Xtant Medical Holdings, Inc.
Form S-1
December 21, 2015

As filed with the Securities and Exchange Commission on December 21, 2015

Registration No. 333-

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

XTANT MEDICAL HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**3841**	**20-5313323**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

664 Cruiser Lane

Belgrade, Montana 59714

(406) 388-0480

(Address, including zip code, and telephone number, including area code, of registrant’s principal executive offices)

John Gandolfo

Chief Financial Officer

Xtant Medical Holdings, Inc.

664 Cruiser Lane

Belgrade, Montana 59714

(406) 388-0480

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Jill Gilpin

General Counsel

Xtant Medical Holdings, Inc.

664 Cruiser Lane

Belgrade, Montana 59714

(406) 388-0480

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box: x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer ¨		Accelerated filer	¨
Non-accelerated filer ¨ (Do not check if a smaller reporting company)		Smaller reporting company	x

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price per Unit	Proposed Maximum Aggregate **Offering Price**[1]	Amount of Registration Fee
6.00% Convertible Senior Notes due 2021	$68,000,000	100 %	$ 68,000,000	$ 6,847.60
Common Stock, par value $0.000001 per share	21,451,035 (2)	N/A (2) (3)	N/A (2) (3)	— (3)

(1) Equals the aggregate principal amount of the 6.00% Senior Convertible Notes due 2021.

(2) Represents 21,451,035 shares of Common Stock initially potentially issuable upon conversion of the 6.00% Convertible Senior Notes due 2021 (the “notes”). Pursuant to Rule 416 of the Securities Act, this registration statement also covers such additional shares of common stock that may be issued from time to time upon conversion of the notes as a result of a stock split, stock dividend, recapitalization or similar event.

(3) Pursuant to Rule 457(i) of the Securities Act, there is no additional filing fee payable with respect to the shares of common stock issuable upon conversion of the notes because no additional consideration will be received in connection with the exercise of the conversion privilege.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling securityholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission becomes effective. This prospectus is not an offer to sell these securities, and the selling securityholders are not soliciting offers to buy these securities in any state where the offer or sale of these securities is not permitted.

SUBJECT TO COMPLETION, DATED December 21, 2015

PRELIMINARY PROSPECTUS

$68,000,000 Aggregate Principal Amount of

6.00% Convertible Senior Notes due 2021

and Shares of Common Stock Issuable Upon Conversion Thereof

We issued a total of $68.0 million aggregate principal amount of our 6.00% Convertible Senior Notes due 2021 (the "notes") in a private placement completed in August 2015. This prospectus covers resales of the notes and shares of our common stock issuable upon conversion of the notes (the "conversion shares"). We will not receive any proceeds from the sale by any selling securityholder of the notes or the conversion shares offered by this prospectus.

The notes bear interest at a rate equal to 6.00% per year. Following the first interest payment date, which will be on April 15, 2016, interest on the notes will be payable semiannually in arrears on January 15 and July 15 of each year. Interest accrues on the notes from the last date to which interest has been paid or duly provided for or, if no interest has been paid or duly provided for, from July 31, 2015. Unless earlier converted or repurchased, the notes will mature on July 15, 2021.

At any time prior to the close of business on the second business day immediately preceding the maturity date, the notes may be converted into shares of our common stock (together with cash in lieu of fractional shares) at an initial conversion rate of 257.5163 shares per $1,000 principal amount of notes (which represents an initial conversion price of approximately $3.88 per share). However, a note will not be convertible to the extent that such convertibility or conversion would result in the holder of that note or any of its affiliates being deemed to beneficially own in excess of 9.99% of the then-outstanding shares of our common stock. The conversion rate is subject to adjustment as described

in this prospectus. In addition, we will, in certain circumstances, increase the conversion rate for holders who convert their notes in connection with a "make-whole fundamental change" (as defined in this prospectus).

No sinking fund is provided for the notes. We may not redeem the notes at our option prior to their maturity.

If a "fundamental change" (as defined in this prospectus) occurs at any time prior to the maturity date, holders have the right to require us to repurchase their notes at a cash price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date, subject to the right of holders of notes on a record date to receive accrued and unpaid interest.

The notes are our senior, unsecured obligations, rank equal in right of payment with our existing and future unsecured indebtedness that is not junior to the notes, are senior in right of payment to any of our existing and future indebtedness that is expressly subordinated to the notes, and are effectively subordinated to our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness. The notes are structurally subordinated to all existing and future indebtedness and other liabilities, including trade payables, and (to the extent we are not a holder thereof) preferred equity, if any, of our subsidiaries.

We do not intend to apply to list the notes on any securities exchange or to include them in any automated dealer quotation system. Our common stock is listed on the NYSE MKT under the ticker symbol "XTNT." On December 16, 2015, the closing price of our common stock was $3.00 per share.

Pursuant to a registration rights agreement, we agreed to file this registration statement covering the resale of the notes and the conversion shares. The selling securityholders identified in this prospectus may offer from time to time up to $68.0 million aggregate principal amount of the notes and the conversion shares. The notes and conversion shares may be offered in market transactions, in negotiated transactions or otherwise, and at prices and on terms which will be determined by the then-prevailing market price or at negotiated prices directly or through a broker or brokers, who may act as agent or as principal, or through a combination of such methods of sale. See "Plan of Distribution" on page 101 for additional information on the methods of sale.

You should read this prospectus and any prospectus supplement, together with additional information described under the heading "Where You Can Find More Information," carefully before you invest in any of our securities.

Investing in our securities involves a high degree of risk. See "Risk Factors" on page 5 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2015.

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This prospectus relates to the offering of our securities by the selling securityholders. You should read this prospectus, the documents incorporated by reference into this prospectus, and any prospectus supplement or free writing prospectus that we may authorize for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus entitled “Incorporation of Certain Information by Reference” and “Where You Can Find More Information.” These documents contain important information that you should consider when making your investment decision.

We have not authorized anyone to provide any information other than that contained in this prospectus, in any prospectus supplement or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. The selling securityholders are offering to sell, and seeking offers to buy, securities only in jurisdictions where such offers and sales are permitted. The information in this prospectus, in any prospectus supplement or any free writing prospectus is accurate only as of its date, regardless of its time of delivery or of any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, assumptions and estimates of our and our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors." These and other factors could cause our future performance to differ materially from our assumptions and estimates. See "Cautionary Note Regarding Forward-Looking Statements."

Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these trademarks and tradenames.

Except as otherwise indicated herein or as the context otherwise requires, references in this prospectus to "Xtant," "the Company," "we," "us," "our" and similar references refer to Xtant Medical Holdings, Inc. and its subsidiaries.

Summary

This summary highlights certain information about us, this offering and selected information contained in this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our securities. For a more complete understanding of the Company and this offering, we encourage you to read and consider the more detailed information in this prospectus, including "Risk Factors" and the financial statements and related notes.

About Xtant Medical Holdings, Inc.

We operate through our subsidiaries Bacterin International, Inc. ("Bacterin International") and X-spine Systems, Inc. ("X-spine"). Through Bacterin International, we develop, manufacture and market biologics products to domestic and international markets. Our bone graft products are used in a variety of applications including enhancing fusion in spine surgery, relief of back pain through facet joint stabilization, promotion of bone growth in foot and ankle surgery, promotion of skull healing following neurosurgery and subchondral bone repair in knee and other joint surgeries. Our acellular dermis scaffolds are utilized in wound care and plastic and reconstructive procedures. Bacterin International also develops custom surgical instruments for use with our allografts, and we produce and distribute OsteoSelect® DBM putty, an osteoinductive product used by surgeons as a bone void filler in the extremities and pelvis. X-spine is a global developer, manufacturer and marketer of implants and instruments for surgery of the spine and sacroiliac joint. X-spine's product emphasis is the minimally invasive approach to the treatment of degenerative spine disorders. X-spine's global strategy is to advance minimally invasive technologies for the treatment of degenerative spinal disorders, while supporting established spinal fusion markets.

We are a Delaware corporation. Our principal executive offices are located at 664 Cruiser Lane, Belgrade, Montana 59714. Our telephone number is (406) 388-0480 and our website address is www.xtantmedical.com. Information contained in, or that can be accessed through, our website is not part of this prospectus.

Recent Developments

On July 31, 2015, we acquired 100% of the outstanding capital stock of X-spine, pursuant to a definitive stock purchase agreement by and among the Company, X-spine and the owners of the issued and outstanding shares of X-spine's capital stock (the "Sellers"). We refer to this transaction as the "acquisition." As a result of the acquisition, Bacterin International and X-spine now operate as wholly owned subsidiaries of Xtant, which prior to changing its name on July 31, 2015 was known as Bacterin International Holdings, Inc. The acquisition was financed through cash and stock with a purchase price of approximately $90.0 million, consisting of approximately $60.0 million in cash,

approximately $13.0 million in debt repayment and approximately $17.0 million in shares of our common stock. Based on an agreed upon fixed price per share of $4.00, approximately 4.24 million shares of our common stock were issued to the Sellers at the closing of the acquisition. All of the shares of common stock issued to the Sellers were issued in a private offering and are subject to securities law and contractual restrictions on transferability. The shares issued to the Sellers, along with $6.0 million of the cash portion of the acquisition consideration, are also subject to an escrow agreement to satisfy indemnification claims that may arise pursuant to the stock purchase agreement. For additional information on the acquisition, see “Business – The Acquisition.”

Concurrently with the acquisition, we completed an offering of $65.0 million aggregate principal amount of the notes in a private offering to qualified institutional buyers, as defined in Rule 144A under the Securities Act of 1933, as amended (the “Securities Act”). Certain private investment funds for which OrbiMed Advisors LLC (“OrbiMed”), one of our existing stockholders, serves as the investment manager (the “OrbiMed purchasers”) purchased $52.0 million aggregate principal amount of the notes directly from us in the offering. The investment banking firm acting as initial purchaser in the offering (the “initial purchaser”) purchased the remaining $13.0 million aggregate principal amount of the notes. We granted the initial purchaser a 30-day option to purchase up to an additional $9.75 million aggregate principal amount of the notes from us. On August 10, 2015, the initial purchaser exercised its option with respect to an additional $3.0 million aggregate principal amount of the notes. Additionally, concurrently with the acquisition, we borrowed an additional $18.0 million under an amended and restated credit agreement with ROS Acquisition Offshore LP (“ROS”).

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The Offering

The summary below describes the principal terms of the notes. Certain descriptions below are subject to important exceptions or limitations. The "Description of Notes" section of this prospectus contains a more detailed description of the terms of the notes.

Issuer	Xtant Medical Holdings, Inc., a Delaware corporation.
	$68.0 million aggregate principal amount of 6.00% Convertible Senior Notes due 2021.
Notes	The notes offered in this offering include $52.0 million aggregate principal amount of notes that the OrbiMed purchasers have purchased from us, which we refer to as the "privately placed notes." The privately placed notes constitute part of the same series as the other notes offered in this offering.
Maturity	July 15, 2021, unless earlier converted or repurchased.
Offering Price	100% plus accrued interest, if any, from July 31, 2015.
Interest	6.00% per year. Interest accrues on the notes from the last date on which interest has been paid or duly provided for or, if no interest has been paid or duly provided for, from July 31, 2015. In addition to the stated interest on the notes, we may be required to pay additional interest on the notes if we fail to satisfy certain of our obligations under the registration rights agreement. See "Description of Notes — Registration Rights; Additional Interest." Furthermore, we may elect to pay special interest as the sole remedy relating to the failure to comply with our reporting requirements as described under "Description of Notes — Events of Default."
Ranking	The notes are our senior, unsecured obligations, rank equal in right of payment with our existing and future unsecured indebtedness that is not junior to the notes, are senior in right of payment to any of our future indebtedness that is expressly subordinated to the notes, and are effectively subordinated to our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness. The notes are structurally subordinated to all existing and future indebtedness and other liabilities, including trade payables, and (to the extent we are not a holder thereof) preferred equity, if any, of our subsidiaries.
	As of September 30, 2015, on a consolidated basis, we had $112.4 million of debt outstanding, $43.1 million of which was indebtedness of our operating subsidiaries that was guaranteed by us and secured by a lien on substantially all of our and our subsidiaries' assets. Our subsidiaries had indebtedness and other liabilities (including trade payables) of $129.1 million, excluding intercompany liabilities, as of

	September 30, 2015.
Conversion Rights	At any time prior to the close of business on the second business day immediately preceding the maturity date, the notes may be converted into shares of our common stock (together with cash in lieu of fractional shares) at an initial conversion rate of 257.5163 shares per $1,000 principal amount of notes (which represents an initial conversion price of approximately $3.88 per share). However, a note will not be convertible to the extent that such convertibility or conversion would result in the holder of that note or any of its affiliates being deemed to beneficially own in excess of 9.99% of the then-outstanding shares of our common stock.

	The conversion rate is subject to adjustment as described in this prospectus. See "Description of Notes — Conversion Rights." In addition, we will, in certain circumstances, increase the conversion rate for holders who convert their notes in connection with a "make-whole fundamental change." See "Description of Notes — Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change."
No Redemption at Our Option	We may not redeem the notes at our option prior to their maturity.
Fundamental Change	If a fundamental change occurs at any time prior to the maturity date, holders have the right to require us to repurchase their notes at a cash price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date, subject to the right of holders of notes on a record date to receive accrued and unpaid interest. See "Description of Notes — Fundamental Change Permits Holders to Require Us to Repurchase Notes." In addition, every fundamental change is a make-whole fundamental change. As a result, we will, in certain circumstances, increase the conversion rate for holders who convert their notes in connection with such fundamental change. See "Description of Notes — Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change."
Use of proceeds	The selling securityholders will receive all of the proceeds from the sale of the notes or the conversion shares offered by this prospectus. We will not receive any proceeds from the sale by any selling securityholder of the notes or the conversion shares offered by this prospectus.
Book-entry Form	The notes are issued in book-entry form and are represented by global notes deposited with, or on behalf of, The Depository Trust Company ("DTC") and registered in the name of Cede & Co., as the nominee of DTC. Beneficial interests in the global notes are shown on, and transfers will be effected only through, records maintained by DTC or its nominee, and such beneficial interests may be exchanged for certificated securities only in limited circumstances.
Absence of a Public Market for the Notes	The notes are a new class of securities, and there is currently no established market for the notes. We do not intend to apply to list the notes on any securities exchange or to include them in any automated dealer quotation system. Accordingly, a liquid market for the notes may never develop.
Registration Rights	We entered into a registration rights agreement with the initial purchaser and the OrbiMed purchasers, pursuant to which we agreed to:

· file with the Securities and Exchange Commission (the "SEC") a shelf registration statement (which, initially, will be on Form S-1 and, as soon as we are eligible, will be on Form S-3) covering the resale, from time to time, of the notes and the conversion shares;

· use our best efforts to cause the shelf registration statement to become effective under the Securities Act no later than the 180th day after the original issuance date of the notes; and

· use our best efforts to keep the shelf registration statement continuously effective under the Securities Act until the earlier of (1) the 60th trading day immediately following the maturity date (subject to extension for any suspension of the effectiveness of the shelf registration statement during the 60 trading days immediately following the maturity date) and (2) the date on which no notes or conversion shares are outstanding and constitute "restricted securities" (as defined in Rule 144 under the Securities Act).

If we fail to satisfy certain of our obligations under the registration rights agreement, we will be required to pay additional interest to holders of the notes. If holders convert some or all of their notes into shares of our common stock, they will not be entitled to additional interest with respect to those shares of common stock. However, if a registration default exists on the maturity date for the notes, then, in addition to any additional interest otherwise payable, we will make a cash payment to each holder of notes in an amount equal to 5% of the principal amount of notes outstanding and held by such holder as of the close of business on the business day immediately before the maturity date. For purposes of the preceding sentence, notes that have been converted with a conversion date that is on or after January 15, 2021 and on or before the second business day immediately preceding the maturity date will be considered to be outstanding. See "Description of Notes — Registration Rights; Additional Interest."

Certain U.S. Federal Income Tax Considerations	For certain U.S. federal income tax consequences of the holding, disposition and conversion of the notes, and the holding and disposition of any conversion shares, see "Certain U.S. Federal Income Tax Considerations."
NYSE MKT Ticker Symbol	Our common stock is listed on the NYSE MKT under the ticker symbol "XTNT."
Trustee, Paying Agent and Conversion Agent	Wilmington Trust, National Association.
Risk Factors	Before deciding whether to invest in the notes, you should carefully consider the risks described under "Risk Factors" beginning on page 5 of this prospectus, as well as the other information included or incorporated by reference into this prospectus, including our financial statements and

the notes thereto.

Risk Factors

An investment in the notes and the underlying common stock involves a high degree of risk. You should carefully consider the risks described below, and the other information included or incorporated by reference in this prospectus, before making an investment decision. Our business, financial condition, results of operations and cash flows could be materially adversely affected by any of these risks. The market or trading price of our securities could decline due to any of these risks. In addition, please read "Cautionary Note Regarding Forward-Looking Statements" in this prospectus, where we describe additional uncertainties associated with our business, and the forward-looking statements included or incorporated by reference in this prospectus. Please note that additional risks not presently known to us or that we currently deem immaterial may also impair our business and operations.

Risks Related to this Offering

We expect that the trading price of the notes will be significantly affected by the market price of our common stock, the general level of interest rates and our credit quality, each of which may be volatile.

The market price of our common stock, as well as the general level of interest rates and our credit quality, will likely significantly affect the trading price of the notes. Each may be volatile and could fluctuate in a way that adversely affects the trading price of the notes and our stock.

We cannot predict whether the market price of our common stock will rise or fall. The market price of our common stock will be influenced by a number of factors, including general market conditions, our operating results, leverage, ability to raise additional capital, product announcements and the successful integration of the acquisition. The market price of our common stock also could be affected by possible sales of common stock by investors who view the notes as an attractive means of equity participation in us and by hedging or arbitrage activity involving our common stock that we expect to develop as a result of the issuance of the notes. The hedging or arbitrage activity could, in turn, affect the trading prices of the notes.

We also cannot predict whether interest rates will rise or fall. During the term of the notes, interest rates will be influenced by a number of factors, most of which are beyond our control. However, if interest rates increase, the trading price of the notes will decrease, and if interest rates decrease, the trading price of the notes will increase.

In addition, our credit quality may vary substantially during the term of the notes and will be influenced by a number of factors, including variations in our cash flows and the amount of indebtedness we have outstanding. Any decrease in our credit quality is likely to negatively impact the trading price of the notes.

The notes are effectively subordinated to our secured indebtedness to the extent of the value of the collateral securing such secured indebtedness and any liabilities of our subsidiaries.

The notes are our senior, unsecured obligations, rank equal in right of payment with our existing and future unsecured indebtedness that is not junior to the notes, and are senior in right of payment to any of our existing and future indebtedness that is expressly subordinated to the notes. The notes, however, are effectively subordinated to our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness. As of September 30, 2015, on a consolidated basis, we had $112.4 million of debt outstanding, $43.1 million of which was indebtedness of our operating subsidiaries that was guaranteed by us and secured by a lien on substantially all of our and our subsidiaries' assets. The indenture governing the notes does not prohibit or restrict us or our subsidiaries from incurring additional indebtedness, including a secured indebtedness, in the future. In the event of our bankruptcy, liquidation, dissolution or reorganization, or of a similar proceeding, any assets that we pledge as collateral for any of our other obligations will not be available to pay our obligations under the notes until we have paid such other obligations in full.

None of our subsidiaries guarantees the notes. Accordingly, the notes are also structurally subordinated to all existing and future indebtedness and other liabilities, including trade payables, and (to the extent we are not a holder thereof) preferred equity, if any, of our subsidiaries. In the event of a bankruptcy, liquidation, dissolution, reorganization or similar proceeding with respect to any of our subsidiaries, we, as a common equity owner of such subsidiary, and, therefore, the holders of the notes, will rank behind such subsidiary's creditors, including such subsidiary's trade creditors, and such subsidiary's preferred equity holders. In this regard, holders of the notes should be aware that we have little or no assets of our own aside from our ownership interest in our wholly owned subsidiaries. Even if we were a creditor of any of our subsidiaries, our rights as a creditor would be subordinated to any security interest of others in the assets of that subsidiary and any indebtedness of that subsidiary senior to that held by us. As of September 30, 2015, our subsidiaries had indebtedness and other liabilities (including trade payables) of $129.1 million, excluding intercompany liabilities. The indenture governing the notes does not prohibit our subsidiaries from incurring additional indebtedness or issuing preferred equity.

We may rely on our subsidiaries for funds necessary to meet our financial obligations, including the notes.

We conduct substantially all of our activities through our subsidiaries. We may depend on those subsidiaries for dividends and other payments to generate the funds necessary to meet our financial obligations, including the payment of principal and interest on the notes. The ability of our subsidiaries to make payments to us may be restricted by, among other things, applicable state corporation or similar statutes and other laws and regulations. The earnings from, or other available assets of, our subsidiaries may be insufficient to enable us to pay principal or interest on the notes when due.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to service our debt, including the notes, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt and other fixed charges, fund working capital needs and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

Despite our current consolidated debt levels, we may still incur substantially more debt or take other actions which would intensify the risks discussed above.

Despite our current consolidated debt levels, we and our subsidiaries may be able to incur substantial additional debt in the future, including secured debt. The indenture governing the notes permits us and our subsidiaries to incur additional indebtedness or to take a number of other actions that could diminish our ability to make payments on the notes.

The indenture governing the notes contains limited protections against certain types of important corporate events and may not protect your investment upon the occurrence of those and other events.

The indenture for the notes does not:

- require us to maintain any financial ratios or specific levels of net worth, revenues, income, cash flows or liquidity;
- protect holders of the notes in the event that we experience significant adverse changes in our financial condition or results of operations;
- limit our ability to pledge assets to secure our existing or future debt;
- limit our ability to incur indebtedness that is equal in right of payment to the notes;
- limit our ability to incur indebtedness with a maturity date earlier than the maturity date of the notes;
- restrict the ability of our subsidiaries to issue securities or incur liability that would be structurally senior to our indebtedness;
- restrict our ability to purchase or prepay our securities; or

- restrict our ability to make investments or to purchase or pay dividends or make other payments in respect of our common stock or other securities ranking junior to the notes.

In addition, the indenture contains no covenants or other provisions to afford protection to holders of the notes in the event of a fundamental change involving us, except to the extent described under "Description of Notes — Fundamental Change Permits Holders to Require Us to Repurchase Notes," "Description of Notes — Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change" and "Description of Notes — Consolidation, Merger and Sale of Assets." Accordingly, your rights under the notes may be substantially and adversely affected upon any fundamental change or if we or our subsidiaries take certain actions that could either increase the probability that we default on the notes or reduce the recovery that you may to receive upon any such default.

Past and future regulatory actions and other events may adversely affect the trading price and liquidity of the notes.

We expect that many investors in, and potential purchasers of, the notes will employ, or seek to employ, a convertible arbitrage strategy with respect to the notes. Investors would typically implement such a strategy by selling short the common stock underlying the notes and dynamically adjusting their short position while continuing to hold the notes. Investors may also implement this type of strategy by entering into swaps on our common stock in lieu of or in addition to short selling the common stock.

The SEC and other regulatory and self-regulatory authorities have implemented various rules and taken certain actions, and may in the future adopt additional rules and take other actions, that may impact those engaging in short selling activity involving equity securities (including our common stock). These rules and actions include Rule 201 of SEC Regulation SHO, the adoption by the Financial Industry Regulatory Authority, Inc. ("FINRA") and the national securities exchanges of a "limit up-limit down" program, the imposition of market-wide circuit breakers that halt trading of securities for certain periods following specific market declines, and the implementation of certain regulatory reforms required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Any governmental or regulatory action that restricts the ability of investors in, or potential purchasers of, the notes to effect short sales of our common stock or enter into swaps on our common stock could adversely affect the trading price and the liquidity of the notes.

In addition, if investors and potential purchasers seeking to employ a convertible arbitrage strategy are unable to borrow or enter into swaps on our common stock, in each case on commercially reasonable terms, the trading price and liquidity of the notes may be adversely affected.

Future sales of our common stock in the public market could lower the market price for our common stock and adversely impact the trading price of the notes.

In the future, we may sell shares of our common stock or equity-related securities to raise capital. In addition, as of September 30, 2015, 1,896,253 shares of our common stock are reserved for issuance upon the exercise of stock options and warrants and additional amounts are reserved for issuance upon conversion of the notes. At September 30, 2015, we also have reserved 1,221,629 shares of common stock for issuance pursuant to a common stock purchase agreement with Aspire Capital Fund, LLC. We cannot predict the size of future issuances or the effect, if any, that they may have on the market price for our common stock. The issuance and sale of substantial amounts of common stock or equity-related securities, or the perception that such issuances and sales may occur, could adversely affect the trading price of the notes and the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities.

We may not have the ability to raise the funds necessary to pay interest on the notes or to repurchase the notes upon a fundamental change.

The notes bear interest semi-annually at a rate of 6.00% per year. In addition, in certain circumstances, we are obligated to pay additional interest or special interest on the notes. In addition, if a fundamental change occurs, holders of the notes may require us to repurchase all or a portion of their notes in cash. Any of the cash payments described above could be significant, and we may not have enough available cash or be able to obtain financing so that we can make such payments when due. In addition, our ability to repurchase the notes, to pay additional interest or special interest on the notes, or to pay cash upon conversions of the notes may be limited by law or by agreements governing our existing or future indebtedness. For example, under the amended and restated credit facility that we entered into in connection with the initial issuance of the notes, we are restricted from making any payment or distribution with respect to, or purchasing, redeeming, defeasing, retiring or acquiring, the notes, other than payments of scheduled interest on the notes, issuance of conversion shares, and payment of cash in lieu of fractional shares. Regardless of these restrictions, if we fail to pay interest on the notes or repurchase the notes when required, we will be in default under the indenture. See “Description of Notes — Interest,” “Description of Notes — Fundamental Change Permits Holders to Require Us to Repurchase Notes” and “Description of Notes — Events of Default.” A default under the indenture would be a default under our credit agreement and could also lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated, we may not have sufficient funds to repurchase the notes or make cash payments upon conversions of the notes.

The adjustment to the conversion rate for notes converted in connection with a make-whole fundamental change may not adequately compensate you for any value that your notes lose as a result of such transaction.

If a make-whole fundamental change occurs prior to the maturity date, we will, under certain circumstances, increase the conversion rate by a number of additional shares of our common stock for notes converted in connection with such make-whole fundamental change. The increase in the conversion rate will be determined based on the date on which the make-whole fundamental change becomes effective and either the average of the last reported sale prices per share of our common stock over the five trading day period immediately preceding the effective date of the make-whole fundamental change or the cash price paid per share of our common stock in the transaction, in each case, as described below under “Description of Notes — Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change.” The adjustment to the conversion rate for notes converted in connection with a make-whole fundamental change may not adequately compensate you for any lost value of your notes as a result of such transaction.

In addition, if the average of the last reported sale price per share of our common stock over the five trading day period immediately preceding the effective date of the make-whole fundamental change or the cash price paid per share of our common stock in the make-whole fundamental change, as the case may be, is greater than $30.00 per share or less than $3.17 per share (in each case, subject to adjustment), no additional shares will be added to the conversion rate.

Moreover, in no event will the conversion rate be increased pursuant to the make-whole fundamental change provisions to exceed 315.4564 shares of common stock per $1,000 principal amount of notes, subject to adjustment in the same manner, at the same time and for the same events for which we must adjust the conversion rate as set forth under "Description of Notes — Conversion Rights — Conversion Rate Adjustments."

Our obligation to increase the conversion rate upon the occurrence of a make-whole fundamental change could be considered a penalty, in which case the enforceability thereof would be subject to general principles of reasonableness of economic remedies.

The conversion rate of the notes may not be adjusted for all dilutive events.

As described under "Description of the Notes — Conversion Rights — Conversion Rate Adjustments," we will adjust the conversion rate of the notes for certain events, including, among others:

- the issuance of certain share and cash dividends on our common stock;
- the issuance of certain rights or warrants;
- certain subdivisions and combinations of our capital stock;
- certain distributions of capital stock, indebtedness or assets; and
- certain tender or exchange offers.

We will not adjust the conversion rate for other events, such as for an issuance of our common stock for cash or in connection with an acquisition, that may dilute our common stock, thereby adversely affecting its market price.

Because the trading price of the notes depends on the market price our common stock, any event that dilutes our common stock and adversely affects the market price of our common stock will likely also adversely affect the trading price of the notes.

We are not obligated to purchase the notes upon the occurrence of all significant transactions that are likely to affect the market price of our common stock and/or the trading price of the notes.

Because the term fundamental change is limited to certain specified transactions, it does not include all events that could adversely affect our financial condition or the market price of our common stock and the trading price of the notes. For example, we are not required to purchase any notes upon the occurrence of certain transactions that would otherwise constitute a fundamental change, if at least 90% of the consideration received by holders of our common stock in the transaction consists of shares of common stock traded on the NASDAQ Stock Market or the New York Stock Exchange. Furthermore, certain other transactions, such as leveraged recapitalizations, refinancings, restructurings or certain acquisitions of other entities by us or our subsidiaries, would not constitute a fundamental change requiring us to purchase the notes or to increase the conversion rate, even though each of these transactions could increase the amount of our indebtedness or otherwise adversely affect our capital structure, which could adversely affect holders of the notes.

An active trading market may never develop for the notes.

There has been no trading market for the notes, and we do not intend to apply to list the notes on any securities exchange or to have them quoted on any automated dealer quotation system. In addition, the liquidity of the trading market in the notes, and the trading price of the notes, may be adversely affected by changes in the overall market for this type of security and by changes in our financial performance or prospects or in the prospects for companies in our industry generally. As a result, we cannot assure you that an active trading market will develop for the notes. If an active trading market does not develop or is not maintained, the trading price and the liquidity of the notes may be adversely affected. In that case, you may not be able to sell your notes at a particular time, if at all, or you may not be able to sell your notes at a favorable price.

If securities analysts stop publishing research or reports about us or our business, or if they downgrade our common stock, the trading volume and market price of our common stock and, consequently, the trading price of the notes could decline.

The market for our common stock relies in part on the research and reports that industry or financial analysts publish about us or our business. We do not control these analysts. If any analyst who covers us downgrades our stock, or lowers its future stock price targets or estimates of our operating results, our stock price could decline rapidly. Furthermore, if any analyst ceases to cover our company, we could lose visibility in the market. Each of these events could, in turn, cause our trading volume and the market price of our common stock and, consequently, the trading price of the notes to decline.

As a holder of notes, you will not be entitled to any rights with respect to our common stock, but you will be subject to all changes made with respect to our common stock.

If you hold notes, you will not be entitled to any rights with respect to our common stock (including, without limitation, voting rights and rights to receive any dividends or other distributions on our common stock) until the conversion date for those notes, but you will be subject to all changes affecting our common stock. For example, in the event that an amendment is proposed to our Restated Certificate of Incorporation or to our Amended and Restated Bylaws requiring stockholder approval and the record date for determining the stockholders of record entitled to vote on the amendment occurs before the date you are deemed the record owner of the shares of our common stock due upon conversion, you will not be entitled to vote on the amendment, although you will nevertheless be subject to any changes in the powers, preferences or special rights of our common stock.

The notes will not be convertible by a holder to the extent that the convertibility or conversion would result in that holder or any of its affiliates beneficially owning more than 9.99% of the then-outstanding shares of our common stock.

Notwithstanding anything to the contrary in the indenture or the notes, no note will be convertible by the holder thereof, and we will not effect any conversion of any note, in each case to the extent (and only to the extent) that such convertibility or conversion would result in such holder or any of its affiliates beneficially owning in excess of 9.99% of the then-outstanding shares of our common stock. For these purposes, beneficial ownership and all determinations and calculations (including, without limitation, with respect to calculations of percentage ownership) will be determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and the rules and regulations promulgated thereunder.

We do not expect the notes to be rated, but if the notes are rated, they may receive a lower rating than anticipated, which would likely adversely affect the trading price of the notes.

We do not intend to seek a rating for the notes and believe it is unlikely that the notes will be rated. However, if one or more rating agencies rates the notes and assigns the notes a rating lower than the rating expected by investors, reduces its rating of the notes or announces its intention to put us on credit watch, the market price of our common stock and the trading price of the notes would likely decline.

Certain provisions in the indenture governing the notes could delay or prevent an otherwise beneficial takeover or takeover attempt of us.

Certain provisions in the notes and the indenture could make it more difficult or more expensive for a third party to acquire us. For example, if a takeover would constitute a fundamental change, holders of the notes have the right to require us to repurchase their notes in cash. In addition, if a takeover constitutes a make-whole fundamental change, we may be required to increase the conversion rate for holders who convert their notes in connection with such takeover. In either case, and in other cases, our obligations under the notes and the indenture could increase the cost of acquiring us or otherwise discourage a third party from acquiring us or removing incumbent management.

The OrbiMed purchasers own a significant portion of the notes and will be able to exert control over certain amendments or waivers relating to the notes or the indenture.

The OrbiMed purchasers purchased $52.0 million of the notes. Accordingly, the OrbiMed purchasers currently own approximately 76.5% of the outstanding notes. Subject to certain exceptions, the indenture and the notes may be modified or amended, and past defaults under the indenture may be waived, with the consent of the holders of at least a majority of the aggregate principal amount of the notes then outstanding. Because the OrbiMed purchasers currently own a majority of the outstanding notes, they will be able to exert control over the outcome of any consents that we may solicit in connection with any indenture amendments or waivers. The OrbiMed purchasers may have interests that differ, or, in some cases, conflict with, your interests as holders of notes. Accordingly, the OrbiMed purchasers may exercise this control in a manner with which you may disagree or that may be detrimental to you. Furthermore, even though the indenture provides that certain provisions of the indenture may not be amended, and certain defaults may not be waived, without the consent of each affected holder, the influence that the OrbiMed purchasers may exercise over other amendments or waivers may significantly and adversely affect your rights as a holder of notes. See "Description of Notes — Modification and Amendment."

The notes are held in book-entry form and, therefore, holders of the notes must rely on the procedures and the relevant clearing systems to exercise their rights and remedies.

The notes are held in book-entry form through DTC. Unless and until certificated notes are issued in exchange for book-entry interests in those notes, owners of the book-entry interests are not considered owners or holders of notes. Instead, DTC, or its nominee, is the sole holder of the notes. Payments of principal, interest and other amounts owing on or in respect of the notes in global form will be made to the paying agent, which will make payments to DTC. Thereafter, such payments will be credited to DTC participants' accounts that hold book-entry interests in the notes in global form and credited by such participants to indirect participants. Unlike record holders of the notes, owners of book-entry interests do not have the direct right to act upon our solicitations for consents or requests for waivers or other actions from holders of the notes. Instead, if a holder owns a book-entry interest, such holder is permitted to act only to the extent such holder has received appropriate proxies to do so from DTC or, if applicable, a DTC participant. We cannot assure holders that the procedures implemented for the granting of such proxies will be sufficient to enable holders to vote on any requested actions on a timely basis.

You may be subject to tax if we make or fail to make certain adjustments to the conversion rate of the notes, even though you do not receive a corresponding cash distribution.

The conversion rate of the notes is subject to adjustment in certain circumstances, including share splits and combinations, the issuance of shares of common stock as dividends, the payment of cash dividends and certain other actions by us. See "Description of Notes — Conversion Rights — Conversion Rate Adjustments." If the conversion rate is adjusted as a result of a distribution that is taxable to our common stockholders, such as certain cash dividends, you may be deemed to have received a dividend subject to U.S. federal income tax without the receipt of any cash. In addition, a failure to adjust (or to adjust adequately) the conversion rate after an event that increases your proportionate interest in us could be treated as a deemed taxable dividend to you. If a make-whole fundamental change occurs prior to the maturity date of the notes, under some circumstances, we will increase the conversion rate for notes converted in connection with the make-whole fundamental change. Such increase may also be treated as a distribution subject to U.S. federal income tax as a dividend. See "Certain U.S. Federal Income Tax Considerations." If you are a non-U.S. holder (as defined in "Certain U.S. Federal Income Tax Considerations"), any deemed dividend would be subject to U.S. federal withholding tax at a 30% rate, or such lower rate as may be specified by an applicable treaty. In certain circumstances, if you are a U.S. holder (as defined in "Certain U.S. Federal Income Tax Considerations") or a non-U.S. holder, deemed dividends may be subject to back-up withholding tax at a 28% rate or withholding tax at a 30% rate under the Foreign Account Tax Compliance Act. Any of the foregoing withholding taxes may be withheld from interest and payments upon conversion or maturity of the notes or, if the withholding tax is paid on behalf of you by us or another withholding agent, may be set off against payments of cash on the notes or shares of common stock payable on the notes, if any, or sales proceeds subsequently paid or credited to you. See "Certain U.S. Federal Income Tax Considerations."

Risks Related to Our Acquisition of X-spine

Growth through an acquisition presents certain risks to our business and operations.

The acquisition of X-spine and any other acquisitions we may pursue present numerous risks, including the following:

- the possibility that the expected benefits of the transactions may not materialize in the timeframe expected, or at all, or may be more costly to achieve than anticipated;
- the acquired assets may not produce as expected;
- we may be unable to successfully develop the assets;

- there may be adverse stockholder reaction to the acquisitions; and
- the integration of these transactions may divert the attention of our management and other key employees from ongoing business activities, including the pursuit of other opportunities that could be beneficial to us.

Any one or more of these factors could negatively affect our business, financial condition or results of operations.

We have made certain assumptions relating to the acquisition that may prove to be materially inaccurate.

We have made certain assumptions relating to the acquisition of X-spine that may be inaccurate. Accordingly, we may fail to realize the expected benefits of the acquisition, may incur higher-than-expected transaction and integration costs, may assume unknown liabilities and may experience general economic and business conditions that adversely affect the combined company following the acquisition. These assumptions relate to numerous matters, including:

- projections of X-spine's future results;
- our expected capital structure following the acquisition;
- the amount of goodwill and intangibles that will result from the acquisition;
- certain other purchase accounting adjustments that we expect will be recorded in our financial statements in connection with the acquisition;
- cost, cross-selling and balance sheet synergies;
- acquisition costs, including restructuring charges and transaction costs;
- our ability to maintain, develop and deepen relationships with X-spine's customers; and
- other financial and strategic risks of the acquisition.

There may be risks associated with the post-acquisition integration of X-spine, because X-spine has historically been operated as a privately owned company.

There may be risks associated with the post-acquisition integration of X-spine, because X-spine has historically been operated as a privately owned company. Public companies are subject to significant additional regulatory and reporting requirements. Senior management of public companies may be required to devote more of their time to meeting these additional requirements. X-spine's senior management has historically been actively involved in the revenue-generating activities of its operations. If these individuals are required to devote more time to the additional requirements of managing a public company, and we are unable to successfully transition some or all of their direct revenue-generating responsibilities to other suitable professionals, our business, results of operations and financial condition may suffer.

Our ability to use our net operating loss carry-forwards to offset future taxable income may become limited.

Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), imposes restrictions on the use of a corporation's net operating losses, as well as certain recognized built-in losses and other carryforwards, after an "ownership change" occurs. A Section 382 "ownership change" occurs if one or more stockholders or groups of stockholders who own at least 5% of our stock (including certain "public groups" deemed created for Section 382 purposes) increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. It is possible that the issuance of common stock upon conversion of the notes could result in an ownership change under Section 382, and there can be no assurance that this will not happen. If an "ownership change" occurs, Section 382 would impose an annual limit on the amount of pre-change net operating losses and other losses we can use to reduce our taxable income generally equal to the product of the total value of our outstanding equity immediately prior to the "ownership change" (subject to certain adjustments) and the applicable federal long-term tax-exempt interest rate for the month of the "ownership change."

Because U.S. federal net operating losses generally may be carried forward for up to 20 years, the annual limitation may effectively provide a cap on the cumulative amount of pre-ownership change losses, including certain recognized built-in losses that may be utilized. Such pre-ownership change losses in excess of the cap may be lost. In addition, if an ownership change were to occur, it is possible that the limitations imposed on our ability to use pre-ownership change losses and certain recognized built-in losses could cause a net increase in our U.S. federal income tax liability and U.S. federal income taxes to be paid earlier than otherwise would be paid if such limitations were not in effect. Further, if for financial reporting purposes the amount or value of these deferred tax assets is reduced, such reduction could negatively impact the book value of our common stock.

We may not be able to deduct all or a portion of the interest payments on the notes for U.S. federal income tax purposes.

The deduction for all or a portion of the interest paid or incurred on indebtedness classified as "corporate acquisition indebtedness" for U.S. federal income tax purposes may be disallowed. A convertible debt instrument may be classified as "corporate acquisition indebtedness" under the Code if the proceeds thereof are used, directly or indirectly, to finance an acquisition and certain other conditions are met. The convertible notes we issued to finance a portion of the acquisition may be treated as corporate acquisition indebtedness. Accordingly, the deduction for all or a portion of the interest paid or incurred on the notes may be disallowed. If we were not entitled to deduct interest on the notes, our after-tax operating results could be adversely affected.

Risks Related to X-spine's Business

We have limited experience with X-spine's product lines.

X-spine's product lines are new to us, and we have limited experience with them. X-spine's business is concentrated on developing and manufacturing implants and surgical instruments for surgery of the spine, which business differs from ours. As a result, X-spine's business is comprised of different product lines with which we have limited experience.

We will depend on retaining X-spine management and employees.

We will also be highly dependent on the continued services of key members of X-spine's executive management team. The loss of any one of these individuals could disrupt X-spine's operations or strategic plans. Additionally, X-spine's future success will depend on, among other things, our ability to hire and retain the necessary qualified scientific, technical, sales, marketing and managerial personnel, for whom X-spine competes with numerous other companies, academic institutions and organizations. The loss of members of X-spine's management team, key advisors or personnel, or X-spine's inability to attract or retain other qualified personnel or advisors, could have a material adverse effect on X-spine's business, results of operations and financial condition.

X-spine's business depends, in part, on a key distributor arrangement.

X-spine's business is dependent, in part, on a key distributor arrangement. For the year ended December 31, 2014, net sales to this one large distributor exceeded 10% of X-spine's net sales. X-spine's results of operations are directly dependent on the sales and marketing efforts of its distributors and other sales agents and employees. If X-spine's key distributor were to reduce its efforts or cease to do business with X-spine, X-spine's sales could be adversely affected. In such a situation, X-spine may need to seek alternative distributors or increase its reliance on existing direct sales employees, sales agent and other distributors, which we may be unable to do in a timely and efficient manner, if at all.

X-spine's business depends, in part, on a relationship with a key supplier, which is a related party.

X-spine relies on third-party suppliers to supply substantially all of its products. For X-spine to be successful, its suppliers must be able to provide it with products in substantial quantities, in compliance with regulatory requirements, in accordance with agreed-upon specifications, at acceptable costs and on a timely basis. If X-spine is unable to obtain sufficient quantities of high quality products to meet demand on a timely basis, it may lose customers, and our business and reputation may suffer.

Certain of X-spine's former shareholders, who now own over 10% of our common stock, own a controlling share of X-spine's largest supplier, Norwood Tool Company d/b/a Norwood Medical. In 2013 and 2014, products purchased from Norwood Medical accounted for approximately 35% and 22% of product purchases, respectively. X-spine's dependence on Norwood Medical exposes us to risks, including limited control over pricing, availability and delivery schedules. If Norwood Medical ceases to provide X-spine with sufficient quantities of products in a timely manner or on terms acceptable to X-spine, or ceases to manufacture products of acceptable quality, X-spine would have to seek alternate sources of supply. Because of the nature of X-spine's regulatory and quality control requirements, and the proprietary nature of its products, it may not be able to quickly engage additional or replacement suppliers. Any such disruption could harm X-spine's business, results of operations or financial condition.

Risks Related to our Business

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to service our debt depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt and other fixed charges, fund working capital needs and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

We may not be able to meet financial or other covenant requirements in our credit facility, and we may not be able to successfully negotiate waivers to cure any covenant violations.

Our credit agreement with affiliates of OrbiMed contains representations, warranties, fees, affirmative and negative covenants, including a minimum cash balance, a leverage ratio and minimum revenue amounts by quarter, and default provisions, which include departures in key management, if not remedied within 90 days. A breach of any of these covenants could result in a default under these agreements. Upon the occurrence of an event of default under our debt agreements, our lender could elect to declare all amounts outstanding to be immediately due and payable and terminate all commitments to extend further credit. If our lender accelerates the repayment of borrowings, we may not have sufficient assets to repay our indebtedness. Also, should there be an event of default, or should we need to obtain waivers following an event of default, we may be subject to higher borrowing costs and/or more restrictive covenants in future periods. In addition, to secure the performance of our obligations under the credit facility, we pledged substantially all of our assets, including our intellectual property, to affiliates of OrbiMed. Our failure to comply with the covenants under the credit facility could result in an event of default, the acceleration of our debt and the loss of our assets.

Affiliates of OrbiMed may be able to exert significant influence over the Company.

Certain private investment funds for which OrbiMed Advisors LLC serves as the investment manager purchased $52 million of the Notes in our recent offering. In addition, affiliates of OrbiMed are significant shareholders and we owe affiliates of OrbiMed approximately $42 million in principal, plus interest and exit fees, pursuant to our Amended and

Restated Credit Agreement. Accordingly, OrbiMed may be able to exert significant influence over the Company. Although OrbiMed has been a strong supporter of the Company, OrbiMed may have interests that differ, or, in some cases, conflict with, interests of other shareholders.

We may need to use 50% of the net proceeds from future offerings to make a mandatory prepayment on our loan.

Subject to the discretion of our lender, our credit agreement with affiliates of OrbiMed includes an obligation on our part to use 50% of the net proceeds from equity offerings above $50 million in the aggregate to make a mandatory prepayment on our loan. This provision could reduce the net proceeds to us in future financing transactions, which may affect our ability to raise capital in the future.

We are not currently profitable and we will need to raise additional funds in the future; however, additional funds may not be available on acceptable terms, or at all.

We have substantial operating expenses associated with the sales and marketing of our products. The sales and marketing expenses are anticipated to be funded from operating cash flow. There can be no assurance that we will have sufficient access to liquidity or cash flow to meet our operating expenses and other obligations. If we do not increase our revenue or reduce our expenses, we may need to raise additional capital, which would result in dilution to our stockholders, or seek additional loans. The incurrence of indebtedness would result in increased debt service obligations and could require us to agree to operating and financial covenants that would restrict our operations. Financing may not be available in amounts or on terms acceptable to us, if at all. Any failure by us to raise additional funds on terms favorable to us, or at all, could result in our inability to pay our expenses as they come due, limit our ability to expand our business operations, and harm our overall business prospects.

We may not be able to raise capital or, if we can, it may not be on favorable terms. We may seek to raise additional capital through public or private equity financings, partnerships, joint ventures, disposition of assets, debt financings or restructuring, bank borrowing or other sources. To obtain additional funding, we may need to enter into arrangements that require us to relinquish rights to certain technologies, products and/or potential markets. If adequate funds are not otherwise available, we would be forced to curtail operations significantly, including reducing our sales and marketing expenses which could negatively impact product sales and we could even be forced to cease operations, liquidate our assets and possibly even seek bankruptcy protection.

The impact of United States healthcare reform legislation remains uncertain.

In 2010, federal legislation, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively “PPACA”), to reform the United States healthcare system was enacted into law. Certain aspects of the law were upheld by a Supreme Court decision announced in June 2012 and in June 2015. PPACA is far-reaching and is intended to expand access to health insurance coverage, improve quality and reduce costs over time. Among other things, the PPACA imposes a 2.3 percent excise tax on medical devices, which applies to United States sales of our medical device products, including our OsteoSelect® DBM putty. X-spine products also are subject to this excise tax. Due to multi-year pricing agreements and competitive pricing pressure in our industry, there can be no assurance that we will be able to pass the cost of the device tax on to our customers. Other provisions of the law, including Medicare provisions aimed at improving quality and decreasing costs, comparative effectiveness research, an independent payment advisory board, and pilot programs to evaluate alternative payment methodologies, could meaningfully change the way healthcare is developed and delivered. We cannot predict the impact of this legislation or other healthcare programs and regulations that may ultimately be implemented at the federal or state level, the effect of any future legislation or regulation in the United States or internationally or whether any changes will have the effect of lowering prices for our products or reducing medical procedure volumes.

We cannot predict the impact of other healthcare programs and regulations that may ultimately be implemented at the federal or state level, the effect of any future legislation or regulation in the United States or internationally or whether any changes will have the effect of lowering prices for our products or reducing medical procedure volumes.

We are subject, directly and indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and physician payment transparency laws. Failure to comply with these laws may subject us to substantial penalties.

We are subject to federal and state healthcare laws and regulations pertaining to fraud and abuse, and physician payment transparency. These laws include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs, such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid or other federal third-party payors that are false or fraudulent;

- federal criminal laws that prohibit executing a scheme to defraud any federal healthcare benefit program or making false statements relating to healthcare matters;

- the federal Physician Payment Sunshine Act, which requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other "transfers of value" made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and requires applicable manufacturers and group purchasing organizations to report annually to CMS ownership and investment interests held by the physicians described above and their immediate family members and payments or other "transfers of value" to such physician owners; and

- analogous state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require device companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available under such laws, it is possible that some of our business activities, including our relationships with customers, physicians and other healthcare providers, some of whom have ownership interests in the company and recommend and/or use our products, could be subject to challenge under one or more of such laws. We are also exposed to the risk that our employees, independent contractors, principal investigators, consultants, vendors, and distributors may engage in fraudulent or other illegal activity. Misconduct by these parties could include, among other infractions or violations, intentional, reckless and/or negligent conduct or unauthorized activity that violates FDA regulations, manufacturing standards, federal and state healthcare fraud and abuse laws and regulations, laws that require the true, complete and accurate reporting of financial information or data or other commercial or regulatory laws or requirements. It is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations.

Because of the nature of our business, we are involved from time to time in lawsuits, claims, audits and investigations, including whistleblower actions by private parties and subpoenas from governmental agencies such as the Office of Inspector General of the Department of Health and Human Services ("OIG"). In February 2013, we received a subpoena from the OIG seeking documents in connection with an investigation into possible false or otherwise improper claims submitted to Medicare. The subpoena requested documents related to physician referral programs operated by the Company, which we believe refers to the Company's prior practice of compensating physicians for performing certain educational and promotional services on behalf of the Company during 2009 and 2010. We later learned that this

subpoena resulted from a qui tam action that was dismissed without prejudice in 2013 after the Department of Justice declined to intervene.

If our operations are found to violate any of the laws described above or any other laws and regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, the exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to market our products and materially adversely affect our business, results of operations and financial condition. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business.

Pricing pressure and cost containment measures could have a negative impact on our future operating results.

Pricing pressure has increased in our industry due to continued consolidation among healthcare providers, trends toward managed care, the shift towards government becoming the primary payor of healthcare expenses, and government laws and regulations relating to reimbursement and pricing generally. Pricing pressure, reductions in reimbursement levels or coverage or other cost containment measures could unfavorably affect our future operating results and financial condition.

Many competitive products exist and more will be developed, and we may not be able to successfully compete because we are smaller and have fewer financial resources.

Our business is in a very competitive and evolving field. Rapid new developments in this field have occurred over the past few years, and are expected to continue to occur. Other companies already have competing products available or may develop products to compete with ours. Many of these products have short regulatory timeframes and our competitors, many with more substantial development resources, may be able to develop competing products that are equal to or better than ours. This may make our products obsolete or undesirable by comparison and reduce our revenue. Our success will depend, in large part, on our ability to maintain a competitive position concerning our intellectual property, and to develop new technologies and new applications for our technologies. Many of our competitors have substantially greater financial and technical resources, as well as greater production and marketing capabilities, and our ability to compete remains uncertain.

The medical community and the general public may perceive synthetic materials and growth factors as safer, which could have a material adverse effect on our business.

Members of the medical community and the general public may perceive synthetic materials and growth factors as safer than our allograft-based bone tissue products. Our products may be incapable of competing successfully with synthetic bone graft substitutes and growth factors developed and commercialized by others, which could have a material adverse effect on our business, financial condition and results of operations.

Negative publicity concerning methods of human tissue recovery and screening of donor tissue in the industry in which we operate may reduce demand for our allografts and impact the supply of available donor tissue.

Media reports or other negative publicity concerning both improper methods of tissue recovery from donors and disease transmission from donated tissue may limit widespread acceptance of our allografts. Unfavorable reports of improper or illegal tissue recovery practices, both in the United States and internationally, as well as incidents of improperly processed tissue leading to transmission of disease, may broadly affect the rate of future tissue donation and market acceptance of allograft technologies. Potential patients may not be able to distinguish our allografts, technologies and the tissue recovery and the processing procedures from those of our competitors or others engaged in tissue recovery. In addition, families of potential donors may become reluctant to agree to donate tissue to for-profit tissue processors.

We are highly dependent on the availability of human donors; any disruptions could cause our customers to seek alternative providers or technologies.

We are highly dependent on our ability to obtain donor cadavers as the raw material for many of our products. The availability of acceptable donors is relatively limited and we compete with many other companies for this limited availability. The availability of donors is also impacted by regulatory changes, general public opinion of the donor process and our reputation for our handling of the donor process. In addition, due to seasonal changes in the mortality rates, some scarce tissues are at times in short supply. Any disruption in the supply of this crucial raw material could have significant consequences for our revenue, operating results and continued operations.

We will need to continue to innovate and develop new products.

The markets for our products and services are characterized by rapid technological change, frequent new introductions, changes in customers' demands and evolving industry standards. Accordingly, we will need to continue to innovate and develop additional products. These efforts can be costly, subject to long development and regulatory delays and may not result in products approved for sale. These costs may hurt operating results and may require additional capital. If additional capital is not available, we may be forced to curtail development activities. In addition, any failure on our behalf to react to changing market conditions could create an opportunity for other market participants to capture a critical share of the market within a short period of time.

Our success will depend on our ability to engage and retain qualified technical personnel who are difficult to attract.

Our success will depend on our ability to attract and retain qualified technical personnel to assist in research and development, testing, product implementation, low-scale production and technical support. The demand for such personnel is high and the supply of qualified technical personnel is limited. A significant increase in the wages paid by competing employers could result in a reduction of our technical work force and increases in the wage rates that we must pay or both. If either of these events were to occur, our cost structure could increase and our growth potential could be impaired.

Loss of key members of our management whom we need to succeed could adversely affect our business.

We are highly dependent on the services of key members of our management team, and the loss of any of their services could have an adverse effect on our future operations. We do not currently maintain key-man life insurance policies insuring the life of any member of our management team.

We are highly dependent on the continued availability of our facilities and would be harmed if they were unavailable for any prolonged period of time.

Any failure in the physical infrastructure of our facilities or services could lead to significant costs and disruptions that could reduce our revenues and harm our business reputation and financial results. We are highly reliant on our Belgrade, Montana facilities. Any natural or man-made event that impacts our ability to utilize these facilities could have a significant impact on our operating results, reputation and ability to continue operations. The regulatory process for approval of facilities is time-consuming and our ability to rebuild facilities would take a considerable amount of time and expense and cause a significant disruption in service to our customers. Further, the FDA or some other regulatory agency could identify deficiencies in future inspections of our facilities or our supplies that could disrupt our business, reducing profitability.

Future revenue will depend on our ability to increase sales.

We currently sell our products through direct sales by our employees and indirectly through distributor relationships. We incurred increased sales and marketing expenses in building and expanding our direct sales force, and there can be no assurance that we will generate increased sales as a result of this effort.

There may be fluctuations in our operating results, which will impact our stock price.

Significant annual and quarterly fluctuations in our results of operations may be caused by, among other factors, our volume of revenues, the timing of new product or service announcements, releases by us and our competitors in the marketplace of new products or services, seasonality and general economic conditions. There can be no assurance that the level of revenues achieved by us in any particular fiscal period will not be significantly lower than in other comparable fiscal periods. Our expense levels are based, in part, on our expectations as to future revenues. As a result, if future revenues are below expectations, net income or loss may be disproportionately affected by a reduction in revenues, as any corresponding reduction in expenses may not be proportionate to the reduction in revenues.

Our revenues will depend upon prompt and adequate coverage and reimbursement from public and private insurers and national health systems.

Political, economic and regulatory influences are subjecting the healthcare industry in the United States to fundamental change. The ability of hospitals to pay fees for allograft bone tissue products depends in part on the

extent to which reimbursement for the costs of such materials and related treatments will continue to be available from governmental health administration authorities, private health coverage insurers and other organizations. In the United States, healthcare providers who purchase our products generally rely on these third-party payors to pay for all or a portion of the cost of our products in the procedures in which they are employed. Because there is often no separate reimbursement for our products, the additional cost associated with the use of our products can impact the profit margin of the hospital or other health care facility where the surgery is performed. Some of our target customers may be unwilling to purchase our products if they are able to procure less expensive alternatives. In addition, major third-party payors of hospital services and hospital outpatient services, including Medicare, Medicaid and private healthcare insurers, annually revise their payment methodologies, which can result in stricter standards for reimbursement of hospital charges for certain medical procedures or the elimination of or reduction in reimbursement. Further, Medicare, Medicaid and private healthcare insurer cutbacks could create downward price pressure on our products.

Our operating results will be harmed if we are unable to effectively manage and sustain our future growth.

We might not be able to manage our future growth efficiently or profitably. Our business is unproven on a large scale and actual revenue and operating margins, or revenue and margin growth, may be less than expected. If we are unable to scale our production capabilities efficiently, we may fail to achieve expected operating margins, which would have a material and adverse effect on our operating results. Growth may also stress our ability to adequately manage our operations, quality of products, safety and regulatory compliance. In order to grow, we may be required to obtain additional financing, which may increase our indebtedness or result in dilution to our stockholders. Further, there can be no assurance that we would be able to obtain any additional financing.

The results of our clinical studies may not support our product candidate claims or may result in the discovery of adverse effects.

Our ongoing research and development, pre-clinical testing and clinical study activities are subject to extensive regulation and review by numerous governmental authorities both in the United States and abroad. We are currently conducting post-market clinical studies of some of our products to gather information about these products' performance or optimal use. Additionally, in the future we may conduct clinical studies to support clearance or approval of new products. Clinical studies must be conducted in compliance with FDA regulations and local regulations, and according to principles and standards collectively referred to as "Good Clinical Practices." Non-compliance could result in regulatory and legal enforcement action and also could invalidate the data. Even if our clinical studies are completed as planned, we cannot be certain that their results will support our product candidates and/or proposed claims or that the FDA or foreign authorities and notified bodies will agree with our conclusions regarding them. Success in pre-clinical studies and early clinical studies does not ensure that later clinical studies will be successful, and we cannot be sure that the results of the later studies will replicate those of earlier or prior studies. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for the proposed indicated uses, which could cause us to abandon a product candidate and may delay development of others. Any delay or termination of our clinical studies will delay the filing of our product submissions and, ultimately, our ability to commercialize our product candidates and generate revenues. It is also possible that patient subjects enrolled in our clinical studies of our marketed products will experience adverse side effects that are not currently part of the product candidate's profile and, if so, these findings may result in lower market acceptance, which could have a material and adverse effect on our business, results of operations and financial condition.

We may be subject to product liability litigation that could be expensive, and our insurance coverage may not be adequate in a catastrophic situation.

We may incur material liabilities relating to product liability claims, including product liability claims arising out of the use of our products. We currently carry product liability insurance, however, our insurance coverage may not be adequate and our business could suffer material adverse consequences due to product liability claims.

U.S. governmental regulation could restrict the use of our tissue products or our procurement of tissue.

In the United States, the procurement and transplantation of allograft bone tissue is subject to federal law pursuant to the National Organ Transplant Act, or NOTA, a criminal statute which prohibits the purchase and sale of human organs used in human transplantation, including bone and related tissue, for "valuable consideration." NOTA permits reasonable payments associated with the removal, transportation, processing, preservation, quality control, implantation and storage of human bone tissue. We provide services in all of these areas in the United States, with the exception of removal and implantation, and receive payments for all such services. We make payments to certain of

our clients and tissue banks for their services related to recovering allograft bone tissue on our behalf. If NOTA is interpreted or enforced in a manner which prevents us from receiving payment for services we render or which prevents us from paying tissue banks or certain of our clients for the services they render for us, our business could be materially and adversely affected.

We are engaged through our marketing employees, independent sales agents and sales representatives in ongoing efforts designed to educate the medical community as to the benefits of our products, and we intend to continue our educational activities. Although we believe that NOTA permits payments in connection with these educational efforts as reasonable payments associated with the processing, transportation and implantation of our products, payments in connection with such education efforts are not exempt from NOTA's restrictions and our inability to make such payments in connection with our education efforts may prevent us from paying our sales representatives for their education efforts and could adversely affect our business and prospects. No federal agency or court has determined whether NOTA is, or will be, applicable to every allograft bone tissue-based material which our processing technologies may generate. Assuming that NOTA applies to our processing of allograft bone tissue, we believe that we comply with NOTA, but there can be no assurance that more restrictive interpretations of, or amendments to, NOTA will not be adopted in the future which would call into question one or more aspects of our method of operations.

If we fail to maintain regulatory approvals and clearances, or are unable to obtain, or experience significant delays in obtaining, FDA clearances or approvals for our future products or product enhancements, our ability to commercially distribute and market these products could suffer.

Our products are subject to rigorous regulation by the FDA and numerous other federal, state and foreign governmental authorities. Certain of our products are regulated as medical devices by the FDA while others are regulated by the FDA as tissues. The process of obtaining regulatory clearances or approvals to market a medical device can be costly and time consuming, and we may not be able to obtain these clearances or approvals on a timely basis, if at all. In particular, the FDA permits commercial distribution of a new medical device only after the device has received clearance under Section 510(k) of the Federal Food, Drug and Cosmetic Act, or is the subject of an approved premarket approval application, or PMA, unless the device is specifically exempt from those requirements.

The FDA will clear marketing of a lower risk medical device through the 510(k) process if the manufacturer demonstrates that the new product is substantially equivalent to a legally marketed device that is not subject to the PMA process, which includes devices that were legally marketed prior to May 28, 1976 (“pre-amendments devices”) for which the FDA has not called for a PMA, devices that have been reclassified from Class III to Class II or I, or devices that have been found substantially equivalent through the 510(k) process. High risk devices deemed to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices, or devices not deemed substantially equivalent to a previously cleared device, require the approval of a PMA. The PMA process is more costly, lengthy and uncertain than the 510(k) clearance process. A PMA application must be supported by extensive data, including, but not limited to, technical, preclinical, clinical trial, manufacturing and labeling data, to demonstrate to the FDA’s satisfaction the safety and efficacy of the device for its intended use.

Our failure to comply with U.S. federal, state and foreign governmental regulations could lead to the issuance of warning letters or untitled letters, the imposition of injunctions, suspensions or loss of regulatory clearance or approvals, product recalls, termination of distribution, product seizures or civil penalties. In the most extreme cases, criminal sanctions or closure of our manufacturing facility are possible.

Modifications to our products may require new regulatory clearances or approvals or may require us to recall or cease marketing our products until clearances or approvals are obtained.

Modifications to our products may require new regulatory approvals or clearances, including 510(k) clearances, premarket approvals, or require us to recall or cease marketing the modified devices until these clearances or approvals are obtained. The FDA requires device manufacturers to initially make and document a determination of whether or not a modification requires a new approval, supplement or clearance. A manufacturer may determine that a modification could not significantly affect safety or efficacy and does not represent a major change in its intended use, so that no new 510(k) clearance is necessary. However, the FDA can review a manufacturer’s decision and may

disagree. The FDA may also on its own initiative determine that a new clearance or approval is required. We have made modifications to our products in the past and may make additional modifications in the future that we believe do not or will not require additional clearances or approvals. If the FDA disagrees and requires new clearances or approvals for the modifications, we may be required to recall and to stop marketing our products as modified, which could require us to redesign our products and harm our operating results. In these circumstances, we may be subject to significant enforcement actions.

If a manufacturer determines that a modification to an FDA-cleared device could significantly affect its safety or efficacy, or would constitute a major change in its intended use, then the manufacturer must file for a new 510(k) clearance or possibly a premarket approval application. Where we determine that modifications to our products require a new 510(k) clearance or premarket approval, we may not be able to obtain those additional clearances or approvals for the modifications or additional indications in a timely manner, or at all. Obtaining clearances and approvals can be a time consuming process, and delays in obtaining required future clearances or approvals would adversely affect our ability to introduce new or enhanced products in a timely manner, which in turn would harm our future growth.

There is no guarantee that the FDA will grant 510(k) clearance or PMA approval of our future products and failure to obtain necessary clearances or approvals for our future products would adversely affect our ability to grow our business.

Future products may require FDA clearance of a 510(k) or approval of a PMA. In addition, future products may require clinical trials to support regulatory approval and we may not successfully complete these clinical trials. The FDA may not approve or clear these products for the indications that are necessary or desirable for successful commercialization. Indeed, the FDA may refuse our requests for 510(k) clearance or premarket approval of new products. Failure to receive clearance or approval for our new products would have an adverse effect on our ability to expand our business.

Clinical trials can be long, expensive and ultimately uncertain which could jeopardize our ability to obtain regulatory approval and market our products.

Clinical trials are generally required to support a PMA application and are sometimes required for 510(k) clearance. Such trials generally require an investigational device exemption application, or IDE, approved in advance by the FDA for a specified number of patients and study sites, unless the product is deemed a nonsignificant risk device eligible for more abbreviated IDE requirements. Clinical trials are subject to extensive monitoring, recordkeeping and reporting requirements. Clinical trials must be conducted under the oversight of an institutional review board, or IRB, for the relevant clinical trial sites and must comply with FDA regulations, including but not limited to those relating to good clinical practices. To conduct a clinical trial, we also are required to obtain the patients' informed consent in form and substance that complies with both FDA requirements and state and federal privacy and human subject protection regulations. We, the FDA or the IRB could suspend a clinical trial at any time for various reasons, including a belief that the risks to study subjects outweigh the anticipated benefits. In addition, the commencement or completion of any clinical trial may be delayed or halted for numerous reasons, including, but not limited to patients not enrolling in clinical trials at the rate we expect, patients experiencing adverse side effects, third party contractors failing to perform in accordance with our anticipated schedule or consistent with good clinical practices, inclusive or negative interim trial results or our inability to obtain sufficient quantities of raw materials to produce our products. Clinical trials often take several years to execute. The outcome of any trial is uncertain and may have a significant impact on the success of our current and future products and future profits. Our development costs may increase if we have material delays in clinical trials or if we need to perform more or larger clinical trials than planned. If this occurs, our financial results and the commercial prospects for our products may be harmed. Even if a trial is completed, the results of clinical testing may not adequately demonstrate the safety and efficacy of the device or may otherwise not be sufficient to obtain FDA approval to market the product in the United States.

Even if our medical device products are cleared or approved by regulatory authorities, if we or our suppliers fail to comply with ongoing FDA or other foreign regulatory authority requirements, or if we experience unanticipated problems with our products, these products could be subject to restrictions or withdrawal from the market.

Any product that we market, and the manufacturing processes, reporting requirements, post-approval clinical data and promotional activities for such product, will be subject to continued regulatory review, oversight and periodic inspections by the FDA and other domestic and foreign regulatory bodies. In particular, we and our suppliers are required to comply with the FDA's current good manufacturing practice, or GMP requirements, known as the Quality System Regulation, or QSR, for medical devices, and International Standards Organization, or ISO, regulations for the manufacture of our products and other regulations which cover the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, storage and shipping of any product. Regulatory bodies, such as the FDA, enforce these and other regulations through periodic inspections. The failure by us or one of our suppliers to comply with applicable statutes and regulations administered by the FDA and other regulatory bodies, or the failure to timely and adequately respond to any adverse inspectional observations or product safety issues, could result in, among other things, any of the following enforcement actions:

- untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties;
- unanticipated expenditures to address or defend such actions;
- customer notifications for repair, replacement, refunds;
- recall, detention or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for 510(k) clearance or premarket approval of new medical device products or modified medical device products;

- operating restrictions;
- withdrawing 510(k) clearances or PMA approvals that have already been granted;
- refusal to grant export approval for our products; or
- criminal prosecution.

If any of these actions were to occur it would harm our reputation and cause our product sales and profitability to suffer and may prevent us from generating revenue. Furthermore, our key component suppliers may not currently be or may not continue to be in compliance with all applicable regulatory requirements, which could result in our failure to produce our products on a timely basis and in the required quantities, if at all.

Even if regulatory clearance or approval of a product is granted, such clearance or approval may be subject to limitations on the intended uses for which the product may be marketed and reduce our potential to successfully commercialize the product and generate revenue from the product. If the FDA determines that our promotional materials, labeling, training or other marketing or educational activities constitute promotion of an unapproved use, it could request that we cease or modify our training or promotional materials or subject us to regulatory enforcement actions. It is also possible that other federal, state or foreign enforcement authorities might take action if they consider our training or other promotional materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement.

In addition, we may be required to conduct costly post-market testing and surveillance to monitor the safety or effectiveness of our products, and we must comply with medical device reporting requirements, including the reporting of certain adverse events and malfunctions related to our products. Later discovery of previously unknown problems with our products, including unanticipated adverse events or adverse events of unanticipated severity or frequency, manufacturing problems, or failure to comply with regulatory requirements such as QSR, may result in changes to labeling, restrictions on such products or manufacturing processes, withdrawal of the products from the market, voluntary or mandatory recalls, a requirement to repair, replace or refund the cost of any medical device we manufacture or distribute, fines, suspension of regulatory approvals, product seizures, injunctions or the imposition of civil or criminal penalties which would adversely affect our business, operating results and prospects.

If our products cause or contribute to a death or a serious injury, or malfunction in certain ways, we will be subject to medical device reporting regulations, which can result in voluntary corrective actions or agency enforcement actions.

Under the FDA medical device reporting regulations, medical device manufacturers are required to report to the FDA information that a device has or may have caused or contributed to a death or serious injury or has malfunctioned in a way that would likely cause or contribute to death or serious injury if the malfunction of the device or one of our similar devices were to recur. Under the FDA's reporting regulations applicable to human cells and tissue and cellular and tissue-based products, or HCT/Ps, we are required to report all adverse reactions involving a communicable disease if it is fatal, life threatening, or results in permanent impairment of a body function or permanent damage to body structure. If we fail to report these events to the FDA within the required timeframes, or at all, the FDA could take enforcement action against us. Any such adverse event involving our products also could result in future voluntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection or enforcement action. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, would require the dedication of our time and capital, distract management from operating our business, and may harm our reputation and financial results.

We may implement a product recall or voluntary market withdrawal due to product defects or product enhancements and modifications, which would significantly increase our costs.

The FDA and similar foreign governmental authorities have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture. In the case of the FDA, the authority to require a recall must be based on an FDA finding that there is a reasonable probability that the device would cause serious injury or death. In addition, foreign governmental bodies have the authority to require the recall of our products in the event of material deficiencies or defects in design or manufacture. Manufacturers may, under their own initiative, recall a product if any material deficiency in a device is found. A government-mandated or voluntary recall by us or one of our distributors could occur as a result of component failures, manufacturing errors, design or labeling defects or other deficiencies and issues. Recalls of any of our products would divert managerial and financial resources and have an adverse effect on our financial condition and results of operations. The FDA requires that certain classifications of recalls be reported to the FDA within 10 working days after the recall is initiated. Companies are required to maintain certain records of recalls, even if they are not reportable to the FDA. We may initiate voluntary recalls involving our products in the future that we determine do not require notification of the FDA. If the FDA disagrees with our determinations, they could require us to report those actions as recalls. A future recall announcement could harm our reputation with customers and negatively affect our sales. In addition, the FDA could take enforcement action for failing to report the recalls when they were conducted.

We may be subject to fines, penalties or injunctions if we are determined to be promoting the use of our products for unapproved or "off-label" uses.

Our promotional materials and training methods for physicians must comply with the FDA and other applicable laws and regulations. We believe that the specific surgical procedures for which our products are marketed fall within the scope of the surgical applications that have been cleared by the FDA. However, the FDA could disagree and require us to stop promoting our products for those specific procedures until we obtain FDA clearance or approval for them. In addition, if the FDA determines that our promotional materials or training constitutes promotion of an unapproved use, it could request that we modify our training or promotional materials or subject us to regulatory or enforcement actions, including the issuance of an untitled letter, a warning letter, injunction, seizure, civil fine and criminal penalties. It is also possible that other federal, state or foreign enforcement authorities might take action if they consider our promotional or training materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement. In that event, our reputation could be damaged and adoption of the products would be impaired.

If we or our suppliers fail to comply with ongoing FDA or other regulatory authority requirements pertaining to Human Tissue Products, these products could be subject to restrictions or withdrawal from the market.

Certain of our products are regulated as HCT/Ps and are not marketed pursuant to the FDA's medical device regulatory authority, and therefore are not subject to FDA clearance or approval. Although we have not obtained premarket approval for these products, they are nonetheless subject to regulatory oversight. Human tissues intended for transplantation have been regulated by the FDA since 1993. Over the course of several years, the FDA issued comprehensive regulations that address manufacturer activities associated with HCT/Ps. The first requires that companies that produce and distribute HCT/Ps register with the FDA. This set of regulations also includes the criteria that must be met in order for the HCT/P to be eligible for marketing solely under Section 361 of the PHS Act and the regulations in 21 CFR Part 1271, rather than under the drug or device provisions of the FD&C Act or the biological product licensing provisions of the PHS Act. The second set of regulations provides criteria that must be met for donors to be eligible to donate tissues and is referred to as the "Donor Eligibility" rule. The third rule governs the processing and distribution of the tissues and is often referred to as the "Current Good Tissue Practices" rule. The "Current Good Tissue Practices" rule covers all stages of allograft processing, from procurement of tissue to distribution of final allografts. Together these regulations are designed to ensure that sound, high quality practices are followed to reduce the risk of tissue contamination and of communicable disease transmission to recipients.

These regulations increased regulatory scrutiny within the industry in which we operate and have led to increased enforcement action which affects the conduct of our business. In addition, these regulations can increase the cost of tissue recovery activities. The FDA periodically inspects tissue processors to determine compliance with these requirements. Violations of applicable regulations noted by the FDA during facility inspections could adversely affect the continued marketing of our products. We believe we comply with all aspects of the Current Good Tissue Practices, although there can be no assurance that we will comply, or will comply on a timely basis, in the future. Entities that provide us with allograft bone tissue are responsible for performing donor recovery, donor screening and donor testing and our compliance with those aspects of the Current Good Tissue Practices regulations that regulate those functions are dependent upon the actions of these independent entities. If our suppliers fail to comply with applicable requirements, our products and our business could be negatively affected. If the FDA determines that we have failed to comply with applicable regulatory requirements, it can impose a variety of enforcement actions from public warning letters, fines, injunctions, consent decrees and civil penalties to suspension or delayed issuance of approvals, seizure of our products, total or partial shutdown of our production, withdrawal of approvals, and criminal prosecutions. If any of these events were to occur, it could materially adversely affect us.

In addition, the FDA could disagree with our conclusion that some of our HCT/Ps meet the criteria for marketing solely under Section 361 of the PHS Act, and therefore do not require approval or clearance of a marketing application. For our HCT/Ps that are not combined with another article, the FDA could conclude that the tissue is more than minimally manipulated, that the product is intended for a non-homologous use, or that the product has a systemic effect or is dependent on the metabolic activity of living cells for its effect. If the FDA were to draw these conclusions, it would likely require the submission and approval or clearance of a marketing application in order for us to continue to market the product. Such an action by the FDA could cause negative publicity, decreased or discontinued product sales, and significant expense in obtaining required marketing approval or clearance.

Other regulatory entities with authority over our products and operations include state agencies enforcing statutes and regulations covering tissue banking. Regulations issued by Florida, New York, California and Maryland will be particularly relevant to our business. Most states do not currently have tissue banking regulations. It is possible that others may make allegations against us or against donor recovery groups or tissue banks about non-compliance with applicable FDA regulations or other relevant statutes or regulations.

Allegations like these could cause regulators or other authorities to take investigative or other action, or could cause negative publicity for our business and the industry in which we operate.

Our products may be subject to regulation in the EU as well, should we enter that market. In the European Union, or EU, regulations, if applicable, differ from one EU member state to the next. Because of the absence of a harmonized regulatory framework and the proposed regulation for advanced therapy medicinal products in the EU, as well as for other countries, the approval process for human derived cell or tissue based medical products may be extensive, lengthy, expensive and unpredictable. Some of our products may be subject to EU member states' regulations that govern the donation, procurement, testing, coding, traceability, processing, preservation, storage, and distribution of

human tissues and cells and cellular or tissue-based products. Some EU member states have their own tissue banking regulations.

Loss of AATB Accreditation would have a material adverse effect on us.

We are accredited with the American Association of Tissue Banks ("AATB"), a private non-profit organization that accredits tissue banks and sets industry standards. Although AATB accreditation is voluntary and not required by law, as a practical matter, many of our customers would not purchase our products if we failed to maintain our AATB accreditation. Although we make every effort to maintain our AATB accreditation, the accreditation process is somewhat subjective and lacks regulatory oversight. There can be no assurance that we will continue to remain accredited with the AATB.

Federal regulatory reforms may adversely affect our ability to sell our products profitably.

From time to time, legislation is drafted and introduced in Congress that could significantly change the statutory provisions governing the regulatory approval, manufacture and marketing of regulated products or the reimbursement thereof. In addition, FDA regulations and guidance are often revised or reinterpreted by the FDA in ways that may significantly affect our business and our products. Any new regulations or revisions or reinterpretations of existing regulations may impose additional costs or lengthen review times of future products. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted or FDA regulations, guidance or interpretations changed, and what the impact of such changes, if any, may be.

For example, the FDA may change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other actions which may prevent or delay approval or clearance of our products under development or impact our ability to modify our currently cleared products on a timely basis. For example, in 2011, the FDA initiated a review of the premarket clearance process in response to internal and external concerns regarding the 510(k) program, announcing 25 action items designed to make the process more rigorous and transparent. In addition, as part of the Food and Drug Administration Safety and Innovation Act of 2012, Congress enacted several reforms entitled the Medical Device Regulatory Improvements and additional miscellaneous provisions which will further affect medical device regulation both pre- and post-clearance or approval. The FDA has implemented, and continues to implement, these reforms, which could impose additional regulatory requirements upon us and delay our ability to obtain new 510(k) clearances, increase the costs of compliance or restrict our ability to maintain our current clearances. For example, the FDA recently issued guidance documents intended to explain the procedures and criteria the FDA will use in assessing whether a 510(k) submission meets a minimum threshold of acceptability and should be accepted for review. Under the "Refuse to Accept" guidance, the FDA conducts an early review against specific acceptance criteria to inform 510(k) submitters if the submission is administratively complete, or if not, to identify the missing element(s). Submitters are given the opportunity to provide the FDA with the identified information, but if the information is not provided within a defined time, the submission will not be accepted for FDA review. Any change in the laws or regulations that govern the clearance and approval processes relating to our current and future products could make it more difficult and costly to obtain clearance or approval for new products, or to produce, market and distribute existing products. Significant delays in receiving clearance or approval, or the failure to receive clearance or approval for our new products would have an adverse effect on our ability to expand our business.

Product pricing (and, therefore, profitability) is subject to regulatory control which could impact our revenue and financial performance.

The pricing and profitability of our products may become subject to control by the government and other third-party payors. The continuing efforts of governmental and other third-party payors to contain or reduce the cost of healthcare through various means may adversely affect our ability to successfully commercialize our products. In most foreign markets, the pricing and/or profitability of certain diagnostics and prescription pharmaceuticals are subject to governmental control. In the United States, we expect that there will continue to be federal and state proposals to implement similar governmental control, though it is unclear which proposals will ultimately become law, if any. Changes in prices, including any mandated pricing, could impact our revenue and financial performance.

Failure of our information technology systems could disrupt our business.

Our operations depend on the continued performance of our information technology systems. Despite security measures and other precautions we have taken, our information technology systems are potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptions. Sustained failure of our information technology systems could disrupt our business operations. In addition, some of our contracts impose obligations related to information we may have in physical or electronic formats, and any breach or failure of our information

technology systems could result in breach of contract claims and other damages.

Failure to protect our intellectual property rights could result in costly and time-consuming litigation and our loss of any potential competitive advantage.

Our success will depend, to a large extent, on our ability to successfully obtain and maintain patents, prevent misappropriation or infringement of intellectual property, maintain trade secret protection, and conduct operations without violating or infringing on the intellectual property rights of third parties. There can be no assurance that our patented and patent-pending technologies will provide us with a competitive advantage, that we will be able to develop or acquire additional technology that is patentable, or that third parties will not develop and offer technologies which are similar to ours. Moreover, we can provide no assurance that confidentiality agreements, trade secrecy agreements or similar agreements intended to protect unpatented technology will provide the intended protection. Intellectual property litigation is extremely expensive and time-consuming, and it is often difficult, if not impossible, to predict the outcome of such litigation. A failure by us to protect our intellectual property could have a materially adverse effect on our business and operating results and our ability to successfully compete in this industry.

We may not be able to obtain or protect our proprietary rights relating to our products without resorting to costly and time-consuming litigation.

We may not be able to obtain, maintain and protect certain proprietary rights necessary for the development and commercialization of our products or product candidates. Our commercial success will depend in part on obtaining and maintaining patent protection on our products and successfully defending these patents against third-party challenges. Our ability to commercialize our products will also depend in part on the patent positions of third parties, including those of our competitors. The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions. Accordingly, we cannot predict with certainty the scope and breadth of patent claims that may be afforded to other companies' patents. We could incur substantial costs in litigation if we are required to defend against patent suits brought by third parties, or if we initiate suits to protect our patent rights.

In addition to the risks involved with patent protection, we also face the risk that our competitors will infringe on our trademarks. Any infringement could lead to a likelihood of confusion and could result in lost sales. There can be no assurance that we will prevail in any claims we make to protect our intellectual property.

Future protection for our proprietary rights is uncertain which may impact our ability to successfully compete in our industry.

The degree of future protection for our proprietary rights is uncertain. We cannot ensure that:

- we were the first to make the inventions covered by each of our patent applications;
- we were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies;
- any of our pending patent applications will result in issued patents;
- any of our issued patents or those of our licensors will be valid and enforceable;
-

any patents issued to us or our collaborators will provide a basis for commercially viable products or will provide us with any competitive advantages or will not be challenged by third parties;

- we will develop additional proprietary technologies that are patentable;
- the patents of others will not have a material adverse effect on our business rights; or
- the measures we rely on to protect the intellectual property underlying our products will be adequate to prevent third parties from using our technology, all of which could harm our ability to compete in the market.

Our success depends on our ability to avoid infringing on the intellectual property rights of third parties, which could expose us to litigation or commercially unfavorable licensing arrangements.

Our commercial success depends in part on our ability and the ability of our collaborators to avoid infringing patents and proprietary rights of third parties. Third parties may accuse us or our collaborators of employing their proprietary technology in our products, or in the materials or processes used to research or develop our products, without authorization. Any legal action against our collaborators or us claiming damages and/or seeking to stop our commercial activities relating to the affected products, materials and processes could, in addition to subjecting us to potential liability for damages, require our collaborators or us to obtain a license to continue to utilize the affected materials or processes or to manufacture or market the affected products. We cannot predict whether we or our collaborators would prevail in any of these actions or whether any license required under any of these patents would be made available on commercially reasonable terms, if at all. If we are unable to obtain such a license, we or our collaborators may be unable to continue to utilize the affected materials or processes or manufacture or market the affected products or we may be obligated by a court to pay substantial royalties and/or other damages to the patent holder. Even if we are able to obtain such a license, the terms of such a license could substantially reduce the commercial value of the affected product or products and impair our prospects for profitability. Accordingly, we cannot predict whether or to what extent the commercial value of the affected product or products or our prospects for profitability may be harmed as a result of any of the liabilities discussed above. Furthermore, infringement and other intellectual property claims, with or without merit, can be expensive and time-consuming to litigate and can divert management's attention from our core business. We may be unable to obtain and enforce intellectual property rights to adequately protect our products and related intellectual property.

Others may claim an ownership interest in our intellectual property, which could expose us to litigation and have a significant adverse effect on our prospects.

A third-party may claim an ownership interest in our intellectual property. While we believe we own 100% of the right, title and interest in the patents for which we have applied and our other intellectual property, including that which we license from third parties, we cannot guarantee that a third-party will not, at some time, assert a claim or an interest in any of such patents or intellectual property. A successful challenge or claim by a third party to our patents or intellectual property could have a significant adverse effect on our prospects.

Litigation may result in financial loss.

We intend to vigorously defend any existing or future litigation that we may be involved in but there can be no assurance that we will prevail in these matters. An unfavorable judgment or settlement may result in a financial burden on us. Moreover, costs, fees, expenses, settlement amounts, judgments or other liabilities associated with such matters may not be covered by our insurance and we may be have to pay out-of-pocket. Company stockholders who

collectively own approximately 588,000 shares of our common stock and warrants to purchase additional shares have made claims that our board of directors breached its fiduciary duties in connection with the X-spine acquisition and the financing thereof, which they allege was on commercially unreasonable terms and did not serve the Company's best interests. No lawsuit has been filed. The Company believes the claims are without merit. If we are required to pay a significant amount to resolve a demand from these stockholders, it could have a material adverse effect on our liquidity, business and financial condition, and efforts required to resolve the demand could distract management from operating our business.

The market price of our common stock is extremely volatile, which may affect our ability to raise capital in the future and may subject the value of your investment to sudden decreases.

The market price for securities of biotechnology companies historically has been highly volatile, and the market from time to time has experienced significant price and volume fluctuations that are unrelated to the operating performance of such companies. Fluctuations in the trading price or liquidity of our common stock may harm the value of your investment in our securities.

Factors that may have a significant impact on the market price and marketability of our securities include:

- announcements of technological innovations or new commercial products by us, our collaborative partners or our present or potential competitors;
- our issuance of debt, equity or other securities, which we need to pursue to generate additional funds to cover our operating expenses;
- our quarterly operating results;
- developments or disputes concerning patent or other proprietary rights;
- developments in our relationships with employees, suppliers or collaborative partners;

- acquisitions or divestitures;
- litigation and government proceedings;
- adverse legislation, including changes in governmental regulation;
- third-party reimbursement policies;
- changes in securities analysts' recommendations;
- short selling;
- changes in health care policies and practices;
- suspension of trading of our common stock;
- economic and other external factors; and
- general market conditions.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been instituted. These lawsuits often seek unspecified damages, and as with any litigation proceeding, one cannot predict with certainty the eventual outcome of pending litigation. Furthermore, we may have to incur substantial expenses in connection with any such lawsuits and our management's attention and resources could be diverted from operating our business as we respond to any such litigation. We maintain insurance to cover these risks for us and our directors and officers, but our insurance is subject to high deductibles, and there is no guarantee that the insurance will cover any specific claim that we currently face or may face in the future, or that it will be adequate to cover all potential liabilities and damages.

If securities analysts stop publishing research or reports about us or our business, or if they downgrade our common stock, the trading volume and market price of our common stock could decline.

The market for our common stock relies in part on the research and reports that industry or financial analysts publish about us or our business. We do not control these analysts. If any analyst who covers us downgrades our stock or lowers its future stock price targets or estimates of our operating results, our stock price could decline rapidly. Furthermore, if any analyst ceases to cover our company, we could lose visibility in the market. Each of these events could, in turn, cause our trading volume and the market price of our common stock to decline.

We do not anticipate, and may be prevented from, paying dividends in the foreseeable future.

We currently intend to retain our future earnings, if any, to support operations and to finance expansion and, therefore, we do not anticipate paying any cash dividends on our common stock in the foreseeable future. In addition, our amended and restated credit facility precludes us from paying dividends.

We could issue "blank check" preferred stock without stockholder approval with the effect of diluting interests of then-current stockholders and impairing their voting rights, and provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable.

Our certificate of incorporation provides for the authorization to issue up to 5,000,000 shares of "blank check" preferred stock with designations, rights and preferences as may be determined from time to time by our board of directors. Our board of directors is empowered, without stockholder approval, to issue one or more series of preferred stock with dividend, liquidation, conversion, voting or other rights which could dilute the interest of, or impair the voting power of, our common stockholders. The issuance of a series of preferred stock could be used as a method of discouraging, delaying or preventing a change in control. For example, it would be possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of our company. In addition, we have a staggered board of directors and advanced notice is required prior to stockholder proposals, which might further delay a change of control.

Cautionary Note Regarding Forward-Looking Statements

The statements set forth and incorporated by reference in this prospectus that are not purely historical are forward-looking statements within the meaning of applicable securities laws. Our forward-looking statements include, but are not limited to, statements regarding our "expectations," "hopes," "beliefs," "intentions," "plans" or "strategies" regardi the future. In addition, any statements that refer to projections, forecasts, or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "might," "plan," "possible," "potential," "predict," "project," "shou well as similar expressions, may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward looking. Forward-looking statements set forth and incorporated by reference in this prospectus may include, for example, statements about:

- our ability to integrate our recent acquisition of X-spine and any future business combinations or acquisitions successfully;
- our ability to increase revenue;
- our ability to obtain financing on reasonable terms and maintain sufficient liquidity to fund our operations;
- our ability to comply with the covenants in our credit facility;
- the ability of our sales force to achieve expected results;
- our ability to remain competitive;
- government regulations;
- our ability to expand our production capacity;
- our ability to innovate and develop new products;
- our ability to obtain donor cadavers for our products;

- our ability to engage and retain qualified technical personnel and members of our management team;
- government and third-party coverage and reimbursement for our products;
- our ability to obtain regulatory approvals;
- product liability claims and other litigation to which we may be subject;
- product recalls and defects;
- timing and results of clinical studies;
- our ability to obtain and protect our intellectual property and proprietary rights; and
- infringement and ownership of intellectual property.

The forward-looking statements set forth and incorporated by reference in this prospectus are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties or assumptions, many of which are beyond our control, which may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, those factors described in the “Risk Factors” section of this prospectus and the documents incorporated by reference. Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

Use of Proceeds

This prospectus relates to the notes and conversion shares that may be offered and sold from time to time by the selling securityholders. The selling securityholders will receive all of the proceeds from the sale of the notes or the conversion shares offered by this prospectus. We will not receive any proceeds from the sale by any selling securityholder of the notes or the conversion shares offered by this prospectus.

Capitalization

The following table sets forth our cash and cash equivalents and capitalization as of September 30, 2015:

You should read this table in conjunction with the information contained in our consolidated financial statements and accompanying notes incorporated by reference into this prospectus.

	As of September 30, 2015 (Unaudited)
Cash and cash equivalents	$ 7,970,433
Long-term debt:	
Long-term debt (including current portion)	$ 44,354,646
6.00% convertible senior notes due 2021	68,000,000
Total long-term debt	112,354,646
Stockholders' equity	
Preferred stock, $0.000001 par value per share; 5,000,000 shares authorized; no shares issued and outstanding, actual and pro forma	0
Common stock, $0.000001 par value per share; 95,000,000 shares authorized; 11,886,107 issued and outstanding	11
Additional paid-in capital	
Accumulated deficit	81,798,160
Total stockholders’ (deficit) equity	(84,629,192)
Total capitalization	$ (2,831,021)

The number of outstanding shares of common stock in the table above excludes, as of September 30, 2015:

- 708,732 shares issuable upon the exercise of outstanding stock options with a weighted average exercise price of $10.54 per share;
- 1,187,521 shares issuable upon the exercise of outstanding warrants with a weighted average exercise price of $9.32 per share;

- Approximately 480,000 shares available for issuance under our Amended and Restated Equity Incentive Plan;

- 1,221,629 shares reserved for issuance pursuant to a common stock purchase agreement with Aspire Capital Fund, LLC; and

- 21,451,035 shares reserved for issuance upon conversion of the notes.

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Dilution

If you acquire shares of our common stock from the selling securityholders in this offering, your ownership interest will be diluted to the extent of the difference between the assumed public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering. Net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by the total number of shares of common stock outstanding. Our historical net tangible book value of common stock as of September 30, 2015 was negative $45.1 million, or $(3.79) per share of common stock.

Our pro forma net tangible book value as of September 30, 2015 was negative $45.1 million, or $(3.79) per share of common stock. Our pro forma net tangible book value per share gives effect to the following as if each had occurred as of September 30, 2015: (i) the acquisition of X-spine, (ii) the issuance of the notes to the initial purchaser and the OrbiMed purchasers for an aggregate principal amount of $68.0 million and (iii) the entry of an amended and restated credit agreement with ROS.

After giving effect to the sale of 17,511,108 shares of common stock in this offering at the conversion price of $3.88 per share, after deducting estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2015 would have been $22.9 million, or $0.78 per share. This amount represents an immediate increase in pro forma as adjusted net tangible book value of $4.57 per share to our existing stockholders and an immediate dilution in pro forma as adjusted net tangible book value of $3.10 per share to investors participating in this offering. The following table illustrates this per share dilution:

Assumed public offering price per share		$3.88
Historical net tangible book value per share as of September 30, 2015	$(3.79)	
Pro forma change in net tangible book value per share attributable to pro forma transactions and other adjustments described above	-	
Pro forma net tangible book value per share before this offering	(3.79)	
Pro forma increase in net tangible book value per share attributable to this offering	4.57	
Pro forma as adjusted net tangible book value per share after this offering		0.78
Dilution in pro forma as adjusted net tangible book value per share to investors participating in this offering		$3.10

The shares of common stock sold in this offering, if any, may be sold from time to time at various prices.

Each $1.00 increase (decrease) in the assumed public offering price of $3.88 per share would increase (decrease) our pro forma as adjusted net tangible book value by $17.5 million, or by $0.64 per share, and the dilution per share to

new investors purchasing shares of common stock in this offering by $0.60, assuming that the number of shares of common stock offered remains the same and after deducting estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The table and calculations set forth above are based on the number of shares of common stock outstanding as of September 30, 2015 and assumes no exercise of any outstanding options or warrants. To the extent that options or warrants are exercised, there will be further dilution to new investors. The table and calculations set forth above also do not take into account the number of additional shares that may be issued upon the conversion of notes at an increased conversion rate "in connection with" a make-whole fundamental change (as defined below under "— Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change"). The number of additional shares, if any, by which the conversion rate will be increased for a holder that converts its notes in connection with a make-whole fundamental change will be determined by reference to the make-whole table set forth below under "Description of Notes — Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change."

Business

The following description of our business should be read in conjunction with the section titled "Business" in Item 1, Part I of our Annual Report on Form 10-K for the year ended December 31, 2014, which is incorporated by reference into this prospectus.

The Acquisition of X-spine

On July 31, 2015, we acquired all of the outstanding capital stock of X-spine for approximately $60.0 million in cash, repayment of all outstanding indebtedness of X-spine to U.S. Bank, National Association, which was approximately $13.0 million, and approximately 4.24 million shares of our common stock. An escrow was established at the closing with Wells Fargo Bank, N.A., as escrow agent. The escrow account was funded with $6.0 million of cash and all of the shares of our common stock issued in the transaction. The term of the escrow will be 27 months following the closing. Subject to any claims then outstanding, the cash portion of the escrow will be released 15 months following the closing, and 25% of the shares will be released on each of the dates that are 18, 21, 24 and 27 months following the closing.

The stock purchase agreement contains customary representations and warranties by the individual Sellers relating to themselves and by the individual Sellers relating to X-spine. The agreement provides for indemnification for breaches of representations and warranties, non-fulfillment of covenants, any unpaid indebtedness and transaction costs, taxes and pre-closing product liability claims. Indemnity for breaches of representations and warranties is generally subject to a $100,000 deductible basket and a cap of $6.0 million for basic representations, the full escrow amount for intermediate representations, and the full purchase price for fundamental representations. All claims must first be asserted against the escrowed cash, then the escrowed shares valued at $4.00 per share.

Dr. David L. Kirschman, President of X-spine prior to the acquisition, remains in that role and is now also a member of our board of directors and is our Executive Vice President and Chief Scientific Officer. Dr. Kirschman's annual base salary is $500,000, with bonus compensation targeted at 50% of base salary. In connection with his continued service after the acquisition, Dr. Kirschman also received a restricted stock grant of 40,000 shares of our common stock, vesting over four years. Dr. Kirschman has agreed to customary proprietary information provisions and restrictive covenants, including non-solicitation and non-competition covenants, and his agreement provides for 12 months' severance if he is terminated in connection with a change of control.

The X-spine Business

Overview

X-spine is a global developer, manufacturer and marketer of implants and instruments for surgery of the spine and sacroiliac joint. X-spine's product emphasis is the minimally invasive approach to the treatment of degenerative spine disorders.

X-spine's global strategy is to advance minimally invasive technologies for the treatment of degenerative spinal disorders, while supporting established spinal fusion markets. By leveraging its vertically-integrated product development resources, X-spine believes it can rapidly respond to the evolving demands of the spinal marketplace. X-spine has developed two product tracks, consisting of core fusion products and minimally-invasive surgery ("MIS") products. Core products address the traditional spinal fusion market, while MIS products include devices implanted in the facet joint, the sacroiliac joint, and interspinous space. X-spine internationally markets the Zyfix®, Fixcet®, H-Graft®, Silex®, and Axle® spinal implant systems in these respective segments. Additional X-spine MIS products include cannulated pedicle screw systems Fortex® and Xpress®. These MIS products are designed to allow for less invasive access to the spine as compared to traditional open access surgical approaches.

X-spine currently markets and sells products in the United States and several other countries. For the year ended December 31, 2014, international sales represented approximately 4% of X-spine's revenue. X-spine has made significant investments in building a managed independent sales organization consisting of direct sales managers, independent sales agencies and distributor partners. As of December 31, 2014, the X-spine global sales force consisted of multiple independent sales agencies and medical device distributorships.

X-spine was founded and incorporated in 2004 by neurosurgeon, Dr. Kirschman, in the Dayton, Ohio region.

Competitive Strengths

X-spine believes the following competitive strengths have been instrumental to X-spine's success:

Emphasis on MIS Technologies: X-spine's strategic focus and core competencies are the design, development and commercialization of MIS technologies and techniques. MIS techniques are rapidly becoming the standard of care in the spinal industry and will continue to evolve over the next decade.

Portfolio of Proprietary Technologies: X-spine has developed a comprehensive portfolio of products that address a broad array of spinal pathologies, anatomies and surgical approaches in the complex spine and MIS markets. To protect company innovative technologies and techniques, X-spine maintains and continues to grow its intellectual property portfolio, with over 50 issued patents globally and over 30 patent applications pending.

Lean Product Development Process: Responding quickly and efficiently to the needs of patients, surgeons and hospitals is central to corporate culture and critical to success. Through a vertically integrated process, X-spine can take a product from concept to market using close internal teams and resources.

Multi-channel Distribution Network: X-spine has approximately 150 contracted sales agents and independent distributors in its global distribution channel. The distribution channel consists of multiple sub-channels including direct sales, consignment agents, reseller distributors, and private label distributors and technology licensees.

Products and Services

X-spine's customers are hospitals, medical device distributors, physicians and payors, to whom X-spine delivers best-in-class products, customer-critical services and economic sustainability. During X-spine's 11-year history, it has commercialized approximately 22 product families that are used to treat a variety of spinal and sacroiliac conditions, including trauma, degeneration, deformity and tumor, with an emphasis on MIS. Some of X-spine's key product lines include:

- Launched in early 2011, the Axle® Interspinous Fusion System is a fully modular interspinous device. Available in multiple implantable configurations, the Axle® can be ideally matched to each patient's individual anatomy.

- Launched in late 2013, the Silex® Sacroiliac Joint Fusion System is a sacroiliac fixation system which actively compresses across the SI joint. Sacroiliac dysfunction is increasingly recognized as a frequent contributor to chronic low back pain.

- Launched in 2014, the Xpress™ Minimally Invasive Pedicle Screw System combines minimally invasive functionality to the most common lumbar fixation procedures — pedicle screw fixation.

- The Certex™ Spinal Fixation System consists of screws, hooks, rods, and cross connectors. Various sizes of these implants are available so that adaptations can be made to take into account pathology and individual patient anatomy. It is intended to promote fusion of the subaxial cervical spine and cervico-thoracic junction (C3 – T3 inclusive).

- The Butrex® Anterior Lumbar Buttress Plating System utilizes the patented Resilient Locking Arm Technology to prevent screw back out, while providing repeatable and reliable results. The low profile design, and two point fixation ensures minimal disruption to the local anatomy and high cantilever expulsion resistance. The Butrex® System also features an all-in-one drill guide with a plate retaining feature to allow for greater control during plate placement, and to protect adjacent structures.

- CalixPC™ combines the osteo-equivalent modules of PEEK with the bone contact qualities of titanium. Frictional titanium plasma-coated PEEK implants provide additional biomechanical performance and end-plate visualization.

- The Calix A Peek Lumbar System is an anterior PEEK lumbar system.

- The Calix ATP™ Peek Lumbar System consists of PEEK implants and complementary instrumentations systems.

- Spider® Cervical Plating System.

- The Calix® Cervical Interbody Spacer is comprised of precision instruments and implants to aid in cervical fusion. The combination of PEEK and tantalum markers facilitate radiographic identification of implant placement and fusion.

- The Zyfix™ Facet Fusion System is a minimally invasive facet fusion system featuring a hollow fenestrated titanium compression screw for bone graft introduction. It is intended for bilateral, transfacet fixation of the facet joint in order to provide stability for fusion.

- The Fixcet® Spinal Facet Screw System is a percutaneous facet screw system offering dual-compression thread and single-thread screws. It is intended for posterior fixation to the lumbar spine (L1 to S1 inclusive). It enables a bilateral, transfacet fixation of the facet joint in order to provide stability for fusion.

- The Fortex® Pedicle Screw System consists of titanium alloy bone screws, rods, cross-connectors and associated instruments. The system is indicated for attachment to the pedicles of the thoracic, lumbar, and sacral spine.

- The X90® Pedicle Screw System combines unique rotary locking technology and maximum biomechanical performance allowing for simple rod locking without a separate locking cap or set screw. Through its unified design, the X90® Pedicle Screw System is designed to avoid the problems of cross threading, head splay, and cap loosening, endemic to cap type pedicle screw systems.

- The Irix-A™ Lumbar Integrated Fusion System consists of an integrated titanium ring, surrounded by an outer PEEK ring and three screws. It is intended for spinal fusion procedures at one or two contiguous levels of the lumbosacral spine (L2 – S1 inclusive) in skeletally mature patients for the treatment of degenerative disc disease.

- The Irix-C™ Cervical Integrated Fusion System consists of an integrated titanium ring, surrounded by an outer PEEK ring and two screws. It is intended for spinal fusion procedures at one level (C3 – T1 inclusive) in skeletally mature patients for the treatment of degenerative disc disease.

- The Axle-X™ Interspinous Fusion System is an internal fixation device for spinal surgery in the non-cervical spine (T1 – S1 inclusive). It is a minimally invasive, modular interspinous fusion system with angled spikes that allows for adequate L5 – S1 engagement and other variations in patient anatomy. The Axle-X™ Interspinous Fusion System is designed to provide spinal stability for lumbar fusion procedures, including the treatment of degenerative disc disease, spinal tumors and trauma.

- The X-PORT™ tissue-sparing instrumentation system was designed to maximize surgical access and visualization while minimizing tissue disruption. An ideal partner to the X-spine Fortex pedicle screw system, the radiolucent X-PORT™ retractor component is integrated with a siderail mounted flexible arm for accurate localization and stability. The X-PORT™ system includes integral tissue-sparing instrumentation to allow for compression, distraction and rod placement while maintaining anatomic visualization through the retractor component.

Technology and Intellectual Property

X-spine has developed and maintains an expanding portfolio of intellectual property, which includes over 50 issued patents globally and over 30 patent applications pending. In addition to current product offerings, X-spine continues to invest in the research and development necessary to design, develop and commercialize new surgical solutions for unmet clinical needs. X-spine's product development process utilizes a lean vertically-integrated approach among small teams of product experts to develop class-leading and differentiated products. X-spine has spent $1,911,268 and $2,140,450 in 2013 and 2014, respectively, in research and development expenses. Since early 2010, X-spine has introduced multiple product lines, including products driven by an MIS product focus such as Axle® modular interspinous and Silex® sacroiliac platforms.

X-spine believes in the superiority of its technology and products. As a result, X-spine has invested in the development of the names of its products in order to drive consumer awareness and loyalty to the brand. To protect this investment, X-spine has registered, and continues to seek registration, of these trademarks and monitors and pursues users of names and marks that potentially infringe upon its registered trademarks. X-spine currently owns the following registered trademarks: SILEX®, X-SPINE®, IRIX®, CAPLESS®, CERTEX®, CALIX®, H-GRAFT®, SPIDER, X90®, HYDRAGRAFT®, BUTREX®, FORTEX®, AXLE®, FIXCET®, Capless® and X-spine's square design logo.

To safeguard its proprietary knowledge and technology, X-spine relies upon trade secret protection and non-disclosure/confidentiality agreements with employees, consultants and third party collaboration partners with access to its confidential information. There can be no assurance, however, that these measures will adequately protect against the unauthorized disclosure or use of confidential information, or that third parties will not be able to independently develop similar technology. Additionally, there can be no assurance that any agreements concerning confidentiality and non-disclosure will not be breached, or if breached, that X-spine will have an adequate remedy to protect it against losses. X-spine believes that the intrinsic knowledge and experience of management, advisory board, consultants and personnel and their ability to identify unmet market needs and to create, invent, develop and market innovative and differentiated products are keys to its future success.

Sales and Marketing

X-spine promotes, markets and sells products through a global sales organization comprised of direct sales managers, product specialists, independent sales agents and distributor partners. The global sales organization consists of independent sales agencies and distributors. Each sales manager is assigned a defined territory.

X-spine currently generates revenues from several countries internationally, in addition to the United States. For the year ended December 31, 2014, international sales represented approximately 4% of revenue. The global sales organization provides geographic coverage in regions where X-spine products are sold, including North America, Europe, Middle East, South Africa and Australia. X-spine continually evaluates new market opportunities and expects to expand the number of international markets served.

Relationship with Zimmer Holdings, Inc.

In January 2014, X-spine entered into a license agreement with Zimmer, under which Zimmer granted to X-spine a royalty-bearing, non-exclusive license under certain Zimmer patents to make, have made, use, practice, offer for sale, sell, export and import certain spinal screw, anchor and rod implants. X-spine is required to pay a royalty in the mid-single digits on gross sales of products covered by the in-licensed patents. X-spine's license agreement with Zimmer continues so long as there is an enforceable claim in the in-licensed patents. Either X-spine or Zimmer may terminate the agreement for any material breach by the other party that is not cured within a specified time period or in the event of the other party's insolvency.

Also, in January 2014, X-spine entered into a distribution agreement with Zimmer, under which X-spine granted Zimmer a co-exclusive right to distribute certain X-spine products worldwide. X-spine is entitled to receive a royalty in the low-single digits on net sales of products. X-spine also obtained a non-exclusive, perpetual, worldwide license under certain Zimmer patents to distribute certain of X-spine's products. In consideration for the rights granted to X-spine under the agreement, X-spine will be required to pay a royalty on net sales of certain products in the low-single digits.

Absent earlier termination, the distribution agreement with Zimmer will expire 10 years from the effective date, subject to automatic two-year extensions unless either party notifies the other party in writing that it desires not to renew the agreement. The agreement may be terminated by either party upon the occurrence of a material breach, a force majeure event, or a bankruptcy event. Zimmer may terminate the agreement if X-spine is subject to a change in control event involving a Zimmer competitor or if X-spine breaches a specific regulatory warranty.

Competition

X-spine's currently marketed products are, and any future products commercialized will be, subject to intense competition. Several companies compete or are developing technologies in current and future product areas. As a result, competition will remain intense. Principal competitors include Medtronic Spine and Biologics, DePuy Synthes, Stryker, Globus Medical and NuVasive, which together represent a significant portion of the spine market. X-spine also competes with smaller spine market participants such as Alphatec Spine, LDR Holding Corporation, Orthofix, SeaSpine, and K2 Medical, who generally have a smaller market share than the principal competitors listed above.

Related Party Transactions

Certain former X-spine shareholders, who now own over 10% of our common stock, own a controlling interest in Norwood Tool Company d/b/a Norwood Medical, X-spine's largest supplier. Products purchased from Norwood Medical accounted for approximately 35% and 22% of products purchased by X-spine in 2013 and 2014, respectively. Aggregate payments to Norwood Medical were $4,709,000 in 2013 and $4,654,384 in 2014.

Certain former X-spine shareholders, who now own over 10% of our common stock, also own a controlling interest in Aerobiotix, Inc., a sub-lessor of X-spine's leased facilities until February 1, 2015. Sublease amounts for 2013 and 2014 were $21,100 and $50,640 respectively.

Certain former X-spine shareholders, who now own over 10% of our common stock, were the senior secured debt holders of X-spine until December 2014, when X-spine obtained a line of credit from U.S. Bank, National Association. The line of credit with U.S. Bank was paid in full in connection with our acquisition of X-spine. The largest aggregate amount of principal outstanding under the senior secured debt previously held by former X-spine shareholders was $10 million and the amount of principal and interest paid during 2013 and 2014 was $565,000 and $10,582,100 respectively, at a rate of 6%.

David Kirschman's sister, Deborah Kirschman Klopsch, serves as X-spine's Corporate Counsel and Director of Corporate Compliance. Compensation paid to Ms. Klopsch in 2013 and 2014 was $93,000 and $98,000 respectively.

Governmental Regulation

X-spine markets products that are regulated as medical devices and tissues and therefore is subject to extensive regulation by the FDA, as well as by other domestic and international regulatory bodies. These regulations govern multiple activities that X-spine and suppliers, licensors and partners perform and will continue to perform. These regulated activities include product design and development, testing, manufacturing, labeling, storage, safety, premarket clearance, advertising and promotion, product marketing, sales and distribution, postmarket surveillance and postmarket adverse event reporting.

Regulatory Clearances and Approvals of Medical Devices

Unless an exemption applies, each medical device X-spine wishes to commercially distribute in the United States requires either prior 510(k) clearance or PMA approval from the FDA. The FDA classifies all medical devices into one of three classes. Devices deemed to pose lower risk are categorized as either Class I or II, which requires the manufacturer to submit to the FDA a 510(k) premarket notification requesting clearance of the device for commercial distribution in the United States. Some low risk devices are exempted from this requirement. Devices deemed by the FDA to pose the greatest risk, such as life sustaining, life-supporting or implantable devices, or devices deemed not substantially equivalent to a previously 510(k)-cleared device, are categorized as Class III, requiring premarket approval. All commercially-marketed X-spine medical device products to date have been cleared for marketing and distribution through the 510(k) pathway, unless exempt.

To obtain 510(k) clearance, we must submit a premarket notification to the FDA demonstrating the proposed device to be substantially equivalent to a previously cleared 510(k) device, a device that was in commercial distribution before May 28, 1976 for which the FDA has not yet called for the submission of PMAs, or is a device that has been reclassified from Class III to either Class II or I. The FDA's 510(k) clearance pathway usually takes from three to 12 months from the date the notification is submitted, but it can take considerably longer, depending on the extent of requests for additional information from the FDA and the amount of time a sponsor takes to fulfill them, and clearance is never assured. Although many 510(k) premarket notifications are cleared without clinical data, in some cases, the FDA requires significant clinical data to support substantial equivalence. In reviewing a premarket notification, the FDA may request additional information, including clinical data, which may significantly prolong the review process.

After a device receives 510(k) clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, requires a new 510(k) clearance or could require premarket approval. The FDA requires each manufacturer to make this decision initially, but the FDA can review any such decision and can disagree with a manufacturer's determination. If the FDA disagrees with a manufacturer's determination, the FDA can require the manufacturer to cease marketing and/or recall the modified device until 510(k) clearance or premarket approval is obtained. X-spine has made, and plans to continue to make, product enhancements that it believes do not require new 510(k) clearances. If the FDA requires X-spine to seek 510(k) clearance or premarket approval for any such modifications to previously cleared products, X-spine may be required to cease marketing or recall the modified device until this clearance is obtained, and significant regulatory fines or penalties could result.

A PMA must be submitted if a device is in Class III (although the FDA has the discretion to continue to allow certain pre-amendment Class III devices to use the 510(k) process) or cannot be cleared through the 510(k) clearance process. A PMA must be supported by extensive data, including, but not limited to, technical information, preclinical data, clinical trial data, manufacturing data and labeling to demonstrate to the FDA's satisfaction the safety and efficacy of the device for its intended use. After a PMA is submitted and filed, the FDA begins an in-depth review of the submitted information, which typically takes between one and three years, but may take significantly longer. During

this review period, the FDA may request additional information or clarification of information already provided. Also, during the review period, an advisory panel of experts from outside the FDA will usually be convened to review and evaluate the application and provide recommendations to the FDA as to the approvability of the device. In addition, the FDA will conduct a pre-approval inspection of the manufacturing facility to ensure compliance with QSR, which imposes elaborate design development, testing, control, documentation and other quality assurance procedures in the design and manufacturing process. The FDA may approve a PMA with post-approval conditions intended to ensure the safety and effectiveness of the device including, among other things, restrictions on labeling, promotion, sale and distribution and collection of long-term follow-up data from patients in the clinical study that supported approval. Failure to comply with the conditions of approval can result in materially adverse enforcement action, including the loss or withdrawal of the approval. New PMAs or PMA supplements are required for significant modifications to the manufacturing process, labeling of the product and design of a device that is approved through the PMA process. PMA supplements often require submission of the same type of information as a PMA, except that the supplement is limited to information needed to support any changes from the device covered by the original PMA, and may not require as extensive clinical data or the convening of an advisory panel.

No X-spine existing products are currently approved under a PMA. In the future, X-spine may decide to strategically commercialize products in the United States that would require a PMA, but there are no plans to do so at the present time. Clinical trials are almost always required to support a PMA and are sometimes required for a 510(k) premarket notification.

Ongoing FDA Regulation

After a device is placed on the market, numerous FDA and other regulatory requirements continue to apply. These include: establishment registration and device listing with the FDA; the QSR, which requires manufacturers to follow stringent design, testing, process control, documentation and other quality assurance procedures; labeling regulations, which prohibit the promotion of products for unapproved, i.e. "off-label," uses and impose other restrictions on labeling; Medical Devise Reporting regulations, which require that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur; corrections and removal reporting regulations, which require that manufacturers report to the FDA field corrections and product recalls or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the Federal Food, Drug, and Cosmetic Act (the "FDCA") that may present a risk to health; and requirements to conduct postmarket surveillance studies to establish continued safety data.

The FDA enforces these requirements by inspection and market surveillance. Failure to comply with applicable regulatory requirements may result in enforcement action by the FDA, which may include one or more of the following sanctions:

- untitled letters or warning letters;
- fines, injunctions and civil penalties;
- mandatory recall or seizure of our products;
- administrative detention or banning of our products;
- operating restrictions, partial suspension or total shutdown of production;
- refusing our request for 510(k) clearance or PMA of new product versions;

- revocation of 510(k) clearance or PMAs previously granted; and

- criminal prosecution and penalties.

International Regulation

Many foreign countries have regulatory bodies and restrictions similar to the FDA. International sales are subject to foreign government regulation, the requirements of which vary substantially from country to country. The time required to obtain approval in a foreign country or to obtain a CE Certificate of Conformity may be longer or shorter than that required for FDA approval and the related requirements may differ. Some third-world countries accept CE Certificates of Conformity or FDA clearance or approval as part of applications of approval for marketing of medical devices in their territory. Other countries, including Brazil, Canada, Australia and Japan, require separate regulatory filings.

Tissue, Cellular and Tissue Based Product

X-spine currently distributes Axograft™, HGraft™, and HydraGraft™ allograft products, which are manufactured by third-party suppliers. Tissue-only products are regulated by the FDA as HCT/Ps. FDA regulations do not currently require clearance or approval of a marketing application before marketing these products. Tissue banks must register their establishments, list products with the FDA and comply with Current Good Tissue Practices for HCT/P Establishments.

The FDA periodically inspects tissue processors to determine compliance with these requirements. Violations of applicable FDA regulations could adversely affect the continued marketing of these products and could result in untitled letters and warning letters; fines, injunctions and civil penalties; mandatory recall or seizure of our products; administrative detention or banning of our products; operating restrictions, partial suspension or total shutdown of production; and/or criminal prosecution and penalties. Entities that provide X-spine with allograft bone tissue are responsible for performing donor recovery, donor screening and donor testing and compliance with those aspects of the Current Good Tissue Practices regulations that regulate those functions are dependent upon the actions of these independent entities.

Healthcare Fraud and Abuse

Healthcare fraud and abuse laws apply to X-spine business when a customer submits a claim for an item or service that is reimbursed under Medicare, Medicaid or most other federally-funded healthcare programs. The federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, items or services for which payment may be made, in whole or in part, under federal health care programs, such as by Medicare or Medicaid. The federal Anti-Kickback Statute is subject to evolving interpretations and has been applied by government enforcement officials to a number of common business arrangements in the medical device industry. For example, the federal government has enforced the Anti-Kickback Statute to reach large settlements with device manufacturers based on allegedly sham consultant arrangements with physicians. A number of states also have anti-kickback laws that establish similar prohibitions that may apply to items or services reimbursed by government programs as well as any third-party payors, including commercial insurers.

The federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”) created new federal criminal statutes that prohibit, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

Further, the recently enacted PPACA, among other things, clarified the intent requirements of the federal Anti-Kickback Statute and the federal criminal statutes governing healthcare fraud. Specifically, a person or entity can be found to have violated the statutes without actual knowledge of these statutes or specific intent to violate them. In addition, the PPACA amended the Social Security Act to provide that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act or federal civil money penalties statute. Recent amendments to the federal False Claims Act provide that a violation of the federal Anti-Kickback Statute is also a violation of the federal False Claims Act, subjecting healthcare entities to treble damages and mandatory penalties for

each false claim or statement.

Additionally, the civil False Claims Act prohibits, among other things, knowingly presenting or causing the presentation of a false, fictitious or fraudulent claim for payment of federal funds, or knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government. Actions under the federal False Claims Act may be brought by the Attorney General or as a qui tam action by a private individual in the name of the government. Violations of the federal False Claims Act can result in very significant monetary penalties and treble damages. The federal government is using the False Claims Act, and the accompanying threat of significant liability, in its investigations of healthcare companies throughout the country for a wide variety of Medicare billing practices, as well as federal Anti-Kickback Statute violations and certain marketing practices, including off-label promotion, and has obtained multi-million and multi-billion dollar settlements under the federal False Claims Act in addition to individual criminal convictions under applicable criminal statutes. Given the significant size of actual and potential settlements, it is expected that the government will continue to devote substantial resources to investigating healthcare providers' and suppliers' compliance with the healthcare reimbursement rules and fraud and abuse laws.

The federal False Claims Act amendments in 2009 and 2010 expanded the scope of the liability for health care entities generally to potentially reach violations of regulatory duties, such as good manufacturing practices. There have been large settlements in the life sciences arena related to FDA regulatory violations for promotional activities and good manufacturing practices.

Even in instances where a company may have no actual liability, the federal False Claims Act private citizen provisions (qui tam) allow the filing of federal False Claims Act actions under seal and impose a mandatory duty on the U.S. Department of Justice to investigate such allegations. Most private citizen actions are declined by the Department of Justice or dismissed by federal courts. However, the investigation costs for a company can be significant and material even if the allegations are without merit.

Federal False Claims Act liability is potentially significant in the health industry because the statute provides for treble damages and mandatory minimum penalties of $5,500 to $11,000 per false claim or statement. Because of the potential for large monetary exposure, health care companies resolve allegations without admissions of liability for significant and material amounts to avoid the uncertainty of treble damages that may awarded in litigation proceedings. They may be required, however, to enter into corporate integrity agreements with the government, which may impose substantial costs to companies to ensure compliance. There has also been a recent trend of increased federal and state regulation of payments and transfers of value provided to healthcare professionals or entities. The Physician Payment Sunshine Act imposes annual reporting requirements on device manufacturers for payments and other transfers of value provided by them, directly or indirectly, to physicians (including physician family members) and teaching hospitals, as well as ownership and investment interests held by physicians. A manufacturer’s failure to submit timely, accurately and completely the required information for all payments, transfers of value or ownership or investment interests may result in civil monetary penalties of up to an aggregate of $150,000 per year, and up to an aggregate of $1.0 million per year for “knowing failures.” Manufacturers must submit reports by the 90th day of each calendar year. Certain states also mandate implementation of commercial compliance programs, impose restrictions on device manufacturer marketing practices and require tracking and reporting of gifts, compensation and other remuneration to healthcare professionals and entities. The shifting commercial compliance environment and the need to build and maintain robust and expandable systems to comply with different compliance or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may fail to comply fully with one or more of these requirements.

If a governmental authority were to conclude that X-spine is not in compliance with applicable laws and regulations, X-spine and its officers and employees could be subject to severe criminal and civil penalties, including, for example, exclusion from participation as a supplier of product to beneficiaries covered by Medicare, Medicaid and other federal health care programs.

Coverage and Reimbursement

X-spine's currently approved products are commonly treated as general supplies utilized in spinal and orthopedic surgery and if covered by third-party payors, are paid for as part of the surgical procedure. Accordingly, healthcare providers in the United States generally rely on third-party payors, principally private insurers and governmental payors such as Medicare and Medicaid, to cover and reimburse all or part of the cost of a spine surgery in which X-spine products are used. Sales volumes and prices of X-spine products will continue to depend in large part on the availability of coverage and reimbursement from such third-party payors. Third-party payors perform analyses on new technologies to determine if they are medically necessary before providing coverage for them. These third-party payors may still deny reimbursement on covered technologies if they determine that a device used in a procedure was not used in accordance with the payor's coverage policy. Particularly in the United States, third-party payors continue to carefully review, and increasingly challenge, the prices charged for procedures and medical products.

In the United States, a large percentage of insured individuals receive their medical care through managed care programs, which monitor and often require pre-approval of the services that a member will receive. Some managed care programs pay their providers on a per capita basis, which puts the providers at financial risk for the services provided to their patients by paying these providers a predetermined payment per member per month and, consequently, may limit the willingness of these providers to use X-spine products.

The overall escalating cost of medical products and services has led to, and will likely continue to lead to increased pressures on the healthcare industry to reduce the costs of products and services. Government or private third-party payors cannot be guaranteed to cover and reimburse the procedures using X-spine products in whole or in part in the future or that payment rates will be adequate. In addition, it is possible that future legislation, regulation or coverage and reimbursement policies of third-party payors will adversely affect the demand for X-spine products or the ability to sell them on a profitable basis.

Internationally, reimbursement and healthcare payment systems vary substantially from country to country and include single-payor, government-managed systems as well as systems in which private payors and government managed systems exist side-by-side. X-spine's ability to achieve market acceptance or significant sales volume in international markets will be dependent in large part on the availability of reimbursement for procedures performed using company products under the healthcare payment systems in such markets. A number of countries may require X-spine to gather additional clinical data before recognizing coverage and reimbursement for its products.

Employees

As of December 7, 2015, X-spine had 90 full-time employees and 93 total employees, of whom 22 were in operations, 12 were in sales, 7 were in marketing, 17 were in regulatory compliance, 11 were in research and development, 6 were in manufacturing, 8 were in customer service and 10 were in administrative functions. In addition, X-spine makes use of a varying number of outsourced services to manage normal business cycles. None of X-spine's employees are covered by a collective bargaining agreement and X-spine management considers relations with employees and service partners to be good.

Facilities

X-spine leases its headquarters and facilities, which are located at 452 and 444 Alexandersville Road, Miamisburg, Ohio 45342. The leased property contains approximately 31,600 square feet, of which approximately 19,260 square feet are office space and approximately 4,740 square feet are warehouse space. The space includes a manufacturing facility with multi-axis CNC machining capacity. The facility specializes in the manufacturing of prototypes, custom

instrumentation, test fixtures and key production items. The space includes an advanced biomechanical laboratory and a full bioskills lab for cadaver surgery and clinician training. The facilities are leased under a five-year lease which runs through November 2016 and has a monthly lease payment of $21,379 plus CAM charges and taxes. The lease has a three-year renewal option.

Litigation

The medical device industry is characterized by frequent claims and litigation, including product liability claims and claims regarding patent and other intellectual property rights as well as improper hiring practices. X-spine is not aware of any pending or threatened legal proceeding against X-spine that is expected to have a material adverse effect on X-spine business, operating results or financial condition. However, X-spine is a party in multiple legal actions, including product liability claims, involving claimants seeking various remedies, including monetary damages, and none of the outcomes are certain or entirely within X-spine’s control.

Government Regulation

Food and Drug Administration

Our research, development and clinical programs, as well as our manufacturing and marketing operations, are subject to extensive regulation in the United States and other countries. Most notably, all of our products sold in the United States are subject to the FDCA and the Public Health Service Act (the "PHSA"), as implemented and enforced by the FDA. Certain of our products sold in the United States require FDA clearance to market under Section 510(k) of the FDCA. Foreign countries may require similar or more onerous approvals to manufacture or market these products. Many of our products are marketed as HCT/Ps solely under Section 361 of the PHSA.

The FDA governs the following activities that we perform or that are performed on our behalf, to ensure that medical products distributed domestically or exported internationally are safe and effective for their intended uses:

- product design, development and manufacture;
- product safety, testing, labeling and storage;
- record keeping procedures;
- product marketing, sales and distribution; and
- post-marketing surveillance, complaint handling, medical device reporting, reporting of deaths, serious injuries or device malfunctions and repair or recall of products.

There are numerous FDA regulatory requirements governing the approval or clearance and marketing of our products. These include:

- product listing and establishment registration, which helps facilitate FDA inspections and other regulatory action;

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QSR, which requires manufacturers, including third-party manufacturers, to follow stringent design, testing, control, documentation and other quality assurance procedures during all aspects of the manufacturing process;

- labeling regulations and FDA prohibitions against the promotion of products for uncleared, unapproved or off-label use or indication;

- clearance or approval of product modifications that could significantly affect safety or efficacy or that would constitute a major change in intended use of a cleared product;

- approval of product modifications that affect the safety or effectiveness of an approved product;

- medical device reporting regulations, which require that manufacturers comply with FDA requirements to report if their device may have caused or contributed to a death or serious injury, or has malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction of the device or a similar device were to recur;

- post-approval restrictions or conditions, including post-approval study commitments;

- post-market surveillance regulations, which apply when necessary to protect the public health or to provide additional safety and effectiveness data for the device; and

- notices of correction or removal and recall regulations.

We have registered our facilities with the FDA as a medical device manufacturer. The FDA has broad post-market and regulatory enforcement powers. We are subject to announced and unannounced inspections by the FDA to determine our compliance with the QSR and other regulations and these inspections may include the manufacturing facilities of our suppliers. Failure by us or by our suppliers to comply with applicable regulatory requirements can result in enforcement action by the FDA or other regulatory authorities, which may result in sanctions including, but not limited to:

- untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties;
- unanticipated expenditures to address or defend such actions;
- customer notifications for repair, replacement, refunds;
- recall, detention or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for 510(k) clearance or premarket approval of new products or modified products;
- operating restrictions;
- withdrawing clearances or approvals that have already been granted;
- refusal to grant export approval for our products; or
- criminal prosecution.

Advertising and promotion of medical devices, in addition to being regulated by the FDA, are also regulated by the Federal Trade Commission and by state regulatory and enforcement authorities. Recently, promotional activities for FDA-regulated products of other companies have been the subject of enforcement action brought under healthcare reimbursement laws and consumer protection statutes. In addition, under the federal Lanham Act and similar state laws, competitors and others can initiate litigation relating to advertising claims. In addition, we are required to meet regulatory requirements in countries outside the United States, which can change rapidly with relatively short notice.

FDA's Premarket Clearance and Approval Requirements

Unless an exemption applies, before we can commercially distribute medical devices in the United States, depending on the type of device, we must obtain either prior 510(k) clearance or premarket approval from the FDA. The FDA classifies medical devices into one of three classes:

- Class I devices, which are subject to only general controls (e.g., labeling, medical devices reporting, and prohibitions against adulteration and misbranding) and, in some cases, to the 510(k) premarket clearance requirements;

- Class II devices, generally requiring 510(k) premarket clearance before they may be commercially marketed in the United States; and

- Class III devices, consisting of devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting or implantable devices, or devices deemed not substantially equivalent to a predicate device, generally requiring submission of a PMA supported by clinical trial data.

510(k) Clearance Pathway

When a 510(k) clearance is required, we must submit a premarket notification demonstrating that our proposed device is substantially equivalent to a previously cleared 510(k) device or a device that was in commercial distribution before May 28, 1976 for which the FDA has not yet called for the submission of PMAs. By regulation, the FDA is required to clear or deny a 510(k) premarket notification within 90 days of submission of the application. As a practical matter, clearance may take longer. The FDA may require further information, including clinical data, to make a determination regarding substantial equivalence. Our OsteoSelect DBM Putty and our Elutia coated wound drains are currently cleared under a 510(k).

Any modification to a 510(k)-cleared device that would constitute a major change in its intended use, or any change that could significantly affect the safety or effectiveness of the device, requires a new 510(k) clearance and may even, in some circumstances, require a PMA, if the change raises complex or novel scientific issues or the product has a new intended use. The FDA requires every manufacturer to make the determination regarding the need for a new 510(k) submission in the first instance, but the FDA may review any manufacturer's decision. We have modified our devices since they received the FDA clearance. If the FDA were to disagree with any of our determinations that changes did not require a new 510(k), it could require us to cease marketing and distribution and/or recall the modified device until 510(k) clearance or PMA approval is obtained. If the FDA requires us to seek 510(k) clearance or PMA approval for any modifications, we may be required to cease marketing and/or recall the modified device, if already in distribution, until 510(k) clearance or PMA approval is obtained and we could be subject to significant regulatory fines or penalties.

There is no guarantee that the FDA will grant 510(k) clearance or PMA approval of our future products and failure to obtain necessary clearances or approvals for our future products would adversely affect our ability to grow our business. Delays in receipt or failure to receive clearances or approvals, the loss of previously received clearances or approvals, or the failure to comply with existing or future regulatory requirements could reduce our sales, profitability and future growth prospects.

Premarket Approval Pathway

A PMA must be submitted to the FDA if the device cannot be cleared through the 510(k) process. A PMA must be supported by extensive data, including but not limited to, technical, preclinical, clinical trials, manufacturing and labeling to demonstrate to the FDA's satisfaction the safety and effectiveness of the device for its intended use. No device that we are marketing to date has required premarket approval. During the review period, the FDA will typically request additional information or clarification of the information already provided. Also, an advisory panel of experts from outside the FDA may be convened to review and evaluate the application and provide recommendations to the FDA as to the approvability of the device. The FDA may or may not accept the panel's

recommendation. In addition, the FDA will generally conduct a pre-approval inspection of the manufacturing facility or facilities to ensure compliance with the QSRs. To date, none of our products have required approval of a PMA.

New PMAs or PMA supplements are required for modifications that affect the safety or effectiveness of the device, including, for example, certain types of modifications to the device's indication for use, manufacturing process, labeling and design. PMA supplements often require submission of the same type of information as a PMA, except that the supplement is limited to information needed to support any changes from the device covered by the original PMA and may not require as extensive clinical data or the convening of an advisory panel. There is no guarantee that the FDA will grant PMA approval of our future products and failure to obtain necessary approvals for our future products would adversely affect our ability to grow our business. Delays in receipt or failure to receive approvals, the loss of previously received approvals, or the failure to comply with existing or future regulatory requirements could reduce our sales, profitability and future growth prospects.

Clinical Trials

Clinical trials are generally required to support a PMA and are sometimes required for 510(k) clearance. Such trials generally require an IDE approved in advance by the FDA for a specified number of patients and study sites, unless the product is deemed an nonsignificant risk device eligible for more abbreviated IDE requirements. Clinical trials are subject to extensive monitoring, recordkeeping and reporting requirements. Clinical trials must be conducted under the oversight of an IRB for the relevant clinical trial sites and must comply with FDA regulations, including but not limited to those relating to good clinical practices. To conduct a clinical trial, we also are required to obtain the patients' informed consent in form and substance that complies with both FDA requirements and state and federal privacy and human subject protection regulations. We, the FDA or the IRB could suspend a clinical trial at any time for various reasons, including a belief that the risks to study subjects outweigh the anticipated benefits. Even if a trial is completed, the results of clinical testing may not adequately demonstrate the safety and efficacy of the device or may otherwise not be sufficient to obtain FDA approval to market the product in the United States.

FDA Regulation of Human Tissue Products

The FDA regulates the manufacture of human tissue products under the authority of the PHSA and, in some cases, under the FDCA as well. Human tissues are subject to the FDA's HCT/P regulations, or may also be subject to FDA's drug, biological product, or medical device regulations.

Under Section 361 of the PHSA, the FDA issued specific regulations governing the use of HCT/Ps in humans. Pursuant to Part 1271 of Title 21 of the Code of Federal Regulations, the FDA established a unified registration and listing system for establishments that manufacture and process HCT/Ps. The regulations also include provisions pertaining to donor eligibility determinations; current good tissue practices covering all stages of production, including harvesting, processing, manufacture, storage, labeling, packaging, and distribution; and other procedures to prevent the introduction, transmission, and spread of communicable diseases

The HCT/P regulations strictly constrain the types of products that may be regulated solely under these regulations. Factors considered include the degree of manipulation, whether the product is intended for a homologous function, whether the product has been combined with another article, and the product's effect or dependence on the body's metabolic function. In those instances where cells, tissues, and cellular and tissue- based products have been only minimally manipulated, are intended strictly for homologous use, have not been combined with noncellular or nontissue substances, and do not depend on or have any effect on the body's metabolism, the manufacturer is only required to register with the FDA, submit a list of manufactured products, adopt and implement procedures for the control of communicable diseases and comply with Good Tissue Practices and other provisions of 21 CFR Part 1271. If one or more of the above factors (minimal manipulation, homologous use, etc.) has been exceeded, the product would be regulated as a drug, biological product, or medical device rather than an HCT/P. There is no requirement

that manufacturers of human tissue products confirm with FDA that their products are eligible for marketing without FDA review and approval or clearance of a marketing application. However, after a human tissue product is marketed without approval or clearance of a marketing application, FDA may inform a company that the product does not meet all the criteria, and that a medical device or biological product marketing application is required.

Healthcare Fraud and Abuse

Federal healthcare fraud and abuse laws apply to our business when a customer submits a claim for an item or service that is reimbursed under Medicare, Medicaid or most other federally-funded healthcare programs. The federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, items or services for which payment may be made, in whole or in part, under federal healthcare programs, such as by Medicare or Medicaid. The Anti-Kickback Statute is subject to evolving interpretations and has been applied by government enforcement officials to a number of common business arrangements in the medical device industry. For example, the federal government has enforced the Anti-Kickback Statute to reach large settlements with device manufacturers based on allegedly sham consultant arrangements with physicians. A number of states also have anti-kickback laws that establish similar prohibitions that may apply to items or services reimbursed by government programs, as well as any third-party payors, including commercial insurers.

HIPAA created new federal criminal statutes that prohibit among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

Further, the recently enacted PPACA, among other things, clarified the intent requirements of the Anti-Kickback Statute and the federal criminal statutes governing healthcare fraud. Specifically, a person or entity can be found to have violated the statutes without actual knowledge of these statutes or specific intent to violate them. In addition, the PPACA amended the Social Security Act to provide that the government may assert that a claim including items or services resulting from a violation of the Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act or the federal civil money penalties statute. Recent amendments to the False Claims Act further provide that a violation of the Anti-Kickback Statute also is a violation of the False Claims Act, subjecting healthcare entities to treble damages and mandatory penalties for each false claim or statement.

Additionally, the False Claims Act prohibits, among other things, knowingly presenting or causing the presentation of a false, fictitious or fraudulent claim for payment of federal funds, or knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government. Actions under the False Claims Act may be brought by the Attorney General or as a qui tam action by a private individual in the name of the government. Violations of the False Claims Act can result in very significant monetary penalties and treble damages. The federal government is using the False Claims Act, and the accompanying threat of significant liability, in its investigations of healthcare companies throughout the country for a wide variety of Medicare billing practices, as well as Anti-Kickback Statute violations and certain marketing practices, including off-label promotion, and has obtained multi-million and, in some cases, multi-billion dollar settlements under the False Claims Act in addition to individual criminal convictions under applicable criminal statutes. Given the significant size of actual and potential settlements, it is expected that the government will continue to devote substantial resources to investigating compliance with the healthcare fraud and abuse laws.

The False Claims Act amendments in 2009 and 2010 expanded the scope of liability for healthcare entities generally to potentially reach violations of regulatory duties, such as good manufacturing practices. There have been large settlements in the life sciences arena related to FDA regulatory violations for promotional activities and good manufacturing practices.

Even in instances where a company may have no actual liability, the False Claims Act private citizen provisions (qui tam) allow the filing of False Claims Act actions under seal and impose a mandatory duty on the U.S. Department of Justice to investigate such allegations. Most private citizen actions are declined by the Department of Justice or dismissed by federal courts. However, the investigation costs for a company can be significant and material even if the allegations are without merit.

False Claims Act liability is potentially significant in the healthcare industry because the statute provides for treble damages and mandatory minimum penalties of $5,500 to $11,000 per false claim or statement. Because of the potential for large monetary exposure, healthcare companies resolve allegations without admissions of liability oftentimes for significant and material amounts to avoid the uncertainty of treble damages and per claim penalties that may awarded in litigation proceedings. They may be required, however, to enter into corporate integrity agreements with the government, which may impose substantial costs to companies to ensure compliance.

There also has been a recent trend of increased federal and state regulation of payments and transfers of value provided to healthcare professionals or entities. The Physician Payment Sunshine Act imposes annual reporting requirements on device manufacturers for payments and other transfers of value provided by them, directly or indirectly, to physicians (including physician family members) and teaching hospitals, as well as ownership and investment interests held by physicians. A manufacturer's failure to submit timely, accurately and completely the required information for all payments, transfers of value or ownership or investment interests may result in civil monetary penalties of up to an aggregate of $150,000 per year, and up to an aggregate of $1.0 million per year for "knowing failures." Manufacturers must submit reports by the 90th day of each calendar year. Certain states also mandate implementation of commercial compliance programs, impose restrictions on device manufacturer marketing practices and require tracking and reporting of gifts, compensation and other remuneration to healthcare professionals and entities. The shifting commercial compliance environment and the need to build and maintain robust and expandable systems to comply with different compliance or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may fail to comply fully with one or more of these requirements.

If a governmental authority were to conclude that we were not in compliance with applicable laws and regulations, the Company and our officers and employees could be subject to severe criminal and civil penalties, including, for example, exclusion from participation as a supplier of product to beneficiaries covered by Medicare, Medicaid and other federal healthcare programs.

Coverage and Reimbursement

Our currently approved products are commonly treated as general supplies utilized in surgical procedures and if covered by third-party payors, are paid for as part of the surgical procedure. Accordingly, healthcare providers in the United States generally rely on third-party payors, principally private insurers and governmental payors, such as Medicare and Medicaid, to cover and reimburse all or part of the cost of a surgery in which our products are used. Sales volumes and prices of our products will continue to depend in large part on the availability of coverage and reimbursement from such third-party payors.

Some third-party payors perform analyses on new technologies to determine if they are medically necessary before providing coverage for them. These third-party payors potentially could deny reimbursement on covered technologies if they determine that a product used in a procedure was not used in accordance with the payor's coverage policy. Particularly in the United States, third-party payors continue to carefully review, and increasingly challenge, the prices charged for procedures and medical products.

In the United States, a large percentage of insured individuals receive their medical care through managed care programs, which monitor and often require pre-approval of the services that a member will receive. Some managed care programs pay their providers on a per capita basis, which puts the providers at financial risk for the services

provided to their patients by paying these providers a predetermined payment per member per month and, consequently, may limit the willingness of these providers to use our products.

The overall escalating cost of medical products and services has led to, and will likely continue to lead to increased pressures on the healthcare industry to reduce the costs of products and services. Government or private third-party payors cannot be guaranteed to cover and reimburse the procedures using our products in whole or in part in the future or to provide payment rates that will be considered adequate by our customers. In addition, it is possible that future legislation, regulation or coverage and reimbursement policies of third-party payors will adversely affect the demand for our products or the ability to sell them on a profitable basis.

Internationally, reimbursement and healthcare payment systems vary substantially from country to country and include single-payor and government-managed systems, as well as systems in which private payors and government managed systems exist side-by-side. Our ability to achieve market acceptance or significant sales volume in international markets will be dependent in large part on the availability of reimbursement for procedures performed using our products under the healthcare payment systems in such markets. A number of countries may require us to gather additional clinical data before recognizing coverage and reimbursement for our products.

Management

Directors and Executive Officers

The names, ages and positions of our directors and executive officers are as follows:

Name	Age	Position
Daniel Goldberger	57	Director, Chief Executive Officer
Kent Swanson	71	Chairman of the board
Michael Lopach	67	Director
Jon Wickwire	71	Director
John Deedrick	53	Director
David Goodman, M.D.	59	Director
David L. Kirschman, M.D.	45	Director, Executive Vice President and Chief Scientific Officer
John P. Gandolfo	55	Chief Financial Officer
Robert Di Silvio	62	President
Darrel Holmes	62	Chief Operating Officer

The principal occupations for the past five years (and, in some instances, for prior years) of each of our directors and executive officers are as follows.

Daniel Goldberger, Director, Chief Executive Officer, has more than 25 years of experience as a leader of both publicly traded and privately held medical technology companies, with a proven track record of building revenue and profits through the introduction of market changing product innovations. He was most recently Chief Executive Officer and a director of Sound Surgical Technologies from April 2007 through its merger with Solta Medical (Nasdaq: SLTM) in February 2013. Previously, he was President/Chief Executive Officer and a director of Xcorporeal (Amex XCR) an innovator in portable dialysis and Glucon (private) a developer of glucose measurement technology and several other successful enterprises. Mr. Goldberger is a named inventor on more than 60 US patents. He holds a B.S. in Mechanical Engineering from the Massachusetts Institute of Technology and an MS in Mechanical Engineering from Stanford University. Mr. Goldberger contributes medical industry and management experience to the board of directors.

Kent Swanson, Chairman of the board, was with Accenture for over 32 years, retiring from the firm in 2001 as a Senior Partner. He held global leadership and management positions in a wide range of industries and geographies. From 2001 to 2008, he was the board chair of ALN Medical Management; providing outsourced services for clinic-based physician practices. Also from 2001 to 2008, he was board chair for Boys Hope Girls Hope of Colorado,

a charitable organization providing a home and scholarship education for disadvantaged children with significant capabilities and promise. From 2002 to 2009, he was a board member, audit committee member and compensation committee chair for MPC Computers. Mr. Swanson graduated with distinction from the University of Minnesota earning an M.S. in Business and received an M.B.A. from the University of Chicago in 1969. Mr. Swanson contributes significant management experience to the board of directors.

Michael Lopach, Director, is a certified public accountant with over 40 years of accounting experience. Mr. Lopach spent 27 years of his career with Galusha, Higgins, Galusha & Co., the largest privately held accounting firm in Montana and northern Idaho, where he served as president and Chief Executive Officer. In 1999, Mr. Lopach founded Lopach & Carparelli PC, an accounting firm that focuses on medical practitioners. Mr. Lopach received his MBA from the University of Notre Dame. Mr. Lopach serves as chairman of the audit committee. Mr. Lopach contributes significant accounting experience to the board of directors.

Jon Wickwire, Director, is an attorney and founding shareholder of Wickwire Gavin, P.C., a national construction law firm which merged with Akerman Senterfitt, one of the top 100 law firms in the United States. Mr. Wickwire served as lead counsel on major infrastructure litigation and alternative dispute resolutions, both domestically and internationally, throughout his 35 year career, and was the founding fellow of the American College of Construction Lawyers. Mr. Wickwire also served as the founding chairman of the College of Scheduling, an organization dedicated to advancing the techniques, practice and profession of project scheduling, and has authored several books and articles on construction and public contract law, including *Construction Management: Law and Practice* and *The Construction Subcontracting Manual: Practice Guide with Forms* . Mr. Wickwire currently serves on the advisory board for Crunchies Food Company. Mr. Wickwire is a graduate of the University of Maryland and Georgetown University Law Center. Mr. Wickwire serves as chairman of the nominations and corporate governance committee. Mr. Wickwire contributes legal experience to the board of directors.

John Deedrick, Director, is an experienced senior executive with 30 years of experience in healthcare, defense, and business consulting. He was a co-founder and managing director for Accuitive Medical Ventures and a corporate venture capitalist for Mayo Clinic. Mr. Deedrick currently serves as President and Chief Executive Officer of CHIP Solutions and is founder and chairman of GreatDeeds, a Minnesota non-profit organization. Mr. Deedrick has served on the board of numerous early, mid and growth stage healthcare companies over the last 17 years, including GreatDeeds and Ironwood Springs Ranch. Mr. Deedrick received his undergraduate degree from the University of Northwestern St. Paul (Roseville, MN) and his MBA from St. Thomas University (St. Paul, MN). Mr. Deedrick contributes significant financial, management and industry experience to the board of directors.

David Goodman, M.D., Director, has devoted his career to improving health through the development and integration of innovative technologies into clinical practice. Dr. Goodman currently serves as co-founder and Chief Medical Officer of FirstVitals Health & Wellness, a technology-enabled service company focused on preventing complications such as foot ulcers and lower extremity amputations in people with diabetes. Dr. Goodman also serves on the board of directors of NEUROMetrix (Nasdaq: NURO), a neurotechnology company focused on the early detection of diabetic peripheral neuropathy (DPN) and treatment of painful diabetic neuropathy (PDN). In addition, Dr. Goodman served as a director of Sound Surgical Technologies LLC, a private manufacturer of aesthetic surgical tools until its successful acquisition by Solta Medical (Nasdaq: SLTM) in 2013. Dr. Goodman has a long track record of accomplishment in executive management as well as through his own entrepreneurial efforts. As an executive, Dr. Goodman served as Chief Executive Officer of SEDLine, an EEG-based brain monitoring company as well as the EVP of Business Development for Masimo (Nasdaq: MASI), a leading company in non-invasive patient monitoring. As an entrepreneur, Dr. Goodman was the founding Chief Executive Officer of LifeMasters Supported SelfCare, a pioneering disease management company, and Aradigm, a developer of electronic aerosol drug delivery systems. Dr. Goodman began his career as the first engineer at Nellcor, the company that developed modern pulse oximetry. He holds a B.A.S. in applied science and bioengineering and a M.S.E. in bioengineering from the University of Pennsylvania. Dr. Goodman also received an M.D. cum laude from Harvard Medical School and the Harvard-M.I.T. Division of Health Sciences and Technology. Dr. Goodman completed his internship at the University of California, San Francisco (UCSF) in the Department of Medicine. He holds 18 issued and 4 pending US patents and maintains clinical practices in California and Hawaii. Dr. Goodman contributes medical and industry experience to the board of directors.

David L. Kirschman, M.D., Director, Executive Vice President and Chief Scientific Officer, is an inventor and entrepreneur with a background in the medical device industry. He completed training in neurosurgery with a specialization in instrumented spinal surgery. Dr. Kirschman retired from the practice of medicine in 2006. Dr. Kirschman has issued and pending patents for a wide range of spinal devices and has been the President of X-spine since 2004. In connection with the acquisition of X-spine by the Company on July 31, 2015, Dr. Kirschman became a member of our board of directors and our Executive Vice President and Chief Scientific Officer. Dr. Kirschman also serves on the board of directors of Aerobiotix, Inc. He received his B.S. in Biological Science cum laude from Colorado State University and M.D. from the University of Colorado School of Medicine. Dr. Kirschman contributes medical, management and industry experience to the board of directors, as well as an in-depth understanding of the X-spine business.

John P. Gandolfo, Chief Financial Officer, joined us as our interim Chief Financial Officer on a part-time basis, effective June 4, 2010, and filled this position full time commencing on July 6, 2010. Mr. Gandolfo also served as Interim Co-Chief Executive Officer from April 5, 2013 to August 14, 2013, and as a Director from July 9, 2013 to August 14, 2013. Mr. Gandolfo has 25 years of experience as chief financial officer of rapidly growing private and publicly held companies with a primary focus in the life sciences, healthcare and medical device areas. Mr. Gandolfo has had direct responsibility over capital raising, including four public offerings, financial management, mergers and acquisition transactions and SEC reporting throughout his professional career. Prior to joining us, Mr. Gandolfo served as the Chief Financial Officer for Progenitor Cell Therapy LLC, a leading manufacturer of stem cell therapies. Prior to joining Progenitor, Mr. Gandolfo served as the Chief Financial Officer for Power Medical Interventions, Inc., a publicly held developer and manufacturer of computerized surgical stapling and cutter systems, from January 2007 to January 2009. Prior to joining PMI, Mr. Gandolfo was the Chief Financial Officer of Bioject Medical Technologies, Inc., a publicly held supplier of needle-free drug delivery systems to the pharmaceutical and biotechnology industries, from September 2001 to May 2006, and served on the Bioject's board of directors from September 2006 through May 2007. Prior to joining Bioject, Mr. Gandolfo was the Chief Financial Officer of Capital Access Network, Inc., a privately held specialty finance company, from 2000 through September 2001, and Xceed, Inc., a publicly held Internet consulting firm, from 1999 to 2000. From 1994 to 1999, Mr. Gandolfo was Chief Financial Officer and Chief Operating Officer of Impath, Inc., a publicly held, cancer-focused healthcare information company. From 1987 through 1994, he was Chief Financial Officer of Medical Resources, Inc., a publicly held manager of diagnostic imaging centers throughout the United States. A graduate of Rutgers University, Mr. Gandolfo is a certified public accountant (inactive status) who began his professional career at Price Waterhouse.

Robert Di Silvio, President, has over 30 years of experience serving in executive management positions in the medical industry, overseeing sales and marketing efforts in the management of medical sales operations. Prior to joining us as a consultant in January of 2014, Mr. Di Silvio served as Senior Vice President and General Manager of the Americas region for Lumenis since January 2012, and prior to that role, beginning in October 2010, as Senior Vice President and General Manager, Lumenis North America Region. Mr. Di Silvio previously served as President and Chief Executive Officer of Pyng Medical Inc. from February 2009 to September 2010; as Vice President Global Sales and Marketing of Safe Life from May 2007 to September 2008; as Vice President of US Field Operations Physio-Control Division of Medtronic, Inc. from May 2002 to April 2007; and as Vice President, US Field Operations of Coherent Medical Group from February 1999 to January 2002. Mr. Di Silvio currently serves as a member of the board of directors of Pyng Medical Corp. He holds a bachelor's degree in economics and organic chemistry and a master's degree in biochemistry from the University of Connecticut, and he also completed three years at the University of Rome School of Medicine in Italy.

Darrel Holmes, Chief Operating Officer, Mr. Holmes has over 25 years of experience in the medical device, biologics, and diagnostic industries. He previously served as Operations Executive for American Qualex, HYCOR Biomedical and Stratagene, and as Executive Vice President and COO of Big Spring Water Company. Since joining us in 2003, Mr. Holmes has assumed responsibilities for all aspects of medical device and biologic product design and development, process scale-up, and production, and Mr. Holmes also served as Interim Co-Chief Executive Officer from April 5, 2013 to August 14, 2013. Mr. Holmes has worked with numerous regulatory agencies at the federal, state, and local level and coordinates our ISO 13485 compliance and environmental health and safety programs. He oversees our operations and production, facility management, engineering and information technology to produce our medical devices and biologic products, and to accommodate business growth. He directs the design, purchase,

validation and implementation of capital assets and facility expansions for us, and is responsible for strategic planning as well as the development and administration of division-level budgets. Currently, Mr. Holmes serves as the Tissue Bank Director and on our Medical Advisory Committee, as a member of Montana State University's Employer Advisory Board, as a Scientific Advisory Board Member for Montana Molecular in Bozeman, Montana, and as member of the board of directors of American Donor Services. Mr. Holmes graduated from California State University at Long Beach with a degree in Biological Science.

Board Composition and Terms of Office

A majority of our board members and all of our board committee members are independent directors. Our independent board members are Messrs. Swanson, Lopach, Wickwire, Deedrick and Goodman. All directors hold office for staggered three-year terms and until the election and qualification of their successors. Officers are elected by, and serve at the discretion of, the board of directors.

Board Committees

We have established an audit committee, compensation committee, nominations and corporate governance committee, and business development committee. The charters of our audit committee, compensation committee and nominations and corporate governance committee have been posted on our website at www.xtantmedical.com.

Audit Committee

The purpose of the audit committee is to assist the oversight of our board of directors with the integrity of our financial statements, our compliance with legal and regulatory matters, our internal audit function, and our independent auditor's qualifications, independence, and performance. The primary responsibilities of the audit committee are set forth in its charter and include various matters with respect to the oversight of our accounting and financial reporting process and audits of our financial statements. The audit committee also selects the independent auditor, reviews the proposed scope of the audit, reviews our accounting and financial controls with the independent auditor and financial accounting staff, and reviews and approves transactions between us and our directors, officers, and their affiliates.

The audit committee currently consists of Messrs. Lopach, Swanson and Wickwire, each an independent director under rules adopted by the SEC pursuant to the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley"). Mr. Lopach serves as the chairman of the audit committee. The board of directors has determined that Messrs. Lopach and Swanson (whose backgrounds are detailed above) each qualify as an "audit committee financial expert" in accordance with applicable rules and regulations of the SEC.

Compensation Committee

The primary purposes of the compensation committee are to determine or recommend the compensation of our Chief Executive Officer and other executive officers, and to oversee our Amended and Restated Equity Incentive Plan. Our compensation committee currently consists of Messrs. Deedrick, Lopach and Goodman, each an independent director under rules adopted by the SEC pursuant to Sarbanes-Oxley. Mr. Deedrick serves as the chairman of the compensation committee.

Nominations and Corporate Governance Committee

The purposes of the nominations and corporate governance committee include the selection or recommendation to our board of directors of nominees to stand for election as directors, the oversight of the selection and composition of the committees of our board of directors, the oversight of the evaluations of our board of directors and management, and the development and recommendation to our board of directors of a set of corporate governance principles applicable to us. The nominations and corporate governance committee currently consists of Messrs. Wickwire, Deedrick and Goodman, each an independent director under rules adopted by the SEC pursuant to Sarbanes-Oxley. Mr. Wickwire serves as the chairman of the nominations and corporate governance committee.

Business Development Committee

In September 2014, the board formed a business development committee to advise the board on strategic direction and growth strategies. With our recent acquisition of X-spine, the board expanded the scope of the business development committee to include integration activities. The business development committee currently consists of Messrs. Deedrick, Swanson and Goodman, and Mr. Deedrick serves as the chairman of the committee.

Nominations to the Board of Directors

Our directors take a critical role in guiding our strategic direction and overseeing the management of the Company. Board candidates are considered based on various criteria, such as their broad-based business and professional skills and experiences, a global business and social perspective, concern for the long-term interests of the stockholders, diversity, personal integrity and judgment.

In addition, directors must have time available to devote to board activities and to enhance their knowledge in the growing business. Accordingly, we seek to attract and retain highly qualified directors who have sufficient time to attend to their substantial duties and responsibilities.

Family Relationships

There are no family relationships among our directors and executive officers.

Procedures for Stockholder Recommendation of Nominees to the Board of Directors

The procedures by which stockholders may recommend nominees to the board of directors are contained in our Amended and Restated Bylaws.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth information regarding the beneficial ownership of our common stock as of November 30, 2015 by (a) each of our directors and named executive officers, (b) all of our current directors and executive officers as a group, and (c) each person who is known by us to beneficially own more than 5% of our common stock.

Name and Address of Beneficial Owner	**Number of Shares Beneficially Owned[2]**		**Percentage of Shares Beneficially Owned[3]**	
Directors and Named Executive Officers[1]:				
Daniel Goldberger	193,693	(4)	1.6	%
Kent Swanson	115,828	(5)	1.0	%
Michael Lopach	43,812	(6)	*	
Jon Wickwire	74,509	(7)	*	
John Deedrick	26,621	(8)	*	
David Goodman, M.D.	5,000	(9)	*	
David L. Kirschman, M.D.	1,701,063	(10)	14.3	%
John P. Gandolfo	22,787	(11)	*	
Robert Di Silvio	17,700	(12)	*	
All executive officers and directors as a group (10 persons)	2,211,578		18.6	%
Five Percent Stockholders:				
OrbiMed Advisors LLC 601 Lexington Ave., 54th Floor New York, NY 10022	1,187,421	(13)	9.99	%
Kenneth J. Hemmelgarn, Jr. Revocable Living Trust dated February 9, 1998 9485 Gulfshore Drive, B-201 Naples, FL 34108	1,272,796	(14)	10.7	%
Brian J. Hemmelgarn Revocable Living Trust dated February 9, 1998 P.O. Box 421 15643 Captive Drive Captiva, FL 33924	1,272,796	(15)	10.7	%

*Less than 1% of outstanding shares of common stock.

(1)

The address for directors and named executive officers is c/o Xtant Medical Holdings, Inc., 664 Cruiser Lane, Belgrade, Montana 59714.

(2) Unless otherwise indicated, includes shares owned by a spouse, minor children and relatives sharing the same home, as well as entities owned or controlled by the named person. Also includes shares that the named person has the right to acquire within 60 days after November 30, 2015, by the exercise or conversion of any warrant, stock option or convertible preferred stock. Unless otherwise noted, shares are owned of record and beneficially by the named person and the persons named in the table have sole voting and investment power with respect to the shares beneficially owned by them as set forth opposite their respective names.

(3) The calculation in this column is based on 11,886,101 shares of common stock outstanding on November 30, 2015. The shares of common stock underlying warrants and stock options are deemed outstanding for purposes of computing the percentage of the person holding them, but are not deemed outstanding for the purpose of computing the percentage of any other person.

(4) Consists of (a) 15,510 shares of our common stock held directly, (b) 81,522 shares of our common stock held by an IRA, and (c) options to purchase 96,661 shares of our common stock.

(5) Consists of (a) 79,828 shares of our common stock held directly, (b) 20,000 shares held by a family limited partnership, (c) warrants to purchase 5,000 shares of our common stock, and (d) options to purchase 11,000 shares of our common stock.

(6) Consists of (a) 11,522 shares of our common stock held directly, (b) 14,258 shares held by a 401(k) plan, (c) warrants to purchase 2,032 shares of our common stock, and (d) options to purchase 16,000 shares of our common stock.

(7) Consists of (a) 31,247 shares of our common stock held directly, (b) 25,762 shares of common stock held by trusts, (c) warrants to purchase 1,500 shares of our common stock, and (d) options to purchase 16,000 shares of our common stock.

(8) Consists of (a) 16,621 shares of our common stock, and (b) options to purchase 10,000 shares of our common stock.

(9) Consists of an option to purchase 5,000 shares of our common stock.

(10) Consists of (a) 4,000 shares of our common stock held directly, and (b) 1,697,063 shares of our common stock acquired in connection with our acquisition of X-spine, which are subject to a lock-up agreement and escrow agreement.

(11) Consists of (a) 6,396 shares of our common stock held directly, (b) 994 shares of our common stock held by an IRA, (c) warrants to purchase 397 shares of our common stock, and (d) options to purchase 15,000 shares of our common stock.

(12) Consists of (a) 1,198 shares of our common stock, and (b) options to purchase 16,502 shares of our common stock.

(13) Based on Schedule 13G/A filed with the SEC on February 17, 2015, as well as our knowledge regarding recent purchases of the notes by affiliates of OrbiMed. Includes 475,439 shares of our common stock and warrants to purchase 87,719 shares of our common stock held by Royalty Opportunities S.àr.l., an entity managed by OrbiMed. Affiliates of OrbiMed also purchased $52.0 million aggregate principal amount of the notes, which are convertible into shares of our common stock. However, the indenture prevents note holders from converting their notes to the extent that such conversion would result in beneficial ownership by the note holder or any of its affiliates in excess of 9.99% of the then-outstanding shares of our common stock. OrbiMed, an investment advisor, and Samuel D. Isaly, its managing member and a control person, each have shared voting and dispositive power with respect to shares of our common stock and notes held by Royalty Opportunities S.àr.l and Royalty Opportunities II, LP.

(14) Based on Schedule 13D filed with the SEC on August 10, 2015. Consists of 1,272,796 shares of our common stock acquired in connection with our acquisition of X-spine, which are subject to a lock-up agreement and escrow agreement. Kenneth J. Hemmelgarn, Jr. is a beneficiary of and the sole trustee of the Kenneth J. Hemmelgarn, Jr. Revocable Living Trust dated February 9, 1998, which may be revoked by Kenneth J. Hemmelgarn, Jr. Kenneth J. Hemmelgarn, Jr. and Brian J. Hemmelgarn are brothers and may be deemed to be members of a “group” for purposes of Section 13(d)(3) of the Exchange Act, though they have disclaimed any express agreement to act as a group, other than as described in their jointly filed Schedule 13D.

(15) Based on Schedule 13D filed with the SEC on August 10, 2015. Consists of 1,272,796 shares of our common stock acquired in connection with our acquisition of X-spine, which are subject to a lock-up agreement and escrow agreement. Brian J. Hemmelgarn is a beneficiary of and the sole trustee of the Brian J. Hemmelgarn Revocable Living Trust dated February 9, 1998, which may be revoked by Brian J. Hemmelgarn. Kenneth J. Hemmelgarn, Jr. and Brian J. Hemmelgarn are brothers and may be deemed to be members of a “group” for purposes of Section 13(d)(3) of the Exchange Act, though they have disclaimed any express agreement to act as a group, other than as described in their jointly filed Schedule 13D.

Because the table above is limited to shares that are owned or which the person has the right to acquire within 60 days, it does not present a complete view of the economic exposure our directors and executive officers have to our common stock. Excluded from the table above are unvested stock options, unvested restricted stock units and unvested warrants which will become vested more than 60 days from November 30, 2015.

Description of Notes

The notes offered hereby were issued under an indenture, dated as of July 31, 2015 (the "indenture"), between us and Wilmington Trust, National Association, as trustee (the "trustee"). We also entered into a registration rights agreement with Leerink Partners LLC (the "initial purchaser") and certain private investment funds for which OrbiMed serves as the investment manager (the "OrbiMed purchasers"). The indenture (which includes the form of note) and the registration rights agreement were previously filed with the SEC and are incorporated herein by reference. You may request a copy of the indenture and the registration rights agreement from us at the address set forth under "Where You Can Find More Information."

The following description is a summary of the material provisions of the notes, the indenture and the registration rights agreement and does not purport to be complete. This summary is subject to and is qualified by reference to all of the provisions of the notes, the indenture and the registration rights agreement, including the definitions of certain terms in those documents. Whenever particular provisions or defined terms of the indenture, the notes or the registration rights agreement are referred to, those provisions or defined terms are incorporated in this prospectus by reference. We urge you to read those documents because they, and not this description, define your rights as a holder of the notes.

For purposes of this description, references to "Xtant," "the Company," "we," "us," "our" and similar references refer only to Xtant Medical Holdings, Inc. and not to its subsidiaries, unless the context requires otherwise.

General

The notes:

- are our general unsecured, senior obligations;
- are limited to an aggregate principal amount of $68.0 million;
- bear cash interest from, and including, July 31, 2015, at an annual rate of 6.00%. Following the first interest payment date, which will be on April 15, 2016, interest will be payable on January 15 and July 15 of each year;

- are convertible into shares of our common stock (the "conversion shares") (together with cash in lieu of fractional shares) at an initial conversion rate of 257.5163 shares per $1,000 principal amount of notes (which represents an initial conversion price of approximately $3.88 per share) under the conditions and subject to such adjustments described under "— Conversion Rights";

- are not subject to redemption at our option prior to their maturity;

- are subject to repurchase by us at the option of the holders following a fundamental change (as defined below under "— Fundamental Change Permits Holders to Require Us to Repurchase Notes"), at a cash price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date, subject to the right of holders of notes on a record date to receive accrued and unpaid interest;

- mature on July 15, 2021, unless earlier converted or repurchased;

- are issued in minimum denominations of $1,000 principal amount and in integral multiples of $1,000 in excess thereof;

- are represented by one or more registered notes in global form, but, in certain limited circumstances, may be represented by notes in definitive form. See "— Book-Entry, Settlement and Clearance"; and

- are entitled to the benefits of a registration rights agreement pursuant to which we have filed and will use our best efforts to cause to become effective, and keep effective for a specified period of time, this shelf registration statement covering the resale of the notes and conversion shares.

The indenture does not limit the amount of debt, including secured debt, that we, or that our subsidiaries, may issue under the indenture or otherwise. The indenture does not contain any financial covenants and does not restrict us from paying dividends or issuing or repurchasing our other securities, including those junior to the notes, except to the limited extent described below under "— Conversion Rights — Conversion Rate Adjustments." Other than the restrictions described below under "— Consolidation, Merger and Sale of Assets" and the provisions described below under "— Fundamental Change Permits Holders to Require Us to Repurchase Notes" and "— Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change," the indenture does not contain any covenants or other provisions designed to afford holders of the notes protection in the event of a takeover, recapitalization, highly leveraged transaction or similar restructuring involving us that could adversely affect such holders or result in a decline in the credit rating of the notes (if the notes are rated at such time).

The OrbiMed purchasers purchased $52.0 million of the $68.0 million aggregate principal amount of the notes. We refer to the notes that these OrbiMed purchasers purchased as the "privately placed notes." The privately placed notes constitute part of the same series as the other notes offered in this offering. Unless the context requires otherwise, references to the notes include the privately placed notes.

We have agreed in the indenture not to purchase any notes unless we immediately retire and cancel them, and that we will use commercially reasonable efforts to prevent any of our "affiliates" (as defined in Rule 144 under the Securities Act) from acquiring any notes. We may also from time to time repurchase notes in open market purchases or negotiated transactions without giving prior notice to holders. Any notes repurchased by us will be retired and no longer outstanding under the indenture.

We may, without the consent of the holders, issue additional notes under the indenture with the same terms and with the same CUSIP numbers as the notes offered hereby (except for any difference in issue date, issue price and interest accrued, if any) in an unlimited aggregate principal amount; provided, however, that if any such additional notes are not fungible with any notes offered hereby for federal income tax purposes, then such additional notes will have a separate CUSIP number or will not have a CUSIP number.

The notes are issued in minimum denominations of $1,000 principal amount and in integral multiples of $1,000 in excess thereof. References to "a note" or "each note" in this prospectus refer to $1,000 principal amount of the notes.

We do not intend to apply to list the notes on any securities exchange or to include them in any automated dealer quotation system.

Payments on the Notes; Paying Agent and Registrar; Transfer and Exchange

We will pay (or cause the paying agent to pay) the principal of and interest on notes in global form registered in the name of, or held by, The Depository Trust Company ("DTC") or its nominee in immediately available funds to DTC or its nominee, as the case may be, as the registered holder of such global note.

We will pay the principal of any certificated notes at the office or agency designated by us for that purpose. We have initially designated the trustee as our paying agent and registrar and its agency in the continental United States as a place where notes may be presented for payment or for registration of transfer. We may, however, change the paying agent or registrar without prior notice to the holders of the notes, and we may act as paying agent or registrar. Interest on certificated notes will be payable by wire transfer in immediately available funds to such holder's account within the United States, which application will remain in effect until such holder notifies the registrar, in writing, to the contrary.

A holder of certificated notes may transfer or exchange such notes solely at the office of the registrar in accordance with the indenture. The registrar and the trustee may require a holder to furnish, among other things, appropriate endorsements and transfer documents. A holder of a beneficial interest in a note in global form may transfer or exchange such beneficial interest in accordance with the indenture and the applicable procedures of the depositary. See "— Book-Entry, Settlement and Clearance." No service charge will be imposed by us, the trustee or the registrar for any registration of transfer or exchange of notes, but we, the trustee or the registrar may require a holder to pay a sum sufficient to cover any transfer tax or other similar governmental charge required by law or permitted by the indenture. The trustee and the registrar are not required to transfer or exchange any note after it has been surrendered for conversion or required repurchase.

The registered holder of a note is treated as the owner of it for all purposes.

Interest

The notes bear cash interest at a rate of 6.00% per year until maturity. Interest on the notes accrues from the most recent date on which interest has been paid or duly provided for, or if no interest has been paid or duly provided for, from July 31, 2015. Following the first interest payment date, which will be on April 15, 2016, interest will be payable semiannually in arrears on January 15 and July 15 of each year (each, an "interest payment date").

Interest will be paid to the person in whose name a note is registered at the close of business (as defined below) on the January 1 or July 1, as the case may be (or April 1, 2016, in the case of the interest payment due on April 15, 2016), and whether or not a business day (each, a "record date"), immediately preceding the relevant interest payment date. Interest on the notes is computed on the basis of a 360-day year composed of twelve 30-day months.

If any interest payment date, the maturity date or any fundamental change repurchase date of a note falls on a day that is not a business day (which, solely for the purposes of any payment required to be made on any such date, will be deemed not to include any day on which the office where the place of payment is authorized or required by law to close), the required payment will be made on the next succeeding business day and no interest on such payment will accrue in respect of such delay. The term "business day" means any day other than a Saturday, a Sunday or a day on which the Federal Reserve Bank of New York is authorized or required by law or executive order to close or be closed.

Unless the context requires otherwise, all references to interest in this description include additional interest, if any, payable as described under "— Registration Rights; Additional Interest" and special interest, if any, payable at our election as the sole remedy relating to the failure to comply with our reporting obligations as described under "— Events of

Default."

Ranking

The notes are our senior, unsecured obligations, rank equal in right of payment with our existing and future unsecured indebtedness that is not junior to the notes, are senior in right of payment to any of our existing and future indebtedness that is expressly subordinated to the notes, and are effectively subordinated to our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness. The notes are structurally subordinated to all existing and future indebtedness and other liabilities, including trade payables, and (to the extent we are not a holder thereof) preferred equity, if any, of our subsidiaries.

In addition, the indenture governing the notes does not restrict our ability to incur additional indebtedness, including secured indebtedness, which would be effectively senior to our obligations under the notes to the extent of the assets securing such indebtedness, or the ability of our subsidiaries to incur additional liabilities, which would be structurally senior to our obligations under the notes.

In the event of a bankruptcy, liquidation or dissolution of a subsidiary of ours, the creditors of such subsidiary will be paid first, after which the subsidiary may not have sufficient assets remaining to make any payments to us as a stockholder or otherwise so that we can meet our obligations under the notes. In the event of a bankruptcy, liquidation, reorganization or other winding up of us, our assets that secure secured debt will be available to pay obligations on the notes only after all indebtedness under our secured debt has been repaid in full from such assets. In such event, there may not be sufficient assets remaining to pay amounts due on any or all of the notes then outstanding.

As of September 30, 2015, on a consolidated basis, we had $112.4 million of debt outstanding, $43.1 million of which was indebtedness of our operating subsidiaries that was guaranteed by us and secured by a lien on substantially all of our and our subsidiaries' assets, and our subsidiaries had indebtedness and other liabilities (including trade payables) of $129.1 million, excluding intercompany liabilities.

No Redemption at Our Option

No sinking fund is provided for the notes. We may not redeem the notes at our option prior to their maturity.

Conversion Rights

General

Prior to the close of business on the second business day immediately preceding the maturity date of the notes, holders of notes may convert their notes in integral multiples of $1,000 principal amount into shares of our common stock (together with cash in lieu of any fractional shares) at an initial conversion rate of 257.5163 shares of our common stock per $1,000 principal amount of notes, subject to adjustment as described below. This rate results in an initial conversion price of approximately $3.88 per share.

"Conversion price" means, as of any particular time, an amount equal to the $1,000 divided by the conversion rate in effect at such time.

If a holder has delivered a repurchase notice with respect to any note, the holder may not surrender that note for conversion until the holder has withdrawn the repurchase notice in accordance with the indenture.

Upon conversion, we will not make any separate cash payment for accrued and unpaid interest, except as described below. Instead, except as described below, our delivery to you of the consideration due upon conversion of a note will be deemed to satisfy in full our obligation to pay:

- the principal amount of such note; and
- accrued and unpaid interest, if any, on such note to, but excluding, the conversion date (as defined below).

As a result, except as described below, accrued and unpaid interest, if any, to, but excluding, the conversion date will be deemed to be paid in full rather than cancelled, extinguished or forfeited.

Notwithstanding anything to the contrary described above, if any note is converted after the close of business (as defined below) on a record date for the payment of interest but prior to the open of business (as defined below) on the corresponding interest payment date, then we will pay, on or before the date we deliver the consideration due upon such conversion, the full amount of accrued and unpaid interest that would have accrued on such note to, but excluding, such interest payment date to the holder of record of such note as of the close of business on such record date. However, notes whose conversion date occurs after any record date and before the corresponding interest payment date must be accompanied by funds equal to the amount of interest, if any, that would be payable on such notes on such interest payment date; provided, however, that no such payment need be made:

- for conversions following the record date immediately preceding the maturity date;

- if we have specified a fundamental change repurchase date that is after such record date and on or before the business day immediately following such interest payment date; or

- to the extent of any overdue interest, if any overdue interest exists at the time of conversion with respect to such note.

For the avoidance of doubt, a holder of a note at the close of business on the record date immediately preceding the maturity date will be entitled to receive interest that accrues (or would have accrued) on such note to, but excluding, the maturity date notwithstanding any conversion of such note.

“Close of business” means 5:00 p.m., New York City time. “Open of business” means 9:00 a.m., New York City time.

If a holder converts notes, we will pay any documentary, stamp or similar issue or transfer tax due on the issue of any shares of our common stock upon such conversion, unless the tax is due because the holder requests that any shares be issued in a name other than the holder’s name, in which case the holder will pay that tax.

Restrictions on Conversion

Notwithstanding anything to the contrary in the indenture or the notes, no note will be convertible by the holder thereof, and we will not effect any conversion of any note, in each case to the extent (and only to the extent) that such convertibility or conversion would result in such holder or any of its affiliates beneficially owning in excess of 9.99% of the then-outstanding shares of our common stock. For these purposes, beneficial ownership and all determinations and calculations (including, without limitation, with respect to calculations of percentage ownership) will be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder.

For the avoidance of doubt, notes whose convertibility is restricted pursuant to the provisions described above will continue to be outstanding, and their convertibility will be reinstated if and when the convertibility and conversion will not violate the limitations described above.

Conversion Procedures

If you hold a beneficial interest in a global note, to convert you must comply with DTC's procedures for converting a beneficial interest in a global note (at which time the conversion will be irrevocable) and, if required, pay funds equal to the interest payable on the next interest payment date as described above and, if required, pay all taxes or duties, if any. As such, if you are the beneficial owner of the notes, you must allow sufficient time to comply with DTC's procedures if you wish to exercise your conversion rights.

If you hold a certificated note, to convert that note, you must:

- complete and manually sign the conversion notice on the back of the note, or a facsimile of the conversion notice (with an original to follow via overnight courier);
- deliver the conversion notice, which is irrevocable, and the note to the conversion agent;
- if required, furnish appropriate endorsements and transfer documents;
- if required, pay all transfer or similar taxes; and
- if required, pay funds equal to the interest payable on the notes as described above.

The date you comply with the relevant procedures described above will be the "conversion date" under the indenture. If a holder has delivered a repurchase notice with respect to a note, the holder may not surrender that note for conversion until the holder has withdrawn the repurchase notice in accordance with the relevant provisions of the indenture. As described below, a holder's right to withdraw a repurchase notice will terminate at the close of business on the business day prior to the relevant fundamental change repurchase date.

Each conversion will be deemed to have been effected as to any notes surrendered for conversion on the conversion date, and the person in whose name any conversion shares are issuable will be deemed to become the holder of record of such shares as of the close of business on the conversion date.

Settlement upon Conversion

Upon conversion of a note, we will deliver, in respect of each $1,000 principal amount of such note to be converted, a number of conversion shares equal to the conversion rate in effect on the conversion date for such conversion. However, we will pay cash in lieu of delivering any fractional share of common stock otherwise issuable upon conversion of a note based on the "last reported sale price" (as defined below) on the conversion date for such conversion (or, if such conversion date is not a "trading day" (as defined below), on the immediately preceding trading day).

Except as described under "— Conversion Rate Adjustments," we will deliver the consideration due upon conversion of a note on the third business day immediately after the conversion date for such conversion.

The "last reported sale price" of our common stock on any date means the closing sale or trading price (or if no closing sale price is reported, the average of the last bid and last ask prices or, if more than one in either case, the average of the average last bid and the average last ask prices) per share on that date as reported in composite transactions for the principal U.S. national or regional securities exchange on which our common stock is traded. If our common stock is not listed for trading on a U.S. national or regional securities exchange on the relevant date, the "last reported sale price" will be the last quoted bid price per share for our common stock in the over-the-counter market on the relevant date as reported by OTC Markets Group Inc. or a similar organization. If our common stock is not so quoted, the "last reported sale price" will be the average of the mid-point of the last bid and ask prices per share for our common stock on the relevant date from each of at least three nationally recognized independent investment banking firms selected by us for this purpose. The "last reported sale price" will be determined without regard to after-hours trading or any other trading outside of regular trading session hours.

“Trading day” means a day on which (i) trading in our common stock (or other security for which a last reported sale price must be determined) generally occurs on the NASDAQ Global Market or, if our common stock (or such other security) is not then listed on the NASDAQ Global Market, on the principal other U.S. national or regional securities exchange on which our common stock (or such other security) is then listed or, if our common stock (or such other security) is not then listed on a U.S. national or regional securities exchange, on the principal other market (including, without limitation, the OTCQX marketplace) on which our common stock (or such other security) is then listed or admitted for trading, and (ii) there is no “market disruption event” (as defined below). If our common stock (or such other security) is not so listed or traded, then “trading day” means a “business day.”

A “market disruption event” means the occurrence or existence during the one-half hour period ending on the scheduled close of trading on the principal U.S. national or regional securities exchange on which our common stock is listed for trading of any material suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the stock exchange or otherwise) in our common stock or in any options contracts or futures contracts relating to our common stock.

Conversion Rate Adjustments

The conversion rate will be adjusted as described below, except that we will not make an adjustment to the conversion rate if each holder of the notes participates (other than in the case of a share split or share combination), at the same time and upon the same terms as holders of our common stock, and solely as a result of holding the notes, in the relevant transaction described below without having to convert its notes and as if it held a number of shares of common stock equal to the conversion rate, multiplied by the principal amount (expressed in thousands) of notes held by such holder.

(1) If we exclusively issue to all or substantially all holders of our common stock shares of our common stock as a dividend or distribution on shares of our common stock, or if we effect a share split or share combination (excluding an issuance solely pursuant to a common stock change event, as defined below under "— Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock"), the conversion rate will be adjusted based on the following formula:

$$CR_1 = CR_0 \times \frac{OS_1}{OS_0}$$

where:

CR_0 = the conversion rate in effect immediately prior to the open of business on the ex-dividend date (as defined below) of such dividend or distribution, or immediately prior to the open of business on the effective date (as defined below) of such share split or share combination, as applicable;

CR_1 = the conversion rate in effect immediately after the open of business on such ex-dividend date or effective date, as applicable;

OS_0 = the number of shares of our common stock outstanding immediately prior to the open of business on such ex-dividend date or effective date, as applicable; and

OS_1 = the number of shares of our common stock outstanding immediately after giving effect to such dividend, distribution, share split or share combination, as applicable.

Such adjustment shall become effective immediately after the open of business on such ex-dividend date or effective date, as applicable. If any dividend, distribution, share split or share combination of the type described in this paragraph (1) is declared but not so paid or made, the conversion rate will be immediately readjusted, effective as of the date our board of directors or a committee thereof determines not to pay such dividend or distribution or effect

such share split or share combination to the conversion rate that would then be in effect if such dividend or distribution or share split or share combination had not been declared or announced.

(2) If we issue to all or substantially all holders of our common stock any rights, options or warrants entitling them, for a period of not more than 60 calendar days after the record date of such issuance, to subscribe for or purchase shares of our common stock, at a price per share less than the average of the last reported sale prices per share of our common stock for the 10 consecutive trading day period ending on, and including, the trading day immediately preceding the date of announcement of such issuance, then, subject to the provisions described below with respect to rights issued pursuant to a stockholder rights plan, the conversion rate will be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{OS + X}{OS + Y}$$

where:

CR_0 = the conversion rate in effect immediately prior to the open of business on the ex-dividend date for such issuance;

CR_1 = the conversion rate in effect immediately after the open of business on such ex-dividend date;

OS = the number of shares of our common stock outstanding immediately prior to the open of business on such ex-dividend date;

X = the total number of shares of our common stock issuable pursuant to such rights, options or warrants; and

Y = the number of shares of our common stock equal to the quotient of (i) the aggregate price payable to exercise such rights, options or warrants over (ii) the average of the last reported sale prices per share of our common stock over the 10 consecutive trading day period ending on, and including, the trading day immediately preceding the date of announcement of the issuance of such rights, options or warrants.

Such adjustment shall become effective immediately after the open of business on such ex-dividend date. To the extent that shares of common stock are not delivered after the expiration of such rights, options or warrants, including because the issued rights, options or warrants were not exercised, the conversion rate will be readjusted to the conversion rate that would then be in effect had the increase with respect to the issuance of such rights, options or warrants been made on the basis of delivery of only the number of shares of common stock actually delivered. If such rights, options or warrants are not so issued, the conversion rate will be readjusted to the conversion rate that would then be in effect if the ex-dividend date for such issuance had not occurred.

In determining whether any rights, options or warrants entitle the holders to subscribe for or purchase shares of common stock at a price per share less than the average of the last reported sale prices per share of our common stock for the 10 consecutive trading day period ending on, and including, the trading day immediately preceding the date of announcement for an issuance, and in determining the aggregate price payable to exercise such rights, options or warrants, there will be taken into account any consideration received by us for such rights, options or warrants and any amount payable on exercise thereof, the value of such consideration, if other than cash, to be determined by our board of directors or a committee thereof.

(3) If we distribute shares of our capital stock, evidences of our indebtedness, other assets or property of ours or rights, options or warrants to acquire our capital stock or other securities to all or substantially all holders of our common stock, excluding:

- dividends, distributions, rights, options or warrants as to which an adjustment was effected pursuant to paragraph (1) or (2) above;

- dividends or distributions paid exclusively in cash for which an adjustment was effected pursuant to paragraph (4) below;

- spin-offs as to which the provisions described below in this paragraph (3) will apply; and

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an issuance solely pursuant to a common stock change event as to which the provisions described below under "— Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock" will apply,

then the conversion rate will be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{SP_0}{SP_0 - FMV}$$

where:

CR_0 = the conversion rate in effect immediately prior to the open of business on the ex-dividend date for such distribution;

CR_1 = the conversion rate in effect immediately after the open of business on such ex-dividend date;

SP_0 = the average of the last reported sale prices per share of our common stock over the 10 consecutive trading day period ending on, and including, the trading day immediately preceding the ex-dividend date for such distribution; and

FMV = the fair market value (as determined by our board of directors or a committee thereof) of the shares of capital stock, evidences of indebtedness, assets, property, rights, options or warrants distributed with respect to each outstanding share of our common stock on the ex-dividend date for such distribution.

Such adjustment shall become effective immediately after the open of business on such ex-dividend date. If "FMV" (as defined above) is equal to or greater than the "SP_0" (as defined above), in lieu of the foregoing increase, each holder of a note will receive, in respect of each $1,000 principal amount thereof, at the same time and upon the same terms as holders of our common stock, the amount and kind of shares of our capital stock, evidences of our indebtedness, other assets or property of ours or rights, options or warrants to acquire our capital stock or other securities that such holder would have received if such holder owned a number of shares of common stock equal to the conversion rate in effect on the record date for the distribution.

If any distribution of the type described in this paragraph (3) is not so paid or made, or if any rights, options or warrants are not exercised before their expiration date, the conversion rate will be readjusted to be the conversion rate that would then be in effect if such distribution had not been declared.

With respect to an adjustment pursuant to this paragraph (3) where there has been a payment of a dividend or other distribution on our common stock of shares of capital stock of any class or series, or similar equity interest, of or relating to an affiliate, a subsidiary or other business unit of ours, and such capital stock or similar equity interest is listed or quoted (or will be listed or quoted upon the consummation of the transaction) on a national securities exchange or a reasonably comparable non-U.S. equivalent, which we refer to as a "spin-off," but excluding an issuance solely pursuant to a common stock change event as to which the provisions described below under "— Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock" apply, the conversion rate will be increased based on the following formula:

$$CR1 = CR0 \times \frac{FMV0 + MP0}{MP_0}$$

where:

CR_0 = the conversion rate in effect immediately prior to the open of business on the ex-dividend date of the spin-off;

CR_1 = the conversion rate in effect immediately after the open of business on the ex-dividend date of the spin-off;

FMV_0 = the average of the last reported sale prices of the capital stock or similar equity interest distributed to holders of our common stock applicable to one share of our common stock (determined for purposes of the definition of last reported sale price as if such capital stock or similar equity interest were our common stock) over the

first 10 consecutive trading day period after, and including, the ex-dividend date of the spin-off (the "valuation period"); and

MP_0 = the average of the last reported sale prices per share of our common stock over the valuation period.

Such adjustment shall become effective immediately after the open of business on such ex-dividend date. The adjustment to the conversion rate under the preceding paragraph will be calculated as of the close of business on the last trading day of the valuation period but will be given effect as of immediately after the open of business on the ex-dividend date of the spin-off. Because we will make the adjustment to the conversion rate with retroactive effect, we will, if necessary, delay the settlement of any conversion of notes where the conversion date occurs during the valuation period until the third business day after the last day of the valuation period. If any distribution of the type described in this paragraph (3) is declared but not so made, the conversion rate will be immediately readjusted, effective as of the date our board of directors or a committee thereof determines not to make such distribution, to the conversion rate that would then be in effect if such distribution had not been declared.

(4) If any cash dividend or distribution (other than a distribution as to which an adjustment was effected pursuant to paragraph (5) below) is made to all or substantially all holders of our outstanding common stock, the conversion rate will be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{SP_0}{SP_0 - C}$$

where:

CR_0 = the conversion rate in effect immediately prior to the open of business on the ex-dividend date for such dividend or distribution;

CR_1 = the conversion rate in effect immediately after the open of business on the ex-dividend date for such dividend or distribution;

SP_0 = the last reported sale price per share of our common stock on the trading day immediately preceding the ex-dividend date for such dividend or distribution; and

C = the amount in cash per share we distribute to holders of our common stock.

Such adjustment shall become effective immediately after the open of business on such ex-dividend date. If "C" (as defined above) is equal to or greater than "SP_0" (as defined above), in lieu of the foregoing increase, each holder of a note will receive, for each $1,000 principal amount of notes, at the same time and upon the same terms as holders of shares of our common stock, the amount of cash that such holder would have received if such holder owned a number of shares of our common stock equal to the conversion rate on the record date for such cash dividend or distribution. If any dividend or distribution of the type described in this paragraph (4) is not so paid, the conversion rate will be decreased to be the conversion rate that would then be in effect if such dividend or distribution had not been declared.

(5) If we or any of our subsidiaries make a payment in respect of a tender offer or exchange offer for our common stock, to the extent that the cash and value of any other consideration included in the payment per share of common stock exceeds the last reported sale price per share of our common stock on the trading day next succeeding the last date (the "expiration date") on which tenders or exchanges may be made pursuant to such tender or exchange offer, the conversion rate will be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{AC + (SP_1 \times OS_1)}{OS_0 \times SP_1}$$

where:

CR_0 = the conversion rate in effect immediately prior to the expiration time (as defined below);

CR_1 = the conversion rate in effect immediately after the expiration time;

AC = the aggregate value of all cash and any other consideration (as determined by our board of directors or a committee thereof) paid or payable for shares purchased in such tender or exchange offer;

OS_0 = the number of shares of our common stock outstanding immediately prior to the time (the "expiration time") on the date such tender or exchange offer expires (prior to giving effect to the purchase of all shares accepted for purchase or exchange in such tender offer or exchange offer);

OS_1 = the number of shares of our common stock outstanding immediately after the expiration time (after giving effect to the purchase of all shares accepted for purchase or exchange in such tender or exchange offer); and

SP_1 = the average of the last reported sale prices per share of our common stock over the 10 consecutive trading day period (the "averaging period") commencing on the trading day next succeeding the expiration date.

The adjustment to the conversion rate under this paragraph (5) will be calculated as of the close of business on the last trading day of the averaging period, but will be given effect as of immediately after the expiration time. Because we will make the adjustment to the conversion rate with retroactive effect, we will, if necessary, delay the settlement of any conversion of notes where the conversion date occurs during the averaging period until the third business day after the last day of the averaging period.

If the application of the foregoing formulas would result in a decrease in the conversion rate, then no adjustment to the conversion rate will be made (other than as a result of a share split, share combination or readjustment of the conversion rate as described in paragraph (1) above).

Notwithstanding anything to the contrary described above, if:

- a note is to be converted and, as of the conversion date for such conversion, any transaction or other event that requires an adjustment to the conversion rate pursuant to the provisions described in paragraphs (1) through (5), inclusive, above has occurred, but has not yet resulted in an adjustment to the conversion rate;
- the consideration due upon such conversion consists of any shares of our common stock; and
- such shares are not entitled to participate in such transaction or event because they were not held on the related record date or otherwise),

then, solely for purposes of such conversion, we will, without duplication, give effect to such adjustment on such conversion date.

In addition, notwithstanding anything to the contrary described above, if:

- a conversion rate adjustment for any transaction or other event becomes effective on any ex-dividend date pursuant to the provisions described in paragraphs (1) through (5), inclusive, above;

· a note is to be converted;

· the conversion date for such conversion occurs on or after such ex-dividend date and on or before the related record date;

· the consideration due upon such conversion includes any whole shares of our common stock; and

· the holder of such note would be treated, on such record date, as the record holder of such shares of common stock based on a conversion rate that is adjusted for such transaction or event,

then such conversion rate adjustment will not be given effect for such conversion. Instead, such holder will be treated as if such holder were, as of such record date, the record owner of such shares of common stock on an unadjusted basis and will participate in such transaction or event.

As used in this "— Conversion Rate Adjustments" section, "ex-dividend date" means the first date on which the shares of our common stock trade on the applicable exchange or in the applicable market, regular way, without the right to receive the issuance, dividend or distribution in question, and "effective date" means the first date on which the shares of our common stock trade on the applicable exchange or in the applicable market, regular way, reflecting the relevant share split or share combination, as applicable.

Subject to the applicable rules of any exchange on which our common stock is listed, we are permitted to increase the conversion rate of the notes by any amount for a period of at least 20 business days if such increase is irrevocable during such 20 business days and our board of directors or a committee thereof determines that such increase would be in our best interest. In addition, subject to those rules, we may (but are not required to) increase the conversion rate to avoid or diminish income tax to holders of our common stock or rights to purchase shares of our common stock in connection with a dividend or distribution of shares (or rights to acquire shares) or similar event for U.S. federal income tax purposes. In each case, we will deliver to the trustee, the conversion agent, and each holder of the notes notice of such increase at least 15 business days prior to the date such increase takes effect.

A holder may, in some circumstances, including a distribution of cash dividends to holders of our shares of common stock, be deemed to have received a distribution subject to U.S. federal income tax as a result of an adjustment or the nonoccurrence of an adjustment to the conversion rate. For a discussion of certain U.S. federal income tax treatment of an adjustment to the conversion rate, see “Certain U.S. Federal Income Tax Considerations.” Because this deemed distribution would not give rise to any cash from which any applicable withholding tax could be satisfied, if withholding taxes (including backup withholding) are paid on behalf of a holder, such withholding taxes may be set off against payments of cash or common stock, if any, payable on the notes (or, in certain circumstances, against any payments on our common stock).

We currently do not have a stockholder rights plan. If we have a rights plan in effect when you convert your notes, you will receive, to the extent you receive any shares of common stock upon such conversion, the rights under the rights plan, unless prior to the conversion date, the rights have separated from the common stock, in which case, and only in such case, the conversion rate will be adjusted at the time of separation as if we distributed to all holders of our common stock, shares of our capital stock, evidences of our indebtedness, other assets or property of ours or rights, options or warrants to acquire our capital stock or other securities as described in paragraph (3) above, subject to readjustment in the event of the expiration, termination or redemption of such rights.

Notwithstanding anything to the contrary described above, the conversion rate will not be adjusted:

- upon the issuance of any shares of our common stock pursuant to any present or future plan providing for the reinvestment of dividends or interest payable on our securities and the investment of additional optional amounts in shares of our common stock under any plan;

- upon the issuance of any shares of our common stock or options or rights to purchase those shares pursuant to any present or future employee, director or consultant benefit plan or program of or assumed by us or any of our subsidiaries;

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upon the issuance of any shares of our common stock pursuant to any option, warrant, right or exercisable, exchangeable or convertible security not described in the preceding bullet and outstanding as of the date the notes were first issued;

· upon the repurchase of any shares of our common stock pursuant to an open-market share repurchase program or other buy-back transaction that is not a tender offer or exchange offer of the nature described under paragraph (5) above;

· for a change in the par value of the common stock; or

· for accrued and unpaid interest.

Adjustments to the conversion rate will be calculated to the nearest 1/10,000th of a share, with five one-hundred-thousandths rounded upward (e.g., 0.76545 would be rounded up to 0.7655).

Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock

In the case of:

- any recapitalization, reclassification or change of our common stock (other than (x) a change only in par value, from par value to no par value or no par value to par value, or (y) changes resulting from a stock split or combination not involving the issuance of any other class or series of securities);

- any consolidation, merger, combination or similar transaction involving us;

- any sale, lease or other transfer to a third party of all or substantially all of the consolidated assets of us and our subsidiaries; or

- any statutory share exchange,

in each case, as a result of which our common stock would be converted into, or exchanged for, or represent solely the right to receive, stock (including one or more series of our common stock), other securities, other property or assets (including cash or any combination thereof) (any such event, a "common stock change event," and such stock, other securities, other property or assets, the "reference property," and the amount and kind of reference property that a holder of one share of our common stock would be entitled to receive on account of such transaction, a "reference property unit"), then, notwithstanding anything to the contrary, at the effective time of the transaction, the consideration due upon conversion of any notes will be determined in the same manner as if each reference to any number of shares of our common stock in the section titled "— Conversion Rights" were instead a reference to the same number of reference property units. For these purposes, the last reported sale price of any reference property unit or portion thereof that does not consist of a class of securities will be the fair value of such reference property unit or portion thereof, as applicable, determined in good faith by us (or, in the case of cash denominated in U.S. dollars, the face amount thereof).

At or before the effective date of such common stock change event, we and the resulting, surviving or transferee person (if not us) of such common stock change event (the "successor person") will execute and deliver to the trustee a supplemental indenture giving effect to the above. Such supplemental indenture will also provide (i) to the extent the reference property is comprised, in whole or in part, of common equity securities, for anti-dilution and other adjustments that are as nearly equivalent as possible to the adjustments described under "— Conversion Rights — Conversion Rate Adjustments" above and (ii) with respect to any reference property other than common equity securities and cash, such anti-dilution adjustments (if any) that we reasonably consider appropriate in our good faith determination. If the reference property in respect of any such transaction includes shares of stock, securities or other property or assets of a company other than us or the successor person, such other company will also execute such supplemental indenture, and such supplemental indenture will contain such additional provisions to protect the interests of the holders, including the right of holders to require us to repurchase their notes upon a fundamental change as described under "— Fundamental Change Permits Holders to Require Us to Repurchase Notes" below, as we reasonably consider necessary by reason of the foregoing.

As soon as practicable after learning the anticipated or actual effective date of any common stock change event, we will notify the trustee, conversion agent and holders of the notes of the same, including a brief description of the common stock change event, its anticipated effective date and a brief description of the anticipated change in the conversion right of the notes.

If the reference property consists of more than a single type of consideration (determined based in part upon any form of stockholder election), then the composition of the reference property unit will be deemed to be (x) the weighted average, per share of common stock, of the types and amounts of consideration received by the holders of our common stock that affirmatively make such an election or (y) if no holders of our common stock affirmatively make such an election, the types and amounts of consideration actually received, per share of common stock, by the holders of our common stock.

We have agreed in the indenture not to become a party to any such transaction unless its terms are consistent with the foregoing.

Adjustments of Prices

Whenever any provision of the indenture requires us to calculate a last reported sale price or a function thereof over a period of multiple days (including the "stock price" (as defined below) for purposes of a make-whole fundamental change), we will make appropriate adjustments to account for any adjustment to the conversion rate that becomes effective, or any event requiring an adjustment to the conversion rate where the ex-dividend date, effective date or expiration date of the event occurs, at any time during such period.

Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change

If a fundamental change as defined below (determined after giving effect to the paragraph immediately following such definition, but without regard to the exclusion in the second bullet of clause (2) of the definition thereof) occurs (such an event, a "make-whole fundamental change") and a holder elects to convert its notes "in connection with" such make-whole fundamental change, we will, under certain circumstances, increase the conversion rate for the notes so surrendered for conversion by a number of additional shares of common stock (the "additional shares"), as described below. A conversion of notes will be deemed for these purposes to be "in connection with" a make-whole fundamental change if the applicable conversion date occurs during the period from, and including, the effective date of the make-whole fundamental change up to, and including, the business day immediately prior to the related fundamental change repurchase date (or, in the case of a make-whole fundamental change that would have been a fundamental change but for the exclusion in clause (2) of the definition thereof, the 35th trading day immediately following the effective date of such make-whole fundamental change). We will notify the trustee, the conversion agent and holders of the effective date of any make-whole fundamental change and issue a press release announcing such effective date as promptly as practicable, but in no event later than the business day after such effective date.

If the consideration for our common stock in any make-whole fundamental change described in clause (2) of the definition of fundamental change consists entirely of cash, then, notwithstanding anything to the contrary, for any conversion of notes on or following the effective date of such make-whole fundamental change, we will satisfy our conversion obligation with respect to each $1,000 principal amount of notes by paying the converting holder, on the third business day following the applicable conversion date, an amount of cash equal to the conversion rate (including any adjustment described in this section), multiplied by the "stock price" (as such term is defined below) for such make-whole fundamental change.

The number of additional shares, if any, by which the conversion rate will be increased for a holder that converts its notes in connection with a make-whole fundamental change will be determined by reference to the table below, based on the date on which the make-whole fundamental change occurs or becomes effective (the "effective date") and the price (the "stock price") paid (or deemed paid) per share of our common stock in the make-whole fundamental change. If the holders of our common stock receive only cash in the make-whole fundamental change and the make-whole

fundamental change is of the type described in clause (2) of the definition of fundamental change, the stock price will be the cash amount paid per share. Otherwise, the stock price will be the average of the last reported sale prices per share of our common stock over the five consecutive trading days ending on, and including, the trading day preceding the effective date of the make-whole fundamental change.

The stock prices set forth in the column headings of the table below will be adjusted as of any date on which the conversion rate of the notes otherwise must be adjusted. The adjusted stock prices will equal the stock prices applicable immediately prior to such adjustment, multiplied by a fraction, the numerator of which is the conversion rate immediately prior to the adjustment giving rise to the stock price adjustment and the denominator of which is the conversion rate as so adjusted. The number of additional shares will be adjusted in the same manner, at the same time and for the same events for which we must adjust the conversion rate as set forth under "— Conversion Rights — Conversion Rate Adjustments."

The following table sets forth the number of additional shares that will be added to the conversion rate per $1,000 principal amount of notes for each stock price and effective date set forth below:

		Stock Price									
Effective	Date	$3.17	$3.50	$3.88	$5.00	$6.00	$8.00	$12.00	$16.00	$24.00	$30.00
July 30,	2015	57.9401	50.7543	44.2036	31.3500	24.3350	15.9788	8.1033	4.4119	1.0613	0.0000
July 15,	2016	57.9401	48.5743	42.0258	29.4560	22.7667	14.9413	7.6433	4.1981	1.0217	0.0000
July 15,	2017	57.9401	46.1857	39.4871	27.0720	20.7383	13.5750	7.0533	3.9606	1.0129	0.0000
July 15,	2018	57.9401	43.5600	36.4381	23.9400	18.0050	11.6775	6.1950	3.6238	1.0975	0.0000
July 15,	2019	57.9401	40.4714	32.4124	19.4720	14.0833	8.9475	4.8458	2.9538	1.0896	0.0000
July 15,	2020	57.9401	36.3086	26.1057	12.4080	8.2217	5.0950	2.8525	1.8056	0.7650	0.0000
July 15,	2021	57.9401	28.1971	0.2165	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

The exact stock price and effective date may not be set forth in the table above, in which case:

- If the stock price is between two stock prices in the table or the effective date is between two effective dates in the table, the number of additional shares will be determined by a straight-line interpolation between the number of additional shares set forth for the higher and lower stock prices and the earlier and the later effective dates, as applicable, based on a 365- or 366-day year, as applicable.

- If the stock price is greater than $30.00 (subject to adjustment in the same manner as the stock prices set forth in the column headings of the table above), no additional shares will be added to the conversion rate.

- If the stock price is less than $3.17 (subject to adjustment in the same manner as the stock prices set forth in the column headings of the table above), no additional shares will be added to the conversion rate.

Notwithstanding the foregoing, in no event will the conversion rate be increased as a result of this section to exceed 315.4564 shares of common stock per $1,000 principal amount of notes, subject to adjustment in the same manner, at the same time and for the same events for which we must adjust the conversion rate as set forth under "— Conversion Rights — Conversion Rate Adjustments."

Our obligation to satisfy the additional shares requirement could be considered a penalty, in which case the enforceability thereof would be subject to general principles of reasonableness and equitable remedies.

Fundamental Change Permits Holders to Require Us to Repurchase Notes

If a fundamental change occurs at any time prior to the maturity date, you will have the right, at your option, to require us to repurchase for cash all of your notes, or any portion of your notes that has a principal amount that is equal to $1,000 or an integral multiple of $1,000 in excess thereof. The price that we will be required to pay will equal 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date, unless the fundamental change repurchase date is after a record date but on or prior to the corresponding interest payment date, in which case we will instead pay, on such fundamental change repurchase date, the full amount of accrued and unpaid interest that would have accrued on such notes to, but excluding, such interest payment date to the holder of record of such notes as of the close of business on such record date and the fundamental change repurchase price will equal 100% of the principal amount of the notes to be repurchased. The fundamental change repurchase date will be a date specified by us that is not less than 20 business days or more than 35 business days following the date on which we deliver a fundamental change notice as described below. Any notes repurchased by us will be paid for in cash.

A “fundamental change” will be deemed to have occurred at the time after the notes are originally issued if any of the following occurs:

(1) a “person” or “group” within the meaning of Section 13(d) of the Exchange Act, other than us or our subsidiaries, has become the direct or indirect “beneficial owner” (as defined below) of shares of our common equity representing more than 50% of the voting power of our common equity;

(2) the consummation of:

- any sale, lease or other transfer, in one transaction or a series of transactions, of all or substantially all of the consolidated assets of us and our subsidiaries to any person; or

- any transaction or series of related transactions in connection with which (whether by means of exchange, liquidation, consolidation, merger, combination, reclassification, recapitalization, acquisition or otherwise) all of our common stock is exchanged for, converted into, acquired for or constitutes solely the right to receive other securities, other property, assets or cash, but excluding any merger, consolidation, share exchange or acquisition of us with or by another person pursuant to which the persons that beneficially owned (as defined below), directly or indirectly, the shares of our voting stock immediately prior to such transaction beneficially own, directly or indirectly, immediately after such transaction, shares of the surviving, continuing or acquiring corporation's voting stock representing more than 50% of the total outstanding voting power of all outstanding classes of voting stock of the surviving, continuing or acquiring corporation in substantially the same proportions vis-à-vis each other as immediately prior to such transaction; or

(3) our stockholders approve any plan or proposal for our liquidation or dissolution.

A transaction or event described in clause (1) or (2) above will not constitute a fundamental change, however, if at least 90% of the consideration received or to be received by the holders of our common stock, excluding cash payments for fractional shares or dissenters rights, in connection with the transaction or transactions consists of shares of common stock traded on any of the NASDAQ Capital Market, the NASDAQ Global Market, the NASDAQ Global Select Market, the NYSE MKT LLC or the New York Stock Exchange (or any of their respective successors) or which will be so traded or quoted when issued or exchanged in connection with such transaction or event (these securities being referred to as "publicly traded securities") and as a result of this transaction or event the notes become convertible or exchangeable solely into such consideration (excluding cash payable in lieu of any fractional share), as described above under "— Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock."

For purposes of this definition of "fundamental change," whether a person is a "beneficial owner" will be determined in accordance with Rule 13d-3 under the Exchange Act.

On or before the business day after the effective date of a fundamental change, we will provide to all holders of the notes, the trustee and paying agent a notice of the occurrence of the fundamental change and of the resulting repurchase right. Such notice will state, among other things:

- the events causing a fundamental change;

- the date of the fundamental change;
- the last date on which a holder may exercise the repurchase right;
- the fundamental change repurchase price;
- the fundamental change repurchase date;
- the name and address of the paying agent and the conversion agent, if applicable;
- if applicable, the conversion rate and any adjustments to the conversion rate;
- if applicable, that the notes with respect to which a repurchase notice has been delivered by a holder may be converted only if the holder withdraws the repurchase notice in accordance with the terms of the indenture or to the extent such notes are not subject to such repurchase notice; and
- the procedures that holders must follow to require us to repurchase their notes.

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Simultaneously with providing such notice, we will publish a notice containing this information in a newspaper of general circulation in The City of New York and on our website or through such other public medium as we may use at that time.

To exercise the fundamental change repurchase right, you must deliver to the paying agent, on or before the close of business on the second business day immediately preceding the fundamental change repurchase date, subject to extension to comply with applicable law, a repurchase notice and, if the notes to be repurchased are in certificated form, the notes to be repurchased, duly endorsed for transfer. If the notes to be repurchased are in global form, you must initiate a book-entry transfer of such notes to the paying agent on or before the close of business on the business day immediately preceding the fundamental change repurchase date.

Your repurchase notice must state:

- if certificated, the certificate numbers of your notes to be delivered for repurchase, or if not certificated, your notice must comply with the appropriate DTC procedures;
- the portion of the principal amount of notes to be repurchased, which must equal $1,000 or an integral multiple of $1,000 in excess thereof; and
- that the notes are to be repurchased by us pursuant to the applicable provisions of the notes and the indenture.

You may withdraw any repurchase notice (in whole or in part) by a written notice of withdrawal delivered to the paying agent prior to the close of business on the second business day prior to the fundamental change repurchase date. The notice of withdrawal must state:

- the principal amount of the withdrawn notes, which principal amount must equal $1,000 or an integral multiple of $1,000 in excess thereof;
- if certificated notes have been issued, the certificate numbers of the withdrawn notes, or if not certificated, your notice must comply with the appropriate DTC procedures; and
- the principal amount, if any, which remains subject to the repurchase notice, which principal amount must equal $1,000 or an integral multiple of $1,000 in excess thereof.

Except as provided below, we will be required to repurchase any notes properly surrendered for repurchase and not withdrawn on the fundamental change repurchase date, subject to extension to comply with applicable law. We will pay you the fundamental change repurchase price on the later of (i) the fundamental change repurchase date and (ii) if the notes are in global form, the time of book-entry transfer or the delivery of the notes (or, if certificated, the date you surrender the certificates representing the notes to be repurchased, duly endorsed, to the paying agent). If the paying agent holds money sufficient to pay the fundamental change repurchase price of the notes on the fundamental change repurchase date, then:

- the notes will cease to be outstanding and interest (except default interest and except as described above) will cease to accrue (whether or not book-entry transfer of the notes is made or whether or not the notes are delivered to the paying agent); and

- all other rights of the holder will terminate (other than the right to receive the fundamental change repurchase price and other than the right of a holder of record on a relevant record date to receive the related interest payment, as described above).

In connection with any repurchase offer pursuant to a fundamental change repurchase notice, we will, if required:

- comply with the provisions of the tender offer rules under the Exchange Act that may then be applicable; and

- file a Schedule TO or any other required schedule under the Exchange Act.

Notwithstanding anything to the contrary described above, the indenture prohibits us from repurchasing any notes at the option of holders upon a fundamental change if, as of the fundamental change repurchase date, the principal amount of the notes has been accelerated, such acceleration has not been rescinded and such acceleration did not result from a default that would be cured by our payment of the fundamental change repurchase price.

The term fundamental change is limited to specified transactions and may not include other events that might adversely affect our financial condition and the value of your notes. In addition, the requirement that we offer to repurchase the notes upon a fundamental change may not protect holders in the event of a highly leveraged transaction, reorganization, merger or similar transaction involving us. We could, in the future, enter into certain transactions, including recapitalizations, that would not constitute a fundamental change but would increase the amount of debt, including secured indebtedness, outstanding or otherwise adversely affect a holder. The indenture does not prohibit or otherwise restrict us or our subsidiaries from incurring debt, including other unsubordinated indebtedness. The incurrence of significant amounts of additional debt could adversely affect our ability to service our debt, including the notes.

The definition of fundamental change includes a phrase relating to the sale, lease or other transfer of “all or substantially all” of the consolidated assets of us and our subsidiaries. There is no precise, established definition of the phrase “substantially all” under applicable law. Accordingly, the ability of a holder of the notes to require us to repurchase its notes as a result of the sale, lease or other transfer of less than all of our assets may be uncertain.

If a fundamental change were to occur, we may not have enough funds to pay the fundamental change repurchase price. In addition, our ability to repurchase the notes for cash may be limited by restrictions on our ability to obtain funds for such repurchase through dividends from our subsidiaries, the terms of our existing or future borrowing arrangements or otherwise. For example, under our amended and restated credit facility, we are restricted from making any payment or distribution with respect to, or purchasing, redeeming, defeasing, retiring or acquiring, the notes, other than payments of scheduled interest on the notes, issuance of conversion shares, and payment of cash in lieu of fractional shares. See “Risk Factors — Risks Relating to the Offering — We may not have the ability to raise the funds necessary to pay interest on the notes or to repurchase the notes upon a fundamental change.” If we fail to repurchase the notes when required following a fundamental change, we will be in default under the indenture. A default under the indenture would be a default under our credit agreement and could also lead to a default under agreements governing our future indebtedness. In addition, we may in the future incur other indebtedness with similar fundamental change provisions permitting holders of such debt to accelerate it or to require us to repurchase such other indebtedness upon the occurrence of similar events.

Consolidation, Merger and Sale of Assets

The indenture provides that we may not consolidate with or merge with or into any other person or sell, lease or otherwise transfer all or substantially all of the consolidated assets of us and our subsidiaries to another person, unless:

- the resulting, surviving or transferee person (if not us) (the "successor company") will be a corporation organized and existing under the laws of the United States of America, any state thereof or the District of Columbia, and such successor company (if not us) expressly assumes, by a supplemental indenture, executed and delivered to the trustee, in form reasonably satisfactory to the trustee, all of our obligations under the notes and the indenture;

- immediately after giving effect to such transaction, no default under the indenture will have occurred and be continuing; and

- we have delivered to the trustee an officers' certificate and an opinion of counsel, each stating that (1) the consolidation, merger, sale, conveyance, transfer or lease and such supplemental indenture (if any) comply with the indenture and all conditions precedent thereto are satisfied and (2) such supplemental indenture (if any) constitutes the legal, valid and binding obligation of the successor company.

The successor company will succeed to, and be substituted for, and may exercise every right and power of us under the indenture and, subject to certain exceptions, we will be discharged from our obligations under the notes and the indenture.

Although these types of transactions are permitted under the indenture, certain of the foregoing transactions could constitute a fundamental change permitting each holder to require us to repurchase the notes of such holder as described above.

SEC and Other Reports

We will deliver to holders, with a copy to the trustee, copies of our annual report and of the information, documents and other reports (or copies of such portions of any of the foregoing as the SEC may by rules and regulations prescribe) that we are required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act no later than the date that we are required to file such annual reports, information, documents and other reports with the SEC (giving effect to any grace period provided by Rule 12b-25 under the Exchange Act). Documents filed by us with the SEC via the EDGAR system (or any successor thereto) will be deemed to be delivered to holders and filed with the trustee as of the time such documents are filed via EDGAR.

Whenever we are not subject to the reporting requirements of the Exchange Act, if at any time the notes or the conversion shares constitute "restricted securities" (within the meaning of Rule 144 under the Securities Act), we will, upon the request of any holder or beneficial owner of the notes, or any holder or beneficial owner of the conversion shares, promptly furnish to such holder, beneficial owner, or any prospective purchaser designated by such holder or beneficial owner of the notes, or such holder, beneficial owner or prospective purchaser designated by such holder or beneficial owner, of the conversion shares, as applicable, all of the information that a prospective purchaser of the notes or the conversion shares, as applicable, is required to receive under Rule 144A(d)(4) for such notes or conversion shares, as applicable, to be resold pursuant to the exemption from registration provided by Rule 144A.

Events of Default

Each of the following constitutes an event of default under the indenture:

- we fail to pay principal of the notes (including any fundamental change repurchase price) when due at maturity, upon repurchase, declaration of acceleration or otherwise;

- we fail to pay any interest on the notes when due and such failure continues for a period of 30 days past the applicable due date;

- we fail to give a fundamental change notice or a notice of a make-whole fundamental change, in each case when due;

- we fail to comply with our obligation to convert the notes in accordance with the indenture upon exercise of any holder's conversion right;

- we fail to comply with our obligations under "— Consolidation, Merger and Sale of Assets";

- we fail to perform or observe any of our other covenants or warranties in the indenture or in the notes for 60 days after written notice to us by the trustee or to us and the trustee by the holders of at least 25% in principal amount of the outstanding notes;

- default by us or any of our subsidiaries with respect to any mortgage, agreement or other instrument under which there may be outstanding, or by which there may be secured or evidenced, any indebtedness for money borrowed in excess of $1.0 million in the aggregate of us and/or any of our subsidiaries, whether such indebtedness now exists or is hereafter created (i) resulting in such indebtedness becoming or being declared due and payable or (ii) constituting a failure to pay the principal or interest of any such debt when due and payable at its stated maturity, upon required repurchase, upon declaration of acceleration or otherwise, and after the expiration of any applicable grace period, and such acceleration shall not have been rescinded or annulled or such failure to pay shall not have been cured, as the case may be, within 30 days after written notice to us by the trustee or to us and the trustee by the holders of at least 25% in principal amount of the outstanding notes;

- a final judgment for the payment of in excess of $1.0 million (excluding any amounts covered by insurance) rendered against us or any of our subsidiaries, which judgment is not discharged or stayed within 60 days after (i) the date on which the right to appeal thereof has expired if no such appeal has commenced, or (ii) the date on which all rights to appeal have been extinguished; and

- certain events of bankruptcy, insolvency and reorganization of us or any of our significant subsidiaries (as defined in Article 1, Rule 1-02 of Regulation S-X).

The foregoing constitute events of default whatever the reason for any such event of default and whether it is voluntary or involuntary or is effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body.

As soon as possible, and in any event within five business days after a default occurs, we will deliver to the trustee an officers' certificate describing the default, its status and a description, in reasonable detail, of what action we are taking or propose to take with respect to the default. If a default under the indenture occurs and is continuing and is actually known to a responsible officer of the trustee, the trustee must send to each holder of the notes notice of the default within 90 days after it occurs or, if later than 90 days, promptly (and in any event within 10 business days) after it is known to the trustee. The trustee may withhold notice of a default to the holders of the notes, except defaults relating to the non-payment of principal (including of the fundamental change repurchase price) or interest on the notes or the failure to convert the notes in accordance with the indenture. The trustee must, however, consider it to be in the interest of the holders of the notes to withhold this notice.

If an event of default (other than an event of default relating to certain events of bankruptcy, insolvency or reorganization of us) occurs and continues, the trustee, by written notice to us, or the holders of at least 25% in

principal amount of the outstanding notes, by written notice to us and the trustee, may declare the principal and accrued and unpaid interest on the outstanding notes to be immediately due and payable. In case of certain events of bankruptcy, insolvency or reorganization of us as described above, the principal and accrued and unpaid interest on the notes will automatically become immediately due and payable. Under certain circumstances, the holders of a majority in aggregate principal amount of the outstanding notes may rescind such acceleration with respect to the notes and, as is discussed below, waive these past defaults.

Notwithstanding the foregoing, the indenture provides that, to the extent we elect, the sole remedy for an event of default relating to our failure to comply with the reporting requirements set forth in the first paragraph under "— SEC and Other Reports" will, for the first 60 days after the occurrence of such an event of default, consist exclusively of the right to receive special interest (the "special interest") on the notes at a rate equal to 0.50% per annum on the principal amount of the outstanding notes. If we so elect, such special interest will be payable in the same manner and on the same dates as the stated interest payable on the notes. On the 61st day after such event of default (if such event of default has not been cured or waived prior to such 61st day), the notes will be subject to acceleration as provided above. For the avoidance of doubt, special interest will cease to accrue from such 61st day. The provisions of the indenture described in this paragraph will not affect the rights of holders of notes in the event of the occurrence of any other event of default. If we do not elect to pay the special interest upon an event of default in accordance with this paragraph and the immediately following paragraph, the notes will be subject to acceleration as provided above.

In order to elect to pay the special interest as the sole remedy during the first 60 days after the occurrence of an event of default relating to the failure to comply with the reporting obligations in accordance with the immediately preceding paragraph, we must notify all holders of notes and the trustee and paying agent of such election prior to the occurrence of such event of default. Upon our failure to timely give such notice or to pay the special interest, the notes will be subject to acceleration as provided above. Special interest will cease to accrue from and after the date such event of default relating to the failure to comply with the reporting obligations has been cured or waived.

The holders of a majority in aggregate principal amount of outstanding notes will have the right to direct the time, method and place of any proceedings for any remedy available to the trustee or of exercising any trust or power conferred on the trustee, subject to limitations specified in the indenture. The trustee, however, may refuse to follow any direction that conflicts with law or the indenture or that the trustee determines is unduly prejudicial to the rights of any other holder of the notes or that would involve the trustee in personal liability. Before taking any action under the indenture, the trustee will be entitled to indemnification satisfactory to it against all losses and expenses caused by taking or not taking the action.

The holders of a majority in aggregate principal amount of outstanding notes may waive any past defaults under the indenture, except a default due to the non-payment of principal (including the fundamental change repurchase price) or interest or due to our failure to comply with our conversion obligations, a default arising from our failure to repurchase any notes when required pursuant to the terms of the indenture or a default in respect of any covenant that cannot be amended without the consent of each holder affected.

No holder of the notes may pursue any remedy under the indenture, except in the case of an event of default due to the non-payment of principal (including the fundamental change repurchase price) or interest on the notes or due to the failure to comply with our conversion obligations, unless:

- the holder has given the trustee written notice of such event of default;
- the holders of at least 25% in principal amount of outstanding notes make a written request to the trustee to pursue the remedy;
- such holders have offered the trustee security or indemnity satisfactory to it;
- the trustee does not receive an inconsistent direction from the holders of a majority in aggregate principal amount of outstanding notes; and

· the trustee fails to comply with the request within 60 days after receipt of the request and offer of indemnity.

Each holder will have the right to receive payment or delivery, as applicable, of:

· the principal (including the fundamental change repurchase price) of;

· accrued and unpaid interest, if any, on; and/or

· the consideration due upon conversion of,

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its notes on or after the respective due dates expressed or provided for in the indenture, or to institute suit for the enforcement of any such payment or delivery, as applicable, and such right to receive such payment or delivery, as applicable, on or after such respective dates will not be impaired or affected without the consent of such holder.

The indenture requires us every year to deliver to the trustee a statement confirming our performance of our obligations under the indenture and listing any default and the steps that we have taken or plan to take to remedy such default. The indenture also requires us to deliver to the trustee written notice of any default within 30 days after its occurrence, which notice will describe in reasonable detail the status of such default and what action we are taking or propose to take in respect thereof.

Payments of the fundamental change repurchase price, principal and interest that are not made when due will accrue interest per annum at the then-applicable interest rate plus 100 basis points from the required payment date.

Modification and Amendment

Subject to certain exceptions, the indenture and the notes may be modified or amended with the consent of the holders of at least a majority of the aggregate principal amount of the notes then outstanding (including without limitation, consents obtained in connection with a repurchase of, or tender offer or exchange offer for, notes) and, subject to certain exceptions, any past default in compliance with any provisions of the indenture may be waived with the consent of the holders of a majority of the aggregate principal amount of notes then outstanding (including, without limitation, consents obtained in connection with a repurchase of, or tender offer or exchange offer for, notes). However, notwithstanding the foregoing and except as provided below, a modification or amendment requires the consent of the holder of each outstanding note affected by such modification or amendment if it would:

- reduce the principal amount of or change the stated maturity of any note;
- reduce the rate or extend the time for payment of interest on any note;
- reduce any amount payable upon repurchase of any note or change the time at which or circumstances under which the notes may or will be repurchased;
- impair the right of a holder to institute suit for payment on any note, including with respect to any consideration due upon conversion of any note;

- change the currency in which any note is payable;

- impair the right of a holder to convert any note or reduce the number of conversion shares or amount of cash or any other property receivable upon conversion;

- change the ranking of the notes;

- amend or modify provisions of the amendment, modification or waiver of provisions of the indenture that require each holder's consent; or

- reduce the percentage of the aggregate principal amount of notes required for consent to any amendment or modification of the indenture or to waive any past default.

We and the trustee may modify certain provisions of the indenture and the notes without the consent of any holder of the notes, including to:

- add guarantees with respect to the notes or secure the notes;

- evidence the assumption of our obligations by a successor person under the provisions of the indenture relating to consolidations, mergers and sales of assets;

- surrender any of our rights or powers under the indenture;

- add covenants or events of default for the benefit of the holders of notes;

- cure any ambiguity or correct any inconsistency or defect in the indenture or in the notes;

- make or change any provisions with respect to questions arising under the indenture, provided that such action, individually or in the aggregate with all other such actions, shall not adversely affect the rights and interests of the holders in any material respect, as determined in good faith by our board of directors (or a committee thereof) and evidenced by resolutions of our board of directors (or such committee);

- make any amendment to the provisions of the indenture relating to the transfer and legending of the notes as permitted by the indenture, including to facilitate the issuance and administration of notes;

provided, however, that (i) compliance with the indenture as so amended would not result in notes being transferred in violation of the Securities Act or any applicable securities law and (ii) such amendment, individually or in the aggregate with all other such amendments, does not adversely affect the rights and interests of the holders to transfer notes in any material respect;

- provide for or confirm the issuance of additional notes in accordance with the indenture;

- enter into supplemental indentures in connection with a common stock change event as described above under the caption "— Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock";

- modify or amend the indenture to permit the qualification of the indenture or any supplemental indenture under the Trust Indenture Act as then in effect;

- evidence the acceptance of appointment by a successor trustee;

- comply with the applicable procedures of the applicable depositary;

- conform the indenture and the form or terms of the notes, to the "Description of Notes" set forth in this prospectus; and

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make other changes to the indenture or forms or terms of the notes; provided that no such change, individually or in the aggregate with all other such changes, shall adversely affect the rights and interests of the holders in any material respect.

The indenture will not require holders to approve the particular form of any amendment or modification. Instead, it will be sufficient for holders to approve the substance of the amendment or modification. Notes that are held by any affiliate of ours will be disregarded and deemed not to be outstanding for purposes of determining whether the holders of the requisite aggregate principal amount of notes have concurred in any direction, consent, waiver or other action under the indenture.

Whenever an amendment or modification to the notes or the indenture is approved, we or the trustee, at our direction, will promptly deliver notice of such modification or amendment to each holder of the notes and to the trustee, which notice will describe the substance of such modification or amendment in reasonable detail and state the effective date for such modification or amendment. However, our failure to deliver such notice to every holder and the trustee, or any defect in any such notice we deliver, will not impair or otherwise affect the validity of the amendment or modification.

Satisfaction and Discharge

We may satisfy and discharge our obligations under the indenture by delivering to the registrar for cancellation all outstanding notes or by depositing with the trustee or delivering to the holders, as applicable, after the notes have become due and payable, whether at the stated maturity, or any fundamental change repurchase date or upon conversion or otherwise, cash, or shares of common stock and cash in lieu of fractional shares, solely to satisfy outstanding conversions, as applicable, sufficient to pay all of the outstanding notes and paying all other sums payable under the indenture by us. Such discharge is subject to terms contained in the indenture.

Calculations in Respect of Notes

Except as otherwise provided above, we will be responsible for making all calculations called for under the notes. These calculations include, but are not limited to, determinations of the last reported sale price of our common stock or any other security, accrued interest payable on the notes and the conversion rate of the notes. We will make all these calculations in good faith and, absent manifest error, our calculations will be final and binding on holders of notes. We will provide a schedule of our calculations to each of the trustee and the conversion agent, and each of the trustee and conversion agent is entitled to rely conclusively upon the accuracy of our calculations without independent verification. The trustee will forward our calculations to any holder of notes upon the written request of that holder.

Trustee

Wilmington Trust, National Association, will be the trustee, registrar, paying agent and conversion agent. Wilmington Trust, National Association, in each of its capacities, including without limitation as trustee, registrar, paying agent and conversion agent, will assume no responsibility for the accuracy or completeness of the information concerning us or our affiliates or any other party contained in this prospectus or the related documents or for any failure by us or any other party to disclose events that may have occurred and may affect the significance or accuracy of such information.

Wilmington Trust, National Association, or its affiliates may in the future engage in banking and other commercial dealings with us in the ordinary course of business.

Notices

Except as otherwise described herein, notices to registered holders of the notes will be given by mail or, in the case of global notes, delivered electronically in accordance with the procedures of the depositary to the addresses as they appear in the security register. Notices will be deemed to have been given on the date of mailing or electronic delivery, as applicable.

Governing Law

The indenture provides that it and the notes, and any claim, controversy or dispute arising under or related to the indenture or the notes, are governed by and construed in accordance with the laws of the State of New York.

Registration Rights; Additional Interest

We entered into a registration rights agreement with the initial purchaser and the OrbiMed purchasers. Pursuant to the registration rights agreement, for the benefit of the holders of the notes and conversion shares, at our cost, we agreed to:

- file with the SEC a shelf registration statement (which, initially, will be on Form S-1 and, as soon as we are eligible, will be on Form S-3) covering the resale, from time to time, of the notes and the conversion shares;

- use our best efforts to cause the shelf registration statement to become effective under the Securities Act no later than the 180th day after the original issuance date of the notes; and

- use our best efforts to keep the shelf registration statement continuously effective under the Securities Act until the earlier of (1) the 60th trading day immediately following the maturity date (subject to extension for any suspension of the effectiveness of the shelf registration statement during the 60 trading days immediately following the maturity date) and (2) the date on which no notes or conversion shares are outstanding and constitute "restricted securities" (as defined in Rule 144 under the Securities Act).

We may suspend the effectiveness of the shelf registration statement or the use of the related prospectus or prospectus supplement during specified periods under certain circumstances relating to pending corporate developments, public filings with the SEC and similar events. We will provide a suspension notice to holders in connection with each such suspension, but the suspension notice need not specify the nature of the event giving rise to the suspension. Each holder, by its acceptance of the notes, agrees to hold each such suspension notice, if any, that we deliver in confidence. Except in the case of a suspension period as the result of filing a post-effective amendment solely to add additional selling securityholders, no suspension period may exceed an aggregate of:

- 30 days (or, if the shelf registration statement is on Form S-1 (or any successor thereto), 60 days) in any calendar quarter; or

- 60 days (or, if the shelf registration statement is on Form S-1 (or any successor thereto), 90 days) in any calendar year.

Each of the following events is a "registration default" under the registration rights agreement:

- the registration statement has not been filed and has not become effective on or before to the 180th day after the original issuance date of the notes;

- we have not, through our omission, named a holder as a selling securityholder in the related prospectus or prospectus supplement, or in a post-effective amendment, within the required time periods as described below; or

- at any time after it becomes effective, the shelf registration statement ceases to be effective, or is not usable, and we do not cure the lapse of effectiveness or usability within 10 business days by a post-effective amendment, prospectus supplement or report filed under the Exchange Act (other than (1) in the case of a permitted suspension period described in the preceding paragraph or (2) in the case of a suspension of the shelf registration statement as a result of the filing of a post-effective amendment solely to add additional selling securityholders).

If a registration default occurs, additional interest will accrue on the notes from, and including, the day on which such registration default occurs to, but excluding, the earlier of (1) the day on which such registration default has been cured and (2) the date the shelf registration statement is no longer required to be kept effective. The additional interest will be payable on the same dates and in the same manner as the stated interest on the notes and will accrue at a rate per annum equal to:

- 0.25% of the principal amount of the notes for the first 90 days beginning on, and including, the date on which such registration default occurs; and
- 0.50% of the principal amount of the notes thereafter;

provided, however, that in no event will additional interest exceed 0.50% per annum.

We will not pay additional interest on any note after it has been converted into shares of our common stock. If a note ceases to be outstanding during the continuance of a registration default, we will prorate the additional interest to be paid with respect to that note. However, if a registration default exists on the maturity date for the notes, then, in addition to any additional interest otherwise payable, we will make a cash payment to each holder of notes of an amount equal to 5% of the principal amount of notes outstanding and held by such holder as of the close of business on the business day immediately before the maturity date. For purposes of the preceding sentence, notes that have been converted with a conversion date that is on or after January 15, 2021 and on or before the second business day immediately preceding the maturity date will be considered to be outstanding for purposes of the preceding sentence. Accordingly, and for the avoidance of doubt, if a registration default exists on the maturity date, the payment described in the preceding two sentences will be payable on all notes outstanding as of the close of business on the business day immediately before the maturity date and on all notes converted with a conversion date that is on or after January 15, 2021 and on or before the second business day immediately preceding the maturity date.

A holder who elects to sell securities pursuant to the shelf registration statement is:

- required to be named as a selling securityholder in the related prospectus or prospectus supplement;
- required to deliver a prospectus and any related prospectus supplement(s) to purchasers;
- subject to the civil liability provisions under the Securities Act in connection with any sales pursuant to the shelf registration statement; and
- subject to the provisions of the registration rights agreement, including the indemnification provisions.

Under the registration rights agreement, we will:

- pay all expenses of the shelf registration statement;
- provide each registered holder with copies of the prospectus and any related prospectus supplement(s);
- notify holders when the shelf registration statement has become effective; and
- take other reasonable actions as are required to permit unrestricted resales of the notes and conversion shares in accordance with the registration rights agreement.

The selling securityholders may resell the notes and conversion shares through brokers and dealers. However, in no event may such resales take the form of an underwritten offering without our prior agreement.

Book-Entry, Settlement and Clearance

The notes are issued in the form of one or more registered notes in global form.

The global notes are deposited with the trustee as custodian for DTC and registered in the name of Cede & Co., as nominee of DTC.

Ownership of beneficial interests in a global note is limited to persons who have accounts with DTC ("DTC participants") or persons who hold interests through DTC participants. We expect that under procedures established by DTC:

- upon deposit of a global note with DTC's custodian, DTC will credit portions of the principal amount of the global note to the accounts of the DTC participants designated by the purchasers of the notes; and

- ownership of beneficial interests in a global note will be shown on, and transfer of ownership of those interests will be effected only through, records maintained by DTC (with respect to interests of DTC participants) and the records of DTC participants (with respect to other owners of beneficial interests in the global note).

Beneficial interests in global notes may not be exchanged for notes in physical, certificated form except in the limited circumstances described in the indenture.

All interests in the global notes will be subject to the operations and procedures of DTC. We provide the following summary of those operations and procedures solely for the convenience of investors. The operations and procedures of DTC are controlled by that settlement system and may be changed at any time. None of us, the selling securityholders or the trustee is responsible for those operations or procedures.

DTC has advised us that it is:

- a limited purpose trust company organized under the laws of the State of New York;
- a "banking organization" within the meaning of the New York State Banking Law;
- a member of the Federal Reserve System;
- a "clearing corporation" within the meaning of the Uniform Commercial Code; and
- a "clearing agency" registered under Section 17A of the Exchange Act.

DTC was created to hold securities for its participants and to facilitate the clearance and settlement of securities transactions between its participants through electronic book-entry changes to the accounts of its participants. DTC's participants include securities brokers and dealers, including the initial purchaser, banks and trust companies, clearing corporations and other organizations. Indirect access to DTC's system is also available to others such as banks, brokers, dealers and trust companies; these indirect participants clear through or maintain a custodial relationship with a DTC participant, either directly or indirectly. Investors who are not DTC participants may beneficially own securities held by or on behalf of DTC only through DTC participants or indirect participants in DTC.

So long as DTC's nominee is the registered owner of a global note, that nominee will be considered the sole owner or holder of the notes represented by that global note for all purposes under the indenture. Except as provided below, owners of beneficial interests in a global note:

- will not be entitled to have notes represented by the global note registered in their names;

- will not receive or be entitled to receive physical, certificated notes; and

- will not be considered the owners or holders of the notes under the indenture for any purpose, including with respect to the giving of any direction, instruction or approval to the trustee under the indenture.

As a result, each investor who owns a beneficial interest in a global note must rely on the procedures of DTC to exercise any rights of a holder of notes under the indenture (and, if the investor is not a participant or an indirect participant in DTC, on the procedures of the DTC participant through which the investor owns its interest).

Payments of principal and interest with respect to the notes represented by a global note will be made by the paying agent to DTC's nominee as the registered holder of the global note. None of us, the trustee or the paying agent will have any responsibility or liability for the payment of amounts to owners of beneficial interests in a global note for any aspect of the records relating to or payments made on account of those interests by DTC or for maintaining, supervising or reviewing any records of DTC relating to those interests.

Payments by participants and indirect participants in DTC to the owners of beneficial interests in a global note will be governed by standing instructions and customary industry practice and will be the responsibility of those participants or indirect participants and DTC.

Transfers between participants in DTC will be effected under DTC's procedures and will be settled in same-day funds.

Global notes will be exchanged for notes in physical, certificated form issued and delivered to each person that DTC identifies as a beneficial owner of such global notes only if:

- DTC notifies us at any time that it is unwilling or unable to continue as depositary for the global notes and a successor depositary is not appointed within 90 days;

- DTC ceases to be registered as a clearing agency under the Exchange Act and a successor depositary is not appointed within 90 days; or

- an event of default with respect to the notes has occurred and is continuing and such beneficial owner requests that its notes be issued in physical, certificated form.

In addition, at any time, we may, in our sole discretion, by delivering a written request to the registrar, the trustee and the owner of such beneficial interest, permit the exchange of any beneficial interest in a global note for a note in physical, certificated form at the request of the owner of such beneficial interest.

Description of Capital Stock

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of our common stock and preferred stock. For the complete terms of our common stock and preferred stock, please refer to our Restated Certificate of Incorporation and Amended and Restated Bylaws that are filed as exhibits to our reports incorporated by reference into the registration statement that includes this prospectus. The Delaware General Corporation Law may also affect the terms of our common stock and preferred stock.

Authorized and Outstanding Capital Stock

Our Restated Certificate of Incorporation provides that we have authority to issue (i) 95,000,000 shares of common stock, par value $0.000001 per share, 11,886,101 of which are issued and outstanding as of November 30, 2015, and (ii) 5,000,000 shares of preferred stock, par value $0.000001 per share, none of which are issued and outstanding as of the date of this prospectus. As of September 30, 2015, we also had outstanding warrants to purchase approximately 1,187,521 shares of our common stock and 1,400,000 shares authorized for issuance under our Amended and Restated Equity Incentive Plan.

Common Stock

Principal Market for our Common Stock

Our common stock is listed on the NYSE MKT under the symbol “XTNT.”

Dividends

Our board of directors may authorize, and we may make, distributions to our common stockholders, subject to any restriction in our Restated Certificate of Incorporation and to those limitations prescribed by law and contractual restrictions. Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock will be entitled to share equally, identically and ratably in any dividends that our board of directors may determine to issue from time to time. However, we have never paid cash dividends on our common

stock or any other securities. We anticipate that we will retain all of our future earnings, if any, for use in the expansion and operation of our business and do not anticipate paying any cash dividends in the foreseeable future.

Fully Paid and Non-Assessable

All shares of our outstanding common stock are fully paid and non-assessable.

Voting Rights

Each share of our common stock is entitled to one vote in each matter submitted to a vote at a meeting of stockholders, including in all elections for directors. Stockholders are not entitled to cumulative voting in the election for directors. Our stockholders may vote either in person or by proxy. Except in respect of matters relating to the election of directors and as otherwise provided in our Restated Certificate of Incorporation or required by law, all matters to be voted on by our stockholders must be approved by holders of a majority of the shares present in person or by proxy at the meeting and entitled to vote on the subject matter. In the case of election of directors, all matters to be voted on by our stockholders must be approved by a plurality of the votes entitled to be cast by holders of all outstanding shares of common stock.

Preemptive and Other Rights

Holders of our common stock have no preemptive rights and have no other rights to subscribe for additional securities of ours under Delaware law, nor does our common stock have any conversion rights or rights of redemption. Upon liquidation, all holders of our common stock are entitled to participate pro rata in our assets available for distribution, subject to the rights of any class of preferred stock then outstanding.

Preferred Stock

Though we currently have no plans to issue any shares of preferred stock, our board of directors has the authority, without further action by our stockholders, to designate and issue up to 5,000,000 shares of preferred stock in one or more series. Our board of directors may also designate the rights, preferences and privileges of the holders of each such series of preferred stock, any or all of which may be greater than or senior to those granted to the holders of common stock. Though the actual effect of any such issuance on the rights of the holders of common stock will not be known until our board of directors determines the specific rights of the holders of preferred stock, the potential effects of such an issuance include:

- diluting the voting power of the holders of common stock;
- reducing the likelihood that holders of common stock will receive dividend payments;
- reducing the likelihood that holders of common stock will receive payments in the event of our liquidation, dissolution or winding up; and
- delaying, deterring or preventing a change in control or other corporate takeover.

Anti-Takeover Provisions

Certificate of Incorporation and Bylaws

Our board of directors is divided into three classes, the members of each of which serve for staggered three-year terms. Our stockholders may elect only one-third of our board of directors each year. Because our stockholders do not have cumulative voting rights, our stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors. Our Amended and Restated Bylaws provide that only our board of directors, Chairman of the board or Chief Executive Officer may call a special meeting of stockholders.

The combination of these factors will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, these provisions may have the

effect of deterring hostile takeovers or delaying changes in our control or management. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our stock and, as a consequence, they also may inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

Section 203 of the Delaware General Corporation Law

We have elected to be subject to Section 203 of the Delaware General Corporation Law ("Section 203"), and we are prohibited from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting shares outstanding at the time the transaction began, excluding for purposes of determining the voting shares outstanding (but not the outstanding voting shares owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66-2/3% of the outstanding voting shares that are not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the Company and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the Company involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the Company of any shares of the Company to the interested stockholder;
- any transaction involving the Company that has the effect of increasing the proportionate share of the shares or any class or series of shares of the Company beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the Company.

In general, by reference to Section 203, an "interested stockholder" is an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status owned, 15% or more of the outstanding voting shares of the Company.

Limitations of Liability and Indemnification Matters

We have adopted provisions in our Restated Certificate of Incorporation that limit or eliminate the liability of our directors for monetary damages for breach of their fiduciary duties, except for a breach of the duty of loyalty to the Company or its stockholders, for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law, or for any transaction from which a director derived an improper personal benefit. Accordingly, our directors will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except with respect to the following:

- any breach of their duty of loyalty to us or our stockholders;

- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;

- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or

- any transaction from which the director derived an improper personal benefit.

This limitation of liability does not apply to liabilities arising under the federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission. If Delaware law is amended to authorize the further elimination or limiting of director liability, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law as so amended.

Our Amended and Restated Bylaws provide for mandatory indemnification of directors and officers to the maximum extent allowed by applicable law. We believe that indemnification under our Amended and Restated Bylaws covers at least negligence and gross negligence on the part of indemnified parties. In addition, we have also entered into indemnification agreements with our directors and officers, pursuant to which we must:

- indemnify officers and directors against certain liabilities that may arise because of their status as officers and directors;

- advance expenses, as incurred, to officers and directors in connection with a legal proceeding subject to limited exceptions; and

- cover officers and directors under any general or directors' and officers' liability insurance policy maintained by us.

We also maintain directors' and officers' liability insurance. We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors and executive officers. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling our Company pursuant to the foregoing provisions, the opinion of the SEC is that such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Transfer Agent

The transfer agent for our common stock is Corporate Stock Transfer, Inc.

Market Price of and Dividends on Our Common Stock

Market Information

Our common stock is listed on the NYSE MKT under the ticker symbol “XTNT.” From April 9, 2015 until October 19, 2015, our common stock traded on the OTCQX marketplace under the ticker symbol “BONE,” and from March 7, 2011 to April 8, 2015, our common stock was listed on the NYSE MKT under the ticker symbol “BONE.” The following table sets forth the range of high and low prices per share of our common stock for each quarter, as reported by the NYSE MKT and the OTCQX marketplace, as applicable, for the periods indicated below. Prices have been adjusted to reflect the Company’s July 25, 2014 1:10 reverse stock split.

	High	Low
First Quarter 2013 (January 1, 2013 – March 31, 2013)	$14.80	$8.10
Second Quarter 2013 (April 1, 2013 – June 30, 2013)	$9.80	$4.50
Third Quarter 2013 (July 1, 2013 – September 30, 2013)	$8.00	$4.70
Fourth Quarter 2013 (October 1, 2013 – December 31, 2013)	$8.20	$3.70
First Quarter 2014 (January 1, 2014 – March 31, 2014)	$14.10	$4.80
Second Quarter 2014 (April 1, 2014 – June 30, 2014)	$8.50	$6.30
Third Quarter 2014 (July 1, 2014 – September 30, 2014)	$7.40	$4.07
Fourth Quarter 2014 (October 1, 2014 – December 31, 2014)	$4.75	$2.19
First Quarter 2015 (January 1, 2015 – March 31, 2015)	$4.50	$2.75
Second Quarter 2015 (April 1, 2015 – June 30, 2015)	$4.49	$2.55
Third Quarter 2015 (July 1, 2015 – September 30, 2015)	$4.49	$2.70

Holders of Record

As of December 7, 2015, we had 220 holders of record.

Dividends

We have not paid any cash dividends and do not expect to do so in the foreseeable future. In addition, our amended and restated credit agreement with ROS precludes us from paying dividends.

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Certain U.S. Federal Income Tax Considerations

This section is a discussion of certain U.S. federal income tax considerations relating to the purchase, ownership and disposition of the notes and any shares of our common stock into which the notes may be converted. This summary does not provide a complete analysis of all potential tax considerations. The information provided below is based on existing U.S. federal income tax authorities, all of which are subject to change or differing interpretations, possibly with retroactive effect. There can be no assurances that the Internal Revenue Service (the "IRS") will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling from the IRS with respect to the U.S. federal income tax consequences of purchasing, owning or disposing of the notes or common stock. The summary generally applies only to beneficial owners of the notes that hold the notes and common stock as "capital assets" (generally, for investment). This discussion does not purport to deal with all aspects of U.S. federal income taxation that may be relevant to a particular beneficial owner in light of the beneficial owner's circumstances (for example, persons subject to the alternative minimum tax provisions of the Internal Revenue Code of 1986, as amended (the "Code")), or a U.S. holder (as defined below) whose "functional currency" is not the U.S. dollar). Also, it is not intended to be wholly applicable to all categories of investors, some of which may be subject to special rules (such as dealers in securities, traders in securities that elect to use a mark-to-market method of accounting, banks, thrifts, regulated investment companies, real estate investment trusts, insurance companies, tax-exempt entities, tax-deferred or other retirement accounts, certain former citizens or residents of the United States, persons holding notes or common stock as part of a hedging, conversion or integrated transaction or a straddle, or persons deemed to sell notes or common stock under the constructive sale provisions of the Code). Finally, the summary does not address the potential application of the Medicare contribution tax, the effects of the U.S. federal estate and gift tax laws or the effects of any applicable foreign, state or local laws.

INVESTORS CONSIDERING THE PURCHASE OF NOTES SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE CONSEQUENCES OF U.S. FEDERAL ESTATE OR GIFT TAX LAWS, NON-U.S., STATE AND LOCAL LAWS, AND TAX TREATIES.

As used herein, the term "U.S. holder" means a beneficial owner of the notes or the common stock into which the notes may be converted that, for U.S. federal income tax purposes, is (1) an individual who is a citizen or resident of the United States, (2) a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or any state of the United States, including the District of Columbia, (3) an estate the income of which is subject to U.S. federal income taxation regardless of its source, or (4) a trust if it (x) is subject to the primary supervision of a U.S. court and the control of one of more U.S. persons or (y) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

A "non-U.S. holder" is a beneficial owner of the notes or the common stock into which the notes may be converted (other than an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is not a U.S. holder.

If an entity or arrangement, domestic or foreign, treated as a partnership for U.S. federal income tax purposes is a beneficial owner of a note or shares of our common stock acquired upon conversion of a note, the tax treatment of a partner in the partnership will depend upon the status of the partner and the activities of the partnership. A beneficial owner of a note or shares of our common stock acquired upon conversion of a note that is a partnership, and partners in such a partnership, should consult their own tax advisors about the U.S. federal income tax consequences of purchasing, owning and disposing of the notes and the shares of our common stock into which the notes may be converted.

U.S. Holders

The following discussion is limited to the U.S. federal income tax consequences relevant to a U.S. holder (as defined above).

Taxation of Interest

U.S. holders will be required to recognize as ordinary income any stated interest paid or accrued on the notes, in accordance with their regular method of tax accounting.

We may be required to make payments of additional interest to holders of the notes if we do not make certain filings, as described under "Description of Notes — Registration Rights; Additional Interest" and "Description of Notes — Events of Default" above. We believe that there is only a remote possibility that we would be required to pay additional interest, or that if such additional interest were required to be paid, it would be an incidental amount, and therefore we do not intend to treat the notes as subject to the special rules governing certain contingent payment debt instruments (which, if applicable, would affect the timing, amount and character of income with respect to a note). Our determination in this regard, while not binding on the IRS, is binding on U.S. holders unless they disclose their contrary position. If, contrary to expectations, we pay additional interest, although it is not free from doubt, such additional interest should be taxable to a U.S. holder as ordinary interest income at the time it accrues or is paid in accordance with the U.S. holder's regular method of tax accounting. In the event we pay additional interest on the notes, U.S. holders should consult their own tax advisors regarding the treatment of such amounts.

Market Discount

If a U.S. holder purchases a note for an amount that is less than its stated redemption price at maturity (generally, the sum of all payments required under the note other than payments of stated interest), then the U.S. holder will be treated as having purchased the note at a "market discount," unless the market discount is less than a de minimis amount (1/4 of 1% of the stated redemption price at maturity of the note times the number of complete years to maturity after the U.S. holder acquires the note).

Under the market discount rules, a U.S. holder will be required to treat any partial principal payment on a note, or any gain realized on the sale, conversion, repurchase, retirement or other disposition of a note, as ordinary income to the extent of the lesser of (i) the amount of the payment or realized gain or (ii) the market discount that has not previously

been included in income and is treated as having accrued on such note at the time of such payment or disposition. Market discount will be considered to accrue ratably during the period from the date of acquisition to the maturity date of the note, unless the U.S. holder elects to accrue market discount on a constant yield basis. Once made, such an election may be revoked only with the consent of the IRS and, therefore, should only be made in consultation with a tax advisor.

A U.S. holder may be required to defer the deduction of all or a portion of the interest paid or accrued on any indebtedness incurred or maintained to purchase or carry a note with market discount until the maturity of the note or certain earlier dispositions, because a current deduction is only allowed to the extent that the interest expense exceeds the portion of market discount allocable to the days during the taxable year in which the note was held by the taxpayer. A U.S. holder may elect to include market discount in income currently as it accrues (on either a ratable or constant yield basis), in which case the rules described above regarding the treatment as ordinary income of gain upon the disposition of the note and upon the receipt of certain cash payments and regarding the deferral of interest deductions will not apply. Generally, currently included market discount is treated as ordinary interest for U.S. federal income tax purposes. Such an election will apply to all debt instruments with market discount acquired by the U.S. holder on or after the first day of the taxable year to which the election applies and may be revoked only with the consent of the IRS. The election, therefore, should only be made in consultation with a tax advisor.

Upon the conversion of a note into cash and common stock, any accrued market discount on the note not previously included in income will be carried over to the shares of common stock received upon conversion of the note, and any gain recognized upon the disposition of the shares of common stock will be treated as ordinary income to the extent of the accrued market discount.

Amortizable Bond Premium

If a U.S. holder purchases a note for an amount that is greater than the stated redemption price at maturity of the note, then the U.S. holder will be considered to have purchased the note with "amortizable bond premium." In general, amortizable bond premium with respect to any convertible debt instrument (such as a note) will be equal in amount to the excess, if any, of the tax basis (reduced as set forth in the following sentence) over the sum of all amounts payable on the debt instrument other than stated interest. For this purpose only, a U.S. holder's tax basis in a convertible debt instrument is reduced by an amount equal to the value of the U.S. holder's option to convert the convertible debt instrument for other property (such as our shares of common stock); the value of this option may be determined under any reasonable method.

A U.S. holder may elect to amortize bond premium on a debt instrument over the remaining term of the debt instrument. Once made, the election applies to all taxable debt instruments then owned and thereafter acquired by the U.S. holder on or after the first day of the taxable year to which the election applies, and may be revoked only with the consent of the IRS. The election, therefore, should only be made in consultation with a tax advisor. In general, a U.S. holder amortizes bond premium by offsetting the stated interest allocable to an accrual period with the bond premium allocable to the accrual period, which is determined under a constant yield method pursuant to the applicable Treasury regulations. If the bond premium allocable to an accrual period exceeds the stated interest allocable to such period, the excess is treated by the U.S. holder as a bond premium deduction. The bond premium deduction for each accrual period is limited to the amount by which the U.S. holder's total interest inclusions on the debt instrument in prior accrual periods exceed the total amount treated by the U.S. holder as a bond premium deduction on the debt instrument in prior accrual periods. Any amounts not deductible in an accrual period may be carried forward to the next accrual period and treated as bond premium allocable to that period.

Election to Include All Interest in Income Using a Constant Yield Method

All U.S. holders may generally, upon election, include in income all interest (including stated interest, acquisition discount, original issue discount, de minimis original issue discount, market discount, de minimis market discount, and unstated interest, as adjusted by any amortizable bond premium or acquisition premium) that accrues on a debt instrument by using the constant yield method applicable to original issue discount, subject to certain limitations and exceptions. Because this election will affect how the U.S. holder treats debt instruments other than the notes, it should be made only in consultation with a tax advisor.

Sale, Exchange, Redemption or Other Taxable Disposition of Notes

A U.S. holder generally will recognize capital gain or loss if the holder disposes of a note in a sale, exchange, redemption or other taxable disposition (other than conversion of a note, the U.S. federal income tax consequences of which are described under "— U.S. Holders — Conversion of Notes" below). The U.S. holder's gain or loss generally will equal the difference between the proceeds received by the holder (other than amounts attributable to accrued but unpaid interest) and the holder's tax basis in the note. The U.S. holder's tax basis in the note generally will equal the amount the holder paid for the note, increased by the amount of any accrued market discount previously included in the U.S. holder's income, and decreased by the amount of any amortizable bond premiums previously taken into account by the U.S. holder. The portion of any proceeds that is attributable to accrued interest will not be taken into account in computing the U.S. holder's capital gain or loss. Instead, that portion will be recognized as ordinary interest income to the extent that the U.S. holder has not previously included the accrued interest in income. Subject to the discussion above regarding market discount, gain or loss recognized by the U.S. holder on the disposition of the note will be long-term capital gain or loss if the holder has held the note for more than one year, or short-term capital gain or loss if the holder has held the note for one year or less, at the time of the transaction. Long-term capital gains of non-corporate taxpayers are currently taxed at preferential rates. Short-term capital gains are taxed at ordinary income rates. The deductibility of capital losses is subject to limitations.

Conversion of Notes

A U.S. holder generally should not recognize any gain or loss on the conversion of a note solely into shares of our common stock, except with respect to cash received in lieu of a fractional share of common stock and the fair market value of any common stock attributable to accrued and unpaid interest, subject to the discussion below under "— U.S. Holders — Constructive Distributions on Shares of Common Stock" regarding the possibility that the adjustment to the conversion rate of a note converted in connection with a make-whole fundamental change may be treated as a taxable stock dividend. The U.S. holder's tax basis in the common stock received (including any fractional share for which cash is paid, but excluding shares attributable to accrued and unpaid interest) generally will equal the tax basis of the converted note. The U.S. holder's holding period in the common stock (other than shares attributable to accrued and unpaid interest) will include the holding period in the converted note. With respect to cash received in lieu of a fractional share of our common stock, a U.S. holder will be treated as if the fractional share were issued and received and then immediately redeemed for cash. Accordingly, the U.S. holder generally will recognize gain or loss equal to the difference between the cash received for the fractional share and that portion of the holder's tax basis in the common stock (determined as discussed above) attributable to the fractional share, which, subject to the discussion above regarding market discount, will be long-term capital gain or loss if the holder held the note for more than one year, or short-term capital gain or loss if the holder held the note for one year or less, at the time of the conversion.

Any cash and the value of any portion of our common stock that is attributable to accrued and unpaid interest on the notes not yet included in income by a U.S. holder will be taxed as ordinary income. The basis in any shares of common stock attributable to accrued and unpaid interest will equal the fair market value of such shares when received. The holding period in any shares of common stock attributable to accrued and unpaid interest will begin on the day after they are received.

A U.S. holder that converts a note between a record date for an interest payment and the next interest payment date and consequently receives a payment of cash interest, as described in "Description of Notes — Conversion Rights — General," should consult its own tax advisor concerning the appropriate treatment of such payment.

If we undergo a transaction of the type described under "Description of Notes — Recapitalizations, Reclassifications, Mergers and Other Changes of Our Common Stock," the conversion obligation may be adjusted so that holders would generally be entitled to convert the notes into the type of consideration that they would have been entitled to receive upon such transaction had the notes been converted into shares of our common stock immediately prior to such transaction, except that such holders will not be entitled to receive a make-whole premium unless such notes are converted in connection with the relevant fundamental change. Depending on the facts and circumstances at the time of such transaction, such adjustment may result in a deemed exchange of the outstanding notes, which may be a taxable event for U.S. federal income tax purposes.

U.S. holders are urged to consult their own tax advisors regarding the U.S. federal income tax consequences of such an adjustment.

Distributions on Shares of Common Stock

If, after a U.S. holder acquires shares of our common stock upon a conversion of a note, we make a distribution in respect of such common stock from our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes), the distribution will be treated as a dividend and will be includible in a U.S. holder's income when paid. If the distribution exceeds our current and accumulated earnings and profits, the excess will be treated first as a tax-free return of the U.S. holder's tax basis in its shares of common stock and any remaining excess will be treated as capital gain from the sale or exchange of the common stock. If the U.S. holder is a U.S. corporation, it would generally be able to claim a dividends-received deduction on a portion of any distribution taxed as a dividend, provided that certain holding period requirements are satisfied. Subject to certain exceptions, dividends received by certain non-corporate U.S. holders are currently taxed at the preferential rates applicable to long-term capital gains, provided that certain holding period requirements are met.

Constructive Distributions on Shares of Common Stock

The terms of the notes allow for changes in the conversion rate of the notes under certain circumstances. A change in conversion rate that allows holders of notes to receive more shares of common stock on conversion may increase such holders' proportionate interests in our earnings and profits or assets. In that case, the holders of notes may be treated as though they received a taxable distribution in the form of our common stock. A taxable constructive stock distribution would result, for example, if the conversion rate is adjusted to compensate holders of notes for distributions of cash or property to our stockholders. The adjustment to the conversion rate of notes converted in connection with a non-stock change of control, as described under "Description of Notes — Increase in the Conversion Rate for Conversions in Connection with a Make-Whole Fundamental Change" above, also may be treated as a taxable stock distribution. If an event occurs that dilutes the interests of stockholders or increases the interests of holders of the notes and the conversion rate of the notes is not adjusted (or not adequately adjusted), this also could be treated as a taxable stock distribution to holders of the notes. Conversely, if an event occurs that dilutes the interests of holders of the notes and the conversion rate is not adjusted (or not adequately adjusted), the resulting increase in the proportionate interests of our stockholders could be treated as a taxable stock distribution to the stockholders. Not all changes in the conversion rate that result in holders of notes receiving more common stock on conversion, however, increase such holders' proportionate interests in us. For instance, a change in conversion rate could simply prevent the dilution of the holders' interests upon a share split or other change in capital structure. Changes of this type, if made pursuant to a bona fide reasonable adjustment formula, are not treated as constructive stock distributions. Any taxable constructive stock distribution resulting from a change to, or failure to change, the conversion rate that is treated as a distribution of common stock would be treated for U.S. federal income tax purposes in a similar manner as a distribution on our common stock paid in cash or other property. It would result in a taxable dividend to the recipient to the extent of our current or accumulated earnings and profits (with the holder's tax basis in its note or common stock (as the case may be) being increased by the amount of such dividend), with any excess treated as a tax-free return of the holder's tax basis in its note or common stock (as the case may be) or as capital gain. U.S. holders should consult their own tax advisors regarding whether any taxable constructive stock dividend would be eligible for the preferential rates or the dividends-received deduction described in the previous paragraph, as the requisite applicable holding period requirements might not be considered to be satisfied.

Sale, Exchange or Other Disposition of Common Stock

A U.S. holder generally will recognize capital gain or loss on a sale, exchange or other disposition of shares of our common stock. The U.S. holder's gain or loss will equal the difference between the proceeds received by the holder and the holder's tax basis in the shares of common stock. The proceeds received by the U.S. holder will include the amount of any cash and the fair market value of any other property received for the shares of common stock. The gain or loss recognized by a U.S. holder on a sale, exchange or other disposition of shares of our common stock will be long-term capital gain or loss if the holder's holding period in the shares of common stock is more than one year, or short-term capital gain or loss if the holder's holding period in the shares of common stock is one year or less, at the time of the transaction. Long-term capital gains of non-corporate taxpayers are currently taxed at preferential rates. Short-term capital gains are taxed at ordinary income rates. The deductibility of capital losses is subject to limitations.

Non-U.S. Holders

The following discussion is limited to the U.S. federal income tax consequences relevant to a non-U.S. holder (as defined above).

Taxation of Interest

Subject to the discussion below under "— Income or Gains Effectively Connected with a U.S. Trade or Business," payments of interest to non-U.S. holders are generally subject to U.S. federal income tax at a rate of 30% (or a reduced or zero rate under the terms of an applicable income tax treaty between the United States and the recipient's country of residence), collected by means of withholding by the payor. Payments of interest on the notes to most non-U.S. holders, however, will qualify as "portfolio interest," and thus will be exempt from U.S. federal income tax, including withholding of such tax, if the non-U.S. holders certify their nonresident status as described below.

The portfolio interest exemption will not apply to payments of interest to a non-U.S. holder that:

- owns, actually or constructively, shares of our stock representing at least 10% of the total combined voting power of all classes of our stock entitled to vote;

- is a "controlled foreign corporation" that is related, directly or indirectly, to us through stock ownership; or

- is a bank whose receipt of interest on the notes is described in Section 881(c)(3)(A) of the Code.

In general, a foreign corporation is a controlled foreign corporation if more than 50% (by vote or value) of its stock is owned, actually or constructively, by one or more U.S. persons that each owns, actually or constructively, at least 10% of the corporation's voting stock. The portfolio interest exemption, reduction of the withholding rate pursuant to the terms of applicable income tax treaty, and several of the special rules for non-U.S. holders described below apply only if the holder certifies its nonresident status. A non-U.S. holder can meet this certification requirement by providing a properly executed IRS Form W-8BEN or W-8BEN-E or appropriate substitute form to us or our paying agent prior to the payment. If the non-U.S. holder holds the note through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to the agent. The non-U.S. holder's agent will then be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Special certification rules apply to non-U.S. holders that are pass-through entities.

Conversion of Notes

The federal income tax treatment of the conversion of the notes into shares of our common stock generally will be the same treatment as that described under "—U.S. Holders—Conversion of Notes" above. A non-U.S. holder will generally not recognize gain or loss on the conversion of the notes into shares of common stock. Any shares of common stock that a non-U.S. holder receives on the conversion of a note that is attributable to accrued interest will be subject to U.S. federal income tax in accordance with the rules of taxation of interest described under "—Non-U.S. Holders—Taxation of Interest" above.

Sale, Exchange, Certain Redemptions or Other Disposition of Notes or Common Stock

Non-U.S. holders generally will not be subject to U.S. federal income or withholding tax on any gain realized on the sale, exchange, certain redemptions or other disposition of notes or shares of our common stock (other than with respect to payments attributable to accrued interest, which, to the extent not previously included in income, will be taxed as described under "— Non-U.S. Holders — Taxation of Interest" above). This general rule, however, is subject to several exceptions. For example, the gain would be subject to U.S. federal income tax if:

- the gain is effectively connected with the conduct by the non-U.S. holder of a U.S. trade or business (and, generally, if an income tax treaty applies, the gain is attributable to a U.S. permanent establishment or fixed base maintained by

the non-U.S. holder), in which case the gain would be subject to tax as described below under "— Non-U.S. Holders — Income or Gains Effectively Connected with a U.S. Trade or Business";

- the non-U.S. holder is an individual who is present in the United States for 183 days or more in the year of disposition and certain other conditions apply, in which case, except as otherwise provided by an applicable income tax treaty, the gain, which may be offset by certain U.S. source capital losses, would be subject to a flat 30% tax, even though the individual is not considered a resident of the United States; or

- the rules of the Foreign Investment in Real Property Tax Act ("FIRPTA") (described below) treat the gain as effectively connected with a U.S. trade or business.

The FIRPTA rules may apply to a sale, exchange, certain redemptions or other disposition of notes or shares of our common stock by a non-U.S. holder if we currently are, or were at any time within five years before the sale, exchange, redemption, conversion or other disposition (or, if shorter, the non-U.S. holder's holding period for the notes or common stock disposed of), a "U.S. real property holding corporation" ("USRPHC"). In general, we would be a USRPHC if interests in U.S. real estate comprised at least 50% of the fair market value of our assets. We believe that we currently are not, and will not become in the future, a USRPHC.

Dividends

Dividends paid to a non-U.S. holder on shares of our common stock received on conversion of a note, including any taxable constructive stock dividends resulting from certain adjustments (or failures to make adjustments) to the number of shares of common stock to be issued on conversion (as described under "— U.S. Holders — Constructive Distributions on Shares of Common Stock" above) generally will be subject to U.S. withholding tax at a 30% rate. The withholding tax on dividends (including any taxable constructive stock dividends), however, may be reduced under the terms of an applicable income tax treaty between the United States and the non-U.S. holder's country of residence. A non-U.S. holder should demonstrate its eligibility for a reduced rate of withholding under an applicable income tax treaty by timely delivering a properly executed IRS Form W-8BEN or W-8BEN-E or appropriate substitute form. A non-U.S. holder that is eligible for a reduced rate of withholding under the terms of an applicable income tax treaty may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Dividends on the common stock that are effectively connected with a non-U.S. holder's conduct of a U.S. trade or business are discussed below under "— Non-U.S. Holders — Income or Gains Effectively Connected with a U.S. Trade or Business." Under proposed Treasury regulations relating to certain "dividend equivalent" payments, an adjustment to the conversion rate of the notes as a result of a dividend on shares of our common stock may be subject to withholding tax at a different time or in a different amount than described above. However, the Treasury Department and the IRS stated their intent to limit the application of the proposed Treasury regulations to instruments issued on or after 90 days after the date of publication of final Treasury regulations. Withholding tax applicable to any taxable constructive stock dividends or dividend equivalent payments received by a non-U.S. holder may be withheld from interest on the notes, distributions on the shares of our common stock or proceeds subsequently paid or credited to the non-U.S. holder.

Income or Gains Effectively Connected With a U.S. Trade or Business

The preceding discussion of the U.S. federal income and withholding tax considerations of the purchase, ownership or disposition of notes or shares of our common stock by a non-U.S. holder assumes that the holder is not engaged in a U.S. trade or business. If any interest on the notes, dividends on shares of our common stock, or gain from the sale, exchange, redemption or other disposition of the notes or shares of our common stock is effectively connected with a U.S. trade or business conducted by the non-U.S. holder, then the income or gain will be subject to U.S. federal income tax on a net income basis at the regular graduated rates and generally in a similar manner applicable to U.S. holders. If the non-U.S. holder is eligible for the benefits of a tax treaty between the United States and the holder's country of residence, any "effectively connected" income or gain generally will be subject to U.S. federal income tax only if it is also attributable to a permanent establishment or fixed base maintained by the holder in the United States. Payments of interest or dividends that are effectively connected with a U.S. trade or business (and, if a tax treaty applies, attributable to a permanent establishment or fixed base), and therefore included in the gross income of a non-U.S. holder, will not be subject to 30% withholding, provided that the holder claims exemption from withholding by timely filing a properly completed and executed IRS Form W-8ECI (in the case of a U.S. trade or business income) or properly completed and executed IRS Form W-8BEN or W-8BEN-E (in the case of a treaty), or any successor form as the IRS designates, as applicable, prior to payment. If the non-U.S. holder is a corporation (including for this purpose any entity treated as a corporation for U.S. federal income tax purposes), that portion of its earnings and

profits that is effectively connected with its U.S. trade or business generally also would be subject to a "branch profits tax." The branch profits tax rate is generally 30%, although an applicable income tax treaty might provide for a lower rate.

Backup Withholding and Information Reporting

The Code and the U.S. Treasury regulations require those who make specified payments to report the payments to the IRS. Among the specified payments are interest, dividends and proceeds paid by brokers to their customers. This reporting regime is reinforced by "backup withholding" rules, which require the payor to withhold from payments subject to information reporting if the recipient has failed to provide a taxpayer identification number to the payor, furnished an incorrect identification number, or repeatedly failed to report interest or dividends on tax returns. The backup withholding rate is currently 28%.

Payments of interest or dividends (including constructive dividends) to U.S. holders of notes or shares of our common stock generally will be subject to information reporting, and will be subject to backup withholding, unless the holder (1) is an exempt payee, or (2) provides the payor with a correct taxpayer identification number and complies with applicable certification requirements. Payments made to U.S. holders by a broker upon a sale of notes or common stock will generally be subject to information reporting and backup withholding. If the sale is made through a foreign office of a foreign broker, however, the sale will generally not be subject to either information reporting or backup withholding. This exception may not apply if the foreign broker is owned or controlled by U.S. persons, or is engaged in a U.S. trade or business.

The applicable withholding agent must report annually to the IRS the interest and/or dividends (including constructive dividends) paid to each non-U.S. holder and the tax withheld, if any, with respect to such interest and/or dividends, including any tax withheld pursuant to the rules described above under "—Taxation of Interest" and "—Dividends." Copies of these reports may be made available to tax authorities in the country where the non-U.S. holder resides. Payments to non-U.S. holders of dividends on our common stock or interest on the notes may be subject to backup withholding unless the non-U.S. holder certifies its non-U.S. status on a properly completed and executed IRS Form W-8BEN or W-8BEN-E or appropriate substitute form. Payments made to non-U.S. holders by a broker upon a sale of the notes or our common stock will not be subject to information reporting or backup withholding as long as the non-U.S. holder certifies its non-U.S. status or otherwise establishes an exemption.

Any amounts withheld from a payment to a U.S. holder or non-U.S. holder of notes or common stock under the backup withholding rules generally will be allowed as a refund or can be credited against any U.S. federal income tax liability of the holder, provided the required information is timely furnished to the IRS.

Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act imposes a 30% U.S. withholding tax on certain U.S. source payments, including interest, dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S. source interest or dividends ("Withholdable Payments"), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution either (i) enters into an agreement with the Treasury Department to collect and provide to the Treasury Department substantial information regarding U.S. account holders, including certain account holders that are foreign entities with U.S. owners, with such institution, (ii) satisfies the requirements of an intergovernmental agreement entered into by such institution's country of residence and the United States, or (iii) otherwise qualifies for an exemption. The legislation also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity or otherwise qualifies for an exemption.

These withholding and reporting requirements generally currently apply to payments of interest and dividends and will apply to payments of gross proceeds from the sale or other disposition of the notes and shares of our common stock after December 31, 2016. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing the Foreign Account Tax Compliance Act may be subject to different rules. Holders are urged to consult their own tax advisors regarding the possible implications of this legislation on their purchase, ownership and disposition of the notes and any shares of our common stock.

Selling SECURITYholders

We originally issued the notes to the initial purchaser and the OrbiMed purchasers in a private placement in July 2015. The notes were immediately resold by the initial purchaser to persons reasonably believed by the initial purchaser to be qualified institutional buyers within the meaning of Rule 144A under the Securities Act in transactions exempt from registration under the Securities Act. Selling securityholders, including their transferees, pledgees or donees or their successors, may from time to time offer and sell the notes and the conversion shares pursuant to this prospectus. Our registration of the notes and the conversion shares does not necessarily mean that the selling securityholders will sell all or any of the notes or the conversion shares. Unless set forth below, none of the selling securityholders has had a position, office or any other material relationship with us, or any of our predecessors or affiliates, within the past three years. Nothing in this prospectus shall be construed as an admission that any selling securityholder is the beneficial owner of any of our securities, other than the securities held directly by such party, nor that any selling securityholder or other persons or entities constitute a "group," for purposes of Section 13(d) of the Exchange Act and the rules promulgated thereunder.

The following table sets forth certain information concerning the principal amount of notes beneficially owned by each selling securityholder and the number of conversion shares that may be offered from time to time by each selling securityholder under this prospectus. The information is based on information provided to us by or on behalf of the selling securityholders. The number of conversion shares shown in the table below assumes conversion of the full amount of notes held by each holder at the initial conversion rate of 257.5163 shares per $1,000 principal amount of notes. This conversion rate is subject to adjustments in certain circumstances. Because the selling securityholders may offer all or some portion of the notes or conversion shares, we have assumed for purposes of the table below that the named selling securityholders will sell all of the notes or convert all of the notes and sell all of the conversion shares offered pursuant to this prospectus. In addition, the selling securityholders identified below may have sold, transferred or otherwise disposed of all or a portion of their notes since the date on which they provided the information regarding their notes in transactions exempt from the registration requirements of the Securities Act. Information about the selling securityholders may change over time. Any changed information given to us by the selling securityholders will be set forth in prospectus supplements if and when necessary or, if appropriate, a post-effective amendment to the registration statement of which this prospectus is a part. Because the selling securityholders may offer all or some portion of their notes or the underlying conversion shares from time to time, we cannot estimate the amount of notes or underlying conversion shares that will be held by the selling securityholders upon the termination of any particular offering. See "Plan of Distribution" for further information.

	Aggregate	Number of	Other Shares of Our Common Stock Beneficially	Percentage of Shares of

Name†	Principal Amount of Notes Beneficially Owned That May be Sold	Percentage of Notes Outstanding	Shares of Common Stock Issuable Upon Conversion of the Notes That May be Sold(1)	Owned Before the Offering and Assumed to be Owned Following the Offering	Common Stock Beneficially Outstanding Following the Offering(2)
OrbiMed Royalty Opportunities II, LP	$18,810,000	27.7%	4,843,881	—(3)	—(3)
ROS Acquisition Offshore LP(3)	$33,190,000	48.8%	8,546,966	—(3)	—(3)
Bruce Fund, Inc.	$2,000,000	2.9 %	515,032	—	—
Telemetry Securities, L.L.C.(4)†	$3,000,000	4.4 %	772,548	—	—
Visium Balanced Master Fund, Ltd.	$1,500,000	2.2 %	386,274	—	—
Symphony Convertible Arbitrage Master Fund LP(5)†	$200,000	0.3 %	51,503	—	—
Symphony Corporate Arbitrage and Relative Value Fund LP(5)†	$800,000	1.2 %	206,013	—	—
All other holders of notes or future transferees of such holders(6)	$68,000,000	100 %	17,511,105	—	—

† The selling securityholders identified with a crosshatch have identified that they are, or are affiliates of, registered broker-dealers. These selling securityholders have represented that they acquired their securities in the ordinary course of business and in the open market, and, at the time of the acquisition of the securities, had no agreements or understandings, directly or indirectly, with any person to distribute the securities. To the extent that we become aware that any such selling securityholder did not acquire its securities in the ordinary course of business or did have such an agreement or understanding, we will file a post-effective amendment to the registration statement of which this prospectus is a part to designate such person as an "underwriter" within the meaning of the Securities Act.

(1) The number of conversion shares shown in the table above assumes conversion of the full amount of notes at the initial conversion rate of 257.5163 shares per $1,000 principal amount of notes. This conversion rate is subject to adjustment as described under "Description of Notes — Conversion Rights." As a result, the number of conversion shares may increase or decrease in the future. Under the terms of the indenture, fractional shares will not be issued upon conversion of the notes. Cash will be paid in lieu of a fractional share upon conversion of the notes.

(2) Calculated based on Rule 13d-3 of the Exchange Act, using 11,886,101 shares of common stock outstanding as of November 30, 2015. In calculating these percentages for each holder of notes, we also treated as outstanding that number of conversion shares issuable upon conversion of that holder's notes. However, we did not assume the conversion of any other holder's notes in calculating these percentages. Based on the 11,886,101 shares of common stock outstanding as of November 30, 2015, unless otherwise noted, none of these selling securityholders would beneficially own 1% or more of the outstanding conversion shares following the sale of securities in the offering.

(3) We entered into a credit agreement with ROS Acquisition Offshore LP ("ROS") on August 24, 2012, which was amended and restated on July 27, 2015 to increase our credit facility with ROS by an additional $18.0 million. An affiliate of ROS owns 475,439 shares of our common stock.

(4) Telemetry Securities, L.L.C. ("Telemetry Securities") is a subsidiary of Telemetry Investments, L.L.C. ("Telemetry Investments"), an investment company registered under the Investment Company Act of 1940, as amended. As such, Telemetry Investments may share voting or dispositive power over the securities held by Telemetry Securities.

(5) Symphony Asset Management LLC is the general partner of the selling securityholder, and as such, may share voting or dispositive power over the securities held by the selling securityholder.

(6) Additional selling security holders may be identified by amendment. Assumes that any other holder of notes or any future transferee of any such holder does not beneficially own any conversion shares other than the conversion shares issuable at the initial conversion rate.

Plan of Distribution

The selling securityholders and their successors, which includes their pledgees, donees, partnership distributees and other transferees receiving the notes or conversion shares from the selling securityholders in non-sale transfers, may sell the notes and the underlying conversion shares directly to purchasers or through underwriters, broker-dealers or agents. However, in no event may such resales take the form of an underwritten offering without our prior agreement. Underwriters, broker-dealers or agents may receive compensation in the form of discounts, concessions or commissions from the selling securityholders or the purchasers. These discounts, concessions or commissions may be in excess of those customary in the types of transactions involved.

The notes and the underlying conversion shares may be sold in one or more transactions at:

- fixed prices that may be changed;
- prevailing market prices at the time of sale;
- prices related to the prevailing market prices;
- varying prices determined at the time of sale; or
- negotiated prices.

These sales may be effected in a variety of transactions, which may involve crosses or block transactions, including the following:

- on any national securities exchange or quotation service on which the notes or our common stock may be listed or quoted at the time of sale;
- in the over-the-counter-market;
- in transactions otherwise than on these exchanges or services or in the over-the-counter market (privately negotiated transactions);

- ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the offered shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account pursuant to this prospectus;
- through the writing and exercise of options (including the issuance of derivative securities), whether these options or such other derivative securities are listed on an options or other exchange or otherwise;
- through the settlement of short sales; or
- through any combination of the foregoing, or by any legally available means.

Selling securityholders may enter into hedging transactions with broker-dealers or other financial institutions which may in turn engage in short sales of the notes or the underlying conversion shares and deliver these securities to close out short positions. In addition, the selling securityholders may sell the notes and the conversion shares short and deliver the notes and underlying conversion shares to close out short positions or loan or pledge the notes or the underlying conversion shares to broker-dealers or other financial institutions that in turn may sell such securities. Selling securityholders may also enter into option or other transactions with broker-dealers or other financial institutions that require the delivery to the broker-dealers or other financial institutions of the notes or the underlying conversion shares or enter into transactions in which a broker-dealer makes purchases as a principal for resale for its own account or through other types of transactions.

Selling securityholders may decide to sell all or a portion of the notes and the underlying conversion shares offered by them pursuant to this prospectus or may decide not to sell the notes or the underlying conversion shares under this prospectus. In addition, selling securityholders may sell or transfer their notes and conversion shares other than by means of this prospectus. In particular, any securities covered by this prospectus that qualify for sale pursuant to Rule 144, Rule 144A or Regulation S under the Securities Act may be sold thereunder, rather than pursuant to this prospectus.

The aggregate proceeds to the selling securityholders from the sale of the notes or underlying conversion shares will be the purchase price of the notes or conversion shares less any discounts and commissions. A selling securityholder reserves the right to accept and, together with their agents, to reject any proposed purchase of the notes or conversion shares to be made directly or through agents. We will not receive any of the proceeds from this offering.

In order to comply with the securities laws of some jurisdictions, if applicable, the holders of notes and conversion shares may sell in some jurisdictions through registered or licensed broker-dealers. In addition, under certain circumstances in some jurisdictions, the holders of notes and conversion shares may be required to register or qualify the securities for sale or comply with an available exemption from the registration and qualification requirements.

Our common stock is listed on the NYSE MKT under the symbol “XTNT.” We do not intend to apply to list the notes on any securities exchange or to include them in any automated dealer quotation system. Accordingly, a liquid market for the notes may never develop.

The selling securityholders and any underwriters, broker-dealers or agents who participate in the distribution of the notes and the underlying conversion shares may be deemed to be “underwriters” within the meaning of the Securities Act. As a result, any profits on the sale of the notes or the underlying conversion shares by selling securityholders and any discounts, commissions or concessions received by any such broker-dealers or agents may be deemed to be underwriting discounts and commissions under the Securities Act. If the selling securityholders were deemed to be underwriters, the selling securityholders will be subject to the prospectus delivery requirements of the Securities Act and may be subject to liabilities including, but not limited to, those of Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

If the notes and the underlying conversion shares are sold through underwriters or broker-dealers, the selling securityholders will be responsible for underwriting discounts or commissions or agent’s commissions.

Any selling securityholder who is a “broker-dealer” may be deemed to be an “underwriter” within the meaning of Section 2(11) of the Securities Act. As a result, each such selling securityholder is an underwriter in connection with the sale

of the notes or the conversion shares covered by this prospectus. Such selling securityholders have informed us that they have purchased their notes in the open market and in the ordinary course of business, not directly from us, and we are not aware of any underwriting plan or agreement, underwriters' or dealers' compensation, or passive market-making or stabilization transactions involving the purchase or distribution of these securities by such selling securityholders.

The selling securityholders and any other persons participating in the distribution of the notes or underlying conversion shares will be subject to the Exchange Act. The Exchange Act rules include, without limitation, Regulation M, which may limit the timing of purchases and sales of any of the notes and the underlying conversion shares by the selling securityholders and any such other person. In addition, Regulation M of the Exchange Act may restrict the ability of any person engaged in the distribution of the notes and the underlying conversion shares to engage in market making activities with respect to the particular notes and underlying conversion shares being distributed for a period of up to five business days prior to the commencement of such distribution. This may affect the marketability of the notes and the underlying conversion shares and the ability to engage in market making activities with respect to the notes and the underlying conversion shares.

If required, the specific notes or conversion shares to be sold, the names of the selling securityholders, the respective purchase prices and public offering prices, the names of any agent, dealer or underwriter and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement of which this prospectus is a part.

We entered into a registration rights agreement for the benefit of the holders of the notes to register the notes and the conversion shares under applicable federal securities laws under specific circumstances and specific times. Under the registration rights agreement, we and the selling securityholders have agreed to indemnify each other and our respective controlling persons against, and in certain circumstances to provide contribution with respect to, specific liabilities in connection with the offer and sale of the notes and the conversion shares, including liabilities under the Securities Act. We will pay substantially all of the expenses incident to the registration of the notes and the conversion shares, except that the selling securityholders will pay all brokers' commissions and, in connection with an underwritten offering, if any, underwriting discounts and commissions. See "Description of Notes — Registration Rights; Additional Interest" above.

Legal Matters

Certain legal matters with respect to the notes and the conversion shares offered in this offering will be passed upon for us by our counsel, Hogan Lovells US LLP.

Experts

The financial statements incorporated by reference into this prospectus and registration statement have been audited by EKS&H LLLP, an independent registered public accounting firm, as set forth in their report thereon appearing in our Annual Report on Form 10-K for the year ended December 31, 2014 and incorporated by reference into this prospectus and registration statement, and such report is included in reliance upon the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of X-spine incorporated by reference into this prospectus and registration statement for the year ended December 31, 2014 have been audited by RSM US LLP, (formerly McGladrey LLP), independent auditors, as set forth in their report thereon appearing in our Current Report on Form 8-K filed with the SEC on July 28, 2015 and incorporated by reference into this prospectus and registration statement, and such report is included in reliance upon the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of X-spine incorporated by reference into this prospectus and registration statement for the year ended December 31, 2013 have been audited by Battelle Rippe Kingston LLP, independent auditors, as set forth in their report thereon appearing in our Current Report on Form 8-K filed with the SEC on July 28, 2015 and incorporated by reference into this prospectus and registration statement, and such report is included in reliance upon the authority of such firm as experts in accounting and auditing.

Material Changes

In addition to the disclosures contained in this prospectus, material changes since the end of our last fiscal year are described in the Company’s Quarterly Reports on Form 10-Q and Current Reports on Form 8-K incorporated by reference into this prospectus.

Incorporation of Certain Information by Reference

The SEC allows us to incorporate by reference certain information that we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. This prospectus incorporates by reference the documents listed below that we previously have filed with the SEC. These documents contain important information about us.

- Our Annual Report on Form 10-K for the year ended December 31, 2014, filed with the SEC on March 18, 2015;
- Our definitive proxy statement on Schedule 14A, filed with the SEC on May 22, 2015;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2015, June 30, 2015 and September 30, 2015, filed with the SEC on May 6, 2015, August 14, 2015 and November 16, 2015; and
- Our Current Reports on Form 8-K (other than portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits accompanying such reports that are related to such items) filed with the SEC on March 17, 2015, April 9, 2015, May 12, 2015, June 26, 2015, July 28, 2015, August 3, 2015, August 14, 2015, October 1, 2015 and October 15, 2015.

We are not, however, incorporating by reference any documents, or portions of documents, which are not deemed "filed" with the SEC.

You can obtain a copy of any or all of the documents incorporated by reference in this prospectus (other than an exhibit to a document unless that exhibit is specifically incorporated by reference into that document) from the SEC on its website at www.sec.gov. You may also obtain these documents from us, free of charge, by visiting our internet website www.xtantmedical.com or by writing to us or calling us at the following address and phone number:

Xtant Medical Holdings, Inc.

664 Cruiser Lane

Belgrade, Montana 59714

Attn: Corporate Secretary

(406) 388-0480

Where You Can Find More Information

We have filed with the SEC a registration statement under the Securities Act that registers the distribution of the securities offered under this prospectus. The registration statement, including the attached exhibits and schedules and the information incorporated by reference, contains additional relevant information about us and the securities. The rules and regulations of the SEC allow us to omit from this prospectus certain information included in the registration statement. In addition, we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy this information and the registration statement at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room.

You may also obtain the documents that we file electronically on the SEC's website at www.sec.gov or on our website at www.xtantmedical.com. Information contained on our website is not incorporated by reference herein and does not constitute part of this prospectus.

$68,000,000 Aggregate Principal Amount of

6.00% Convertible Senior Notes due 2021

and Shares of Common Stock Issuable Upon Conversion Thereof

PRELIMINARY PROSPECTUS

, 2015

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses payable by us in connection with the issuance and registration of the securities being registered. All amounts are estimates, except the SEC registration fee.

	Amount
SEC registration fee	$6,847.60
Printing expenses	$3,000
Accounting fees and expenses	$5,000
Legal fees and expenses	$20,000
Miscellaneous	$2,000
Total	$36,847.60

Item 14. Indemnification of Directors and Officers.

Delaware General Corporation Law

Section 145(a) of the Delaware General Corporation Law (the "DGCL") provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the person's conduct was unlawful.

Section 145(b) of the DGCL states that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which the person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, the person is fairly and reasonably entitled to indemnity for such expenses as the Delaware Court of Chancery or such other court shall deem proper.

Section 145(c) of the DGCL provides that to the extent that a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

Section 145(d) of the DGCL states that any indemnification under subsections (a) and (b) of Section 145 (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of the present or former director, officer, employee or agent is proper in the circumstances because the person has met the applicable standard of conduct set forth in subsections (a) and (b) of Section 145. Such determination shall be made with respect to a person who is a director or officer at the time of such determination (1) by a majority vote of the directors who are not parties to such action, suit or proceeding, even though less than a quorum, (2) by a committee of such directors designated by majority vote of such directors, even though less than a quorum, (3) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion or (4) by the stockholders.

Section 145(f) of the DGCL states that the indemnification and advancement of expenses provided by, or granted pursuant to, the other subsections of Section 145 shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office.

Section 145(g) of the DGCL provides that a corporation shall have the power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against any liability asserted against such person and incurred by such person in any such capacity or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of Section 145.

Section 145(j) of the DGCL states that the indemnification and advancement of expenses provided by, or granted pursuant to, Section 145 shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

Certificate of Incorporation

The Company has adopted provisions in its Restated Certificate of Incorporation that limit director liability to the maximum extent permitted under the DGCL.

Bylaws

The Company's Amended and Restated Bylaws provide for the indemnification of directors and officers to the fullest extent permitted by applicable law.

Indemnification Agreements

We have entered into agreements with our directors and executive officers that require us to indemnify them against certain liabilities that may arise by reason of their status or service as directors or executive officers to the fullest extent not prohibited by Delaware law.

Insurance Policies

We have purchased an insurance policy that purports to insure our directors and officers against certain liabilities incurred by them in the discharge of their functions as directors and officers.

The foregoing description of our Restated Certificate of Incorporation, Amended and Restated Bylaws, and Section 145 of the DGCL is only a summary and is qualified in its entirety by the full text of each of the foregoing.

We have been advised that it is the position of the Securities and Exchange Commission that insofar as the foregoing provisions may be invoked to disclaim liability for damages arising under the Securities Act of 1933, as amended (the "Securities Act"), that such provisions are against public policy as expressed in the Securities Act and are therefore unenforceable.

Item 15. Recent Sales of Unregistered Securities

Aspire Capital Transaction

On April 17, 2015, the Company entered into an Amended and Restated Common Stock Purchase Agreement (the "Purchase Agreement") with Aspire Capital Fund, LLC, an Illinois limited liability company ("Aspire Capital"), which provides that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital is committed to purchase up to an aggregate of $10.0 million of shares of the Company's common stock (the "Purchase Shares") over the 24-month term of the Purchase Agreement. Pursuant to the terms of the Purchase Agreement, we issued 207,182 shares of our common stock (the "Initial Purchase Shares") to Aspire Capital for $750,000 in aggregate proceeds. We also issued 154,189 shares of our common stock to Aspire Capital as a commitment fee (the "Commitment Shares"). Subsequent to the issuance of the Initial Purchase Shares and the Commitment Shares, pursuant to the Purchase Agreement, we issued 417,000 shares of our common stock to Aspire Capital for $1,387,439 in aggregate proceeds.

The Purchase Shares may be sold by the Company to Aspire Capital on any business day the Company selects in two ways: (1) through a regular purchase of up to 50,000 shares at a known price based on the market price of our common stock prior to the time of each sale, and (2) through a volume-weighted average price purchase of a number of shares up to 30% of the volume traded on the purchase date at a price equal to the lessor of the closing sale price or 97% of the volume-weighted average price for such purchase date.

The issuance of the Initial Purchase Shares, the Commitment Shares and all other shares of common stock that have been or may be issued from time to time to Aspire Capital under the Purchase Agreement is exempt from registration under the Securities Act, pursuant to the exemption for transactions by an issuer not involving any public offering under Section 4(a)(2) of the Securities Act.

Other Sales of Unregistered Securities

In addition to the shares we issued to Aspire Capital pursuant to the Purchase Agreement, during the past three years, we issued unregistered securities as outlined below, in reverse chronological order. Unless otherwise specifically noted, no commissions were paid in connection with the issuances described below and each issuance was effected pursuant to Section 4(a)(2) of the Securities Act, as a transaction by an issuer not involving any public offering. Share amounts and prices per share have been adjusted to reflect our July 25, 2014 1:10 reverse stock split.

Issuances of Capital Stock

(1) On September 4, 2015, we issued 140,053 shares of our common stock to certain directors for aggregate proceeds of $515,395.

(2) On July 31, 2015, in connection with our acquisition of X-spine Systems, Inc. (“X-spine”), we issued 4,242,655 shares of our common stock at an assumed value of $4.00 per share to the owners of the issued and outstanding shares of X-spine’s capital stock.

(3) On September 5, 2014, we issued 4,000 shares of our common stock to Cameron Beckman in exchange for a release to settle a claim.

(4) On March 11, 2014, we issued 150,000 shares of our common stock to Royalty Opportunities S.àr.l. as consideration for the Sixth Amendment to our credit agreement with ROS Acquisition Offshore LP (“ROS”) whereby we borrowed an additional $4.0 million under our credit agreement.

(5) On November 25, 2013, we issued 150,000 shares of our common stock to Royalty Opportunities S.àr.l. as consideration for the Waiver and Fifth Amendment to our credit agreement with ROS whereby ROS (i) waived our failure to achieve the revenue required by Section 8.4.1 of our credit agreement for the quarter ended September 30, 2013 and (ii) agreed to reduce our future revenue requirements.

(6) On June 10, 2013, we issued 850,877 shares of our common stock to accredited investors pursuant to Rule 506 of Regulation D at a price of $5.70 per share, along with warrants to purchase 425,438 shares of our common stock at an exercise price of $7.20 per share, for aggregate gross proceeds of $4.85 million. William Blair & Company, LLC served as sole placement agent for the transaction and received a commission of approximately $400,000.

Convertible Note Financing

(7) On July 31, 2015, we issued 6.00% convertible senior unsecured notes due 2021 (the "notes") to qualified institutional buyers for an aggregate principal amount of $65.0 million, and on August 13, 2015, we issued additional notes in the aggregate principal amount of $3.0 million pursuant to the initial purchaser's partial exercise of its overallotment option.

Grants of Stock Options

(8) On July 1, 2014, we issued an option to purchase 55,000 shares of our common stock at $6.80 per share to our President, Robert Di Silvio, outside of our Amended and Restated Equity Incentive Plan.

(9) On August 14, 2013, we issued an option to purchase 200,000 shares of our common stock at $6.00 per share to our Chief Executive Officer, Daniel Goldberger, outside of our Amended and Restated Equity Incentive Plan.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits

See the Exhibit Index attached to this registration statement, which is incorporated by reference herein.

(b) Financial Statement Schedules

Financial statement schedules have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described under Item 14 above, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(a) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(b) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(c) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of this offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser: if the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Belgrade, State of Montana, on December 21, 2015.

XTANT MEDICAL HOLDINGS, INC.
By: */s/ Daniel Goldberger*
Name: Daniel Goldberger
Title: Chief Executive Officer

POWER OF ATTORNEY

Each of the undersigned directors and officers of Xtant Medical Holdings, Inc. hereby constitutes and appoints Daniel Goldberger, John Gandolfo and Jill Gilpin as his or her true and lawful attorney-in-fact and agents with full power of substitution and resubstitution, for him or her and his or her name, place and stead, in any and all capacities, to execute any and all amendments (including post-effective amendments) to this registration statement, to sign any registration statement related to this registration statement filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended, and to cause the same to be filed with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and desirable to be done in and about the premises as fully and to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all acts and things that said attorneys-in-fact and agents or any of them, or their or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Capacity	Date
/s/ Daniel Goldberger Daniel Goldberger	Chief Executive Officer and Director (Principal Executive Officer)	December 21, 2015
/s/ John Gandolfo John Gandolfo	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	December 21, 2015

/s/ Kent Swanson Kent Swanson	Director	December 21, 2015
/s/ David Goodman, M.D. David Goodman, M.D.	Director	December 21, 2015
/s/ Michael Lopach Michael Lopach	Director	December 21, 2015
/s/ Jon Wickwire Jon Wickwire	Director	December 21, 2015
/s/ John Deedrick John Deedrick	Director	December 21, 2015
/s/ David L. Kirschman, M.D. David L. Kirschman, M.D.	Director	December 21, 2015

Exhibit Index

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated as of June 30, 2010, by and among K-Kitz, Inc., KB Merger Sub, Inc. and Bacterin International, Inc.(1)
3.1	Restated Certificate of Incorporation(2)
3.2	Certificate of Amendment to Restated Certificate of Incorporation(3)
3.3	Certificate of Amendment to Restated Certificate of Incorporation(4)
3.4	Amended and Restated Bylaws(5)
4.1	Form of Warrant to Purchase Common Stock(1)(6)(7)
4.2*	Form of Common Stock Certificate
4.3	Registration Rights Agreement dated March 16, 2015 by and between Bacterin International Holdings, Inc. ("Bacterin") and Aspire Capital Fund, LLC(9)
4.4	Registration Rights Agreement dated July 31, 2015 by and among Bacterin, Leerink Partners LLC, OrbiMed Royalty Opportunities II, LP and ROS Acquisition Offshore LP(10)
4.5	Indenture dated July 31, 2015 by and between Bacterin and Wilmington Trust, National Association(11)
4.6	Form of 6.00% Convertible Senior Note due 2021(11)
5.1*	Opinion of Hogan Lovells US LLP
10.1•	Form of Indemnification Agreement for officers and directors(8)
10.2•	Amended and Restated Xtant Medical Equity Incentive Plan(12)
10.3•	Form of Stock Option Agreement(13)
10.4•	Form of Restricted Stock Agreement(8)
10.5•	Daniel Goldberger Employment Agreement(14)
10.6•	Daniel Goldberger Stock Option Agreement(15)
10.7•	Daniel Goldberger Indemnification Agreement(16)
10.8•	John Gandolfo Employment Agreement(17)
10.9•	Robert Di Silvio Employment Agreement(8)
10.10•	Robert Di Silvio Stock Option Agreement(8)
10.11•	Darrel Holmes Employment Agreement(17)
10.12	Common Stock Purchase Agreement dated March 16, 2015 by and between Bacterin and Aspire Capital Fund, LLC(9)
10.13	Amended and Restated Common Stock Purchase Agreement dated April 17, 2015 by and between Bacterin and Aspire Capital Fund, LLC(18)
10.14	Stock Purchase Agreement dated July 27, 2015 by and among Bacterin, X-spine Systems, Inc. and the sellers named therein(19)
10.15	Amended and Restated Credit Agreement dated July 27, 2015 by and between Bacterin and ROS Acquisition Offshore LP(20)
10.16	Termination of Royalty Agreement dated July 27, 2015 by and between Bacterin and ROS Acquisition Offshore LP(21)
10.17	Securities Purchase Agreement dated July 27, 2015 by and between Bacterin and the investors named therein(22)
10.18	Purchase Agreement dated July 27, 2015 by and between Bacterin and Leerink Partners LLC(23)
10.19	Distribution Agreement dated January 23, 2014 by and between X-spine Systems, Inc. and Zimmer Spine, Inc., as amended(24)

10.20•	Employment Agreement dated July 31, 2015 by and between X-spine Systems, Inc. and David L. Kirschman[25]
21.1	Subsidiaries of the Registrant[26]
23.1*	Consent of Independent Accounting Firm, EKS&H LLLP
23.2*	Consent of Independent Accounting Firm, RSM US LLP (formerly McGladrey LLP)
23.3*	Consent of Independent Accounting Firm, Battelle Rippe Kingston LLP
23.4*	Consent of Hogan Lovells US LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included on the signature page to this registration statement)
25.1*	Statement of Eligibility of Trustee on Form T-1

•Indicates a management contract or compensatory plan.

*Filed herewith.

(1) Incorporated herein by reference to the Registrant's Form 8-K filed with the SEC on June 30, 2010.
(2) Incorporated by reference to Exhibit 3.1 to the Registrant's Form 10-Q filed with the SEC on November 14, 2011.
(3) Incorporated by reference to Exhibit 3.1 to the Registrant's Form 8-K filed with the SEC on July 25, 2014.
(4) Incorporated by reference to Exhibit 3.1 to the Registrant's Form 8-K filed with the SEC on August 3, 2015.
(5) Incorporated by reference to Exhibit 3.2 to the Registrant's Form 8-K filed with the SEC on October 1, 2015.
(6) Incorporated by reference to Exhibit 4.1 to the Registrant's Form 8-K filed with the SEC on July 31, 2014.
(7) Incorporated by reference to Exhibit 4.1 to the Registrant's Form 8-K filed with the SEC on June 5, 2013.
(8) Incorporated by reference to the Registrant's Form 10-K filed with the SEC on March 18, 2015.
(9) Incorporated by reference to the Registrant's Form 8-K filed with the SEC on March 17, 2015.
(10) Incorporated by reference to Exhibit 10.3 to the Registrant's Form 8-K filed with the SEC on August 3, 2015.
(11) Incorporated by reference to Exhibit 10.2 to the Registrant's Form 8-K filed with the SEC on August 3, 2015.
(12) Incorporated by reference to Exhibit 10.8 to the Registrant's Form 10-Q filed with the SEC on November 16, 2015.
(13) Incorporated by reference to Exhibit 10.23 to the Registrant's Form 10-Q filed with the SEC on May 4, 2012.
(14) Incorporated by reference to Exhibit 10.25 to the Registrant's Form 8-K filed with the SEC on August 15, 2013.
(15) Incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-8 filed with the SEC on September 19, 2013.
(16) Incorporated by reference to Exhibit 10.26 to the Registrant's Form 10-Q filed with the SEC on November 14, 2013.
(17) Incorporated by reference to the Registrant's Form 8-K filed with the SEC on July 29, 2014.
(18) Incorporated by reference to Exhibit 10.23 to the Registrant's Registration Statement on Form S-1 filed with the SEC on April 17, 2015.
(19) Incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed with the SEC on July 28, 2015.
(20) Incorporated by reference to Exhibit 10.2 to the Registrant's Form 8-K filed with the SEC on July 28, 2015.
(21) Incorporated by reference to Exhibit 10.3 to the Registrant's Form 8-K filed with the SEC on July 28, 2015.
(22) Incorporated by reference to Exhibit 10.4 to the Registrant's Form 8-K filed with the SEC on July 28, 2015.
(23) Incorporated by reference to Exhibit 10.5 to the Registrant's Form 8-K filed with the SEC on July 28, 2015.
(24) Incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed with the SEC on August 3, 2015.
(25) Incorporated by reference to Exhibit 10.4 to the Registrant's Form 8-K filed with the SEC on August 3, 2015.
(26) Incorporated by reference to Exhibit 21.1 to the Registrant's Registration Statement on Form S-1/A filed with the SEC on August 25, 2015.