	30.0%
<b>BSTE Sales Potential</b>	<b>0</b>	<b>0</b>	<b>28,000</b>	<b>40,710</b>	<b>52,080</b>	<b>61,750</b>	<b>69,360</b>
<b>Total Market Size</b>	<b>500,000</b>	<b>421,000</b>	<b>487,186</b>	<b>452,782</b>	<b>419,213</b>	<b>387,353</b>	<b>351,273</b>
<b>Total BSTE Sales Potential</b>	<b>12,550</b>	<b>52,250</b>	<b>115,913</b>	<b>118,126</b>	<b>114,918</b>	<b>112,662</b>	<b>109,136</b>

Overall Hospital Market	2001	2002	2003	2004	2005	2006	2007
Total # Hospitals	5,000	5,000	5,000	5,000	5,000	5,000	5,000
BSTE	252	1,200	1,800	2,200	2,300	2,400	2,500
Roche			200	400	450	500	550
Bayer			300	600	650	700	750
Abbott			0	600	800	1,000	1,200
Other				20	50	75	100
BSTE	5.0%	24.0%	36.0%	44.0%	46.0%	48.0%	50.0%
Roche	0.0%	0.0%	4.0%	8.0%	9.0%	10.0%	11.0%
Bayer	0.0%	0.0%	6.0%	12.0%	13.0%	14.0%	15.0%
Abbott	0.0%	0.0%	0.0%	12.0%	16.0%	20.0%	24.0%
Other	0.0%	0.0%	0.0%	0.4%	1.0%	1.5%	2.0%
<b>Total % of Hospitals with BNP</b>	<b>5.0%</b>	<b>24.0%</b>	<b>46.0%</b>	<b>76.0%</b>	<b>84.0%</b>	<b>92.0%</b>	<b>100.0%</b>

Revenue Estimates	2001	2002	2003	2004	2005	2006	2007
<i>Kits Per Month (25 tests/kit)</i>							
BSTE	7	9	10	11	10	9	9
Roche			6	8	10	12	12
Bayer			4	10	12	14	16
Abbott				10	12	14	16
Other				6	9	11	10
<i>Average Price</i>							
BSTE	25	20	22	20	18	16	14
Roche			20	17	14	11	8
Bayer			20	18	16	12	10
Abbott				18	16	12	10
Other				17	14	11	8
<i>Estimated Potential Revenue</i>							
BSTE	13,230,000	64,800,000	118,800,000	145,200,000	124,200,000	103,680,000	94,500,000
Roche				16,320,000	18,900,000	19,800,000	15,840,000
Bayer				32,400,000	37,440,000	35,280,000	36,000,000
Abbott				32,400,000	46,080,000	50,400,000	57,600,000
Other				612,000	1,890,000	2,722,500	2,400,000
<b>Total</b>	<b>13,230,000</b>	<b>64,800,000</b>	<b>118,800,000</b>	<b>226,932,000</b>	<b>228,510,000</b>	<b>211,882,500</b>	<b>206,340,000</b>

**Market Segment Assumptions**

**Hospital Emergency Department (ED):**

- \* Admissions growth based on a 3% population growth rate.
- \* Biosite market share will peak in 2004 at only 50%, and then decline through 2007.
- \* Pricing will decline considerably, but command a slight premium over the central lab test used for inpatient monitoring

**Inpatient Monitoring:**

- \* Assumes 20% of CHF patients will be hospitalized at least once during any given year.
- \* ALOS is based on MEDPAR data from 2000 for DRG 127, heart failure and shock.
- \* BNP is not used to titrate treatment, and tests are only done once per day.
- \* This will be the most competitive market segment and likely most sensitive to pricing. We assume significant price erosion, particularly if Roche aggressively licenses NT-proBNP to other manufacturers.
- \* Biosite will only have 20% market share in this segment.

**Outpatient Monitoring:**

- \* Biosite will offer the only BNP testing platform for the physician office lab (POL) market segment.
- \* Growth of CHF patients assumes 600,000 new patients per year, adjusted for mortality.
- \* Difficult to estimate how many physician office visits a CHF patient makes per year, we assume only 2 per year.
- \* Biosite only will have 30% market share in this segment, which assumes little outpatient testing of BNP.

**Overall Hospital Market Assumptions**

**Hospital Placements:**

- \* Biosite will achieve peak market penetration of 50% in five years
- \* All Roche customers today will use proBNP by 2004, installed base will grow conservatively, market share will increase to 11% from 8% in five years.
- \* All Bayer customers today will use BNP by 2004, installed base will grow conservatively, market share will increase to 15% in five years.
- \* Abbott will have highest share in five years, although BNP test will not launch until 2004.

**Utilization:**

- \* Central lab systems will have higher utilization due to their use for inpatient monitoring of drug therapies.
- \* Current kits/month usage for BSTE is 9, we do not expect significant increases in future utilization of BNP.
- \* We expect many hospitals to use both Biosite's BNP and a central lab BNP.
- \* We estimate higher utilization of BNP compared to proBNP (Roche).

**Pricing:**

- \* We assume proBNP will be priced less expensively than BNP
- \* Biosite will command a slight premium as a POC test.
- \* Significant price erosion, particularly for the central lab assays.

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

**Table 10**  
**Biosite Incorporated**  
**BNP Market Size and Market Share Estimates**

<b>A Reasonable View</b>							
<b>Hospital ED</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Annual Visits (000)	5,000	5,150	5,305	5,464	5,628	5,796	5,970
Tests/Visit	1	1	1	1	1	1	1
Price	25	20	19	18	17	15	12
Total Market Size	125,000	103,000	100,786	98,345	95,668	86,946	71,643
Estimated BSTE Share	5.0%	25.0%	45.0%	49.0%	53.0%	56.5%	60.0%
<b>BSTE Sales Potential</b>	<b>6,300</b>	<b>25,750</b>	<b>45,353</b>	<b>48,189</b>	<b>50,704</b>	<b>49,124</b>	<b>42,986</b>
<b>Inpatient Monitoring</b>							
Annual Visits (000)	1,000	1,060	1,120	1,180	1,240	1,300	1,360
Average Length of Stay (Days)	5	5	5	5	5	5	5
Tests/Day	2	2	2	2	2	2	2
Price	25	20	19	15	12	10	9
Total Market Size	250,000	212,000	212,800	177,000	148,800	130,000	122,400
Estimated BSTE Share	5.0%	25.0%	25.0%	20.0%	15.0%	10.0%	5.0%
<b>BSTE Sales Potential</b>	<b>12,500</b>	<b>53,000</b>	<b>53,200</b>	<b>35,400</b>	<b>22,320</b>	<b>13,000</b>	<b>6,120</b>
<b>Outpatient Monitoring</b>							
CHF Patients in U.S.	5,000	5,300	5,600	5,900	6,200	6,500	6,800
Visits/Year	2	2	2	2	2	2	2
Tests/Visit	1	1	1	1	1	1	1
Price	25	20	30	25	24	23	22
Total Market Size	250,000	212,000	336,000	295,000	297,600	299,000	299,200
Estimated BSTE Share	0.0%	0.0%	0.0%	10.0%	20.0%	30.0%	40.0%
<b>BSTE Sales Potential</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29,500</b>	<b>59,520</b>	<b>89,700</b>	<b>119,680</b>
<b>Total Market Size</b>	<b>625,000</b>	<b>527,000</b>	<b>649,586</b>	<b>570,345</b>	<b>542,068</b>	<b>515,946</b>	<b>493,243</b>
<b>Total BSTE Sales Potential</b>	<b>18,800</b>	<b>78,750</b>	<b>98,553</b>	<b>113,089</b>	<b>132,544</b>	<b>151,824</b>	<b>168,786</b>

<b>Overall Hospital Market</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Total # Hospitals	5,000	5,000	5,000	5,000	5,000	5,000	5,000
BSTE	252	1,238	2,228	2,476	2,476	2,476	2,576
Roche			400	500	600	700	800
Bayer			600	750	900	1,050	1,200
Abbott			0	750	1,050	1,350	1,650
Other				20	50	75	100
BSTE	5.0%	24.8%	44.6%	49.5%	49.5%	49.5%	51.5%
Roche	0.0%	0.0%	8.0%	10.0%	12.0%	14.0%	16.0%
Bayer	0.0%	0.0%	12.0%	15.0%	18.0%	21.0%	24.0%
Abbott	0.0%	0.0%	0.0%	15.0%	21.0%	27.0%	33.0%
Other	0.0%	0.0%	0.0%	0.4%	1.0%	1.5%	2.0%
<b>Total % of Hospitals with BNP</b>	<b>5.0%</b>	<b>24.8%</b>	<b>64.6%</b>	<b>89.5%</b>	<b>100.5%</b>	<b>111.5%</b>	<b>124.5%</b>

<b>Revenue Estimates</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<i>Kits Per Month (25 tests/kit)</i>							
BSTE	7	9	10	11	12	13	14
Roche			6	13	15	17	19
Bayer			4	15	17	19	21
Abbott				12	17	19	21
Other				6	13	13	13
<i>Average Price</i>							
BSTE	25	20	25	22	21	18	15
Roche			20	17	14	11	8
Bayer			20	18	16	12	10
Abbott				18	16	12	10
Other				17	14	11	8
<i>Estimated Potential Revenue</i>							
BSTE	13,230,000	66,852,000	163,752,556	175,641,543	182,696,911	173,784,867	162,260,778
Roche				33,150,000	37,800,000	39,270,000	36,480,000
Bayer				60,750,000	73,440,000	71,820,000	75,600,000
Abbott				48,600,000	85,680,000	92,340,000	103,950,000
Other				612,000	2,730,000	3,217,500	3,120,000
<b>Total</b>	<b>13,230,000</b>	<b>66,852,000</b>	<b>163,752,556</b>	<b>318,753,543</b>	<b>382,346,911</b>	<b>380,432,367</b>	<b>381,410,778</b>

**Market Segment Assumptions**

**Hospital Emergency Department (ED):**

- \* Admissions growth based on a 3% population growth rate.
- \* Biosite market share will peak in 2007 at only 60%.
- \* Pricing will decline moderately, but command a slight premium over the central lab test used for inpatient monitoring.

**Inpatient Monitoring:**

- \* Assumes 20% of CHF patients will be hospitalized at least once during any given year.
- \* ALOS is based on MEDPAR data from 2000 for DRG 127, heart failure and shock.
- \* BNP is not used to titrate treatment frequently, and tests are performed an average of twice per day.
- \* This will be the most competitive market segment and likely most sensitive to pricing. We assume significant price erosion, particularly if Roche aggressively licenses NT-proBNP to other manufacturers.
- \* Biosite will only have 20% market share in this segment.

**Outpatient Monitoring:**

- \* Biosite will offer the only BNP testing platform for the physician office lab (POL) market segment.
- \* Growth of CHF patients assumes 600,000 new patients per year, adjusted for mortality.
- \* Difficult to estimate how many physician office visits a CHF patient makes per year, we assume only 2 per year.
- \* Biosite only will have 40% market share in this segment, which assumes moderate outpatient testing of BNP.
- \* We do not expect significant testing in this market until 2004.

**Overall Hospital Market Assumptions**

**Hospital Placements:**

- \* Biosite will achieve peak market penetration of 55% in five years.
- \* All Roche customers today will use proBNP by 2003, installed base will grow moderately, market share will double in five years.
- \* All Bayer customers today will use BNP by 2003, installed base will grow moderately, market share will double in five years.
- \* Abbott will have highest share in five years, although BNP test will not launch until 2004.

**Utilization:**

- \* Central lab systems will have higher utilization due to their use for inpatient monitoring of drug therapies.
- \* Current kits/month usage for BSTE is 9, we expect significant increases in future utilization of BNP.
- \* We expect many hospitals to use both Biosite's BNP and a central lab BNP.
- \* We estimate higher utilization of BNP compared to proBNP (Roche).

**Pricing:**

- \* We assume proBNP will be priced less expensively than BNP.
- \* Biosite will command a slight premium as a POC test.
- \* Significant price erosion, particularly for the central lab assays.

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



Current Rating Distribution (as of 11/29/02)

Coverage Universe Percent	Inv. Banking Relationships*	Percent
Outperform 45%	Outperform	5%
Market Perform 38%	Market Perform	5%
Underperform 17%	Underperform	1%

\*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.

Stock Rating: William Blair & Company, L.L.C. uses a three-point system to rate stocks. Individual ratings reflect the expected performance of the stock relative to the broader market over the next 12 months. The assessment of expected performance is a function of near-term company fundamentals, industry outlook, confidence in earnings estimates, valuation, and other factors. Outperform (O) – stock expected to outperform the broader market over the next 12 months; Market Perform (M) – stock expected to perform approximately in line with the broader market over the next 12 months; Underperform (U) – stock expected to underperform the broader market over the next 12 months; Not Rated (NR) – the stock is currently not rated.

Prior to September 3, 2002, William Blair & Company, L.L.C. used a four-point numerical system to rate stocks. Investment ratings reflect the expected performance of the stock relative to the market over the next 12 to 18 months: 1 – Strong Buy (Significant Outperformance); 2 – Long-term Buy (Outperformance); 3 – Hold (Market Average Performance); 4 – Sell (Underperformance).

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