



November 30, 2016

**Key Metrics**

XTNT - NYSE	\$0.49
Pricing Date	Nov 29 2016
Price Target	\$3.50
52-Week Range	\$3.75 - \$0.45
Shares Outstanding (mm)	12.2
Market Capitalization (mm)	\$6.0
3-Mo Average Daily Volume	126,594
Book Value/Share	(0.42)
Price/Book	(1.2)x

**EPS FY: December**

	2015A	Prior 2016E	Curr. 2016E	Prior 2017E	Curr. 2017E
1Q-Mar	(0.44)	--	(0.46)A	--	(0.27)E
2Q-Jun	(0.50)	--	(0.37)A	--	(0.24)E
3Q-Sep	(0.51)	--	(0.40)A	--	(0.23)E
4Q-Dec	0.97	--	(0.22)E	--	(0.20)E
FY	(0.65)	--	(1.45)E	--	(0.94)E
P/E	NM		NM		NM

**REVENUE**

	2015A	Prior 2016E	Curr. 2016E	Prior 2017E	Curr. 2017E
1Q-Mar	21.7	--	21.0A	--	23.9E
2Q-Jun	21.6	--	21.5A	--	24.4E
3Q-Sep	20.9	--	23.1A	--	25.9E
4Q-Dec	22.3	--	24.6E	--	26.9E
FY	86.5	--	90.1E	--	101.1E

**Company Description:**

Xtant Medical Holdings, Inc. ("Xtant"), formerly known as Bacterin International Holdings, Inc., and its wholly owned subsidiaries Bacterin International, Inc., and X-spine Systems, is a supplier of orthopedic and spine surgery products. Bacterin develops, manufactures and markets biologic products to domestic and international markets. Bacterin's proprietary methods are used to process human-derived allografts into scaffolds that promote bone and other tissue growth. X-spine is a global developer and manufacturer of a full suite of implants and surgical implants with differentiated MIS products.

## Xtant Medical

### Rating: Buy

Initiating with a Buy rating and \$3.50 PT

**Investment Highlights:**

**We are initiating coverage on Xtant Medical with a Buy rating and \$3.50 target price.** The company is the result of a merger (closed July 31, 2015) of two complementary businesses with sales and geographic synergies:

1) **Bacterin**, a biologics company with a vertically integrated tissue bank and a wide variety of biologic offerings that focuses primarily on the bone repair segment of the regenerative medicine market.

2) **X-spine**, a spine company that develops and manufactures a full suite of implants with differentiated MIS products that have been successful due to a strong physician network and a strong design/engineer team.

**Return to double digit growth:** The company ran into supply constraints that stunted growth in the first half of 2016, though these issues have been alleviated, as seen in their 3Q16 results. We prefer supply constraint over demand issues, and we anticipate the company resuming growth. The company was quick to address the issues with management changes, including the hiring of President Carl O'Connell (previously Global Vice President of Marketing for Wright Medical's foot and ankle business).

**Cash Liquidity and Capital Structure:** The company currently has access to \$15.8 million of cash available from 1) \$1.4 million of cash on the balance sheet as of 9/30/16, 2) \$2.6 million of cash available from its revolver, 3) \$8.3 million remaining from a \$10 million commitment from Aspire, and 4) \$3.5 million net proceeds from its recent rights offering. We anticipate the company will generate \$8 million in EBITDA in 2017 (guidance of \$7.7-9.2 million), which implies enough access to cash into 2018. That said, the company's capital structure is too debt laden, with a 21.2 (\$127 million/\$6 million) debt to equity ratio. We think this is a major issue weighing on shares, which we believe the company will look to address in 2017 with a recapitalization. OrbiMed is the largest holder of debt and equity, with \$94 million of debt (\$52 million of the \$68 million convertible notes and \$42 of the straight debt) and 3.9% of outstanding shares, and has shown a willingness to work with the company to unlock value.

**Valuation:** Our \$3.50 target price is derived by applying a 1.5x EV/Sales multiple to our FY20 estimate of \$137 million, discounted back at 15%.

**Exhibit 1: Peer Group Valuation Metrics**

Company	Ticker	Market Cap	EV (MM)	EV/SALES		
				TTM	2016	2017
XTANT Medical	XTNT	\$6	\$125.4	1.4x	1.4x	1.2x
RTI Surgical	RTIX	\$172	\$303.2	1.1x	1.1x	1.1x
K2M Group	KTWO	\$807	\$834.0	3.6x	3.6x	3.6x
SeaSpine	SPNE	\$77.5	\$61.3	0.5x	0.5x	0.5x
<b>Average</b>		<b>\$265.8</b>	<b>\$331.0</b>	<b>1.7x</b>	<b>1.6x</b>	<b>1.6x</b>

Source: FactSet and Aegis Capital Corp. Estimates \*Priced as of 11/29/2016

**Risk:** Risks to the achievement of our target price include (1) merger-related risks with the integration of Bacterin and X-Spine, (2) heavy debt burden related to its \$121 million in debt, (3) increased competition in spine, (4) availability of human donor tissue, and (5) slower than expected market uptake on key products.

**Biologics and Hardware go hand in hand:** Post-merger the company has focused on cross-selling its combined catalog of biologics and hardware products, which management estimates is a \$86 million opportunity, by providing a more attractive offering to hospital executives and spinal surgeons. There are approximately 2,000 Bacterin procedures and 3,000 X-Spine procedures each quarter - a \$2,500 Bacterin ASP and \$7,000 X-spine ASP creates a \$86 million per year opportunity. This includes core products that legacy Bacterin sells without a hardware component, in addition to items that normally only sell in concert with hardware (discussed in more detail below). Management is on track with its sales force training and portfolio selling initiative, and we expect cross-selling to accelerate as the sales force finish their training and as biologic and hardware supply constraints are removed. The company began cross-portfolio selling among Bacterin and X-spine products in Oct 2015, with a goal for 10-12% of sales derived from portfolio sales (~7.4% as of 3Q), and expects to exceed that in 4Q, setting up for a high floor in 2017.

**Biologics Platform:** The company runs a vertically integrated tissue bank with a wide variety of biologic offerings, focusing primarily on the bone repair segment of the regenerative medicine market (roughly half the total market or about \$1.5 billion). Its core product is OsteoSponge, a bone graft made from demineralized bone matrix (DBM) for the spine market, which has osteoinductive properties to help promote bone fusion in spinal surgery procedures. The company uses a proprietary process to remove the calcium to create a unique DBM that produces a graft that is both more malleable and compressible compared to other DBMs, and thus has built a strong following.

Last year the company commercially released 3Demin that uses demineralized cortical bone fibers to create novel interconnected graft materials that contain bone morphogenetic proteins (BMPs) and other growth factors. 3Demin is used as a standalone bone graft or in combination with autologous bone in a variety of spinal fusion applications. It is available in a variety of preformed constructs, including boats for packing autologous bone material, strips for larger coverage, and cortical fibers. 3Demin has proven extremely popular with spinal surgeons despite being supply constrained until the second half of 2016, when XTNT doubled tissue processing capabilities near its headquarters in Belgrade, Montana -- we expect 3Demin growth to accelerate through 2H16 and continue through 2017 to about a \$20-\$24 million run rate.

In March, the company announced an agreement with Vivex Biomedical to distribute OsteoVive, an osteoconductive scaffold that contains viable stem cells to support the osteogenic healing process, and launched distribution near the end of 2Q. The product, a bone graft substitute similar to NUVA's Osteocel (NUVA \$65.43, BUY), allows XTNT to enter the \$252 million cellular allograft market.

**X-spine's hardware business:** X-spine offers a full line of lumbar and cervical fusion products, with its three lead products Axle, Irix-C, and Silex representing 53% of revenues. We think Xtant can at least maintain its double-digit growth trajectory over the next few years as it builds out its platform and as supply constraints on its Irix-C and Axle system are removed.

Its Axle Interspinous Fusion system is used as an MIS alternative to pedicle screws to provide stability in non-cervical spine procedures (T1-S1 inclusive). Interspinous clips are gaining popularity, especially with free standing spine centers (which, thanks to reimbursement changes, may become increasingly popular), among which Axle gets high marks for its modular design.

Irix-C is a cervical integrated fusion system consisting of an integrated endoskeleton surrounded by an outer PEEK ring and two screws, intended for spinal fusion procedures at one level (C3-T1 inclusive) for the treatment of degenerative disc disease.

The Silex sacroiliac (SI) joint system is used for fusion and stabilization that utilizes a proprietary dual-hitch compression-thread design and titanium plasma coating to stabilize the SI joint. Silex differs from SI-Bone's offering, iFuse, as it is a true bone fusion device, while SI-Bone is a fixation system that does not create true fusion. In addition, Silex is reimbursable under two codes, codes 27279 and 27280, while SI-Bone's product is reimbursed under 27279. The 27280 code is a well established fusion code with physician payments of \$1,413, while 27279 is reimbursed at a rate of \$715 (for 2017, CMS announced a substantial increase to MIS CPT code 27279 to \$14,698 (up 40%), resulting in a physician payment of \$715). Management expects SI joint fusion to grow to 20% of the overall spine market by 2021 (currently around 5%).

**Financials:** As of the end of 3Q16, the company had \$1.4 million of cash remaining on the balance sheet, and the rights offering is expected to bring in \$3.5 million net. The company had a loss from operations of \$1.9 million in 3Q, though we believe the company will become operating cash flow positive in 2017. The company expects its breakeven point to be at \$24.67 million in quarterly revenue -- 2017 guidance points to revenues of \$98-102 million (\$24.5-25.5 million/Q). The majority of operating cash generated will be used to to pay down debt (the company has a \$70 million of convertible debt at 6% and \$47 million of senior secured debt from Orbimed with a 15% interest rate-- 9% cash interest and 6% payment in kind) and interest (running at about \$3.6 million a quarter, and \$2.6 million). We expect the company and its debt holders will look for opportunities to re-adjust its capital structure to a more equity friendly in the future.

## Xtant Medical Holdings, Inc. Income Statement

(Fiscal Years Ending December 31; \$ millions)

	2014A	2015A				2015A	2016E				2016E	2017E				2017E	2018E
	Year	Q1A	Q2A	Q3A	Q4A	Year	Q1A	Q2A	Q3A	Q4E	Year	Q1E	Q2E	Q3E	Q4E	Year	Year
Net sales	\$77.7	\$21.7	\$21.6	\$20.9	\$22.3	\$86.5	\$21.0	\$21.5	\$23.1	\$24.6	\$90.1	\$23.9	\$24.4	\$25.9	\$26.9	\$101.1	\$113.2
Cost of goods sold	\$26.4	\$7.8	\$7.6	\$7.2	\$7.4	\$29.9	\$6.9	\$6.8	\$7.1	\$7.6	\$28.4	\$7.4	\$7.3	\$7.8	\$7.8	\$30.3	\$34.0
Gross profit	\$51.2	\$14.0	\$14.0	\$13.7	\$14.9	\$56.6	\$14.1	\$14.7	\$16.0	\$17.0	\$61.8	\$16.5	\$17.1	\$18.1	\$19.1	\$70.8	\$79.2
Operating expenses:																	
G&A	\$13.9	\$3.8	\$4.1	\$4.5	\$4.2	\$16.6	\$3.5	\$3.9	\$3.8	\$4.1	\$15.2	\$3.9	\$4.0	\$4.3	\$4.4	\$16.7	\$18.7
S&M	\$33.3	\$8.8	\$10.1	\$9.8	\$10.6	\$39.3	\$10.5	\$10.4	\$11.2	\$11.4	\$43.6	\$11.1	\$11.2	\$11.8	\$12.1	\$46.2	\$49.8
R&D	\$3.6	\$0.9	\$1.0	\$1.0	\$1.0	\$3.8	\$0.9	\$0.8	\$0.9	\$0.8	\$3.4	\$0.8	\$0.9	\$0.9	\$0.9	\$3.5	\$4.0
Non-cash consulting expense	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.2	\$0.1	\$0.1	\$0.2	\$0.1	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	\$0.3
D&A	\$4.6	\$1.3	\$1.3	\$1.6	\$2.0	\$6.2	\$1.4	\$1.2	\$1.3	\$1.4	\$5.3	\$1.4	\$1.4	\$1.4	\$1.4	\$5.6	\$5.6
D&A + COGS D&A		\$2.1	\$2.1	\$2.2	\$2.5	\$8.8	\$2.2	\$1.9	\$1.9	\$2.2	\$8.2	\$2.2	\$2.2	\$2.2	\$2.2	\$8.8	\$8.8
Impairment of assets	\$0.9	\$0.0	\$0.0	\$0.2	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
stock based comp		\$0.2	\$0.2	\$0.2	\$0.2	\$0.8	\$0.2	\$0.1	\$0.3	\$0.1	\$0.7	\$0.2	\$0.2	\$0.2	\$0.2	\$0.7	\$0.7
acquisition/integration expenses					\$1.1	\$2.6	\$0.0	\$0.5	\$0.5	\$0.0	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
EBITDA		\$1.4	(\$0.2)	(\$0.9)	(\$0.3)	(\$0.0)	\$0.1	\$0.3	\$0.8	\$1.5	\$2.8	\$1.5	\$1.9	\$2.1	\$2.5	\$8.0	\$16.0
Total operating costs	\$56.5	\$14.9	\$16.5	\$17.2	\$19.0	\$69.1	\$16.4	\$16.8	\$17.9	\$17.8	\$68.8	\$17.4	\$17.6	\$18.4	\$19.0	\$72.3	\$72.8
Operating income (loss)	(\$5.2)	(\$0.9)	(\$2.5)	(\$3.5)	(\$4.1)	(\$12.5)	(\$2.3)	(\$2.1)	(\$1.9)	(\$0.8)	(\$7.1)	(\$0.9)	(\$0.5)	(\$0.3)	\$0.1	(\$1.5)	\$6.5
Interest income/(expense)	(\$11.6)	(\$3.0)	(\$3.0)	(\$2.2)	(\$2.8)	(\$10.9)	(\$2.8)	(\$3.0)	(\$3.2)	(\$3.0)	(\$11.9)	(\$3.7)	(\$3.7)	(\$3.7)	(\$3.7)	(\$14.9)	(\$8.3)
Other, net	\$1.4	(\$1.0)	(\$0.1)	\$0.3	\$0.9	\$0.1	(\$0.4)	\$0.6	\$0.2		\$0.4					\$0.0	\$0.0
Total other	(\$10.2)	(\$4.0)	(\$3.1)	(\$1.8)	(\$1.9)	(\$10.8)	(\$3.2)	(\$2.3)	(\$3.0)	(\$3.0)	(\$11.5)	(\$3.7)	(\$3.7)	(\$3.7)	(\$3.7)	(\$14.9)	(\$8.3)
Pretax income	(\$15.5)	(\$4.9)	(\$5.6)	(\$5.3)	(\$5.9)	(\$23.3)	(\$5.5)	(\$4.5)	(\$4.9)	(\$3.8)	(\$18.6)	(\$4.6)	(\$4.2)	(\$4.0)	(\$3.6)	(\$16.5)	(\$1.8)
Income tax provision	\$0.1	\$0.0	(\$0.0)	\$0.0	(\$17.5)	(\$17.5)					\$0.0					\$0.0	\$0.0
Net income (loss)	(\$15.6)	(\$4.9)	(\$5.6)	(\$5.4)	\$11.6	(\$5.8)	(\$5.5)	(\$4.5)	(\$4.9)	(\$3.8)	(\$18.6)	(\$4.6)	(\$4.2)	(\$4.0)	(\$3.6)	(\$16.5)	(\$1.8)
EPS - Non GAAP Fully Diluted	(\$1.53)	(\$0.44)	(\$0.50)	(\$0.51)	\$0.97	(\$0.65)	(\$0.46)	(\$0.37)	(\$0.40)	(\$0.22)	(\$1.45)	(\$0.27)	(\$0.24)	(\$0.23)	(\$0.20)	(\$0.94)	(\$0.10)
Average FD shares outstanding	10.2	11.2	11.2	10.4	11.9	9.1	11.9	12.1	12.2	17.2	13.4	17.3	17.4	17.5	17.6	17.5	18.1
Margin Analysis																	
Gross Margin	66.0%	64.3%	64.9%	65.5%	67.0%	65.4%	67.2%	68.5%	69.2%	69.0%	68.5%	69.0%	70.0%	70.0%	71.0%	70.0%	70.0%
G&A	17.9%	17.5%	18.8%	21.7%	18.9%	19.2%	16.6%	18.2%	16.3%	16.5%	16.9%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%
S&M	42.9%	40.5%	46.7%	47.0%	47.6%	45.5%	50.1%	48.6%	48.7%	46.5%	48.4%	46.5%	46.0%	45.5%	45.0%	45.7%	44.0%
R&D	4.6%	4.0%	4.4%	4.7%	4.6%	4.4%	4.3%	3.7%	4.0%	4.0%	3.8%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Operating margin	-6.7%	-4.1%	-11.6%	-16.8%	-18.3%	-14.4%	-10.7%	-9.9%	-8.2%	-3.2%	-7.9%	-3.7%	-2.1%	-1.2%	0.5%	-1.5%	5.7%
Pretax margin	-19.9%	-22.6%	-25.9%	-25.6%	-26.7%	-26.9%	-26.1%	-20.8%	-21.2%	-15.4%	-20.7%	-19.3%	-17.4%	-15.6%	-13.3%	-16.3%	-1.6%
Tax Rate	-0.7%	-0.5%	0.2%	-0.2%	294.8%	74.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Margin	-20.0%	-22.7%	-25.8%	-25.6%	52.0%	-6.8%	-26.1%	-20.8%	-21.2%	-15.4%	-20.7%	-19.3%	-17.4%	-15.6%	-13.3%	-16.3%	-1.6%

Source: Company reports and Aegis Capital Corp. estimates

## Required Disclosures

### Price Target

\$3.50

### Valuation Methodology

**Valuation:** Our \$3.50 target price is derived by applying a 1.5x EV/Sales multiple to our FY20 estimate of \$137 million, discounted back at 15%.

### Risk Factors

**Risk:** Risks to the achievement of our target price include (1) merger-related risks with the integration of Bacterin and X-Spine, (2) heavy debt burden related to its \$121 million in debt, (3) increased competition in spine, (4) availability of human donor tissue, and (5) slower than expected market uptake on key products.

### For important disclosures go to [www.aegiscap.com](http://www.aegiscap.com).

We, Jason Wittes and Evan Wang, hereby certify that the views expressed in this research report accurately reflect our personal views about the subject companies and their securities. We also certify that We have not been, do not, and will not be receiving direct or indirect compensation in exchange for expressing the specific recommendations in this report.

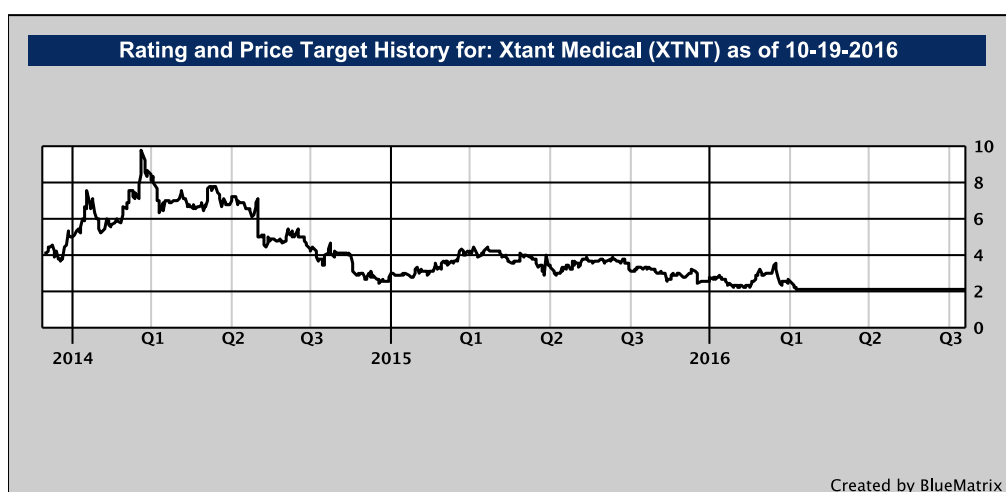
Research analyst compensation is not dependent upon investment banking revenues received by Aegis Capital Corp.

Aegis Capital Corp. intends to seek or expects to receive compensation for investment banking services from the subject company within the next three months.

The firm nor the Research Analyst have any material conflict of interest in which the Research Analyst has a reason to know or knows at the time of publication of this research report.

As of the report date neither Aegis Capital Corp. or its affiliates beneficially own 1% or more of any class of common equity securities of the subject company of this report.

Neither the research analyst who prepared this report or a member of the research analyst's household has a financial position in the debt or equity securities of the subject company.



Rating	Investment Banking Services/Past 12 Mos.	
	Percent	Percent
BUY [BUY]	85.85	37.36
HOLD [HOLD]	14.15	20.00
SELL [SELL]	0.00	0.00

#### Meaning of Ratings

- A) A Buy rating is assigned when we do not believe the stock price adequately reflects a company's prospects over 12-18 months.
- B) A Hold rating is assigned when we believe the stock price adequately reflects a company's prospects over 12-18 months.
- C) A Sell rating is assigned when we believe the stock price more than adequately reflects a company's prospects over 12-18 months.

#### Other Disclosures

Other Disclosures The information contained herein is based upon sources believed to be reliable but is not guaranteed by us and is not considered to be all inclusive. It is not to be construed as an offer or the solicitation of an offer to sell or buy the securities mentioned herein. Aegis Capital Corp., its affiliates, shareholders, officers, staff, and/or members of their families, may have a position in the securities mentioned herein, and, before or after your receipt of this report, may make or recommend purchases and/or sales for their own accounts or for the accounts of other customers of the Firm from time to time in the open market or otherwise. Opinions expressed are our present opinions only and are subject to change without notice. Aegis Capital Corp. is under no obligation to provide updates to the opinions or information provided herein. Additional information is available upon request.

The common stock of the subject company in this report may not be suitable for certain investors based on their investment objectives, degree of risk, as well as their financial status.

© Copyright 2016 by Aegis Capital

**Aegis Capital Corp.**  
**(212) 813-1010**  
**810 Seventh Avenue, 18th Floor**  
**New York, New York 10019**