UNITED THERAPEUTICS Corp
Form 10-Q
April 26, 2017
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the quarterly period ended March 31, 2017

OR

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the transition period from to

Commission file number 0-26301

United Therapeutics Corporation

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**52-1984749**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
1040 Spring Street, Silver Spring, MD	**20910**
(Address of Principal Executive Offices)	(Zip Code)

(301) 608-9292

(Registrant s Telephone Number, Including Area Code)

(Former Name, Former Address and Former Fiscal Year, If Changed Since Last Report)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No o

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

Large accelerated filer x	Accelerated filer o
Non-accelerated filer o (do not check if a smaller reporting company)	Smaller reporting company o
	Emerging growth company o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x

The number of shares outstanding of the issuer s common stock, par value $.01 per share, as of April 19, 2017 was 45,056,932.

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PART I. FINANCIAL INFORMATION

Item 1. CONSOLIDATED FINANCIAL STATEMENTS

UNITED THERAPEUTICS CORPORATION

CONSOLIDATED BALANCE SHEETS

(In millions, except share data)

	March 31, 2017 (Unaudited)	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 1,122.6	$ 1,023.0
Marketable investments	33.7	27.8
Accounts receivable, no allowance for 2017 and 2016	188.0	214.5
Inventories, net	106.9	100.0
Other current assets	52.9	59.5
Total current assets	1,504.1	1,424.8
Marketable investments	144.5	2.3
Goodwill and other intangible assets, net	33.6	33.8
Property, plant and equipment, net	493.5	489.3
Deferred tax assets, net	181.5	178.3
Other non-current assets	204.1	197.1
Total assets	$ 2,561.3	$ 2,325.6
Liabilities and Stockholders Equity		
Current liabilities:		
Accounts payable and accrued expenses	$ 105.6	$ 104.2
Share tracking awards plan	218.1	194.8
Other current liabilities	104.0	33.5
Total current liabilities	427.7	332.5
Other non-current liabilities	57.4	130.9
Total liabilities	485.1	463.4
Commitments and contingencies		
Temporary equity	10.9	10.9
Stockholders equity:		
Preferred stock, par value $.01, 10,000,000 shares authorized, no shares issued		
Series A junior participating preferred stock, par value $.01, 100,000 shares authorized, no shares issued		
Common stock, par value $.01, 245,000,000 shares authorized, 69,695,007 and 69,340,985 shares issued, and 45,052,579 and 42,965,856 shares outstanding at March 31, 2017 and December 31, 2016, respectively	0.7	0.7
Additional paid-in capital	1,801.4	1,813.5
Accumulated other comprehensive loss	(16.7)	(16.8)
Treasury stock, 24,642,428 and 26,375,129 shares at March 31, 2017 and December 31, 2016, respectively	(2,326.4)	(2,379.6)

Retained earnings		2,606.3		2,433.5
Total stockholders equity		2,065.3		1,851.3
Total liabilities and stockholders equity	$	2,561.3	$	2,325.6

See accompanying notes to consolidated financial statements.

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UNITED THERAPEUTICS CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

(In millions, except per share data)

	Three Months Ended March 31, (Unaudited)	
	2017	**2016**
Revenues:		
Net product sales	$ 370.5	$ 369.0
Total revenues	370.5	369.0
Operating expenses:		
Cost of product sales	14.3	0.7
Research and development	36.2	(0.4)
Selling, general and administrative	56.4	5.0
Total operating expenses	106.9	5.3
Operating income	263.6	363.7
Other income (expense):		
Interest expense	(0.8)	(0.6)
Other, net	0.8	0.8
Total other income, net		0.2
Income before income taxes	263.6	363.9
Income tax expense	(85.0)	(128.4)
Net income	$ 178.6	$ 235.5
Net income per common share:		
Basic	$ 4.01	$ 5.19
Diluted	$ 3.89	$ 4.84
Weighted average number of common shares outstanding:		
Basic	44.5	45.4
Diluted	45.9	48.7

See accompanying notes to consolidated financial statements.

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UNITED THERAPEUTICS CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In millions)

	Three Months Ended March 31,	
	2017	**2016**
	(Unaudited)	
Net income	$ 178.6	$ 235.5
Other comprehensive income:		
Foreign currency translation losses		0.4
Defined benefit pension plan:		
Actuarial loss arising during period, net of tax	(0.1)	
Amortization of actuarial gain and prior service cost included in net periodic pension cost, net of tax	0.1	0.2
Total defined benefit pension plan, net of tax		0.2
Unrealized gain on available-for-sale securities, net of tax	0.1	
Other comprehensive income, net of tax	0.1	0.6
Comprehensive income	$ 178.7	$ 236.1

See accompanying notes to consolidated financial statements.

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UNITED THERAPEUTICS CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions)

	Three Months Ended March 31,	
	2017	**2016**
	(Unaudited)	
Cash flows from operating activities:		
Net income	$ 178.6	$ 235.5
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	7.9	7.7
Share-based compensation benefit	(19.1)	(144.6)
Other	(8.5)	(1.1)
Excess tax benefits from share-based compensation		(2.1)
Changes in operating assets and liabilities:		
Accounts receivable	26.5	(2.0)
Inventories	(7.3)	(5.5)
Accounts payable and accrued expenses	(1.1)	0.5
Other assets and liabilities	53.8	37.4
Net cash provided by operating activities	230.8	125.8
Cash flows from investing activities:		
Purchases of property, plant and equipment	(15.6)	(3.8)
Purchases of held-to-maturity investments and other	(25.1)	
Maturities of held-to-maturity investments	20.8	21.0
Purchases of available-for-sale investments	(145.7)	
Intangible assets acquired		(5.2)
Net cash (used in) provided by investing activities	(165.6)	12.0
Cash flows from financing activities:		
Principal payments of debt		(0.1)
Payments of debt issuance costs	(0.7)	(6.8)
Payments to repurchase common stock		(123.2)
Proceeds from the exercise of stock options	33.0	2.6
Issuance of stock under employee stock purchase plan	2.1	2.2
Excess tax benefits from share-based compensation		2.1
Net cash provided by (used in) financing activities	34.4	(123.2)
Effect of exchange rate changes on cash and cash equivalents		0.4
Net increase in cash and cash equivalents	99.6	15.0
Cash and cash equivalents, beginning of period	1,023.0	831.8
Cash and cash equivalents, end of period	$ 1,122.6	$ 846.8
Supplemental cash flow information:		
Cash paid for interest	$ 1.0	$ 0.1
Cash paid for income taxes	$	$ 88.6
Non-cash investing and financing activities:		
Non-cash additions to property, plant and equipment	$ 6.5	$ 3.3
Issuance of common stock upon conversion of convertible notes	$	$ 0.1

See accompanying notes to consolidated financial statements.

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UNITED THERAPEUTICS CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

March 31, 2017

(UNAUDITED)

1. Organization and Business Description

United Therapeutics Corporation is a biotechnology company focused on the development and commercialization of innovative products to address the unmet medical needs of patients with chronic and life-threatening conditions.

We have approval from the U.S. Food and Drug Administration (FDA) to market the following therapies: Remodulin® (treprostinil) Injection (Remodulin), Tyvaso® (treprostinil) Inhalation Solution (Tyvaso), Adcirca® (tadalafil) Tablets (Adcirca), Orenitram® (treprostinil) Extended-Release Tablets (Orenitram) and Unituxin® (dinutuximab) Injection (Unituxin). Our only significant revenues outside the United States are derived from sales of Remodulin in Europe.

As used in these notes to the consolidated financial statements, unless the context otherwise requires, the terms we , us , our , and similar terms refer to United Therapeutics Corporation and its consolidated subsidiaries.

2. Basis of Presentation

The accompanying unaudited consolidated financial statements have been prepared in accordance with the rules and regulations of the U.S. Securities and Exchange Commission (SEC) for interim financial information. Accordingly, they do not include all of the information required by U.S. generally accepted accounting principles (GAAP) for complete financial statements. These consolidated financial statements should be read in conjunction with the audited consolidated financial statements and the accompanying notes to the consolidated financial statements contained in our Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the SEC on February 22, 2017.

In our management s opinion, the accompanying consolidated financial statements contain all adjustments, including normal, recurring adjustments, necessary to fairly present our financial position as of March 31, 2017, statements of operations, comprehensive income and cash flows for the three-month periods ended March 31, 2017 and March 31, 2016. Interim results are not necessarily indicative of results for an entire year.

Recently Issued Accounting Standards

Accounting Standards Adopted During the Period

In July 2015, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2015-11, *Simplifying the Measurement of Inventory* (ASU 2015-11), which requires that inventory be measured at the lower of cost or net realizable value for entities using first-in, first-out or average cost methods. ASU 2015-11 should be applied prospectively and is effective for fiscal years beginning after December 15, 2016, and for interim periods within those fiscal years. We adopted this standard on January 1, 2017, with no material impact on our financial statements.

In March 2016, the FASB issued ASU No. 2016-09, *Compensation Stock Compensation* (ASU 2016-09), which serves to simplify the accounting for share-based payment transactions. ASU 2016-09 includes guidance on several aspects of the accounting for share-based payments, including the income tax consequences, forfeitures and classification on the statement of cash flows. ASU 2016-09 is effective for fiscal years beginning after December 15, 2016, and for interim periods within those fiscal years. We adopted this standard on January 1, 2017. Upon adoption of ASU 2016-09, we began to recognize excess tax benefits as income tax benefits on our consolidated statements of operations. Previously, we recognized such amounts in additional paid-in capital on our consolidated balance sheets. Additionally, on January 1, 2017, we established an accounting policy election to account for forfeitures of share-based awards when they occur. Upon adoption, we recognized a cumulative-effect adjustment for the removal of the forfeiture estimate with respect to awards that were continuing to vest as of January 1, 2017. The adjustment resulted in a decrease to retained earnings of $5.8 million, which is net of a $3.2 million tax benefit. The guidance also requires that we classify excess tax benefits as an operating activity in our statements of cash flows, whereas we previously classified such amounts as a financing activity. These amounts are now classified as other in our cash flows from operating activities. We have adopted ASU 2016-09 on a prospective basis and, as such, prior periods have not been adjusted, with the exception of the cumulative-effect adjustment to retained earnings for the removal of the forfeiture estimate, which was adopted on a modified retrospective basis. Refer to Note 7 *Share Tracking Awards Plans,* Note 9 *Stockholders Equity Employee Stock Options* and Note 10 *Income Taxes*.

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Accounting Standards Not Yet Adopted

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* and subsequent clarifying guidance. This guidance eliminates transaction-specific and industry-specific revenue recognition guidance under current GAAP and replaces it with a principle-based approach for determining revenue recognition. This guidance requires that companies recognize revenue based on the value of transferred goods or services as they occur in the contract. In addition, disclosure is required about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. This guidance is effective for annual reporting periods beginning after December 15, 2017, and allows for either full retrospective or modified retrospective adoption. We have initiated an assessment of our customer arrangements and we are evaluating what transition method to elect.

In January 2016, the FASB issued ASU No. 2016-01, *Financial Instruments Overall: Recognition and Measurement of Financial Assets and Financial Liabilities* (ASU 2016-01), which requires equity investments to be measured at fair value through net income. Equity investments that are accounted for under the equity method are not impacted. ASU 2016-01 provides that equity investments without readily determinable fair values can be valued at cost minus impairment with a simplified impairment assessment using qualitative assessments. ASU 2016-01 requires separate presentation of the financial assets and liabilities by category and form. ASU 2016-01 should be applied prospectively and will be effective for fiscal years beginning after December 15, 2017, and for interim periods within those fiscal years. Early adoption is not permitted except in limited circumstances.

In February 2016, the FASB issued ASU No. 2016-02, *Leases* (ASU 2016-02), which requires that organizations recognize lease assets and lease liabilities on the balance sheet. ASU 2016-02 also requires additional quantitative and qualitative disclosures that provide the amount, timing, and uncertainty of cash flows relating to lease arrangements. ASU 2016-02 is effective for annual reporting periods beginning after December 15, 2018, using a modified retrospective approach. The modified retrospective approach requires retrospective application to the earliest period presented in the respective financial statements, provides certain practical expedients related to leases that commenced prior to the effective date and allows the use of hindsight when evaluating lease options. Early adoption is permitted.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows Classification of Certain Cash Receipts and Cash Payments* (ASU 2016-15), which reduces existing diversity in the classification of certain cash receipts and cash payments on the statements of cash flows. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, and for interim periods within those fiscal years. Early adoption is permitted.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes Intra-Entity Transfers of Assets Other Than Inventory* (ASU 2016-16), which requires that an entity recognize the income tax consequences of an intra-entity transfer of assets other than inventory when the transfer occurs. ASU 2016-16 is effective for annual reporting periods beginning after December 15, 2017 using a modified retrospective approach through a cumulative adjustment in retained earnings as of the beginning of the period of adoption. Early adoption is permitted.

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations-Clarifying the Definition of a Business* (ASU 2017-01). This update narrows the definition of a business by providing a screen to determine when an integrated set of assets and activities is not a business. The screen specifies that an integrated set of assets and activities is not a business if substantially all of the fair value of the gross assets acquired or disposed of is concentrated in a single asset or a group of similar identifiable assets. ASU 2017-01 should be applied prospectively and is effective for annual reporting periods beginning after December 15, 2017, and for interim periods within those fiscal years. Early adoption is permitted.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles-Goodwill and Other: Simplifying the Test for Goodwill Impairment* (ASU 2017-04), which simplifies how an entity is required to test goodwill for impairment. A goodwill impairment will be measured by the amount by which a reporting unit s carrying value exceeds its fair value, with the amount of impairment not to exceed the carrying amount of goodwill. ASU 2017-04 is effective for goodwill impairment tests in fiscal years beginning after December 15, 2019, and for interim periods within those fiscal years, and must be adopted on a prospective basis. Early adoption is permitted.

In March 2017, the FASB issued ASU No. 2017-07, *Compensation-Retirement Benefits* (ASU 2017-07), which improves the presentation of net periodic pension cost and net periodic post-retirement benefit cost. For employers that present a measure of operating income in their statement of income, ASU 2017-07 requires employers to include only the service cost component of net periodic pension cost and net periodic post-retirement benefit cost in operating expense-along with other employee compensation costs. Under ASU 2017-07, the service cost component of net benefit cost is eligible for capitalization. Additionally, this update further requires other components of net benefit cost to be included in nonoperating expenses. ASU 2017-07 is effective for fiscal years beginning after December 15, 2017, and for interim periods within those fiscal years. An

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entity is to apply the change in income statement presentation retrospectively, and the change in capitalized benefit cost is to be applied prospectively. Early adoption is permitted.

We are evaluating the effect of adoption of each of these accounting standards on our financial statements.

3. Marketable Investments

Available-for-Sale Investments

Marketable investments classified as available-for-sale consisted of the following (in millions):

As of March 31, 2017	Amortized Cost	Gross Unrealized Gains	Fair Value
U.S. government and agency securities	$ 311.8	$ 0.1	$ 311.9
Total	$ 311.8	$ 0.1	$ 311.9
Reported under the following captions on the consolidated balance sheet:			
Cash and cash equivalents			$ 168.1
Non-current marketable investments			143.8
			$ 311.9

We had no available-for-sale investments as of December 31, 2016.

The following table summarizes the contractual maturities of available-for-sale marketable investments (in millions):

	March 31, 2017	
	Amortized Cost	Fair Value
Due in less than one year	$ 168.1	$ 168.1
Due in one to two years	80.8	80.8
Due in three to five years	62.9	63.0
Total	$ 311.8	$ 311.9

Held-to-Maturity Investments and Other

The balance of our marketable investments classified as held-to-maturity was $9.3 million and $30.1 million as of March 31, 2017 and December 31, 2016, respectively. The March 31, 2017 balance also includes an investment of $25.1 million of time deposits which will mature in September 2017. Marketable investments classified as held-to-maturity are comprised of government-sponsored enterprises and corporate notes and bonds. We do not intend to sell these securities, nor is it more likely than not that we will be required to sell them prior to the recovery of their amortized cost basis. Furthermore, we do not believe that these securities expose us to undue market risk or counterparty credit risk. As such, we do not consider these securities to be other than temporarily impaired.

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4. Fair Value Measurements

We account for certain assets and liabilities at fair value and classify these assets within a fair value hierarchy (Level 1, Level 2 or Level 3). Our other current assets and our current liabilities have fair values that approximate their carrying values. Assets and liabilities subject to fair value measurements are as follows (in millions):

	As of March 31, 2017			
	Level 1	Level 2	Level 3	Balance
Assets				
Money market funds(1)	$ 573.6	$	$	$ 573.6
Time deposits(2)		25.1		25.1
U.S. government and agency securities(2)		317.4		317.4
Corporate debt securities(2)		3.8		3.8
Total assets	$ 573.6	$ 346.3	$	$ 919.9
Liabilities				
Contingent consideration(3)			10.4	10.4
Total liabilities	$	$	$ 10.4	$ 10.4

	As of December 31, 2016			
	Level 1	Level 2	Level 3	Balance
Assets				
Money market funds(1)	$ 534.4	$	$	$ 534.4
U.S. government and agency securities(2)		19.3		19.3
Corporate debt securities(2)		10.8		10.8
Total assets	$ 534.4	$ 30.1	$	$ 564.5
Liabilities				
Contingent consideration(3)			10.4	10.4
Total liabilities	$	$	$ 10.4	$ 10.4

(1) Included in cash and cash equivalents on the accompanying consolidated balance sheets.

(2) Included in cash equivalents and current and non-current marketable investments on the accompanying consolidated balance sheets. The fair value of these securities is principally measured or corroborated by trade data for identical securities in which related trading activity is not sufficiently frequent to be considered a Level 1 input or comparable securities that are more actively traded.

(3) Included in other liabilities on the accompanying consolidated balance sheets. The fair value of contingent consideration has been estimated using probability-weighted discounted cash flow models (DCFs). The DCFs incorporate Level 3 inputs including estimated discount rates that we believe market participants would consider relevant in pricing and the projected timing and amount of cash flows, which are estimated and developed, in part, based on the requirements specific to each acquisition agreement.

Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses approximate fair value because of their short maturities. The fair values of our marketable investments are reported above within the fair value hierarchy. Refer to Note 3 *Marketable Investments*.

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5. Inventories

Inventories are stated at the lower of cost (first-in, first-out method) or net realizable value and consist of the following, net of reserves (in millions):

	March 31, 2017	December 31, 2016
Raw materials	$ 26.5	$ 25.4
Work-in-progress	22.9	24.9
Finished goods	57.5	49.7
Total inventories	$ 106.9	$ 100.0

6. Goodwill and Other Intangible Assets

Goodwill and other intangible assets comprise the following (in millions):

	As of March 31, 2017			As of December 31, 2016		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Goodwill	$ 10.3	$	$ 10.3	$ 10.3	$	$ 10.3
Other intangible assets:						
Technology, patents and trade names	6.5	(4.8)	1.7	6.5	(4.8)	1.7
In-process research and development	21.5		21.5	21.5		21.5
Customer relationships and non-compete agreements	4.3	(4.2)	0.1	4.3	(4.0)	0.3
Total	$ 42.6	$ (9.0)	$ 33.6	$ 42.6	$ (8.8)	$ 33.8

7. Share Tracking Awards Plans

We previously issued awards under the United Therapeutics Corporation Share Tracking Awards Plan, adopted in June 2008 (2008 STAP) and the United Therapeutics Corporation 2011 Share Tracking Awards Plan, adopted in March 2011 (2011 STAP). We refer to the 2008 STAP and the 2011 STAP collectively as the STAP and awards granted and/or outstanding under either of these plans as STAP awards. STAP awards convey the right to receive in cash an amount equal to the appreciation of our common stock, which is measured as the increase in the closing price of our common stock between the dates of grant and exercise. STAP awards expire on the tenth anniversary of the grant date, and in most cases they vest in equal increments on each anniversary of the grant date over a four-year period. The STAP liability includes vested awards and awards that are expected to vest. We recognize expense for awards that are expected to vest during the vesting period. We discontinued the issuance of STAP awards in June 2015, when our shareholders approved the United Therapeutics Corporation 2015 Stock Incentive Plan (the 2015 Plan), a broad-based stock incentive plan enabling us to grant stock options and other forms of equity compensation to our employees. See Note 9 *Stockholders Equity* to these consolidated financial statements for information on the 2015 Plan.

The aggregate STAP liability balance was $220.3 million and $268.9 million at March 31, 2017 and December 31, 2016, respectively, of which $2.2 million and $74.1 million, respectively, has been classified as other non-current liabilities on our consolidated balance sheets based on their vesting terms. The decrease in STAP liability classified as other non-current liabilities is primarily due to a tranche of STAP awards with a fair value of $69.4 million at March 31, 2017 that is expected to vest within one year, and therefore is now classified as a current liability.

Estimating the fair value of STAP awards requires the use of certain inputs that can materially impact the determination of fair value and the amount of compensation expense (benefit) we recognize. Inputs used in estimating fair value include the price of our common stock, the expected volatility of the price of our common stock, the risk-free interest rate, the expected term of STAP awards and the expected dividend yield. The fair value of outstanding STAP awards is measured at the end of each financial reporting period because the awards are settled in cash. As a result of the adoption of ASU 2016-09, we established an accounting policy election to account for forfeitures of share-based awards when they occur. Upon adoption, we recognized a cumulative-effect adjustment for the removal of the forfeiture estimate with respect to awards that were continuing to vest as of January 1, 2017. The adjustment resulted in an increase to our STAP liability of $8.4 million and a corresponding decrease to retained earnings of $5.4 million, which is net of tax. Refer to Note 2 *Basis of Presentation Recently Issued Accounting Standards*.

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The table below includes the weighted-average assumptions used to measure the fair value of the outstanding STAP awards:

	March 31, 2017	March 31, 2016
Expected volatility	36.3%	37.4%
Risk-free interest rate	1.4%	0.9%
Expected term of awards (in years)	2.4	3.2
Expected dividend yield	0.0%	0.0%

The closing price of our common stock was $135.38 and $111.43 on March 31, 2017 and March 31, 2016, respectively. The closing price of our common stock was $143.43 on December 31, 2016.

A summary of the activity and status of STAP awards during the three-month period ended March 31, 2017 is presented below:

	Number of Awards	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in millions)
Outstanding at January 1, 2017	5,113,838	$ 91.51		
Granted				
Exercised	(463,183)	75.15		
Forfeited	(85,086)	95.82		
Outstanding at March 31, 2017	4,565,569	$ 93.09	6.3	$ 227.1
Exercisable at March 31, 2017	2,811,258	$ 94.42	6.1	$ 136.0
Unvested as of March 31, 2017	1,754,311	$ 90.94	6.6	$ 91.2

Share-based compensation benefit recognized in connection with STAP awards is as follows (in millions):

	Three Months Ended March 31,	
	2017	2016
Cost of product sales	$ (1.7)	$ (12.0)
Research and development	(5.8)	(37.4)
Selling, general and administrative	(17.1)	(98.5)
Share-based compensation benefit before taxes	$ (24.6)	$ (147.9)
Related income tax expense	9.0	52.4
Share-based compensation benefit, net of taxes	$ (15.6)	$ (95.5)

Cash paid to settle STAP awards exercised during the three-month periods ended March 31, 2017 and March 31, 2016 was $32.4 million and $13.8 million, respectively.

8. Debt

Unsecured Revolving Credit Facility

In January 2016, we entered into a credit agreement (the 2016 Credit Agreement) with Wells Fargo Bank, National Association (Wells Fargo), as administrative agent and a swingline lender, and various other lender parties, providing for an unsecured revolving credit facility of up to $1.0 billion. In accordance with the terms of the 2016 Credit Agreement, in January 2017 we extended the maturity date of the 2016 Credit Agreement by one year, to January 2022.

At our option, amounts borrowed under the 2016 Credit Agreement will bear interest at either the LIBOR rate or a fluctuating base rate, in each case, plus an applicable margin determined on a quarterly basis based on our consolidated ratio of total indebtedness to EBITDA (as calculated in accordance with the 2016 Credit Agreement).

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The 2016 Credit Agreement contains customary events of default and customary affirmative and negative covenants. As of March 31, 2017, we were in compliance with such covenants and we had not drawn any amounts on the revolving facility. Lung Biotechnology PBC is our only subsidiary that guarantees our obligations under the 2016 Credit Agreement though, from time to time, one or more of our other subsidiaries may be required to guarantee such obligations.

Convertible Notes and Warrant Transactions

In October 2011, we issued $250.0 million in aggregate principal value 1.0 percent Convertible Senior Notes due September 15, 2016 (Convertible Notes). Upon maturity of the Convertible Notes in September 2016, we fulfilled all remaining settlement and repayment obligations.

In connection with the issuance of the Convertible Notes, we sold to Deutsche Bank AG London (DB London) warrants to acquire up to approximately 5.2 million shares of our common stock at a strike price of $67.56 per share. The warrants expired incrementally on a series of expiration dates that began in December 2016 and ended in January 2017. The warrants were settled on a net-share basis. As the price of our common stock exceeded the strike price of the warrants on the series of related incremental expiration dates, we delivered 2.8 million shares of common stock from our treasury stock to DB London, including 1.7 million shares that were issued during the first quarter of 2017.

9. Stockholders Equity

Earnings Per Common Share

Basic earnings per share is computed by dividing net income by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share is computed by dividing net income by the weighted average number of shares of common stock outstanding during the period, adjusted for the potential dilutive effect of other securities if such securities were converted or exercised. The components of basic and diluted earnings per common share comprised the following (in millions, except per share amounts):

	Three Months Ended March 31,	
	2017	**2016**
Numerator:		
Net income	$ 178.6	$ 235.5
Denominator:		
Weighted average outstanding shares basic	44.5	45.4
Effect of dilutive securities(1):		
Warrants	0.3	2.4
Stock options, restricted stock units and employee stock purchase plan	1.1	0.8
Convertible notes		0.1
Weighted average shares diluted(2)	45.9	48.7
Earnings per common share:		

Basic	$	4.01	$	5.19
Diluted	$	3.89	$	4.84
Stock options, convertible notes and warrants excluded from calculation(2)		1.8		4.1

(1) Calculated using the treasury stock method.

(2) Certain stock options and warrants have been excluded from the computation of diluted earnings per share because their impact would be anti-dilutive for the three-month periods ended March 31, 2017. Additionally, certain convertible notes were excluded for the three-month periods ended March 31, 2016. Under our convertible note hedge agreement, we were entitled to receive shares required to be issued to investors upon conversion of our Convertible Notes. Since related shares used to compute dilutive earnings per share would be anti-dilutive, they have been excluded from the calculation above.

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Equity Incentive Plans

As of March 31, 2017, we have two shareholder-approved equity incentive plans: the United Therapeutics Corporation Amended and Restated Equity Incentive Plan (the 1999 Plan) and the United Therapeutics Corporation 2015 Stock Incentive Plan (the 2015 Plan). The 2015 Plan was approved by our shareholders in June 2015 and provides for the issuance of up to 6,150,000 shares of our common stock pursuant to awards granted under the 2015 Plan. As a result of the approval of the 2015 Plan, no further awards will be granted under the 1999 Plan. During the three-month periods ended March 31, 2017 and March 31, 2016, we granted 1.9 million and 1.5 million stock options under the 2015 Plan, respectively.

Employee Stock Options

We estimate the fair value of stock options using the Black-Scholes-Merton valuation model, which requires us to make certain assumptions that can materially impact the estimation of fair value and related compensation expense. The assumptions used to estimate fair value include the price of our common stock, the expected volatility of our common stock, the risk-free interest rate, the expected term of stock option awards and the expected dividend yield. As a result of the adoption of ASU 2016-09, we established an accounting policy election to account for forfeitures of share-based awards when they occur. Upon adoption, we recognized a cumulative-effect adjustment for the removal of the forfeiture estimate with respect to awards that were continuing to vest as of January 1, 2017. The adjustment resulted in a decrease to retained earnings of $0.4 million, which is net of a $0.2 million tax benefit. Refer to Note 2 *Basis of Presentation Recently Issued Accounting Standards*.

In March 2017, we began issuing stock options with performance conditions under the 2015 Plan to certain executives. The awards have vesting conditions tied to the achievement of specified performance conditions. The performance conditions have target performance levels that span from one to three years. Upon the conclusion of the performance period, the performance level achieved will be measured and the ultimate number of shares that may vest will be determined. Share-based compensation expense for these awards is recorded ratably over their vesting period, depending on the specific terms of the award and achievement of the specified performance conditions. In total, we granted 0.9 million stock options with performance conditions, with a total grant date fair value of $53.9 million based on achievement of the target performance level. We recorded $0.7 million in share-based compensation expense related to these awards for the three-month period ended March 31, 2017.

The table below includes the weighted-average assumptions used to measure the fair value of the stock options granted during the three-month periods ended March 31, 2017 and March 31, 2016:

	March 31, 2017	**March 31, 2016**
Expected volatility	35.7%	34.7%
Risk-free interest rate	2.2%	1.6%
Expected term of awards (in years)	6.1	5.8
Expected dividend yield	0.0%	0.0%

A summary of the activity and status of stock options under our equity incentive plans during the three-month period ended March 31, 2017 is presented below:

	Number of Options	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in millions)
Outstanding at January 1, 2017	4,459,291	$ 104.97		
Granted	1,906,683	146.15		
Exercised	(334,065)	98.69		
Forfeited/canceled	(38,069)	129.57		
Outstanding at March 31, 2017	5,993,840	$ 118.26	7.7	$ 129.5
Exercisable at March 31, 2017	3,154,307	$ 101.23	6.0	$ 113.9
Unvested as of March 31, 2017	2,839,533	$ 137.19	9.6	$ 15.6

The weighted average fair value of a stock option granted during each of the three-month periods ended March 31, 2017 and March 31, 2016, was $56.28 and $42.84, respectively. These stock options have an aggregate grant date fair value of $107.3 million and $62.8 million, respectively. The total fair value of employee stock options that vested during the three-

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month period ended March 31, 2017 was $11.0 million. No stock options vested during the three-month period ended March 31, 2016.

Stock option exercise data is summarized below (dollars in millions):

	Three Months Ended March 31,	
	2017	2016
Number of options exercised	334,065	81,105
Cash received	$ 33.0	$ 2.6
Total intrinsic value of options exercised	$ 20.3	$ 7.6

Total share-based compensation expense relating to stock options is as follows (in millions):

	Three Months Ended March 31,	
	2017	2016
Cost of product sales	$ 0.2	$ 0.1
Research and development	0.5	0.1
Selling, general and administrative	3.9	2.9
Share-based compensation expense before taxes	4.6	3.1
Related income tax benefit	(1.7)	(1.1)
Share-based compensation expense, net of taxes	$ 2.9	$ 2.0

As of March 31, 2017, unrecognized compensation cost was $124.0 million. Unvested outstanding stock options as of March 31, 2017 had a weighted average remaining vesting period of 3.1 years.

Restricted Stock Units

In June 2016, we began issuing restricted stock units under the 2015 Plan to our non-employee directors. Each restricted stock unit entitles the director to receive one share of our common stock upon vesting, subject to the director s election to defer receipt of shares to a later date. We measure the fair value of restricted stock units using the stock price on the date of grant. Share-based compensation expense for the restricted stock units is recorded ratably over their one year vesting period. We recorded $0.5 million in share-based compensation expense for the three-month period ended March 31, 2017 related to restricted stock units. The share-based compensation expense related to restricted stock units granted is reflected in selling, general and administrative expense on our statements of operations.

As of March 31, 2017, unrecognized compensation cost related to the grant of restricted stock units was $0.5 million. Unvested outstanding restricted stock units as of March 31, 2017 had a weighted average remaining vesting period of 0.2 years.

10. Income Taxes

Our effective income tax rate (ETR) for the three months ended March 31, 2017 and March 31, 2016 was 32 percent and 35 percent, respectively. Our 2017 ETR decreased compared to 2016 primarily due to a decrease in non-deductible share-based compensation expense, and the impact of ASU 2016-09 adoption requiring windfall excess tax benefits to be recognized in income tax expense.

We are subject to federal and state taxation in the United States as well as various foreign jurisdictions. We are no longer subject to income tax examinations by the Internal Revenue Service and substantially all other major jurisdictions for tax years prior to 2011.

As of both March 31, 2017 and March 31, 2016, our uncertain tax positions were $0.5 million. Unrecognized tax benefits as of both March 31, 2017 and March 31, 2016, included $0.3 million of tax benefits that, if recognized, would impact our ETR. We record interest and penalties related to uncertain tax positions as a component of income tax expense. As of March 31, 2017 and March 31, 2016, we have not accrued any interest expense related to uncertain tax positions. We are unaware of any positions for which it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease within the next twelve months.

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For the three months ended March 31, 2017, in accordance with newly adopted ASU 2016-09 related to employee stock compensation, we recognized a cumulative-effect adjustment of a $3.2 million tax benefit to reduce retained earnings for the removal of the forfeiture estimate with respect to awards that were continuing to vest as of December 31, 2016.

Additionally, we now recognize excess tax benefits as income tax benefits on our consolidated statements of operations. For the three months ended March 31, 2017, we recognized excess tax benefits of $2.6 million, partially offsetting income tax expenses on our consolidated statements of operations. Previously, we recognized such amounts in additional paid-in capital on our consolidated balance sheets. Refer to Note 2 *Basis of Presentation Recently Issued Accounting Standards*.

11. Segment Information

We currently operate as one operating segment with a focus on the development and commercialization of products to address the unmet needs of patients with chronic and life-threatening conditions. Our Chief Executive Officer, as our chief operating decision maker, manages and allocates resources to the operations of our company on a consolidated basis. This enables our Chief Executive Officer to assess the overall level of resources available and how to best deploy these resources across functions, therapeutic areas, and research and development projects that are in line with our long-term company-wide strategic goals.

Net product sales, cost of product sales and gross profit for each of our commercial products were as follows (in millions):

	Three Months Ended March 31,					
2017	**Remodulin**	**Tyvaso**	**Adcirca**	**Orenitram**	**Unituxin**	**Total**
Net product sales	$ 145.8	$ 87.4	$ 80.0	$ 39.3	$ 18.0	$ 370.5
Cost of product sales	2.0	2.8	4.6	2.8	2.1	14.3
Gross profit	$ 143.8	$ 84.6	$ 75.4	$ 36.5	$ 15.9	$ 356.2
2016						
Net product sales	$ 139.8	$ 102.2	$ 72.6	$ 40.2	$ 14.2	$ 369.0
Cost of product sales	(2.4)	0.8	4.3	(0.4)	(1.6)	0.7
Gross profit	$ 142.2	$ 101.4	$ 68.3	$ 40.6	$ 15.8	$ 368.3

12. Litigation

Watson Laboratories, Inc.

In June 2015, we received a Paragraph IV certification notice letter from Watson Laboratories, Inc. (Watson) indicating that Watson has submitted an abbreviated new drug application (ANDA) to the FDA to market a generic version of Tyvaso. In its notice letter, Watson states that it intends to market a generic version of Tyvaso before the expiration of U.S. Patent Nos. 6,521,212 and 6,756,033, each of which expires in

November 2018; and U.S. Patent No. 8,497,393, which expires in December 2028. Watson s notice letter states that the ANDA contains a Paragraph IV certification alleging that these patents are not valid, not enforceable, and/or will not be infringed by the commercial manufacture, use or sale of the proposed product described in Watson s ANDA submission. We responded to the Watson notice letter by filing a lawsuit on July 22, 2015 against Watson in the U.S. District Court for the District of New Jersey alleging infringement of U.S. Patent Nos. 6,521,212, 6,756,033, and 8,497,393. Under the Hatch-Waxman Act, the FDA is automatically precluded from approving Watson s ANDA for up to 30 months from receipt of Watson s notice letter or until the issuance of a U.S. District Court decision that is adverse to us, whichever occurs first. In September 2015, Watson filed (1) a motion to dismiss some, but not all, counts of the complaint; (2) its answer to the complaint; and (3) certain counterclaims against us. The Court granted Watson s motion to dismiss certain counts of our complaint. In September 2015, we filed our answer to Watson s counterclaims. In June 2016, Watson sent a second Paragraph IV certification notice letter addressing two new patents, U.S. Patent Nos. 9,339,507 and 9,358,240. In June 2016, we filed an amended complaint against Watson asserting these two additional patents. The parties are currently engaged in discovery, and trial on all of the asserted patents is currently scheduled to take place in September 2017.

We intend to vigorously enforce our intellectual property rights relating to Tyvaso.

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Actavis Laboratories FL, Inc.

In February 2016, we received a Paragraph IV certification notice letter (the First Actavis Notice Letter) from Actavis Laboratories FL, Inc. (Actavis) indicating that Actavis has submitted an ANDA to the FDA to market a generic version of the 2.5 mg strength of Orenitram. The First Actavis Notice Letter states that Actavis intends to market a generic version of the 2.5 mg strength of Orenitram before the expiration of the following patents, all of which are listed in the Orange Book:

U.S. Patent No.	Expiration Date
8,252,839	May 2024
9,050,311	May 2024
7,544,713	July 2024
7,417,070	July 2026
8,497,393	December 2028
8,747,897	October 2029
8,410,169	February 2030
8,349,892	January 2031

The First Actavis Notice Letter states that the ANDA contains a Paragraph IV certification alleging that these patents are not valid, not enforceable, and/or will not be infringed by the commercial manufacture, use or sale of the proposed product described in Actavis ANDA submission. We responded to the First Actavis Notice Letter by filing a lawsuit (the First Actavis Action) against Actavis in March 2016 in the U.S. District Court for the District of New Jersey alleging infringement of each of the patents noted above and one additional patent, U.S. Patent No. 9,278,901 (the 901 patent), which expires in May 2024 and is also now listed in the Orange Book. Under the Hatch-Waxman Act, the FDA is automatically precluded from approving Actavis ANDA with respect to the 2.5 mg strength of Orenitram for up to 30 months from receipt of Actavis notice letter or until the issuance of a U.S. District Court decision that is adverse to us with respect to all of the eight patents listed in the table above, whichever occurs first. In June 2016, we filed an amended complaint against Actavis, Actavis filed its answer and counterclaims to that amended complaint, and we filed our answer to those counterclaims.

In May 2016, we received a second Paragraph IV certification notice letter from Actavis (the Second Actavis Notice Letter) indicating that Actavis has amended its ANDA to include its generic version of the 0.25 mg and 1.0 mg strengths of Orenitram, in addition to the 2.5 mg strength identified in the First Actavis Notice Letter. We responded to the Second Actavis Notice Letter by filing an additional lawsuit against Actavis (the Second Actavis Action) on June 17, 2016 in the U.S. District Court for the District of New Jersey alleging infringement of the same patents asserted in the First Actavis Action. The Second Actavis Action triggered an additional 30-month stay with respect to the 0.25 mg and 1.0 mg strengths. Specifically, the FDA is automatically precluded from approving Actavis ANDA with respect to the 0.25 mg and 1.0 mg strengths of Orenitram for up to 30 months from receipt of the Second Actavis Notice Letter or until the issuance of a U.S. District Court decision that is adverse to us with respect to all of the eight patents listed in the table above and the 901 patent, whichever occurs first.

We filed a second amended complaint against Actavis on September 7, 2016, to allege infringement of two patents that were not issued and listed in the Orange Book at the time of the First and Second Actavis Notice Letters, but are now listed: U.S. Patent Nos. 9,393,203, which expires in April 2026, and 9,422,223, which expires in May 2024.

The Court has consolidated the First Actavis Action and the Second Actavis Action. The parties are currently engaged in discovery, and trial on all patents is scheduled for February 2018.

We intend to vigorously enforce our intellectual property rights relating to Orenitram.

SteadyMed Ltd.

On October 1, 2015, SteadyMed Ltd. (SteadyMed) filed a petition with the Patent Trial and Appeal Board (PTAB) of the U.S. Patent and Trademark Office for *inter partes* review (the IPR Petition) of one of our patents. In its IPR Petition, SteadyMed seeks to invalidate U.S. Patent No. 8,497,393 (the 393 Patent), which expires in December 2028 and covers a method of making treprostinil, the active pharmaceutical ingredient in our Remodulin, Tyvaso and Orenitram products. The 393 Patent was also the subject of now-settled litigation with generic companies relating to ANDAs to market generic versions of Remodulin, and remains the subject of our pending litigation with Watson and Actavis, described above. SteadyMed has announced that it is developing a product called Trevyent , which is a single-use, pre-filled pump for which it plans to seek FDA approval for delivery of a two-day supply of treprostinil subcutaneously using its PatchPump® technology.

On March 31, 2017, the PTAB issued a Final Written Decision in this matter, finding that all claims of the 393 patent are not patentable. We are evaluating our options, including the possibility of exercising our right of appeal to the U.S. Court of

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Appeals for the Federal Circuit or first requesting a rehearing before the PTAB. The 393 patent remains valid and enforceable until appeals have been exhausted.

We intend to continue vigorously defending the 393 patent.

Department of Justice Subpoena

In May 2016, we received a subpoena from the U.S. Department of Justice requesting documents regarding our support of 501(c)(3) organizations that provide financial assistance to patients taking our medicines. Other companies have received similar inquiries. We are cooperating with this inquiry. It is possible that any actions taken by the U.S. Department of Justice could result in civil penalties or injunctive relief, negative publicity or other negative actions that could harm our reputation, reduce demand for our products and/or reduce coverage of our products, including by federal health care programs such as Medicare and Medicaid and state health care programs. If any or all of these events occur, our business and stock price could be materially and adversely affected.

Item 2. MANAGEMENT S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with our Annual Report on Form 10-K for the year ended December 31, 2016, and the consolidated financial statements and accompanying notes included in *Part I, Item I* of this Quarterly Report on Form 10-Q. The following discussion contains forward-looking statements made pursuant to the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995, including the statements listed in the section below entitled *Part II, Item 1A Risk Factors*. These statements are based on our beliefs and expectations about future outcomes, and are subject to risks and uncertainties that could cause our actual results to differ materially from anticipated results. Factors that could cause or contribute to such differences include those described in *Part II, Item 1A Risk Factors* of this Quarterly Report on Form 10-Q; factors described in our Annual Report on Form 10-K for the year ended December 31, 2016, under the section entitled *Part I, Item 1A Risk Factors Forward-Looking Statements*; and factors described in other cautionary statements, cautionary language and risk factors set forth in other filings with the Securities and Exchange Commission (SEC). We undertake no obligation to publicly update these forward-looking statements, whether as a result of new information, future events or otherwise.

Overview of Marketed Products

We currently market and sell the following commercial products:

- *Remodulin® (treprostinil) Injection (Remodulin).* Remodulin, a continuously-infused formulation of the prostacyclin analogue treprostinil, is approved by the U.S. Food and Drug Administration (FDA) for subcutaneous (under the skin) and intravenous (in the vein) administration. Prostacyclin analogues are stable synthetic forms of prostacyclin, an important molecule produced by the body that has powerful effects on blood vessel health and

function. Remodulin is indicated to diminish symptoms associated with exercise in patients with World Health Organization (WHO) Group 1 pulmonary arterial hypertension (PAH). Remodulin has also been approved in various countries outside of the United States.

- *Tyvaso® (treprostinil) Inhalation Solution (Tyvaso).* Tyvaso, an inhaled formulation of treprostinil, is approved by the FDA to improve exercise ability in PAH patients.

- *Orenitram® (treprostinil) Extended-Release Tablets (Orenitram).* Orenitram, a tablet dosage form of treprostinil, is approved by the FDA to improve exercise capacity in PAH patients.

- *Adcirca® (tadalafil) Tablets (Adcirca).* We acquired exclusive commercialization rights to Adcirca, an oral PDE-5 inhibitor therapy for PAH, in the United States from Eli Lilly and Company (Lilly). PDE-5 inhibitors inhibit the degradation of cyclic guanosine monophosphate (cyclic GMP) in cells. Cyclic GMP is activated by nitric oxide (NO), a naturally occurring substance in the body that mediates the relaxation of vascular smooth muscle. Adcirca is approved by the FDA to improve exercise ability in PAH patients.

- *Unituxin® (dinutuximab) Injection (Unituxin).* In March 2015, the FDA approved Unituxin in combination with granulocyte-macrophage colony-stimulating factor (GM-CSF), interleukin-2 (IL-2), and 13-cis-retinoic acid (RA), for the treatment of patients with high-risk neuroblastoma (a rare form of pediatric cancer) who achieve at least a partial response to prior first-line multi-agent, multimodality therapy. Unituxin is a chimeric, composed of a combination of mouse and human DNA, monoclonal antibody that induces antibody-dependent cell-mediated cytotoxicity, a form of cell-mediated immunity whereby the immune system actively targets a cell that has been bound by specific antibodies. We received orphan drug designation for Unituxin from the FDA, conferring exclusivity through March 2022, during which the FDA may not approve any application to market the same drug for the same indication, except in limited circumstances such as a showing of clinical superiority.

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Revenues

Our net product sales consist entirely of sales of the five commercial products noted above. We have entered into separate, non-exclusive distribution agreements with Accredo Health Group, Inc. (Accredo) and CVS Caremark, Inc. (Caremark) to distribute Remodulin, Tyvaso and Orenitram in the United States, and we have entered into an exclusive distribution agreement with ASD Specialty Healthcare, Inc. (ASD), an affiliate of AmerisourceBergen Corporation, to distribute Unituxin in the United States. We also sell Remodulin and Tyvaso to distributors internationally. We sell Adcirca through Lilly s pharmaceutical wholesale network. To the extent we have increased the price of any of these products, increases have typically been in the single-digit percentages per year, except for Adcirca, the price of which is set by Lilly.

We require our specialty pharmaceutical distributors to maintain reasonable levels of inventory reserves because the interruption of Remodulin, Tyvaso or Orenitram can be life threatening. Our specialty pharmaceutical distributors typically place monthly orders based on current utilization trends and contractual minimum inventory requirements. As a result, sales of Remodulin, Tyvaso and Orenitram can vary depending on the timing and magnitude of these orders and may not precisely reflect changes in patient demand.

We recognize revenues net of: (1) estimated rebates; (2) prompt pay discounts; (3) allowances for sales returns; and (4) distributor fees. We derive our provisions for rebates from an analysis of historical levels of rebates for all government drug discount programs and commercial third-party payer contracts, relative to sales of each product. We provide prompt pay discounts to customers that pay amounts due within a specific time period and base related estimates on observed historical customer payment behavior. Remodulin, Tyvaso and Orenitram are distributed in the United States under separate contracts with substantially similar terms, which include exchange rights in the event that product is damaged during shipment or expires. The allowance for exchanges for Remodulin, Tyvaso, Orenitram and Unituxin has been negligible and immaterial. Furthermore, we anticipate minimal exchange activity in the future for Remodulin, Tyvaso, Orenitram and Unituxin since we typically sell these products with a remaining shelf life in excess of one year and our distributors generally carry a thirty- to sixty-day supply of our products at any given time. As a result, we do not record reserves for exchanges for Remodulin, Tyvaso, Orenitram and Unituxin at the time of sale. We derive estimates relating to our allowance for returns of Adcirca based on actual return data accumulated since the drug s launch in 2009. To date, we have not identified any unusual patterns in the volume of prescriptions relative to sales that would warrant reconsideration of our methodology for estimating Adcirca returns. Lastly, we pay our distributors for contractual services rendered and accrue for related fees based on contractual rates applied to the estimated units of service provided by distributors for a given financial reporting period.

Generic Competition

We settled litigation with Sandoz, Inc. (Sandoz), Teva Pharmaceuticals USA, Inc. (Teva) and Par Sterile Products, LLC (Par) relating to their abbreviated new drug applications (ANDAs) seeking FDA approval to market generic versions of Remodulin before the expiration of certain of our U.S. patents. Under the terms of our settlement agreements, Sandoz can market its generic version of Remodulin in the United States beginning in June 2018, and both Teva and Par can market their generic versions of Remodulin in the United States beginning in December 2018, although each of these companies may be permitted to enter the market earlier under certain circumstances.

In April 2017, we received a Paragraph IV Certification Notice Letter (the Notice Letter) that another generic drug company, Dr. Reddy s Laboratories, Inc. (Dr. Reddy s), also filed an ANDA seeking FDA approval to market a generic version of Remodulin. In the Notice Letter, Dr. Reddy s states that it intends to market a generic version of Remodulin before the expiration of U.S. Patent No. 8,497,393, which expires in December 2028, U.S. Patent No. 7,999,007, which expires in March 2029, U.S. Patent No. 9,199,908, which expires in May 2024, U.S. Patent No. 9,593,066, which expires in December 2028 and U.S. Patent No. 9,604,901, which expires in December 2028. Dr. Reddy s Notice Letter states that the ANDA contains a Paragraph IV Certification alleging that these patents are not valid, not enforceable and/or will not be infringed

by the commercial manufacture, use or sale of the proposed product described in Dr. Reddy s ANDA submission. We are currently reviewing the Notice Letter. If we commence a patent infringement lawsuit against Dr. Reddy s within 45 days from receipt of the Notice Letter, the FDA would be precluded from approving Dr. Reddy s ANDA for up to 30 months or until the issuance of a district court decision that is adverse to us, whichever occurs first.

We are engaged in litigation with Watson Laboratories, Inc. (Watson), based on its ANDA to market a generic version of Tyvaso before the expiration of certain of our U.S. patents at various dates from November 2018 through December 2028. We also are engaged in litigation with Actavis Laboratories FL, Inc. (Actavis), contesting its ANDA to market a generic version of the 0.25 mg, 1.0 mg and 2.5 mg strengths of Orenitram before the expiration of certain of our U.S. patents at various dates from 2024 through 2031.

Finally, SteadyMed Ltd. (SteadyMed) filed a petition for *inter partes* review (IPR) seeking to invalidate the claims of one of our patents that expires in December 2028 and relates to treprostinil (U.S. Patent No. 8,497,393, which we refer to as the 393 Patent), which is the active ingredient in Remodulin, Tyvaso and Orenitram. In April 2016, the Patent Trial and Appeal Board (PTAB) of the U.S. Patent and Trademark Office (USPTO) instituted an IPR of the 393 Patent on the basis of SteadyMed s petition. SteadyMed announced that it is developing a product called Trevyent®, which is a single-use, pre-filled pump intended to deliver a two-day supply of treprostinil subcutaneously using SteadyMed s PatchPump® technology. In January 2016, SteadyMed announced that Trevyent had been granted orphan drug designation by the FDA for the treatment of PAH. SteadyMed has announced plans to file an NDA for Trevyent during the second quarter of 2017, and launch the product in 2018.

On March 31, 2017, the PTAB issued a Final Written Decision in this matter, finding that all claims of the 393 patent are not patentable. We are evaluating our options, including the possibility of exercising our right of appeal to the U.S. Court of Appeals for the Federal Circuit or first requesting a rehearing before the PTAB. The 393 patent remains valid and enforceable

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until appeals have been exhausted. We are currently asserting the 393 patent (along with several other patents) against Watson and Actavis in connection with their efforts to obtain approval to market generic copies of Tyvaso and Orenitram, respectively.

We intend to continue vigorously defending the 393 patent, but even if the ultimate result is unfavorable to us, we have other patents covering subject matters similar to the 393 patent and with the same expiration date (December 2028). Specifically, in March 2017, the USPTO awarded us two additional patents related to the 393 patent, U.S. Patent Nos. 9,593,066 and 9,604,901. We prosecuted the applications that resulted in these new patents in parallel with the 393 patent IPR proceedings and presented claims addressing the invalidity arguments raised by SteadyMed in the IPR and Watson and Actavis in the ongoing litigations. The USPTO allowed the new patent claims with full knowledge of the IPR, the invalidity arguments presented therein, and the invalidity arguments raised by Watson and Actavis in connection with the 393 patent. Thus, we anticipate that these new patents should be less susceptible to challenge than the 393 patent. We have listed both of these new patents in the Orange Book for Remodulin, Tyvaso, and Orenitram and may in the future decide to assert these patents against any competitor marketing or seeking approval to market generic versions of Remodulin, Tyvaso, or Orenitram. Following the Final Written Decision in the 393 patent IPR, SteadyMed asked the PTAB to invalidate the new patents because SteadyMed claimed that the new patents claims are patentably indistinct from the 393 patent claims. The PTAB denied SteadyMed s request. Thus, SteadyMed must petition the PTAB to request new IPRs if it wishes to attempt to invalidate the newly issued patents.

For further details regarding the Watson, Actavis and SteadyMed matters, please see Note 12 *Litigation*, to our consolidated financial statements.

As a result of our settlements with Sandoz, Teva and Par, we expect to see generic competition for Remodulin from these companies in the United States beginning in June 2018 (Sandoz) and December 2018 (Teva and Par) (or earlier under certain circumstances). Our two new patents granted in March 2017 will not impact these settlements. This increased competition could reduce our net product sales and profits. In addition, while we intend to vigorously enforce our intellectual property rights relating to our products, there can be no assurance that we will prevail in defending our patent rights, or that additional challenges from other ANDA filers or other challengers will not surface with respect to our products. Our patents could be invalidated, found unenforceable or found not to cover one or more generic forms of Remodulin, Tyvaso or Orenitram. If any ANDA filer were to receive approval to sell a generic version of Remodulin, Tyvaso or Orenitram and/or prevail in any patent litigation, the affected product(s) would become subject to increased competition, which could reduce our net product sales and profits.

Certain patents for Revatio®, a PDE-5 inhibitor marketed by Pfizer for treatment of PAH, expired in 2012, leading several manufacturers to launch generic formulations of sildenafil citrate, the active ingredient in Revatio. Generic sildenafil s lower price relative to Adcirca could lead to pressure from payers to use generic products within the same class of therapy initially, which could erode Adcirca s market share and limit its potential sales. Although we believe Adcirca s once-daily dosing regimen provides a significant competitive advantage over generic sildenafil s multiple dosing regimen, government payers and private insurance companies may favor the use of less expensive generic sildenafil over Adcirca. As a result, we have seen generic sildenafil increase its share of the PDE-5 market over time. The U.S. patent for Adcirca for the treatment of pulmonary hypertension will expire in November 2017, after which time we expect to see increased generic competition for Adcirca that could have a material adverse impact on our Adcirca revenues. The FDA has already tentatively approved ANDAs filed by at least two generic companies to market generic versions of Adcirca following the expiration of the November 2017 patent. Patent expiration, patent litigation and generic competition for any of our commercial PAH products could have a significant, adverse impact on our revenues, profits and stock price, and is inherently difficult to predict. For additional discussion, refer to the risk factor entitled, *Our intellectual property rights may not effectively deter competitors from developing competing products that, if successful, could have a material adverse effect on our revenues and profit*s, contained in *Part II*, *Item 1A Risk Factors* included in this Quarterly Report on Form 10-Q.

Operating Expenses

Since our inception, we have devoted substantial resources to our various clinical trials and other research and development efforts, which are conducted both internally and through third parties. From time to time, we also license or acquire additional technologies and compounds to be incorporated into our development pipeline.

Our operating expenses include the following costs:

Cost of Product Sales

Our cost of product sales primarily includes costs to manufacture and acquire products sold to customers, royalty payments under license agreements granting us rights to sell related products, direct and indirect distribution costs incurred in the sale of products, and the costs of inventory reserves for current and projected obsolescence. These costs also include share-based compensation and salary-related expenses for direct manufacturing and indirect support personnel, quality review and release for commercial distribution, direct materials and supplies, depreciation, facilities-related expenses and other overhead costs.

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Research and Development

Our research and development expenses primarily include costs associated with the research and development of products and post-marketing research commitments. These costs also include share-based compensation and salary-related expenses for research and development functions, professional fees for preclinical and clinical studies, costs associated with clinical manufacturing, facilities-related expenses, regulatory costs and costs associated with pre-FDA approval payments to third-party contract manufacturers. Expenses also include costs for third-party arrangements, including upfront fees and milestone payments required under license arrangements for therapies under development. We expect to incur increased clinical trial-related expenses in 2017, driven by enrollment in several large clinical studies of our existing products, including Orenitram (*SOUTHPAW,* a study of Orenitram in patients with pulmonary hypertension associated with left ventricular diastolic dysfunction: 310 patients; and *TAO*, a study of Orenitram in up-front combination with ambrisentan and tadalafil: 600 patients); Tyvaso (*INCREASE*, a study of Tyvaso in patients with pulmonary hypertension associated with idiopathic pulmonary fibrosis: 314 patients) and Unituxin in new indications (expected to be large, international studies).

Selling, General and Administrative

Our selling, general and administrative expenses primarily include costs associated with the commercialization of approved products and general and administrative costs to support our operations. Selling expenses also include share-based compensation, salary-related expenses, product marketing and sales operations costs, and other costs incurred to support our sales efforts. General and administrative expenses also include our core corporate support functions such as human resources, finance and legal, external costs such as insurance premiums, legal fees, grants to non-affiliated, not-profit organizations, and other professional service fees.

Share-Based Compensation

Historically, we granted stock options under our Amended and Restated Equity Incentive Plan (the 1999 Plan) and awards under our Share Tracking Awards Plans (STAP). In June 2015, our shareholders approved the United Therapeutics Corporation 2015 Stock Incentive Plan (the 2015 Plan), which authorizes the issuance of up to 6,150,000 shares of our common stock. Following approval of the 2015 Plan, we ceased granting awards under the STAP and the 1999 Plan, and we modified our equity compensation programs to grant stock options to employees who previously received STAP awards, and to grant stock options and restricted stock units to non-employee directors. The grant date fair values of stock options and restricted stock units are recognized as share-based compensation expense ratably over their vesting periods.

The fair values of STAP awards and stock option grants are measured using inputs and assumptions under the Black-Scholes-Merton model that can materially impact the amount of share-based compensation (benefit) expense for a given period. The fair value of restricted stock units is measured using our stock price on the date of grant.

Although we have ceased granting STAP awards, we still have a significant number of STAP awards outstanding. We account for STAP awards as liabilities because they are settled in cash. As such, we must re-measure the fair value of STAP awards at the end of each financial reporting period until the awards are no longer outstanding. Changes in our STAP-related liability resulting from such re-measurements are recorded as adjustments to share-based compensation (benefit) expense and can create substantial volatility within our operating expenses from period to period. The following factors, among others, have a significant impact on the amount of share-based compensation (benefit) expense recognized

in connection with STAP awards from period to period: (1) volatility in the price of our common stock (specifically, increases in the price of our common stock will generally result in an increase in our STAP liability and related compensation expense, while decreases in our stock price will generally result in a reduction in our STAP liability and related compensation expense); (2) changes in the number of outstanding awards; and (3) changes in the number of vested and unvested awards.

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Research and Development

We focus most of our research and development efforts on the following pipeline programs:

Product	Mode of Delivery	Indication	Current Status STUDY NAME CAPS	Target Commercial Launch Date	Our Territory
RemoSynch (Implantable System for Remodulin)	Continuous intravenous via implantable pump	PAH	Pending regulatory approvals and launch preparations.	2018	United States, United Kingdom, Canada, France, Germany, Italy and Japan
RemUnity (treprostinil)	Continuous subcutaneous via pre-filled, semi-disposable pump	PAH	Pre-NDA	2019	Worldwide
Dinutuximab	Intravenous infusion	Multiple GD2 expressing cancers, including small cell lung cancer	Phase II/III	2019-2023 for accelerated approval and other regulatory pathways	Worldwide
RemoPro (pain-free subcutaneous Remodulin® prodrug)	Continuous subcutaneous	PAH	Pre-Clinical	2020	Worldwide
OreniPlus (Orenitram in combination with approved background therapy)	Oral	PAH (decrease morbidity and mortality)	Phase IV *FREEDOM-EV*	2020	Worldwide
Tysuberprost (esuberaprost in combination with Tyvaso)	Oral (esuberaprost) Inhaled (Tyvaso)	PAH (decrease morbidity and mortality)	Phase III *BEAT*	2020	North America, Europe, Mexico, South America, Egypt, India, Israel, South Africa and Australia
Tyvaso-ILD (treprostinil)	Inhaled	Pulmonary hypertension associated with idiopathic pulmonary fibrosis (WHO Group 3)	Phase III *INCREASE*	2021	Worldwide
Aurora-GT (eNOS gene therapy)	Intravenous injection	PAH	Phase II/III *SAPPHIRE*	2022	United States
OreniLeft (treprostinil)	Oral	Pulmonary hypertension associated with left ventricular diastolic dysfunction (WHO Group 2)	Phase III *SOUTHPAW*	2022	Worldwide
Manufactured Organs	Transplant	End-stage organ failure	Pre-Clinical	2023	Worldwide

RemoSynch (Implantable System for Remodulin)

We are working with Medtronic, Inc. (Medtronic) on a program to develop Medtronic s proprietary intravascular infusion catheter to be used with its SynchroMed® II implantable infusion pump and related infusion system components (together referred to as the Implantable System for Remodulin, or RemoSynch) in order to deliver Remodulin for the treatment of PAH. The SynchroMed II device is already approved for delivery of medication to treat neuropathic pain. With our funding, Medtronic completed the DelIVery clinical trial, which studied the safety of the Implantable System for Remodulin. The primary objective was to demonstrate a rate of catheter-related complications below 2.5 per 1,000 patient-days while using the Implantable System for Remodulin. In September 2013, Medtronic informed us that this primary objective was met. If the Implantable System for Remodulin is approved, the technology has the potential to reduce many of the patient burdens and other complications associated with the use of external pumps to administer prostacyclin analogues. In order to launch RemoSynch in the United States, Medtronic and we are pursuing parallel regulatory filings relating to the device and the drug, respectively. Assuming we and Medtronic obtain the necessary regulatory approvals, we anticipate launching RemoSynch in 2018.

Medtronic is entirely responsible for regulatory approvals and all manufacturing and quality systems related to its infusion pump and related components. Medtronic has received a consent decree citing violations of the quality system regulation for

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medical devices and requiring it to stop manufacturing, designing and distributing SynchroMed II implantable infusion pump systems, except in limited circumstances, until the FDA determines that Medtronic has met all the provisions listed in the consent decree. It is unclear how this consent decree will impact our ability to obtain FDA approval for RemoSynch, or its commercial prospects if approved.

RemUnity and RemoPro

In December 2014, we entered into an exclusive agreement with DEKA Research & Development Corp. (DEKA) to develop a pre-filled, semi-disposable pump system for subcutaneous delivery of treprostinil, which we call the RemUnity system. Under the terms of the agreement, we are funding the development costs related to the RemUnity system and will pay product fees and a single-digit royalty to DEKA based on commercial sales of the system and the treprostinil drug product sold for use with the system. Currently, we are engaged in engineering, design and development efforts to optimize the RemUnity pump to deliver treprostinil in pre-filled reservoirs, and intend to complete human factor studies in healthy volunteers and functionality testing in patients before submitting an application to the FDA to approve the pre-filled RemUnity pump.

We are also engaged in pre-clinical development of a new prodrug formulation of Remodulin called RemoPro, which is intended to enable subcutaneous delivery without the site pain currently associated with subcutaneous Remodulin. A prodrug is a metabolically inactive compound that, after administration, metabolizes into an active compound. RemoPro is intended to be inactive in the subcutaneous tissue, which should eliminate site pain. Once RemoPro is absorbed into the blood, it metabolizes into treprostinil. RemoPro is intended to be administered using the RemoUnity system.

Tyvaso and Tyvaso-ILD

We are developing further enhancements intended to make the Tyvaso Inhalation System easier to use and have submitted a supplement to our New Drug Application (NDA) to include a new device, with FDA action anticipated in late 2017. In addition, we have commenced a phase III registration study called INCREASE, which is a study of Tyvaso in patients with WHO Group 3 pulmonary hypertension associated with interstitial lung disease (specifically associated with idiopathic pulmonary fibrosis or emphysema), which we refer to as Tyvaso-ILD. There are presently no FDA approved therapies indicated for treatment of WHO Group 3 pulmonary hypertension.

Orenitram, OreniPlus and OreniLeft

In December 2013, the FDA approved Orenitram for the treatment of PAH patients to improve exercise capacity. The primary study that supported efficacy of Orenitram was a 12-week monotherapy study (FREEDOM-M) in which PAH patients were not on any approved background PAH therapy.

We believe that in order for Orenitram to reach its full commercial potential, we need to complete further studies to support an amendment to Orenitram s label to indicate that Orenitram delays morbidity and/or mortality (also known as time to clinical worsening) in PAH patients who are on an approved oral background therapy. We refer to this initiative to amend Orenitram s label as OreniPlus. As such, we are conducting a

phase IV registration study called FREEDOM-EV, which is intended to support such a label amendment if successful.

We are also planning a study of Orenitram (*SOUTHPAW*) in patients with WHO Group 2 pulmonary hypertension (specifically associated with left ventricular diastolic dysfunction), which we refer to as OreniLeft. There are presently no FDA approved therapies indicated for treatment of WHO Group 2 pulmonary hypertension.

Tysuberprost

In July 2012, we completed a phase I safety trial of esuberaprost, a single-isomer orally bioavailable prostacyclin analogue, and the data suggested that dosing esuberaprost four times a day was safe. We believe that esuberaprost and treprostinil have differing prostacyclin receptor-binding profiles and thus could provide benefits to certain groups of patients with differing sets of safety and efficacy profiles. We also believe that inhaled treprostinil and oral esuberaprost have complimentary pharmacokinetic and pharmacodynamic profiles, which indicate that they should provide greater efficacy in combination. As a result, in March 2017 we completed enrollment of our phase III registration study called *BEAT* (***BE***raprost 314d ***A***dd-on to ***T***yvaso) to evaluate the clinical benefit and safety of esuberaprost in combination with Tyvaso for patients with PAH who show signs of deterioration on inhaled treprostinil or have a less than optimal response to inhaled treprostinil treatment. We refer to the resulting combination of esuberaprost and Tyvaso therapies as Tysuberprost.

Unituxin

Under our Biologics License Application (BLA) approval for Unituxin, the FDA has imposed certain post-marketing requirements and post-marketing commitments on us. We are conducting additional clinical and non-clinical studies to satisfy

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these requirements and commitments. While we believe we will be able to complete these studies, any failure to satisfy these requirements or commitments could result in penalties, including fines or withdrawal of Unituxin from the market, unless we are able to demonstrate good cause for the failure.

In addition, we are planning studies of Unituxin in adult patients with other forms of GD2-expressing cancers, including small cell lung cancer. These research and development efforts into new indications for Unituxin have been substantially outsourced to a contract research organization called Precision Oncology, LLC.

Unituxin therapy is associated with severe side effects, including infections, infusion reactions, hypokalemia, hypotension, pain, fever, and capillary leak syndrome. In post-approval use of Unituxin, the adverse reactions of prolonged urinary retention, transverse myelitis, and reversible posterior leukoencephalopathy syndrome have been observed. Unituxin s label also includes a boxed warning related to serious infusion reactions and neurotoxicity.

Finally, we are working on the development of a fully humanized (non-chimeric) version of dinutuximab, the active ingredient in Unituxin. This new version is expected to reduce some of the side effects associated with Unituxin, which is a chimeric composed of a combination of mouse and human DNA.

Aurora-GT

We are planning a phase II/III study of a gene therapy product called Aurora-GT, in which a PAH patient s own endothelial progenitor cells are isolated, transfected with the gene for human endothelial NO-synthase (eNOS), expanded ex-vivo and then delivered to the same patient. This product is intended to rebuild the blood vessels in the lungs that are destroyed by PAH.

Organ Manufacturing

Each year, end stage organ failure kills millions of people. A significant number of these patients could have benefited from an organ transplant. Unfortunately, the number of usable, donated organs available for transplantation has not changed significantly over the past half century while the need has soared. Our long-term goals are aimed at addressing this shortage. With advances in technology, we believe that creating an unlimited supply of tolerable manufactured organs is now principally an engineering challenge, and we are dedicated to finding engineering solutions. Since 2011, we have been engaged in research and development of a variety of technologies designed to increase the supply of transplantable organs and tissues and improve outcomes for transplant recipients. These programs include preclinical research and development of alternative tissue sources through tissue and organ xenotransplantation, as well as regenerative medicine and other technologies to create engineered organs and organ tissues. Although our primary focus is on engineered lungs, we are also developing technology for other engineered organs, such as kidneys and hearts, and our manufactured lungs, kidneys and hearts have set records for viability in animal models. We are also developing technologies to improve outcomes for lung transplant recipients and to increase the supply of donor lungs through ex-vivo lung perfusion. We have also invested $41.8 million in TransMedics, Inc., a company engaged in the development of ex vivo perfusion systems for donor lungs, hearts and kidneys. While we continue to develop and commercialize therapies for rare and life threatening conditions, we view organ manufacturing as the ultimate technology solution for a broad array of diseases, many of which (such as PAH) have proven incurable thus far through more traditional pharmaceutical and biologic therapies. For this reason, in 2015 we created a wholly-owned public benefit

corporation called Lung Biotechnology PBC, chartered with the express purpose to address the acute national shortage of transplantable lungs and other organs with a variety of technologies that either delay the need for such organs or expand the supply.

Research and Development Expenditures

We have incurred substantial expenses for our research and development activities and expect to continue to do so in connection with the programs described above.

Future Prospects

Our strategy is to continue to grow the revenues of our existing commercial products, including through approval of new and/or improved indications, formulations and delivery devices for our existing cardiopulmonary and oncology products. These efforts are designed to provide continued revenue growth in the near and medium term, while efforts are under way to develop technologies in organ manufacturing in the longer term.

Our ability to achieve these objectives and sustain our growth and profitability will depend on many factors, including among others: (1) the timing and outcome of preclinical research, clinical trials and regulatory approvals for products we develop; (2) the timing and degree of success related to the commercial launch of new products; (3) the demand for our products; (4) the price of our products and the reimbursement of our products by public and private health insurance organizations; (5) the competition we face within our industry, including competition from generic companies; (6) our ability to effectively manage our business in an increasingly complex legal and regulatory environment; (7) our ability to defend against

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generic competition and challenges to our patents; and (8) the risks identified in *Part II, Item 1A Risk Factors*, included in this Quarterly Report on Form 10-Q.

We will need to construct additional facilities to support the development and commercialization of our products and technologies. We have budgeted for capital expenditures of approximately $300 million over the next three years.

We operate in a highly competitive market in which a small number of large pharmaceutical companies control a majority of available PAH therapies. These pharmaceutical companies are well established in the market and possess greater financial, technical and marketing resources than we do. In addition, there are a number of investigational products in late-stage development that, if approved, may erode the market share of our existing commercial therapies and make market acceptance more difficult to achieve for any therapies we attempt to market in the future.

Three Months Ended March 31, 2017 and March 31, 2016

Revenues

The following table presents the components of total revenues (dollars in millions):

	Three Months Ended March 31,		Percentage Change
	2017	2016	
Net product sales:			
Remodulin	$ 145.8	$ 139.8	4%
Tyvaso	87.4	102.2	(14)%
Adcirca	80.0	72.6	10%
Orenitram	39.3	40.2	(2)%
Unituxin	18.0	14.2	27%
Total revenues	$ 370.5	$ 369.0	0%

Revenues for the three months ended March 31, 2017 increased by $1.5 million compared to the same period in 2016. The growth in revenues resulted from the following: (1) a $7.4 million increase in Adcirca net product sales primarily due to price increases, which were determined by Lilly; (2) a $6.0 million increase in Remodulin net product sales due to an increase in the number of patients being treated with Remodulin; and (3) a $3.8 million increase in Unituxin net product sales due to a price increase and an increase in number of vials sold. These increases were partially offset by a $0.9 million decrease in Orenitram net product sales and a $14.8 million decrease in Tyvaso net product sales. We believe the decrease in Tyvaso sales resulted from the availability of oral prostacyclin-class therapies, and increased propensity to treat patients with multiple oral therapies earlier in their disease progression, which can delay the need to prescribe inhaled therapies.

We recognize revenues net of: (1) estimated rebates; (2) prompt pay discounts; (3) allowances for sales returns; and (4) distributor fees. These are referred to as gross-to-net deductions and are based on historical experiences and contractual and statutory requirements. The tables below

include a reconciliation of the accounts associated with these deductions (in millions):

	Three Months Ended March 31, 2017				
	Rebates	Prompt Pay Discounts	Allowance for Sales Returns	Distributor Fees	Total
Balance, January 1, 2017	$ 46.0	$ 4.3	$ 7.7	$ 2.8	$ 60.8
Provisions attributed to sales in:					
Current period	50.5	8.7	(1.3)	3.0	60.9
Prior periods	2.7				2.7
Payments or credits attributed to sales in:					
Current period	(4.4)	(5.0)		(0.5)	(9.9)
Prior periods	(45.3)	(4.2)	(0.2)	(2.8)	(52.5)
Balance, March 31, 2017	$ 49.5	$ 3.8	$ 6.2	$ 2.5	$ 62.0

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	Three Months Ended March 31, 2016				
	Rebates	Prompt Pay Discounts	Allowance for Sales Returns	Distributor Fees	Total
Balance, January 1, 2016	$ 44.6	$ 3.9	$ 5.3	$ 2.6	$ 56.4
Provisions attributed to sales in:					
Current period	48.5	8.6	0.3	3.0	60.4
Prior periods	1.5				1.5
Payments or credits attributed to sales in:					
Current period	(8.2)	(4.8)		(1.0)	(14.0)
Prior periods	(39.0)	(3.7)	(0.2)	(2.5)	(45.4)
Balance, March 31, 2016	$ 47.4	$ 4.0	$ 5.4	$ 2.1	$ 58.9

Cost of Product Sales

The table below summarizes cost of product sales by major category (dollars in millions):

	Three Months Ended March 31,		Percentage
	2017	2016	