UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

4. Investments (Continued)

(the License Agreement) with this company. The License Agreement entitles us to control rights sufficient to require us to consolidate the balance sheet and results of operations of this company. The control rights relate to additional research and development funding that we may provide to this company over a period of six years. We are also entitled to representation on a joint development committee that approves the company's use of funding provided by us. In 2017, we provided $9.9 million of financial support to the company. We have the right, at any time and for any reason, to cease our funding of this company's activities.

As of December 31, 2017, our consolidated balance sheet included $11.6 million of cash maintained by this company that can only be used to settle its obligations. Additionally, our consolidated balance sheets included an $8.8 million in-process research and development intangible asset, $3.4 million of goodwill and $8.3 million of preferred stock due to the consolidation of this company. The preferred stock is recorded in temporary equity on our consolidated balance sheets. During the year ended December 31, 2017, this company incurred a net loss of $5.1 million. This company's creditors have no recourse against our assets and general credit.

5. Fair Value Measurements

Assets and liabilities subject to fair value measurements are required to be disclosed within a fair value hierarchy. The fair value hierarchy ranks the quality and reliability of inputs used to determine fair value. Accordingly, assets and liabilities carried at, or permitted to be carried at, fair value are classified within the fair value hierarchy in one of the following categories based on the lowest level input that is significant in measuring fair value:

Level 1—Fair value is determined by using unadjusted quoted prices that are available in active markets for identical assets and liabilities.

Level 2—Fair value is determined by using inputs other than Level 1 quoted prices that are directly or indirectly observable. Inputs can include quoted prices for similar assets and liabilities in active markets or quoted prices for identical assets and liabilities in inactive markets. Related inputs can also include those used in valuation or other pricing models such as interest rates and yield curves that can be corroborated by observable market data.

Level 3—Fair value is determined by using inputs that are unobservable and not corroborated by market data. Use of these inputs involves significant and subjective judgment.

We account for certain assets and liabilities at fair value and rank these assets and liabilities within the fair value hierarchy. Other current assets and other current liabilities have fair values that approximate their carrying values.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

5. Fair Value Measurements (Continued)

Assets and liabilities subject to fair value measurements are as follows (in millions):

	As of December 31, 2017			
	Level 1	Level 2	Level 3	Balance
Assets				
Money market funds[1]	$ 217.9	$ —	$ —	$ 217.9
Time deposits[2]	—	25.2	—	25.2
U.S. government and agency securities[2]	—	723.5	—	723.5
Corporate debt securities[2]	—	18.0	—	18.0
Total assets	$ 217.9	$ 766.7	$ —	$ 984.6
Liabilities				
Contingent consideration[3]	—	—	12.8	12.8
Total liabilities	$ —	$ —	$ 12.8	$ 12.8

	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]	—	30.1	—	30.1
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 non-current 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.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

6. Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses consist of the following by major categories (in millions):

	As of December 31,	
	2017	2016
Accounts payable	$ 8.4	$ 8.1
Accrued expenses:		
Sales related (royalties, rebates and fees)	104.6	55.7
Payroll related	34.6	30.6
Other	23.5	9.8
Total accrued expenses	$ 162.7	$ 96.1
Total accounts payable and accrued expenses	$ 171.1	$ 104.2

7. 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 and in January 2018, we extended the maturity date of the 2016 Credit Agreement by one year to January 2022 and January 2023, respectively.

At our option, amounts borrowed under the 2016 Credit Agreement 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).

On June 1, 2017, we borrowed $250.0 million under this facility and used the funds to initiate an accelerated share repurchase program. Refer to Note 10—*Stockholders' Equity—Share Repurchases*. As we no longer intend to repay the full outstanding balance within one year, the outstanding balance has been reclassified from short-term to long-term within the consolidated balance sheet. We elected to have interest on this draw calculated at LIBOR plus an applicable margin. During the year ended December 31, 2017, we recorded $7.1 million of interest expense related to the credit facility.

The 2016 Credit Agreement contains customary events of default and customary affirmative and negative covenants. As of December 31, 2017, we were in compliance with such covenants. 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 Note Hedge 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.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

7. Debt (Continued)

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 during December 2016 and 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 each of the series of related incremental expiration dates, we delivered 2.8 million shares of common stock previously held as treasury stock to DB London, including 1.7 million shares that were delivered during the first quarter of 2017.

Interest Expense

Details of interest expense presented on our consolidated statements of operations are as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Credit Facility interest expense[1]	$ 7.1	$ 3.2	$ —
Convertible Notes interest expense	—	0.1	3.4
Other interest expense	1.9	0.6	1.3
Total interest expense	$ 9.0	$ 3.9	$ 4.7

(1) Represents interest expense related to debt and amortization of issuance costs associated with our 2016 Credit Agreement.

8. Temporary Equity

Temporary equity includes securities that: (1) have redemption features that are outside our control; (2) are not classified as an asset or liability; (3) are excluded from permanent stockholders' equity; and (4) are not mandatorily redeemable. Amounts included in temporary equity relate to securities that are redeemable at a fixed or determinable price.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

8. Temporary Equity (Continued)

Components comprising the carrying value of temporary equity include the following (in millions):

	As of December 31,	
	2017	2016
Common stock subject to repurchase[(1)]	$ 10.9	$ 10.9
Preferred stock with redemption rights[(2)]	8.3	—
Total	$ 19.2	$ 10.9

(1) In connection with our license agreement with Toray Industries Inc. (Toray), we issued 200,000 shares of our common stock (which have since split into 400,000 shares) to Toray in 2007, and provided Toray the right to require us to repurchase the shares at a price of $27.21 per share.

(2) The preferred stock issued by the variable interest entity we consolidate includes rights that allow the holders to redeem the preferred stock at the original issuance price in exchange for cash. Refer to Note 4—*Investments—Variable Interest Entity* for more information.

9. Share-Based Compensation

As of December 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. We grant equity-based awards including stock options and restricted stock units (RSUs) under these plans. Refer to the sections entitled *Employee Stock Options* and *Restricted Stock Units* below.

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." Refer to the section entitled *Share Tracking Awards Plans* below. We discontinued the issuance of STAP awards in June 2015, when our shareholders approved the 2015 Plan.

In 2012, our shareholders approved the United Therapeutics Corporation Employee Stock Purchase Plan (ESPP), which has been structured to comply with Section 423 of the Internal Revenue Code. Refer to the section entitled *Employee Stock Purchase Plan* section below.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

9. Share-Based Compensation (Continued)

The following table reflects the components of share-based compensation expense (benefit) recognized in our consolidated statements of operations (in millions):

	Year Ended December 31,		
	2017	2016	2015
Stock Options	$ 43.0	$ 24.8	$ 4.9
Restricted Stock Units	2.2	1.1	—
Share Tracking Awards	27.1	(15.2)	274.2
Employee Stock Purchase Plan	1.2	1.4	1.2
Total Share-based compensation expense before tax	$ 73.5	$ 12.1	$ 280.3
Share-based compensation capitalized as part of inventory	$ 0.4	$ 0.2	$ 7.1

As a result of the adoption of ASU 2016-09, we established an accounting policy election to account for forfeitures of share-based awards and STAPs 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 decreased retained earnings by $5.8 million, net of tax. Refer to Note 3—*Recently Issued Accounting Standards*.

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.

In March 2017, we began issuing stock options with performance conditions to certain executives under the 2015 Plan. The stock options have vesting conditions tied to the achievement of specified performance criteria, which 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 criteria. During 2017, we granted 0.9 million stock options with performance vesting conditions with a total grant date fair value of $53.9 million based on achievement of target performance levels. During the year ended December 31, 2017, we recorded $16.7 million of share-based compensation expense related to these awards.

A description of the key inputs, requiring estimates, used in determining the fair value of Employee Stock Options are provided below:

Expected term—The expected term reflects the estimated time period we expect an award to remain outstanding. For the years ended December 31, 2017, 2016 and 2015, we used historical data to develop this input.

Expected volatility—Volatility is a measure of the amount the price of our common stock has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. We use

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

9. Share-Based Compensation (Continued)

historical volatility based on weekly price observations of our common stock during the period immediately preceding an award that is equal to its expected term up to a maximum period of five years. We believe the volatility in the price of our common stock over the preceding five years generally provides a reliable projection of future long-term volatility.

Risk-free interest rate—The risk-free interest rate is the average interest rate consistent with the yield available on a U.S. Treasury note with a term equal to the expected term of an award.

Expected dividend yield—We do not pay cash dividends on our common stock and do not expect to do so in the future. Therefore, the dividend yield is zero.

The following weighted-average assumptions were used in estimating the fair value of stock options granted to employees during the twelve months ended December 31, 2017, December 31, 2016, and December 31, 2015:

	Year Ended December 31,		
	2017	2016[1]	2015[1]
Expected term of options (in years)	6.1	5.8	5.8
Expected volatility	35.7%	34.8%	33.1%
Risk-free interest rate	2.2%	1.6%	2.0%
Expected dividend yield	0.0%	0.0%	0.0%

(1) Prior to the adoption of ASU 2016-09 on January 1, 2017, the weighted-average expected forfeiture rate used in estimating the fair value of stock options granted to employees was 5.4% and 1.5% in 2016 and 2015, respectively. Refer to Note 3 —*Recently Issued Accounting Standards* for more information. During 2016, we issued stock options to all our employees, which resulted in an increase in the forfeiture rate compared to prior years.

A summary of the status and activity of stock options is presented below:

	Options	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in millions)
Outstanding at January 1, 2017	4,459,291	$ 104.97		
Granted	1,958,843	145.72		
Exercised	(461,465)	86.65		
Forfeited	(78,346)	133.55		
Outstanding at December 31, 2017	5,878,323	$ 119.61	7.1	$ 171.2
Exercisable at December 31, 2017	3,082,847	$ 103.23	5.5	$ 142.1
Unvested at December 31, 2017	2,795,476	$ 137.67	8.9	$ 29.0

The weighted average fair value of a stock option granted during each of the years in the three-year period ended December 31, 2017, was $56.07, $42.59 and $60.70, respectively. The total fair

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

9. Share-Based Compensation (Continued)

value of stock options that vested for each of the years in the three-year period ended December 31, 2017, was $13.1 million, $19.9 million and zero, respectively.

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

	Year Ended December 31,		
	2017	2016	2015
Cost of product sales	$ 1.3	$ 0.5	$ —
Research and development	3.7	1.4	—
Selling, general and administrative	38.0	22.9	4.9
Share-based compensation expense before tax	43.0	24.8	4.9
Related income tax benefit	(15.8)	(9.1)	(1.8)
Share-based compensation expense, net of tax	$ 27.2	$ 15.7	$ 3.1

Selling, general and administrative expense for the year ended December 31, 2016 includes approximately $9.8 million of costs related to the accelerated vesting of stock options associated with the departure of a corporate officer during the second quarter of 2016.

As of December 31, 2017, the unrecognized compensation cost was $101.8 million. Unvested outstanding stock options as of December 31, 2017 had a weighted average remaining vesting period of 2.3 years.

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

	Year Ended December 31,		
	2017	2016	2015
Number of options exercised	461,465	243,624	985,583
Cash received from options exercised	$ 39.9	$ 7.7	$ 39.3
Total intrinsic value of options exercised	$ 29.3	$ 21.9	$ 120.3
Tax benefits realized from options exercised[1]	$ —	$ 5.9	$ 37.4

(1) On January 1, 2017, we adopted ASU 2016-09. Upon adoption of ASU 2016-09, we began to recognize excess tax benefits as income tax benefits on our consolidated statements of operations.

Restricted Stock Units

In June 2016, we began issuing restricted stock units under the 2015 Plan to our non-employee directors. In October 2017, we also began issuing restricted stock units to employees. Over time, we expect to increase the percentage of our equity awards made to employees in the form of restricted stock units, instead of stock options. Each restricted stock unit entitles the recipient to receive one share of our common stock upon vesting. 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 vesting period.

During the year ended December 31, 2017, we granted 21,290 restricted stock units under the 2015 Plan with a weighted average grant date fair value per restricted stock unit of $131.22. The restricted

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

9. Share-Based Compensation (Continued)

stock units have an aggregate grant date fair value of $2.8 million. We recorded $2.2 million in share-based compensation expense for the year ended December 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 the statements of operations.

As of December 31, 2017, unrecognized compensation cost related to the grant of restricted stock units was $1.6 million. Unvested outstanding restricted stock units as of December 31, 2017 had a weighted average remaining vesting period of 1.1 years.

Share Tracking Awards Plans

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.

The aggregate balance of the STAP liability was $241.3 million and $268.9 million at December 31, 2017 and 2016, respectively, of which $1.2 million and $74.1 million, respectively, has been classified as other non-current liabilities on our consolidated balance sheets based on their vesting terms.

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 the STAP awards is measured at the end of each financial reporting period because the awards are settled in cash. Refer to the descriptions of these key inputs, requiring estimates, used in determining the fair value of the awards in the *Employee Stock Options* section above.

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

	As of December 31,		
	2017	2016[1]	2015[1]
Expected term of awards (in years)	1.8	2.5	3.4
Expected volatility	31.7%	36.1%	35.3%
Risk-free interest rate	1.8%	1.4%	1.4%
Expected dividend yield	0.0%	0.0%	0.0%

(1) Prior to the adoption of ASU 2016-09 on January 1, 2017, the weighted-average expected forfeiture rate used in estimating the fair value of STAP awards granted to employees was 8.8 percent in 2016 and 2015. Refer to Note 3—*Recently Issued Accounting Standards* for more information.

The closing price of our common stock was $147.95, $143.43, and $156.61 on December 31, 2017, 2016 and 2015, respectively.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

9. Share-Based Compensation (Continued)

A summary of the status and activity of the STAP is presented below:

	Number of Awards	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in millions)
Outstanding at January 1, 2017	5,113,838	$ 91.51		
Granted	—	—		
Exercised	(887,540)	69.33		
Forfeited	(129,904)	113.84		
Outstanding at December 31, 2017	4,096,394	$ 95.60	5.6	$ 232.6
Exercisable at December 31, 2017	2,419,103	$ 98.93	5.5	$ 129.7
Unvested at December 31, 2017	1,677,291	$ 90.80	5.8	$ 102.9

The weighted average grant-date fair value of STAP awards granted during the year ended December 31, 2015 was $58.52.

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

	Year Ended December 31,		
	2017	2016	2015
Cost of product sales	$ 1.2	$ —	$ 8.7
Research and development	4.1	(11.8)	87.4
Selling, general and administrative	21.8	(3.4)	178.1
Share-based compensation expense (benefit) before tax	27.1	(15.2)	274.2
Related income tax (benefit) expense	(10.0)	5.6	(103.5)
Share-based compensation expense (benefit), net of tax	$ 17.1	$ (9.6)	$ 170.7

Cash paid to settle STAP exercises during the years ended December 31, 2017, 2016 and 2015 was $63.4 million, $69.5 million, and $248.8 million, respectively.

Employee Stock Purchase Plan

In June 2012, our shareholders approved the United Therapeutics Corporation Employee Stock Purchase Plan (ESPP), which has been structured to comply with Section 423 of the Internal Revenue Code. The ESPP provides eligible employees with the right to purchase shares of our common stock at a discount through elective accumulated payroll deductions at the end of each offering period. Offering periods, which began in 2012, occur in consecutive six-month periods commencing on September 5th and March 5th of each year. Eligible employees may contribute up to 15 percent of their base salary, subject to certain annual limitations as defined in the ESPP. The purchase price of the shares is equal to the lower of 85 percent of the closing price of our common stock on either the first or last trading day of a given offering period. In addition, the ESPP provides that no eligible employee may purchase more than 4,000 shares during any offering period. The ESPP has a 20-year term and limits the aggregate number of shares that can be issued under the ESPP to 3.0 million.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

10. Stockholders' Equity

Earnings Per Common Share

The components of basic and diluted earnings per share comprised the following (in millions, except per share amounts):

	Year Ended December 31,		
	2017	2016	2015
Numerator:			
Net income	$ 417.9	$ 713.7	$ 651.6
Denominator:			
Weighted average outstanding shares—basic	44.0	43.8	46.0
Effect of dilutive securities[1]:			
Convertible notes	—	—	0.9
Warrants	0.1	2.3	3.0
Stock options, restricted stock units and employee stock purchase plan	0.8	0.7	1.3
Weighted average shares—diluted[2]	44.9	46.8	51.2
Earnings per common share:			
Basic	$ 9.50	$ 16.29	$ 14.17
Diluted	$ 9.31	$ 15.25	$ 12.72
Stock options, restricted stock units and warrants excluded from calculation[2]	3.3	5.2	3.8

(1) Calculated using the treasury stock method.

(2) Certain convertible notes, stock options, restricted stock units and warrants have been excluded from the computation of diluted earnings per share because their impact would be anti-dilutive. Under the convertible note hedge agreement we entered into in connection with our Convertible Notes, 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.

Share Repurchases

In April 2017, our Board of Directors approved a share repurchase program authorizing up to $250.0 million in aggregate repurchases of our common stock. Pursuant to this authorization, in May 2017, we paid $250.0 million to enter into an accelerated share repurchase agreement (ASR) with Citibank, N.A. (Citibank). Pursuant to the terms of the ASR, in June 2017, Citibank delivered to us approximately 1.7 million shares of our common stock, representing the minimum number of shares we were entitled to receive under the ASR. Upon termination of the ASR in September 2017, Citibank delivered to us approximately 0.3 million additional shares of our common stock. The ASR was accounted for as an equity transaction and the shares we repurchased under the ASR were included in treasury stock when the shares were received.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

10. Stockholders' Equity (Continued)

Shareholder Rights Plan

In June 2008, we entered into an Amended and Restated Rights Agreement with The Bank of New York as Rights Agent (the Plan), which amended and restated our original Rights Agreement dated December 17, 2000. The Plan, as amended and restated, extended the expiration date of the Preferred Share Purchase Rights (Rights) from December 29, 2010 to June 26, 2018, and increased the purchase price of each Right from $64.75 to $400.00, respectively. Each Right entitles holders to purchase one one-thousandth of a share of our Series A Junior Participating Preferred Stock. Rights are exercisable only upon our acquisition by another company, or commencement of a tender offer that would result in ownership of 15 percent or more of the outstanding shares of our voting stock by a person or group (as defined under the Plan) without our prior express written consent. As of December 31, 2017, we have not issued any shares of our Series A Preferred Stock.

Accumulated Other Comprehensive Loss

The following table includes changes in accumulated other comprehensive loss by component, net of tax (in millions):

	Defined Benefit Pension Plan[1]	Foreign Currency Translation Losses	Unrealized Gains and (Losses) on Available-for-Sale Securities	Total
Balance, January 1, 2017	$ 1.3	$ (18.1)	$ —	$ (16.8)
Other comprehensive (loss) income before reclassifications	(1.7)	0.2	(1.9)	(3.4)
Amounts reclassified from accumulated other comprehensive income	0.6	—	—	0.6
Net current-period other comprehensive (loss) income	(1.1)	0.2	(1.9)	(2.8)
Balance, December 31, 2017	$ 0.2	$ (17.9)	$ (1.9)	$ (19.6)

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

10. Stockholders' Equity (Continued)

	Defined Benefit Pension Plan[1]	Foreign Currency Translation Losses[2]	Unrealized Gains and (Losses) on Available-for-Sale Securities	Total
Balance, January 1, 2016	$ (5.3)	$ (15.1)	$ —	$ (20.4)
Other comprehensive income (loss) before reclassifications	6.0	(3.0)	—	3.0
Amounts reclassified from accumulated other comprehensive income	0.6	—	—	0.6
Net current-period other comprehensive income (loss)	6.6	(3.0)	—	3.6
Balance, December 31, 2016	$ 1.3	$ (18.1)	$ —	$ (16.8)

(1) Refer to Note 12—*Employee Benefit Plans—Supplemental Executive Retirement Plan*, which identifies the captions within our consolidated statement of operations where reclassification adjustments were recognized and their associated tax impact.

(2) In the fourth quarter of 2016, we changed the functional currency for our foreign entities to the U.S. dollar. The loss on foreign currency translation attributable to each foreign entity at the time of this change will remain in accumulated other comprehensive loss until the sale or substantial liquidation of the foreign entity.

11. Income Taxes

The Tax Cuts and Jobs Act (Tax Reform) was enacted on December 22, 2017 and has multiple provisions that impact our tax expense. The significant impacts of Tax Reform include a reduction in the U.S. federal corporate tax rate from 35 percent to 21 percent, a requirement for companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, additional limitations on deductions for executive compensation, the opportunity to fully expense (take 100 percent bonus depreciation) qualified property, reduction of the Orphan Drug Credit, repeal of the Section 199 deduction for domestic manufacturing activities, and creation of new taxes on certain foreign sourced earnings.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed in reasonable detail to complete the accounting for certain income tax effects of Tax Reform. As a result of changes under Tax Reform, we have recognized a provisional amount of $71.0 million of additional tax expense in our consolidated financial statements for the year ended December 31, 2017. The additional tax expense is primarily due to the revaluing of our ending net deferred tax assets at December 31, 2017 because of the reduction in the U.S. corporate income tax rate under Tax Reform. While we have substantially completed our provisional analysis of the income tax effects of Tax Reform, and recorded a reasonable estimate of such effects, the ultimate impact may differ from these provisional amounts, possibly materially, due to, among other things, further refinement of our calculations, additional analysis, changes in assumptions, and actions we may take as a result of Tax Reform.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

11. Income Taxes (Continued)

While Tax Reform provides for a modified territorial tax system beginning in 2018, it also includes a new U.S. tax base erosion provision, the tax on global intangible low-taxed income (GILTI). Beginning in 2018, the GILTI provision of Tax Reform will require us to include in our U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary's tangible assets in our U.S. income tax return beginning in 2018. We have elected to account for the GILTI tax in the period in which it is incurred, and do not expect any significant impacts from this tax.

We previously asserted that all undistributed earnings of foreign subsidiaries are permanently reinvested, and we have therefore not provided for U.S. deferred taxes on unremitted earnings. As required by Tax Reform, we are subject to a one-time transition tax of $1.8 million on our unremitted foreign earnings. After payment of the transition tax, our foreign earnings will have been taxed by the United States, and we do not anticipate any other material taxes on our undistributed earnings of foreign subsidiaries upon a future repatriation. Due to this change in facts, we conclude that our undistributed foreign earnings are no longer permanently reinvested.

Components of income tax expense (benefit) consist of the following (in millions):

	Year Ended December 31,		
	2017	2016	2015
Current:			
Federal	$ 261.3	$ 311.9	$ 351.2
State	23.9	24.1	37.0
Total current	285.2	336.0	388.2
Deferred			
Federal	67.2	8.3	(2.7)
State	(0.8)	2.2	7.3
Total deferred	66.4	10.5	4.6
Total income tax expense	$ 351.6	$ 346.5	$ 392.8

Presented below is a reconciliation of income tax expense computed at the statutory federal tax rate to income tax expense as reported (in millions):

	Year Ended December 31,		
	2017	2016	2015
Federal taxes at 35 percent	$ 269.2	$ 371.1	$ 365.5
Tax reform	71.0	—	—
Section 199 deduction	(22.8)	(22.0)	(21.8)
Nondeductible portion of DOJ settlement	19.0	—	—
Change in valuation allowance	17.5	1.1	—
General business credits	(15.1)	(10.5)	(6.9)
State taxes, net of federal benefit	14.2	17.1	28.7
Impact of windfall tax benefits upon exercise of stock options	(4.5)	—	—
Nondeductible compensation expense	1.8	(11.4)	29.3
Other	1.3	1.1	(2.0)
Total income tax expense	$ 351.6	$ 346.5	$ 392.8

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

11. Income Taxes (Continued)

Components of the net deferred tax assets are as follows (in millions):

	As of December 31,	
	2017	2016
Deferred tax assets:		
Intangible assets	$ 24.6	$ 48.1
Nonqualified stock options	34.3	44.7
SERP	12.6	18.9
STAP awards	47.7	80.1
Impairments	11.6	—
Other	18.6	22.9
Total deferred tax assets	149.4	214.7
Deferred tax liabilities:		
Plant and equipment principally due to differences in depreciation	(13.6)	(23.5)
Other	(5.5)	(8.2)
Net deferred tax assets before valuation allowance	130.3	183.0
Valuation allowance	(16.9)	(4.7)
Net deferred tax assets	$ 113.4	$ 178.3

Unrecognized tax benefits as of December 31, 2017 and 2016, were $0.5 million, and included $0.3 million of tax benefits that, if recognized, would impact our effective tax rate. We record interest and penalties related to uncertain tax positions as a component of income tax expense. As of both December 31, 2017 and 2016, we have not accrued any interest expense relating to uncertain tax positions. It is reasonably possible that this position will be effectively settled during the next twelve months, at which time some or all of the benefit may be recognized. We are unaware of any additional positions for which it is reasonably possible that the total amount of unrecognized tax benefits will significantly increase or decrease within the next twelve months.

We are subject to federal and state taxation in the United States and 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. At December 31, 2017, we had a gross federal net operating loss carryforward of $1.0 million which is fully reserved with a valuation allowance. We had approximately $54.3 million of gross state net operating loss carryforwards which will expire at various dates between the years 2029 and 2037. We expect that these carryforwards will expire unused, so the related deferred tax asset has been reserved with a full valuation allowance.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

12. Employee Benefit Plans

Supplemental Executive Retirement Plan

We maintain the United Therapeutics Corporation Supplemental Executive Retirement Plan (SERP) to provide retirement benefits to certain senior members of our management team.

Participants who retire at age 60 or older are eligible to receive either monthly payments or a lump sum payment based on an average of their total gross base salary over the last 36 months of active employment, subject to certain adjustments. Related benefit payments commence on the first day of the sixth month after retirement. Participants who elect to receive monthly payments will continue to receive payments through the remainder of their life. Alternatively, participants who elect to receive a lump sum distribution will receive a payment equal to the present value of the estimated monthly payments that would have been received upon retirement. As of December 31, 2017 and 2016, all SERP participants had elected to receive a lump sum distribution. Participants who terminate employment for any reason other than death, disability, or change in control prior to age 60 will not be entitled to receive any benefits under the SERP.

We recognize the unfunded balance of the SERP as a liability on our consolidated balance sheets. Since we do not fund the SERP, the liability is equal to the projected benefit obligation as measured at the end of each fiscal year. Expenses related to the SERP are reported under the captions, "Research and development" and "Selling, general and administrative" within "Operating expenses" on the consolidated statements of operations.

A reconciliation of the beginning and ending balances of the projected benefit obligation is presented below (in millions):

	Year Ended December 31,	
	2017	2016
Projected benefit obligation at the beginning of the year	$ 49.5	$ 54.8
Service cost	2.2	2.7
Interest cost	1.6	1.5
Plan amendments	—	2.0
Actuarial loss (gain)[1]	2.6	(11.5)
Projected benefit obligation at the end of the year	$ 55.9	$ 49.5
Fair value of plan assets at the end of the year	—	—
Unfunded at end of the year	$ 55.9	$ 49.5
Amount included in Other current liabilities[2]	$ 16.4	$ 15.2

(1) During the second quarter of 2016, certain participants in the SERP departed before retirement age under the terms of the SERP. As a result, we remeasured the benefit obligation under the SERP and recorded a reduction to the benefit obligation of $11.3 million, an increase to "Actuarial (loss) gain arising during period, net of tax" within "Accumulated other comprehensive loss" of $7.1 million and a decrease to "Deferred tax assets, net" of $4.2 million.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

12. Employee Benefit Plans (Continued)

(2) The amount included under the caption "Other current liabilities" on our consolidated balance sheets represents the benefit obligation due to participants who are eligible to retire and whose benefit payments could commence within one year of the respective balance sheet date.

The accumulated benefit obligation, a measure that does not consider future increases in participants' salaries, was $44.8 million and $37.5 million at December 31, 2017 and 2016, respectively.

Future estimated benefit payments, based on current assumptions, including election of lump-sum distributions and expected future service, are as follows (in millions):

Year Ended December 31,	
2018	$ 16.4
2019	5.8
2020	—
2021	—
2021	—
Thereafter	71.0
Total	$ 93.2

The following weighted-average assumptions were used to measure the SERP obligation:

	Year Ended December 31,	
	2017	2016
Discount Rate	3.36%	3.67%
Salary Increases	4.00%	4.00%

The components of net periodic pension cost recognized on our consolidated statements of operations consisted of the following (in millions):

	Year Ended December 31,		
	2017	2016	2015
Service cost	$ 2.2	$ 2.7	$ 3.5
Interest cost	1.6	1.5	1.8
Amortization of prior service cost	1.5	1.4	1.2
Amortization of net actuarial (gain) loss	(0.6)	(0.4)	0.2
Total	$ 4.7	$ 5.2	$ 6.7

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

12. Employee Benefit Plans (Continued)

Reclassification adjustments related to the SERP from accumulated other comprehensive loss to the statements of operations by line item and the tax impact of these reclassifications is presented below (in millions):

Components Reclassified from Accumulated Other Comprehensive Loss[1]	As of December 31, 2017	As of December 31, 2016
Amortization of prior service cost:		
Research and development	$ 0.2	$ 0.3
Selling, general and administrative	1.3	1.1
Total	1.5	1.4
Amortization of net actuarial (gain) loss:		
Research and development	(0.1)	(0.1)
Selling, general and administrative	(0.5)	(0.3)
Total	(0.6)	(0.4)
Total amortization of prior service cost and net actuarial (gain) loss	0.9	1.0
Tax benefit	(0.3)	(0.4)
Total, net of tax	$ 0.6	$ 0.6

(1) Refer to Note 10—*Stockholders' Equity—Accumulated Other Comprehensive Loss.*

Amounts relating to the SERP that have been recognized in other comprehensive (loss) income are as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Net unrecognized actuarial (loss) gain	$ (3.2)	$ 11.0	$ 1.6
Net unrecognized prior service cost (benefit)	1.5	(0.6)	1.2
Total	(1.7)	10.4	2.8
Tax expense (benefit)	0.6	(3.8)	(1.2)
Total, net of tax	$ (1.1)	$ 6.6	$ 1.6

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

12. Employee Benefit Plans (Continued)

The table below presents amounts relating to the SERP included in accumulated other comprehensive loss that have not yet been recognized as a component of net periodic pension cost on our consolidated statements of operations (in millions):

	Year Ended December 31,		
	2017	2016	2015
Net unrecognized actuarial (gain) loss	$ (6.6)	$ (9.8)	$ 1.2
Net unrecognized prior service cost	6.2	7.7	7.1
Total	(0.4)	(2.1)	8.3
Tax expense (benefit)	0.2	0.8	(3.0)
Total, net of tax	$ (0.2)	$ (1.3)	$ 5.3

Estimated amounts included in accumulated other comprehensive loss as of December 31, 2017, that are expected to be recognized as components of net periodic pension cost on our consolidated statements of operations for the year ended December 31, 2018, comprise the following (in millions):

Amortization of prior service cost	$ 1.5
Amortization of net actuarial gain	(0.1)
Total	$ 1.4

Employee Retirement Plan

We maintain a Section 401(k) Salary Reduction Plan which is open to all eligible full-time employees. Under the 401(k) Plan, eligible employees can make pre-tax or after-tax contributions up to statutory limits. Currently, we make discretionary matching contributions to the 401(k) Plan equal to 40 percent of a participant's elected salary deferral. Matching contributions vest immediately for participants who have been employed for three years; otherwise, matching contributions vest annually, in one-third increments over a three-year period until the three-year employment requirement has been met.

13. Commitments and Contingencies

Operating Leases

We lease facilities and equipment under operating lease arrangements that have terms expiring at various dates through 2023. Certain lease arrangements include renewal options and escalation clauses. In addition, various lease agreements to which we are party require that we comply with certain customary covenants throughout the term of these leases. If we are unable to comply with these covenants and cannot reach a satisfactory resolution in the event of noncompliance, these agreements could terminate.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

13. Commitments and Contingencies (Continued)

Future minimum lease payments under non-cancelable operating leases as of December 31, 2017, are as follows (in millions):

Year Ending December 31,	
2018	$ 3.4
2019	0.9
2020	0.7
2021	0.6
2022	0.7
Thereafter	0.4
Total	$ 6.7

Total rent expense was $4.8 million, $4.4 million and $3.8 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Milestone Payments

We are party to certain license agreements as described in the *Assignment and License Agreements* section below and acquisition agreements. Generally, these agreements require that we make milestone payments in cash upon the achievement of certain product development and commercialization goals and payments of royalties upon commercial sales.

Assignment and License Agreements

Supernus Pharmaceuticals, Inc.

In 2006, we entered into an exclusive license agreement with Supernus Pharmaceuticals, Inc. (Supernus) for the use of certain technologies developed by Supernus in our Orenitram tablet. Under this agreement, we paid Supernus certain amounts upon the achievement of specified milestones based on the development and commercial launch of Orenitram for PAH, and we would be obligated to make additional milestone payments if we develop Orenitram for a second indication. Additionally, we pay a single digit royalty under this agreement, based on net product sales of Orenitram. Royalties will be paid for approximately twelve years commencing with the first commercial sale, which occurred in the second quarter of 2014.

Eli Lilly and Company

In 2008, we acquired from Lilly exclusive rights to develop, market, promote and commercialize Adcirca for the treatment of pulmonary hypertension in the United States. In exchange for these license rights, we agreed to pay Lilly, among other fees, royalties of five percent of our net product sales of Adcirca as a pass through of Lilly's third-party royalty obligations for as long as Lilly is required to make such royalty payments. Pursuant to the terms of our license arrangement, Lilly manufactures Adcirca for us and distributes Adcirca via its wholesaler network in the same manner that it distributes its own pharmaceutical products. We purchase Adcirca from Lilly at a fixed manufacturing cost, which is adjusted by Lilly from time to time. In addition, at Lilly's discretion the license agreement may be terminated in the event that we undergo a change in control.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

13. Commitments and Contingencies (Continued)

In May 2017, we amended our license agreement with Lilly relating to Adcirca, in order to clarify and extend the term of the agreement and to amend the economic terms of the agreement following a patent expiry in November 2017. As a result of this amendment, beginning December 1, 2017, our royalty rate on net product sales of Adcirca increased from five percent to ten percent and we are required to make milestone payments to Lilly equal to $325,000 for each $1,000,000 in net product sales. As amended, the term of the agreement expires on the latest to occur of (1) expiration, lapse, cancellation, abandonment or invalidation of the last claim to expire within a Lilly patent covering the commercialization of Adcirca for the treatment of pulmonary hypertension in the United States; (2) expiration of any government-conferred exclusivity rights to use Adcirca for the treatment of pulmonary hypertension in the United States; or (3) December 31, 2020.

The Scripps Research Institute

Under a non-exclusive license agreement with The Scripps Research Institute, we pay a royalty of one percent of Unituxin's net sales.

Toray Industries, Inc.

In 2000, we entered into a license agreement with Toray to obtain exclusive rights to develop and market beraprost, a chemically stable oral prostacyclin analogue, in a sustained release formulation in the United States and Canada for the treatment of all cardiovascular indications. In 2007, we amended the agreement to expand our rights to commercialize modified release formulations of beraprost, which include esuberaprost. As part of the 2007 amendment, we issued 200,000 shares of our common stock (which have since split into 400,000 shares) to Toray with certain put rights. These put rights provide Toray the ability to request at its discretion that we repurchase these shares at a price of $27.21 per share upon 30 days' prior written notice. Accordingly, we classified the value of the shares within temporary equity on our consolidated balance sheets. In the event that Toray requests that we repurchase these shares, we will reclassify the repurchase value of the stock as a liability until settlement. The 2007 amendment also provided for certain milestone payments during the development period and upon receipt of regulatory approval in the United States or the European Union.

In 2011, we amended our license agreement with Toray. The amendment did not materially change the terms of our license agreement, except for a reduction in royalty rates in exchange for a total of $50.0 million in equal, non-refundable payments to Toray over the five-year period ending in 2015. As of December 31, 2015, we have fulfilled this obligation to Toray. In March 2017, we amended our license agreement with Toray to further reduce the royalty rate to single digits in exchange for contingent milestone payments in the event that we do not achieve certain clinical and regulatory events by certain dates.

Medtronic Inc.

In 2009, we entered into an agreement with Medtronic, Inc. (Medtronic) providing us exclusive rights in the United States and certain other countries 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) in order to deliver Remodulin for the treatment of PAH. If this development program is successful, our agreement provides that, upon commercialization, we will purchase infusion pumps and supplies from Medtronic

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

13. Commitments and Contingencies (Continued)

and will also pay a ten percent royalty to Medtronic based on net product sales of Remodulin for use in the Implantable System for Remodulin within the exclusive territories, subject to certain adjustments specified in the agreement. The Implantable System for Remodulin will be exclusive to Remodulin so long as we purchase a minimum percentage of our annual requirement for implantable pump systems from Medtronic. We will be solely responsible for all marketing and promotion of the Implantable System for Remodulin for the treatment of PAH in the exclusive territories.

DEKA Research & Development Corp.

In 2014, we entered into an exclusive agreement with DEKA Research & Development Corp. (DEKA) to develop a pre-filled, semi-disposable system for subcutaneous delivery of Remodulin. Under the terms of the agreement, we will fund the development costs related to the semi-disposable system and will pay product fees and a single-digit royalty to DEKA based on commercial sales of the system and the Remodulin sold for use with the system.

Other

We are party to various other license agreements relating to therapies under development. These license agreements require us to make payments based on a percentage of sales, if we are successful in commercially developing these therapies, and may require other payments upon the achievement of certain milestones.

14. 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.

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

14. Segment Information (Continued)

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

	Remodulin	Tyvaso	Adcirca	Orenitram	Unituxin	Total
Year Ended December 31, 2017						
Net product sales	$ 670.9	$ 372.9	$ 419.7	$ 185.8	$ 76.0	$ 1,725.3
Cost of product sales	15.9	18.5	43.1	15.3	12.9	105.7
Gross profit	$ 655.0	$ 354.4	$ 376.6	$ 170.5	$ 63.1	$ 1,619.6
Year Ended December 31, 2016						
Net product sales	$ 602.3	$ 404.6	$ 372.2	$ 157.2	$ 62.5	$ 1,598.8
Cost of product sales	10.5	19.6	21.4	13.7	7.5	72.7
Gross profit	$ 591.8	$ 385.0	$ 350.8	$ 143.5	$ 55.0	$ 1,526.1
Year Ended December 31, 2015[1]						
Net product sales	$ 572.8	$ 470.1	$ 278.8	$ 118.4	$ 20.5	$ 1,460.6
Cost of product sales	12.4	23.9	16.5	12.5	3.7	69.0
Gross profit	$ 560.4	$ 446.2	$ 262.3	$ 105.9	$ 16.8	$ 1,391.6

(1) We commenced sales of Unituxin during the third quarter of 2015.

Geographic revenues are determined based on the country in which our customers (distributors) are located. Total revenues from external customers by geographic area are as follows (in millions):

Year Ended December 31,	2017	2016	2015
United States	$ 1,536.8	$ 1,461.9	$ 1,353.0
Rest-of-World[1]	188.5	136.9	112.8
Total[2]	$ 1,725.3	$ 1,598.8	$ 1,465.8

(1) Primarily Europe.

(2) Total includes other revenue of $5.2 million for the year ended December 31, 2015.

We recorded revenue from two specialty pharmaceutical distributors comprising 46 percent and 15 percent of total revenues in 2017, 50 percent and 14 percent of total revenues in 2016, and 55 percent and 16 percent of total revenues in 2015, respectively. All of our revenues for Adcirca are distributed through Lilly's pharmaceutical wholesaler network.

Long-lived assets (property, plant and equipment) located by geographic area are as follows (in millions):

Year Ended December 31,	2017	2016	2015
United States	$ 544.5	$ 481.1	$ 481.2
Rest-of-World	1.2	8.2	14.6
Total	$ 545.7	$ 489.3	$ 495.8

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

15. Quarterly Financial Information (Unaudited)

Summarized quarterly financial information for each of the years ended December 31, 2017 and 2016 are as follows (in millions, except per share amounts):

	Quarter Ended			
	December 31, 2017	September 30, 2017	June 30, 2017	March 31, 2017
Total revenues	$ 464.7	$ 445.5	$ 444.6	$ 370.5
Cost of product sales	53.0	19.5	18.9	14.3
Gross profit	411.7	426.0	425.7	356.2
Net income (loss)[1]	19.0	276.3	(56.0)	178.6
Net income (loss) per share—basic	$ 0.44	$ 6.37	$ (1.25)	$ 4.01
Net income (loss) per share—diluted	$ 0.43	$ 6.27	$ (1.25)	$ 3.89

	Quarter Ended			
	December 31, 2016	September 30, 2016	June 30, 2016	March 31, 2016
Total revenues	$ 409.0	$ 408.2	$ 412.6	$ 369.0
Cost of product sales	28.4	23.6	20.0	0.7
Gross profit	380.6	384.6	392.6	368.3
Net income[2]	110.3	161.8	206.1	235.5
Net income per share—basic	$ 2.61	$ 3.75	$ 4.65	$ 5.19
Net income per share—diluted	$ 2.43	$ 3.50	$ 4.39	$ 4.84

(1) Operating results for the quarters ended December 31, 2017, September 30, 2017, June 30, 2017 and March 31, 2017 included $66.2 million, $(24.1) million, $(9.4) million and $(15.6) million, net of tax, for STAP related share-based compensation expense (benefit), respectively.

(2) Operating results for the quarters ended December 31, 2016, September 30, 2016, June 30, 2016 and March 31, 2016 included $64.2 million, $28.7 million, $(7.0) million and $(95.5) million, net of tax, for STAP related share-based compensation expense (benefit), respectively.

16. 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 in July 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

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

16. Litigation (Continued)

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 our complaint; and (3) certain counterclaims against us. The District 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 us a second Paragraph IV certification notice letter addressing two new patents, U.S. Patent Nos. 9,339,507 (the '507 patent) and 9,358,240 (the '240 patent), which expire in March and May 2028, respectively. In June 2016, we filed an amended complaint against Watson asserting these two additional patents. In June 2017, Watson filed petitions with the Patent Trial and Appeal Board (PTAB) of the U.S. Patent and Trademark Office for *inter partes* review (IPR), seeking to invalidate the '507 patent and '240 patent. On January 11, 2018, the PTAB issued decisions to institute IPR proceedings with respect to both patents.

Trial in the District Court on all of the asserted patents was scheduled to take place in September 2017. The parties, however, asked the District Court to stay the case until 14 days after the PTAB resolves Watson's IPR petitions either by declining to institute the IPRs or by issuing a final written decision on the merits. The District Court granted the request staying the case, and as such trial will not occur until sometime after the stay is lifted. The stay will not be lifted until there is a final written decision by the PTAB, which we would expect within a year of the IPR(s) being instituted.

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

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),

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

16. Litigation (Continued)

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) in June 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 nine patents noted above, whichever occurs first.

We filed a second amended complaint against Actavis in September 2016, alleging 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.

On February 15, 2018, we entered into a Settlement Agreement with Actavis to settle all ongoing litigation between the parties concerning Actavis' ANDA for a generic version of Orenitram. Under the Settlement Agreement, we granted Actavis a non-exclusive license to manufacture and commercialize in the United States the generic version of Orenitram described in Actavis' ANDA filing beginning on June 15, 2027, although Actavis may be permitted to enter the market earlier under certain circumstances. The Settlement Agreement does not grant Actavis a license to manufacture a generic version of any other product, such as Tyvaso or Remodulin. The Settlement Agreement does not grant Actavis any rights other than those required to launch Actavis' generic version of Orenitram. The terms of the settlement agreement are substantially similar to the terms of our settlement agreement with Sandoz and other generic companies relating to Remodulin.

In accordance with the terms of the Settlement Agreement, the parties have submitted the Settlement Agreement to the U.S. Federal Trade Commission and the U.S. Department of Justice for review. The parties are also taking certain procedural steps to dismiss the First Actavis Action and Second Actavis Action with prejudice.

SteadyMed Ltd.

In October 2015, SteadyMed Ltd. (SteadyMed) filed an IPR petition with the PTAB seeking 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 Remodulin, Tyvaso and Orenitram. 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

UNITED THERAPEUTICS CORPORATION

Notes to Consolidated Financial Statements (Continued)

16. Litigation (Continued)

litigation with Watson, described above. In June 2017, SteadyMed submitted a new drug application (NDA) to the FDA seeking approval of 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 August 2017, SteadyMed announced receipt of a refuse-to-file letter from the FDA relating to SteadyMed's NDA, requesting further information on certain device specifications and requiring performance testing as well as additional design verification and validation testing on the final, to-be-marketed Trevyent product.

In March 2017, the PTAB issued a Final Written Decision regarding SteadyMed's IPR, finding that all claims of the '393 patent are not patentable. In May 2017, we appealed the PTAB's decision to the U.S. Court of Appeals for the Federal Circuit, and in November 2017, the Federal Circuit issued its decision affirming the PTAB. On February 9, 2018, we filed a petition for certiorari seeking review of the Federal Circuit decision by the United States Supreme Court. 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 (DOJ) requesting documents regarding our support of 501(c)(3) organizations that provide financial assistance to patients. Other companies received similar inquiries as part of a DOJ investigation regarding whether that support may violate the Federal Anti-Kickback Statute and the Federal False Claims Act. On December 19, 2017, we entered into a civil Settlement Agreement with the DOJ and the Office of Inspector General (OIG) of the Department of Health and Human Services (collectively the "United States Government"). The Settlement Agreement is neither an admission of facts nor liability, nor a concession by the United States Government that its contentions are not well-founded. Under the Settlement Agreement, we paid to the United States Government the sum of approximately $210.0 million. During the second quarter of 2017, we recorded a $210.0 million accrual relating to this matter. In connection with the civil settlement, we also entered into a Corporate Integrity Agreement with the OIG, effective as of December 18, 2017, which requires us to maintain our corporate compliance program and to undertake a set of defined corporate integrity obligations for a period of five years, ending in December 2022.

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United Therapeutics Corporation
Schedule II—Valuation and Qualifying Accounts
Years Ended December 31, 2017, 2016 and 2015
(In millions)

	Valuation Allowance on Deferred Tax Assets			
	Balance at Beginning of Year	Additions Charged to Expense	Deductions	Balance at End of Year
Year Ended December 31, 2017	$ 4.7	$ 13.4	$ (1.2)	$ 16.9
Year Ended December 31, 2016	$ 3.4	$ 1.3	$ —	$ 4.7
Year Ended December 31, 2015	$ 3.0	$ 0.4	$ —	$ 3.4

	Inventory Reserves			
	Balance at Beginning of Year	Additions Charged to Expense	Deductions	Balance at End of Year
Year Ended December 31, 2017	$ 17.5	$ 12.1	$ (4.5)	$ 25.1
Year Ended December 31, 2016	$ 12.1	$ 8.2	$ (2.8)	$ 17.5
Year Ended December 31, 2015	$ 10.5	$ 7.9	$ (6.3)	$ 12.1

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ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with participation of our Chairman and Chief Executive Officer and Chief Financial Officer and Treasurer, has evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of December 31, 2017. Based on that evaluation, our Chairman and Chief Executive Officer and Chief Financial Officer and Treasurer concluded that our disclosure controls and procedures were effective as of December 31, 2017.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended). Our internal control over financial reporting was designed to provide reasonable assurance to our management and Board of Directors regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. All internal controls over financial reporting, no matter how well designed, have inherent limitations. As a result of these inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even those internal controls determined to be effective can provide only reasonable assurance with respect to the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2017, based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control—Integrated Framework (2013)*. Management's assessment included an evaluation of the design of our internal control over financial reporting and testing of the operational effectiveness of our internal control over financial reporting. Based on this assessment, our management concluded that, as of December 31, 2017, our internal control over financial reporting was effective.

Ernst & Young LLP, an independent registered public accounting firm, has issued an attestation report on our internal control over financial reporting. The report of Ernst & Young LLP is contained in *Item 8* of this Report.

Attestation of Independent Registered Public Accounting Firm

The attestation report of our independent registered public accounting firm regarding internal control over financial reporting is set forth in *Item 8* of this Report under the caption "Report of Independent Registered Public Accounting Firm" and incorporated herein by reference.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information as to the individuals serving on our board of directors is set forth below under the heading *Board of Directors*. Additional information required by Item 10 regarding nominees and directors appearing under Proposal No. 1: *Election of Directors* in our definitive proxy statement for our 2018 annual meeting of shareholders currently scheduled for June 27, 2018 (the 2018 Proxy Statement) is hereby incorporated herein by reference. Information regarding our executive officers appears in *Item 1* of this Report under the heading *Executive Officers of the Registrant*. Information regarding the Audit Committee and the Audit Committee's financial expert appearing under the heading *Committees of our Board of Directors—Audit Committee* in our 2018 Proxy Statement is hereby incorporated herein by reference.

Information appearing under the heading *Section 16(a) Beneficial Ownership Reporting Compliance* in our 2018 Proxy Statement is hereby incorporated herein by reference.

We have a written Code of Conduct and Business Ethics that applies to our principal executive officer, principal financial officer and our principal accounting officer and every other director, officer and employee of United Therapeutics. The Code of Conduct and Business Ethics is available on our Internet website at *http://ir.unither.com/corporate-governance*. A copy of the Code of Conduct and Business Ethics will be provided free of charge by making a written request and mailing it to our corporate headquarters offices to the attention of the Investor Relations Department. If any amendment to, or a waiver from, a provision of the Code of Conduct and Business Ethics that applies to the principal executive officer, principal financial officer and principal accounting officer is made, we intend to post such information on our Internet website within four business days at *www.unither.com*.

Board of Directors

Christopher Causey, M.B.A.

Principal, Causey Consortium

Raymond Dwek, F.R.S.

Director of the Glycobiology Institute and Professor Emeritus, University of Oxford

Richard Giltner

Private Investor

Katherine Klein, Ph.D.

Vice-Dean and Professor, The Wharton School of the University of Pennsylvania

Ray Kurzweil

Director of Engineering, Google Inc.

Judy D. Olian, Ph.D.

Dean, UCLA Anderson School of Management and John E. Anderson Chair in Management

Christopher Patusky, J.D., M.G.A.

Founding Principal, Patusky Associates, LLC

Martine Rothblatt, Ph.D., J.D., M.B.A.

Chairman and Chief Executive Officer of United Therapeutics

Louis Sullivan, M.D.

Former Secretary, U.S. Department of Health and Human Services

Tommy Thompson, J.D.

Former Secretary, U.S. Department of Health and Human Services

ITEM 11. EXECUTIVE COMPENSATION

Information concerning executive compensation required by Item 11 will appear under the headings *Director Compensation*, *Compensation Discussion and Analysis, Summary Compensation Table and Grants of Plan-Based Awards in 2017, Narratives to Summary Compensation Table and Grants of Plan-Based Awards Table, Summary of Terms of Plan-Based Awards, Supplemental Executive Retirement Plan, Rabbi Trust, Potential Payments Upon Termination or Change in Control, and Director Compensation* in our 2018 Proxy Statement and is incorporated herein by reference.

Information concerning the Compensation Committee required by Item 11 will appear under the heading *Compensation Committee Report* in our 2018 Proxy Statement and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information regarding beneficial ownership of our common stock required by Item 12 will appear under *Beneficial Ownership of Common Stock* in our 2018 Proxy Statement and is incorporated herein by reference.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table presents information as of December 31, 2017, regarding our securities authorized for issuance under equity compensation plans:

Plan category	Number of securities to be issued upon exercise of outstanding options (a)[2]	Weighted average exercise price of outstanding options (b)[3]	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)[4]
Equity compensation plan approved by security holders[1]	5,901,363	$ 119.61	5,362,968
Total	5,901,363	$ 119.61	5,362,968

(1) All outstanding stock options were issued under our two equity incentive plans approved by security holders in 1999 (the 1999 Plan) and 2015 (the 2015 Plan). All outstanding restricted stock units (RSUs) were issued under the 2015 Plan. In addition, our employees have outstanding rights to purchase our common stock at a discount as part of our ESPP. Information regarding these plans is contained in Note 9—*Share-Based Compensation* to our consolidated financial statements. Aside from stock options issued under the 1999 Plan, stock options and RSUs issued under the 2015 Plan, and shares issued under the ESPP, we do not have any outstanding stock options, warrants or rights that are outstanding or available for issuance as described in Regulation S-K Item 201(d). No further awards will be issued under the 1999 Plan.

(2) Column (a) includes 5,878,323 shares of our common stock issuable upon the exercise of outstanding stock options issued under the 1999 and 2015 Plan and 23,040 shares issuable upon the vesting of outstanding RSUs issued under the 2015 Plan. The 2015 Plan uses a share counting formula for determining the number of shares available for issuance under the plan. In accordance with this formula, each option issued under the 2015 Plan counts as one share, while each RSU issued under the 2015 Plan counts as 2.14 shares. The number under column (a) represents the actual number of shares issuable under our outstanding awards without giving effect to the share counting formula. The number under column (c) represents the number of shares available for issuance under this plan based on each such available share counting as one share.

(3) Column (b) represents the weighted-average exercise price of the outstanding stock options only. The outstanding RSUs are not included in this calculation because they do not have an exercise price.

(4) Column (c) includes 2,577,627 and 2,785,341 of shares available for future issuance under the 2015 Plan and ESPP, respectively. Under the ESPP, employees may purchase shares based upon a 6-month offering period at an amount equal to the lesser of (1) 85 percent of the closing market price of the Common Stock on the first day of the offering period, or (2) 85 percent of the closing market price of the Common Stock on the last day of the offering period. Refer to Note 9—*Share-Based Compensation—Employee Stock Purchase Plan* for more information.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information concerning related party transactions and director independence required by Item 13 will appear under the headings *Other Matters—Certain Relationships and Related Party Transactions, Board of Directors, Committees, Corporate Governance—Director Independence and Committees of our Board of Directors* in our 2018 Proxy Statement and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information required by Item 14 concerning the principal accounting fees paid by the Registrant and the Audit Committee's pre-approval policies and procedures, will appear under the heading *Report of the Audit Committee and Information on our Independent Auditors* in our 2018 Proxy Statement and is incorporated herein by reference.

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PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

In reviewing the agreements included or incorporated by reference as exhibits to this Report, it is important to note that they are included to provide investors with information regarding their terms, and are not intended to provide any other factual or disclosure information about United Therapeutics or the other parties to the agreements. The agreements contain representations and warranties made by each of the parties to the applicable agreement. These representations and warranties have been made solely for the benefit of the other parties to the applicable agreement, and: (1) should not be treated as categorical statements of fact, but rather as a way of allocating risk between the parties; (2) have in some cases been qualified by disclosures that were made to the other party in connection with the negotiation of the applicable agreement, which disclosures are not necessarily reflected in the agreement; (3) may apply standards of materiality in a way that is different from what may be material to investors; and (4) were made only as of the date of the applicable agreement or such other date or dates as may be specified in the agreement and are subject to more recent developments.

Accordingly, these representations and warranties may not describe the actual state of affairs as of the date they were made or at any other time. Additional information about United Therapeutics may be found elsewhere in this Report and our other public filings, which are available without charge through the SEC's website at *http://www.sec.gov*.

(a)(1) Our financial statements filed as part of this report on Form 10-K are set forth in the Index to Consolidated Financial Statements under Part II, Item 8 of this Form 10-K.

(a)(2) The Schedule II—Valuation and Qualifying Accounts is filed as part of this Form 10-K. All other schedules are omitted because they are not applicable or not required, or because the required information is included in the consolidated statements or notes thereto.

(a)(3) Exhibits filed as a part of this Form 10-K are listed on the Exhibit Index, which is incorporated by reference herein.

Certain exhibits to this report have been included only with the copies of this report filed with the Securities and Exchange Commission. Copies of individual exhibits will be furnished to shareholders upon written request to United Therapeutics and payment of a reasonable fee (covering the expense of furnishing copies). Shareholders may request exhibit copies by contacting: United Therapeutics Corporation, Attn: Investor Relations, 1040 Spring Street, Silver Spring, Maryland 20910.

EXHIBIT INDEX

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant, incorporated by reference to Exhibit 3.1 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant, incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed on June 28, 2010.
3.3	Fifth Amended and Restated By-laws of the Registrant, incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K filed on February 3, 2017.
3.4	Form of Certificate of Designation, Preferences and Rights of Series A Junior Participating Preferred Stock of the Registrant, incorporated by reference to Exhibit A to Exhibit 4 to the Registrant's Current Report on Form 8-K, filed December 18, 2000.
4.1	Reference is made to Exhibits 3.1, 3.2, 3.3 and 3.4.
4.2	First Amended and Restated Rights Agreement, incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K filed on July 3, 2008.
10.1	Form of Indemnification Agreement between the Registrant and each of its Directors and Executive Officers, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2009.
10.2**	Amended and Restated Executive Employment Agreement dated as of January 1, 2009, between the Registrant and Martine A. Rothblatt, incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2009.
10.3**	Amendment to Amended and Restated Executive Employment Agreement between the Registrant and Martine Rothblatt, Ph.D., dated as of January 1, 2015, incorporated by reference to Exhibit 10.1 to Registrant's Current Report on Form 8-K filed December 17, 2014.
10.4**	Employment Agreement, dated as of June 26, 2016, between the Registrant and Michael Benkowitz, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed June 22, 2016.
10.5**	Change in Control Severance Agreement between the Registrant and Michael Benkowitz, dated as of February 14, 2012, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed April 28, 2016.
10.6**	Employment Agreement, dated as of March 13, 2015, between the Registrant and James Edgemond, incorporated by reference to Exhibit 10.55 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2014.
10.7**	Amendment to Employment Agreement, dated as of October 25, 2016, between the Registrant and James Edgemond, incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016.
10.8**	Change in Control Severance Agreement between the Registrant and James Edgemond, dated as of November 12, 2014, incorporated by reference to Exhibit 10.56 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2014.

Exhibit No.	Description
10.9**	Employment Agreement dated as of June 16, 2001 between the Registrant and Paul Mahon, incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2002.
10.10**	Amendment dated December 11, 2002 to Employment Agreement between the Registrant and Paul Mahon, incorporated by reference to Exhibit 10.43 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2002.
10.11**	Amendment dated December 29, 2004 to Employment Agreement between Paul A. Mahon and the Registrant dated June 16, 2001, as previously amended, incorporated by reference to Exhibit 10.4 of the Registrant's Current Report on Form 8-K filed on December 29, 2004.
10.12**	Amendment, dated as of July 31, 2006, to amended Employment Agreement, dated June 16, 2001, between Paul Mahon and the Registrant, incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 8-K filed on August 4, 2006.
10.13**	Form of Amendment to Employment Agreement between the Registrant and Paul Mahon, dated as of January 1, 2009, incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2009.
10.14**	Form of Amendment to Employment Agreement between the Registrant and Paul Mahon, dated as of February 22, 2010, incorporated by reference to Exhibit 10.46 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2009.
10.15**	United Therapeutics Corporation Amended and Restated Equity Incentive Plan, as amended effective as of September 24, 2004, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004.
10.16**	First Amendment to the United Therapeutics Corporation Amended and Restated Equity Incentive Plan, effective as of June 2, 2015, incorporated by reference to Exhibit 10.6 to Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015.
10.17**	Form of terms and conditions for awards granted to Employees by the Registrant under the Amended and Restated Equity Incentive Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on December 17, 2004.
10.18**	Form of terms and conditions for awards granted to Non-Employees by the Registrant under the Amended and Restated Equity Incentive Plan, incorporated by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K filed on December 17, 2004.
10.19**	United Therapeutics Corporation Supplemental Executive Retirement Plan, effective as of July 1, 2006, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on May 4, 2006.
10.20	United Therapeutics Corporation Supplemental Executive Retirement Plan Rabbi Trust Document entered into on December 28, 2007, by and between the Registrant and Wilmington Trust Company, as trustee, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on December 28, 2007.
10.21**	United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008.
10.22**	First Amendment to the United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on September 18, 2009.

Exhibit No.	Description
10.23**	Second Amendment to the United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on February 6, 2012.
10.24**	Form of terms and conditions for awards granted to non-employees by the Registrant under the United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008.
10.25**	Form of terms and conditions for awards granted to employees by the Registrant prior to January 1, 2010, under the United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008.
10.26**	Form of terms and conditions for awards granted to employees by the Registrant on or after January 1, 2010, under the United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.48 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2009.
10.27**	Form of terms and conditions for awards granted to employees on or after March 15, 2011 under the United Therapeutics Corporation 2011 Share Tracking Awards Plan and the United Therapeutics Corporation 2008 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.2 of Registrant's Registration Statement on Form S-8 (Registration No. 333-173858) filed on May 2, 2011.
10.28**	Form of grant letter used by Registrant under the United Therapeutics Corporation Share Tracking Awards Plan, incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008.
10.29	Stipulation of Settlement, dated October 25, 2010, among the parties to a derivative lawsuit against the directors and officers of the Registrant identified therein, incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2010.
10.30**	United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on March 18, 2011.
10.31**	First Amendment to the United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K filed on February 6, 2012.
10.32**	Second Amendment to the United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2012.
10.33**	Third Amendment to the United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on February 4, 2013.
10.34**	Fourth Amendment to the United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on January 31, 2014.

Exhibit No.	Description
10.35**	Form of terms and conditions for awards granted to non-employees by the Registrant on or after March 15, 2011 under the United Therapeutics Corporation Share Tracking Awards Plan or the United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 8-K filed on March 18, 2011.
10.36**	Form of grant letter used by Registrant under the United Therapeutics Corporation 2011 Share Tracking Awards Plan, incorporated by reference to Exhibit 10.4 of the Registrant's Current Report on Form 8-K filed on March 18, 2011.
10.37**	United Therapeutics Corporation Employee Stock Purchase Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012.
10.38**	United Therapeutics Corporation Section 162(m) Bonus Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed June 27, 2014.
10.39**	United Therapeutics Corporation 2015 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on June 29, 2015.
10.40**	Form of Grant Notice and Standard Terms and Conditions for Non-Qualified Stock Options Granted to Non-Employee Directors under the United Therapeutics Corporation 2015 Stock Incentive Plan, incorporated by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K filed on June 29, 2015.
10.41**	Form of Grant Notice and Standard Terms and Conditions for Non-Qualified Stock Options Granted to Certain Executives under the United Therapeutics Corporation 2015 Stock Incentive Plan, incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 8-K filed on June 29, 2015.
10.42**	Form of Grant Notice and Standard Terms and Conditions for Non-Qualified Stock Options Granted to Employees under the United Therapeutics Corporation 2015 Stock Incentive Plan, incorporated by reference to Exhibit 10.4 of the Registrant's Current Report on Form 8-K filed on June 29, 2015.
10.43**	Form of Grant Notice and Standard Terms and Conditions for Restricted Stock Units Granted to Non-Employee Directors under the United Therapeutics Corporation 2015 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016.
10.44**	Form of Grant Notice and Standard Terms and Conditions for Non-Qualified Stock Options Granted to Employees (Performance Vesting) under the United Therapeutics Corporation 2015 Stock Incentive Plan, incorporated by reference to Exhibit 10.59 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2017.
10.45***	Form of Grant Notice and Standard Terms and Conditions for Restricted Stock Units Granted to Employees under the United Therapeutics Corporation 2015 Stock Incentive Plan.
10.46*	License Agreement, dated as of November 14, 2008, by and between Eli Lilly and Company and the Registrant, incorporated by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K filed on December 24, 2008.

Exhibit No.	Description
10.47*	Manufacturing and Supply Agreement, dated as of November 14, 2008, by and between Eli Lilly and Company, Lilly del Caribe, Inc. and the Registrant incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 8-K filed on December 24, 2008.
10.48	First Amendment to License Agreement, dated as of May 17, 2017, by and between Eli Lilly and Company and the Registrant, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 18, 2017.
10.49	Amendment to Manufacturing and Supply Agreement, dated as of October 5, 2011, by and among Eli Lilly and Company, Lilly Del Caribe, Inc. and the Registrant, incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017.
10.50	Second Amendment to Manufacturing and Supply Agreement, dated as of May 17, 2017, by and among Eli Lilly and Company, Lilly Del Caribe, Inc. and the Registrant, incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017.
10.51***†	Wholesale Product Purchase Agreement, dated January 1, 2018, by and between Priority Healthcare Distribution, Inc., doing business as CuraScript SD Specialty Distribution, and the Registrant.
10.52***	Specialty Pharmacy Network Agreement, dated as of January 1, 2018, between the Registrant and Accredo Health Group, Inc.
10.53*	Settlement Agreement, dated September 29, 2015, between the Registrant and Sandoz Inc., incorporated by reference to Exhibit 10.2 to Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015.
10.54	Credit Agreement, dated as of January 29, 2016, among the Registrant, certain of its subsidiaries party thereto, as guarantors, the lenders referred to therein, and Wells Fargo Bank, National Association, as administrative agent and as a swingline lender, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed on February 1, 2016.
10.55	Settlement Agreement, dated December 19, 2017, among the United States of America, acting through the United States Department of Justice and on behalf of the Office of Inspector General of the Department of Health and Human Services, and the Registrant, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on December 20, 2017.
10.56	Corporate Integrity Agreement, dated December 18, 2017, between the Registrant and the Office of Inspector General of the Department of Health and Human Services, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on December 20, 2017.
21***	Subsidiaries of the Registrant.
23.1***	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
31.1***	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.
31.2***	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.

Exhibit No.	Description
32.1***	Certification of Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2***	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101***	The following financial information from our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 21, 2018, formatted in Extensible Business Reporting Language (XBRL): (i) Consolidated Balance Sheets as of December 31, 2017 and 2016, (ii) Consolidated Statements of Operations for each of three years in the period ended December 31, 2017, (iii) Consolidated Statements of Comprehensive Income for each of the three years in the period ended December 31, 2017, (iv) Consolidated Statements of Stockholders' Equity for each of the three years in the period ended December 31, 2017, (v) Consolidated Statements of Cash Flows for each of the three years in the period ended December 31, 2017, and (vi) Notes to Consolidated Financial Statements.

* Confidential treatment has been granted with respect to certain portions of this exhibit pursuant to Rule 406 of the Securities Act of 1933, as amended or Rule 24b-2 of the Securities Act of 1934, as amended. The omitted portions of this document have been filed with the Securities and Exchange Commission.

** Designates management contracts and compensation plans.

*** Filed herewith.

† Confidential treatment has been requested with respect to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Act of 1934, as amended. The omitted portions of this document have been filed with the Securities and Exchange Commission.

Note: Except as otherwise noted above, all exhibits incorporated by reference to the Registrant's previously filed reports with the Securities and Exchange Commission are filed under File No. 000-26301.

ITEM 16. FORM 10-K SUMMARY

None.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereto duly authorized.

UNITED THERAPEUTICS CORPORATION

By: /s/ MARTINE A. ROTHBLATT

Martine A. Rothblatt, Ph.D.
Chairman and Chief Executive Officer

February 21, 2018

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Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signatures	Title	Date
/s/ MARTINE A. ROTHBLATT Martine A. Rothblatt	Chairman and Chief Executive Officer (Principal Executive Officer)	February 21, 2018
/s/ JAMES C. EDGEMOND James C. Edgemond	Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	February 21, 2018
/s/ CHRISTOPHER CAUSEY Christopher Causey	Director	February 21, 2018
/s/ RAYMOND DWEK Raymond Dwek	Director	February 21, 2018
/s/ RICHARD GILTNER Richard Giltner	Director	February 21, 2018
/s/ KATHERINE KLEIN Katherine Klein	Director	February 21, 2018
/s/ RAYMOND KURZWEIL Raymond Kurzweil	Director	February 21, 2018
/s/ JUDY D. OLIAN Judy D. Olian	Director	February 21, 2018
/s/ CHRISTOPHER PATUSKY Christopher Patusky	Director	February 21, 2018
/s/ LOUIS W. SULLIVAN Louis W. Sullivan	Director	February 21, 2018
/s/ TOMMY G. THOMPSON Tommy Thompson	Director	February 21, 2018

Exhibit 10.45

UNITED THERAPEUTICS CORPORATION
GRANT NOTICE FOR 2015 STOCK INCENTIVE PLAN
RESTRICTED STOCK UNITS
FOR EMPLOYEES

FOR GOOD AND VALUABLE CONSIDERATION, United Therapeutics Corporation (the "Company"), hereby grants to Participant named below the restricted stock units (the "Award") with respect to the number of shares of its par value common stock (the "Shares"), that are covered by this Award, as specified below, subject to the conditions set forth in this Grant Notice, the United Therapeutics Corporation 2015 Stock Incentive Plan (the "Plan") and the Standard Terms and Conditions for Employees (the "Standard Terms and Conditions") promulgated under such Plan, each as amended from time to time. This Award is granted pursuant to the Plan and is subject to and qualified in its entirety by the Standard Terms and Conditions.

Name of Participant:

Grant Date:

Number of Shares Covered by Restricted Stock Units
Pursuant to this Award:

Vesting Schedule: The Award vests with respect to one-third of the shares subject to the Award on each of the first, second and third anniversaries of the Grant Date.

By accepting this Grant Notice, Participant acknowledges that he or she has received and read, and agrees that this Award shall be subject to, the terms of this Grant Notice, the Plan and the Standard Terms and Conditions. Such acceptance shall be effected by such method(s) as determined by the Company, which may include acceptance by electronic means.

UNITED THERAPEUTICS CORPORATION
STANDARD TERMS AND CONDITIONS FOR
RESTRICTED STOCK UNITS
FOR EMPLOYEES

These Standard Terms and Conditions for Employees (these "Standard Terms and Conditions") apply to the Award (as defined below) of restricted stock units granted to an employee of the Company (as defined below) pursuant to the United Therapeutics Corporation 2015 Stock Incentive Plan (the "Plan"), which are evidenced by a Grant Notice or an action of the Administrator that specifically refers to these Standard Terms and Conditions. In addition to these Standard Terms and Conditions, the Award shall be subject to the terms of the Plan, which are incorporated into these Standard Terms and Conditions by this reference. Capitalized terms not otherwise defined herein shall have the meaning set forth in the Plan.

1. TERMS OF AWARD

United Therapeutics Corporation (the "Company") has granted to the Participant named in the Grant Notice provided to said Participant herewith (the "Grant Notice") an award of a number of Restricted Stock Units (the "Award") specified in the Grant Notice. Each Restricted Stock Unit represents the right to receive one share of the Company's par value common stock (the "Shares"), upon the terms and subject to the conditions of the Grant Notice, these Standard Terms and Conditions, as amended from time to time, and the Plan. For purposes of these Standard Terms and Conditions and the Grant Notice, any reference to the Company shall include a reference to any Subsidiary or Affiliate of the Company.

2. VESTING OF AWARD

The Award shall not be vested as of the Grant Date set forth in the Grant Notice and shall be forfeitable unless and until otherwise vested pursuant to the terms of the Grant Notice. The vesting period of the Award may be adjusted by the Administrator to reflect the decreased level of employment during any period in which the Participant is on an approved leave of absence or is employed on a less than full time basis, subject to the requirements of Section 409A of the Code. Notwithstanding any provision of any employment or other agreement between the Company and the Participant, in no event shall any portion of the Award vest prior to the first anniversary of the Grant Date, other than as provided in these Standard Terms and Conditions in connection with the Participant's death or Disability or the occurrence of a Change in Control.

Notwithstanding anything contained in these Standard Terms and Conditions to the contrary:

A. If the Participant's Termination of Employment is by reason of death or Disability, the Award shall fully vest.

B. If the Participant's Termination of Employment is for any reason other than death or Disability, any portion of the Award that is not vested at the time of such

Termination of Employment (after taking into account any accelerated vesting under Section 3 below or any other agreement between the Participant and the Company) shall be forfeited and canceled as of the date of such Termination of Employment.

3. CHANGE IN CONTROL

Notwithstanding any other provision in the Plan or these Standard Terms & Conditions to the contrary, the Award shall fully vest (a) upon a Change in Control if the Award is not assumed by, or a substitute award granted, in connection with such Change of Control, (b) upon a Qualifying Termination of the employment of the Participant within twelve (12) months following a Change in Control if the Award is assumed, or a new award substituted, in connection with the Change in Control. If so determined by the Committee or the Board, in connection with a Change in Control, all or a portion of the Award may be cancelled in connection with the Change in Control for a cash payment equal to the per-Share payment in connection therewith.

4. SETTLEMENT OF AWARD

The vested portion of the Award shall be settled by the delivery to the Participant or a designated brokerage firm of one Share per vested Restricted Stock Unit as soon as reasonably practicable following the vesting of the Award, and in all events no later than March 15 of the year following the year of vesting (unless earlier delivery is required by Section 409A of the Code or delivery is deferred pursuant to a nonqualified deferred compensation plan in accordance with the requirements of Section 409A of the Code).

5. RESTRICTIONS ON RESALES OF SHARES ACQUIRED PURSUANT TO SETTLEMENT OF THE AWARD

The Company may impose such restrictions, conditions or limitations as it determines appropriate as to the timing and manner of any resales by the Participant or other subsequent transfers by the Participant of any Shares issued as a result of the settlement of the Award, including without limitation (a) restrictions under an insider trading policy, (b) restrictions designed to delay and/or coordinate the timing and manner of sales by Participant and other participants and (c) restrictions as to the use of a specified brokerage firm for such resales or other transfers.

6. INCOME TAXES

The Company shall not deliver Shares in respect of the vesting of the Award unless and until the Participant has made arrangements satisfactory to the Administrator to satisfy applicable withholding tax obligations. The Company may withhold Shares issuable in connection with the vesting or settlement of the Award (provided that Shares may be withheld only to the extent that such withholding will not result in adverse accounting treatment for the Company) to pay the minimum required withholding taxes unless the Participant pays the withholding tax obligations to the Company by cash or check. The Participant acknowledges that the Company shall have the right to deduct any taxes required to be withheld by law in connection with the vesting or settlement of the Award

from any amounts payable by it to the Participant (including, without limitation, future cash wages).

7. NON-TRANSFERABILITY OF AWARD

Except as permitted by the Administrator or as permitted under the Plan, the Participant may not assign or transfer the Award to anyone other than by will or the laws of descent and distribution. The Company may cancel the Participant's Award if the Participant attempts to assign or transfer it in a manner inconsistent with this Section 7.

8. OTHER AGREEMENTS SUPERSEDED

The Grant Notice, these Standard Terms and Conditions and the Plan constitute the entire understanding between the Participant and the Company regarding the Award. Any prior agreements, commitments or negotiations concerning the Award are superseded.

9. LIMITATION OF INTEREST IN SHARES SUBJECT TO AWARD

Neither the Participant (individually or as a member of a group) nor any beneficiary or other person claiming under or through the Participant shall have any right, title, interest, or privilege in or to any Shares allocated or reserved for the purpose of the Plan or subject to the Grant Notice or these Standard Terms and Conditions except as to such Shares, if any, as shall have been issued to such person upon settlement of the Award. Nothing in the Plan, in the Grant Notice, these Standard Terms and Conditions or any other instrument executed pursuant to the Plan shall confer upon the Participant any right to continue in the Company's service nor limit in any way the Company's right to terminate the Participant's service at any time for any reason.

10. GENERAL

In the event that any provision of these Standard Terms and Conditions is declared to be illegal, invalid or otherwise unenforceable by a court of competent jurisdiction, such provision shall be reformed, if possible, to the extent necessary to render it legal, valid and enforceable, or otherwise deleted, and the remainder of these Standard Terms and Conditions shall not be affected except to the extent necessary to reform or delete such illegal, invalid or unenforceable provision.

The headings preceding the text of the sections hereof are inserted solely for convenience of reference, and shall not constitute a part of these Standard Terms and Conditions, nor shall they affect its meaning, construction or effect.

These Standard Terms and Conditions shall inure to the benefit of and be binding upon the parties hereto and their respective permitted heirs, beneficiaries, successors and assigns.

These Standard Terms and Conditions shall be construed in accordance with and governed by the laws of the State of Delaware, without regard to principles of conflicts of law.

In the event of any conflict between the Grant Notice, these Standard Terms and Conditions and the Plan, the Grant Notice and these Standard Terms and Conditions shall control. In the event of any conflict between the Grant Notice and these Standard Terms and Conditions, the Grant Notice shall control.

All questions arising under the Plan or under these Standard Terms and Conditions shall be decided by the Administrator in its total and absolute discretion.

11. ELECTRONIC DELIVERY

By executing the Grant Notice, the Participant hereby consents to the delivery of information (including, without limitation, information required to be delivered to the Participant pursuant to applicable securities laws) regarding the Company and the Subsidiaries, the Plan, the Award and the Shares via Company web site or other electronic delivery.

12. DEFINITIONS

A. "Good Reason" means any of the following actions upon or after a Change in Control, without the Participant's express prior written approval, other than due to the Participant's Disability or death: (i) (a) an adverse change in the Participant's status, title, position or responsibilities (including reporting responsibilities) from the Participant's status, title, position or responsibilities as in effect immediately prior to the Change in Control; (b) the assignment to the Participant of any duties or responsibilities which are inconsistent with the Participant's status, title, position or responsibilities as in effect immediately prior to the Change in Control; or (c) any removal of the Participant from or failure to reappoint or reelect the Participant to any of the offices or positions held by the Participant immediately prior to the Change in Control, except in the case of (a), (b) or (c) in connection with the termination of the Participant's employment for Cause, as a result of the Participant's Disability or death, or by the Participant other than for Good Reason; (ii) a reduction in the Participant's base salary or any failure to pay the Participant any compensation or benefits to which the Participant is entitled within five (5) days of the date due; (iii) a reduction in the Participant's annual cash bonus opportunity or equity-type incentive opportunity; (iv) the Company requiring the Participant to relocate to any place outside a fifty (50) mile radius of the location serving as the Participant's principal work site immediately prior to the Change in Control, except for reasonably required travel on the business of the Company or an Affiliate which is not materially greater than such travel requirements in effect immediately prior thereto; (v) the failure by the Company to continue in effect employee benefits for the Participant no less favorable in the aggregate as in effect immediately prior to the Change in Control; or (vi) any material breach by the Company of any provision of an agreement between the Company and the Participant. With respect to (i) through (vi) above, Good Reason shall not be deemed to have occurred unless the Participant shall have notified the Company in writing of his or her intent to resign for Good Reason within thirty (30) days following occurrence of the event constituting Good

Reason and the Company shall not have cured the grounds for Good Reason within five (5) days following the provision of such notice.

B. "Qualifying Termination" means termination of the Participant's employment by the Company without Cause or resignation by the Participant for Good Reason.

Exhibit 10.51

Pursuant to 17 C.F.R §240.24b-2, confidential information (indicated as [***]) has been omitted and has been filed separately with the Securities and Exchange Commission pursuant to a Confidential Treatment Application filed with the Commission.

WHOLESALE PRODUCT PURCHASE AGREEMENT

TIIIS WIIOLESALE PRODUCT PURCIIASE AGREEMENT (the "Agreement") is made this 1st day of January, 2018, (the "Effective Date") by and between Priority Healthcare Distribution, Inc., doing business as CuraScript SD Specialty Distribution, a Florida corporation having offices at 255 Technology Park, Lake Mary, Florida 32746, ("Distributor"), and United Therapeutics Corporation ("UT"), a Delaware corporation having offices at 1040 Spring Street, Silver Spring, Maryland. Distributor and UT are each referred to in this Agreement as a "Party," collectively, the "Parties."

WHEREAS, UT manufactures Product; and

WHEREAS, Distributor wholesales certain products to its customers, which include physicians, physician group practices, and certain health care institutions and facilities located in the United States and Puerto Rico; and

WHEREAS, Distributor has represented that it possesses the necessary expertise, financial resources and organization to sell UT Product (as hereinafter defined) and desires to acquire from UT the right to sell, market, distribute and maintain UT Product in the Territory (as hereinafter defined); and

WHEREAS, the Parties desire to enter into this Agreement so that Distributor can sell, distribute and maintain UT Product in the Territory

NOW THEREFORE, in consideration of the mutual agreements and covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto, intending to be legally bound, hereby agree as follows:

ARTICLE I
PRODUCTS AND SERVICES

1.1 **APPOINTMENT OF DISTRIBUTOR.** This Agreement governs Distributor's distribution of those UT products set forth in **EXHIBIT A** ("Product" or "Products"), which is attached hereto and incorporated by reference herein and which may be modified from time to time by the Parties upon written mutual consent. UT hereby appoints Distributor and Distributor hereby accepts such appointment, as a distributor of UT Product during the term of this Agreement in the Territory, subject to the terms and conditions of this Agreement. This appointment is non-exclusive, and UT reserves the right to appoint additional distributors in the Territory and to distribute UT Product in the Territory on its own behalf. UT will notify Distributor prior to adding additional distributors within the Territory.

1.2 **PURCHASE ORDERS.** Distributor shall submit written purchase orders to UT by electronic mail or in accordance with written instructions provided by UT. Except as otherwise agreed by UT, Purchase Orders shall be submitted one (1) time per month by the tenth (10th) day of the month. Each such order shall set forth: (a) the package reference (e.g. Remodulin/Tyvaso order quantities of ten (10); Orenitram order quantities of twelve (12)) for the UT Product ordered including item numbers, (b) UT Product Price per **EXHIBIT A,** (c) Quantity ordered for each product, (d) requested delivery dates, (e) specific shipping instructions, and (f) if applicable, any relevant export control information or documentation required of Distributor to enable UT to comply with Applicable Laws. Except as otherwise agreed by UT, Distributor shall submit such purchase orders at least five (5) business days prior to the requested delivery dates. Distributor is responsible for good inventory management processes and subsequent purchases should not deviate negatively by more than

[***]% from the previous purchase unless unexpected events occur and are communicated to UT in advance in writing. Distributor may, however, place a purchase order for UT Product that is more than [***]% of a previous purchase if needed. Distributor may only purchase UT Product from UT. Distributor may only sell UT Products to those customers listed in **EXHIBIT C**.

1.3 **ACCEPTANCE OF ORDERS**. Distributor purchase orders are subject to acceptance by UT in UT's sole discretion. UT shall have no liability to Distributor or to the proposed Customer for orders that are not accepted. Each purchase order shall be deemed to be an offer by Distributor to purchase UT Product pursuant to the terms of this Agreement. Acceptance of an order by UT shall oblige the Parties to the terms and conditions set forth in this Agreement with respect to such order to the exclusion of any additional or contrary terms set forth in the Distributor purchase order. Any terms or conditions of such purchase order shall be null and void. Notwithstanding the foregoing, in the event of exigent circumstances, UT shall use its Commercially Reasonable Efforts to accept an emergency purchase order from Distributor two (2) business days prior to the requested delivery date.

1.4 **REPORTS.** Distributor will provide UT with data reports as specified on **EXHIBIT E**, which is attached hereto and incorporated by reference herein. The Parties intend that these reports will comply with all applicable laws, statutes, regulations, and rules (and reasonable interpretations thereof and guidance related thereto) (collectively, "Applicable Laws"). In the event of any inconsistency between the data file layouts set forth in **EXHIBIT E** and any Applicable Laws. Distributor shall be entitled to unilaterally modify the data reports without consent from, UT, if required by Applicable Law solely to the extent required to comply. If unilateral changes are made by the Distributor and if needed the Parties shall work in good faith to make additional modifications to the Report to reach a mutually agreed upon format. If UT requests additional report fields, changes to the report fields, or data configurations not specified on **EXHIBIT E** that require significant changes, Distributor shall notify UT of any additional fees pursuant to Section 2.8 below. If UT agrees to proceed, the Parties will execute an amendment to authorize such work and amend **EXHIBIT E**.

1.5 **EVIDENCE OF PEDIGREE.** In accordance with, and to the extent required by, Applicable Law, Distributor shall create and maintain all records, manifests, or other documentation, in electronic and/or written form, necessary to evidence the pedigree (i.e., a record of each distribution) of any Products purchased from UT and shipped, resold, or provided to another distributor or customer.

1.6 **SERVICES.** Distributor will fulfil their obligations as set forth in this Agreement and perform those services set forth in **EXHIBIT B,** which is attached hereto and incorporated by reference herein (the "Services").

1.7 **DELIVERY OF PRODUCT.**

(a) *Delivery Terms*. Units of UT Product ordered by Distributor and accepted by UT shall be packed for shipment and storage in accordance with UT's standard commercial shipping practices. UT shall use its Commercially Reasonable Efforts to deliver Units of UT Product into the possession of a common carrier for delivery within a reasonable period of time after acceptance of a purchase order by UT. Unless mutually agreed upon by Distributor and UT, no UT Product shall be shipped to Distributor on a Friday, Saturday or Sunday. Each order may only be shipped, and shall be addressed for shipment, to the Designated Shipment Locations specified in **EXHIBIT G**. Unless UT and Distributor otherwise agree in writing, all deliveries of UT Product shall be F.O.B., Distributor's Designated Shipment Location. UT shall insure each shipment of UT Product with a reputable insurer for the full invoice price of such shipment.

(b) *Risk of Loss*. Risk of loss and title to UT Product shall pass to Distributor upon delivery at its Designated Shipment Location. UT shall have no liability for any loss, theft, destruction or

damage to the Units of UT Product caused after they have been delivered to a Designated Shipment Location. Distributor shall, at its sole cost and expense, insure or self-insure the UT Products from the time of delivery at Distributor's Designated Shipment Location until delivery of the Units of UT Product by Distributor to Customer has been completed.

(c) *Inspection of Product*. Distributor shall promptly inspect each shipment of UT Product. In the event of any shortage, damage, expiration, or discrepancy in a shipment of UT Product that is patently obvious, Distributor shall promptly report the same to UT and furnish such written evidence or other documentation as UT may reasonably request. Distributor shall be deemed to have accepted a shipment and UT shall not be liable for any such shortage, damage, expiration, or discrepancy in such shipment unless Distributor provides UT with such notice and substantiating evidence within five (5) days of receipt of the UT Product at Distributor's Designated Shipment Location. Upon receipt of reasonable substantiating evidence of such shortage, damage or discrepancy, UT shall promptly provide additional UT product or substitute products to Distributor.

(d) *Modification of Orders*. No accepted purchase order shall be modified or canceled except upon the written agreement of both Parties.

(e) *Change Order Charges*. If Distributor requests modifications to an accepted order prior to the scheduled delivery date and prior to such time that delivery courier has accepted contents of order, then, in consideration for accepting such change order, UT may extend the scheduled delivery date.

(f) *Product Changes*. Subject to applicable regulatory approval, UT reserves the right, in its sole discretion and without incurring any liability to Distributor except as otherwise provided in this Agreement, to: (a) alter UT Product, (b) discontinue the manufacture of UT Product, or (c) commence the manufacture and sale of new products having features which compete with UT Product or make UT Product obsolete. UT also reserves the right, in its sole discretion and without incurring any liability to Distributor except as otherwise provided in this Agreement, immediately to alter the specifications or the manufacturing process for UT Product for reasons of health or safety. UT shall fill all accepted purchase orders from Distributor for altered or discontinued UT Product for which manufacturing and commercial deliveries have commenced prior to the effective date of such a change but otherwise shall have no obligation to do so unless the delivery date requested in the relevant purchase order is prior to the effective date of such a change.

1.8 **PRODUCT RETURNS.** UT will not accept the return of any UT Product, unless agreed in writing by UT, except if returned pursuant to a recall under Section 1.13 (b) below or products delivered under non-acceptable conditions as described in Section 1.7 (c). Notwithstanding anything herein to the contrary, all Product returns made in conjunction with this Agreement will be made on behalf of Distributor by Distributor's designated third party product returns company ("Returns Agent"). UT will pay any reimbursement associated with Product returns directly to Distributor and not to the Returns Agent. All fees associated with the use of the Returns Agent's services will be paid by Distributor and not UT.

1.9 **DIVERSION.** Distributor shall promptly notify UT upon learning of any activity that appears to illegally divert any Products. UT shall promptly notify Distributor if UT becomes aware of any diverted Product.

1.10 **ADVERSE EVENT REPORTING ("AE")/PRODUCT COMPLAINTS ("PC").** Distributor will not be responsible for United States Food and Drug Administration ("FDA") reporting of adverse events/product complaints. Distributor shall notify UT at drugsafety@unither.com utilizing Distributor's standard form within two (2) business days of any adverse event or product complaint from a third party being reported to Distributor that meets the definition as defined in Exhibit H of a serious adverse event or product complaint for purposes of regulatory reporting globally.

1.11 **PRODUCT EDUCATION.** Distributor will not promote UT's Products, but Distributor will promote its own distribution services to its customers in accordance with Distributor's standard business practices, which typically include, but are not limited to, informing its customers of pricing available for products distributed by Distributor. Distributor may, provide its customers with educational information concerning Product, additionally information may be provided by UT and reviewed and pre-approved by Distributor.

1.12 **SALES OUTSIDE THE UNITED STATES.** Distributor agrees not to distribute or sell Products outside of the United States, its territories or possessions (the "Territory"), unless otherwise agreed to between the Parties in a written amendment to this Agreement.

1.13 **SUSPENSION OF DISTRIBUTION AND RECALL.**

(a) *Suspension of Distribution*. If, for good reason and with written notification, UT requests that Distributor suspend distribution of any Product, Distributor shall use commercially reasonable efforts to suspend its distribution of such Product. If the suspension continues for more than six (6) weeks, UT will repurchase the Product held in inventory by Distributor at the Product Price, as defined in Section 2.1(a), paid for such Product by Distributor, and Distributor shall have the right to terminate this Agreement for material breach under Section 3.2(c)(vi) of this Agreement. All such repurchased Product shall be returned to UT at UT's expense.

(b) *Recalls*. Any recalls of UT Product shall be conducted in compliance with FDA requirements and the UT standard operating procedure for recalls ("UT Recall SOP") as provided to and accepted by Distributor. UT shall promptly notify Distributor of any recalls initiated by UT or required by the FDA. UT shall provide Distributor a third party (e.g., UPS or FedEx) billing number for shipping of recalled Products to UT (or UT's designated agent) at UT's expense. Distributor shall provide to UT the names and addresses of customers that may have received recalled Products. To the extent such recall does not result from a breach of any of Distributor's representations and warranties under this Agreement or Distributor's negligence or willful misconduct (in which even Distributor shall be responsible for all recall related expenses), UT shall be responsible for the mailing, shipping, and reasonable administrative expenses incurred by Distributor in connection with the recall, plus a reasonable service fee of one dollar ($1.00) per customer name and address, up to a maximum of one thousand dollars ($1,000) per recall. In addition, UT shall pay the cost of replacement Product for Distributor's customers.

(c) *Records of Recalls*. Distributor shall maintain for two (2) years after termination or expiration of this Agreement such information as is reasonably required in the event of a Product recall after termination or expiration of this Agreement, and shall make such information available to UT, at UT's expense, in the event of such a recall.

(d) *Investigations*. Distributor shall use its commercially reasonable efforts to cooperate with UT in investigating any Product failure that resulted in the need for a recall and any reasonable costs involved with such investigation will be paid by UT.

1.14 [***]

ARTICLE II
PRICES, FEES, AND PAYMENT

2.1 PRODUCT PRICING.

(a) *Product Price*. The price Distributor will pay UT for Products is set forth in **EXHIBIT A** (the "Product Price").

(b) *Resale Price*. The Parties acknowledge that Distributor may offer the UT Product in the Territory at such prices or discounts as Distributor, in its sole discretion, may determine.

(c) *Price Changes*. At any time during the term of this Agreement, UT may increase or decrease its Prices for UT Product with advance written notice to Distributor of the effective date of the price change by sending such change notice to [***]. Any such price change shall not apply to purchase orders accepted prior to the effective date of the applicable price change. Distributor agrees to continue placing purchase orders at quantity volumes consistent with demand and inventory levels prior to the effective date of any such price change.

(d) *Costs*. All costs related to shipping, insuring, packing, handling and delivering UT Product to Distributor's facility shall be at the sole expense of UT. All such costs incurred after the instant of delivery to the Designated Shipment Location shall be the responsibility of Distributor. Notwithstanding anything to the contrary in this Agreement, UT may, in its sole discretion, charge Distributor for any and all shipping, packing, handling or delivery charges associated with emergency purchase orders, or if Distributor places three (3) or more orders in a one (1) month period.

2.2 PAYMENT TERMS.

(a) Distributor shall make payments for UT Product within sixty (60) days of invoice date of an applicable invoice from UT payable by check and received by UT prior to the 60 day due date. Distributor shall be eligible for a two percent (2%) prompt pay discount if payment is received by UT within thirty (30) days of the date of invoice. All payments shall be made in United States Dollars.

2.3 TAX PAYMENTS. Each Party shall pay all taxes, duties, import deposits, assessments and other governmental charges, however designated, that are now or hereafter imposed upon such Party by any governmental authority or agency in connection with the performance of its obligations under this Agreement.

2.4 **CHARGEBACKS.** Subject to UT's reimbursement of the Chargebacks (as described below) Distributor shall provide wholesale distribution to certain entities eligible for discounted government pricing (e.g., FSS, VA, PHS (340B)) ("Discounted Entity") as described herein. The discounted government pricing is less than the price at which Distributor purchases UT Product (i.e., less than the Price set forth in Attachment A). Distributor shall create an account for each Discounted Entity purchasing UT Product from Distributor. As part of this process, Distributor shall use Commercially Reasonable Efforts to identify whether the proposed Discounted Entity is eligible for discounted government pricing through direct documentation from the proposed Discounted Entity or through review of data on the HRSA eligibility website or other database resource. UT agrees that all HRSA active entity codes are eligible for discounted government pricing. As an order for UT Product is received from the Discounted Entity, Distributor shall sell UT Product to the Discounted Entity at the discounted government price. At least five (5) business days prior to the effective date of any original contract, or update to any existing contract, UT will provide Distributor, via email, all original contract pricing and/or membership information, and any contract notifications or updates to ContractAdmin@CuraScript.com. The difference between the discounted government price and the Price as of the Discounted Entity's invoice date for the UT Product is referred to as the "Chargeback." The Chargeback shall be paid by UT to Distributor by check. When submitting a Chargeback request to UT, Distributor shall send Distributor's chargeback template via systematic email to UTtrade@unither.com and shall include the information in an Excel format as set forth below. Chargeback request(s) shall be submitted to UT by the tenth (10th) day of each month for all activity in the previous calendar month. UT shall process Chargeback credits due to Distributor within thirty (30) days of receipt of the Chargeback submission. UT shall send Distributor any information or updates regarding Chargeback requests to ChargebackAdmin@CuraScript.com. UT will provide, at the time of payment, a reconciliation report for disputed Chargeback items.

Manual Chargeback Report

CURASCRIPT SD - 0850
2397 SOUTHWEST BLVD STE D
GROVE CITY, OH 43123

DEA# RP0334540

**** Chargeback Total ------ $ XXX.XX

VDM-79700 VENDOR NAME

Debit Memo #	Vendor Contract #	Customer DEA #	Customer HIN #	Customer Name	Customer Address	Customer DBA	City	Customer State	Customer Zip	Invoice #	Invoice Date	NDC Number	Item Description	Qty	Unit of Measure	Replacement Price	Extended WAC	Contract Price	Extended Contract $	Extended Chargeback

Distributor may resubmit disputed Chargebacks for reconsideration within (60) days from the date the reconciliation report is received. In the event that new information surfaces that causes corrections or adjustments to prior sales, Distributor may reopen and resubmit chargeback claims within eighteen (18) months of the original sale date or as otherwise may be required in a government contract. Distributor shall not set off Chargebacks owed by UT against any amounts owed by Distributor to UT. Upon termination of this Agreement, if there are any unapplied credits for a Chargeback, UT shall issue a check in the amount thereof to Distributor. Chargebacks paid hereunder constitute reimbursement to Distributor for debits incurred in administering UT discounts to Discounted Entities, and are not, and should not be construed as, remuneration intended to induce Distributor to purchase, order, lease, or recommend any UT product.

2.5 **DATA REPORT MODIFICATIONS**. UT shall pay Distributor a programming fee of $185 per hour within thirty (30) calendar days of receipt of Distributor's invoice for such programming for any changes to the data specifications set forth on **EXHIBIT E**, including the addition of reporting fields, changes to the report fields, or data configurations not specified on **EXHIBIT E**. Late payments will accrue interest at the rate of eighteen percent (18%) per annum (or the maximum amount permissible under Applicable Law, if lower) for every invoice or statement past due. The late payment fee shall be calculated on the basis of a 365-day year for the actual number of days elapsed between the date upon which payment was due and the date upon which payment is made. UT agrees to pay reasonable attorney fees and expenses incurred by Distributor in enforcing its right of collection.

2.6 **FEES FOR SERVICES.**

(a) *Services Fee*. In consideration for Distributor's performance of the Services, UT shall pay Distributor a fee (the "Services Fee") in accordance with **EXHIBIT B.** Distributor shall invoice UT monthly, and UT shall pay such invoices within thirty (30) calendar days of receipt.

(b) *Late Fee*. Payment of the Services Fee other than as stated herein will result in a late payment fee equal to eighteen percent (18%) per annum (or the maximum amount permissible under Applicable Law, if lower) for every invoice or statement past due. The late payment fee shall be calculated on the basis of a 365-day year for the actual number of days elapsed between the date upon which payment was due and the date upon which payment is made. UT agrees to pay reasonable attorney fees and expenses incurred by Distributor in enforcing its right of collection.

ARTICLE III
TERM AND TERMINATION

3.1 **TERM.** Unless and until this Agreement is terminated as provided for herein, this Agreement shall have a term of Two (2) years, commencing on the Effective Date. Following the initial term, this Agreement shall be renewed automatically for additional one-year terms unless either Party shall have given the other written notice of non-renewal at least sixty (60) days prior to the expiration of the then current term.

3.2 **TERMINATION.** This Agreement is made in good faith based on the assumption that early termination shall not be required. Notwithstanding the foregoing, early termination shall be permissible as follows:

(a) By either Party with ninety (90) days' written notice for any reason.

(b) Immediately by either Party if such Party provided written notice detailing a material breach of this Agreement and the breaching Party failed to cure the breach within thirty (30) days of the date of the notice.

(c) Immediately with written notice, by either Party, except that only Distributor may terminate this Agreement with respect to subsection (vi), in the event that:

(i) the other Party shall file any petition under any bankruptcy, reorganization, insolvency or moratorium laws, or any other law or laws for the relief of or in relation to the relief of debtors;

(ii) there shall be filed against the other Party any involuntary petition under any bankruptcy statute or a receiver or trustee shall be appointed to take possession of all or a substantial

part of the assets of the Party that has not been dismissed or terminated within sixty (60) days of the date of such filing or appointment;

(iii) the other Party shall make a general assignment for the benefit of creditors or shall become unable, or admit in writing its inability, to meet its obligations as they mature;

(iv) the other Party shall institute any proceedings for liquidation or the winding up of its business other than for purposes of reorganization, consolidation, or merger;

(v) the other Party's financial condition shall become such as to endanger completion of its performance in accordance with the terms and conditions of this Agreement;

(vi) UT suspends distribution of Products for more than six (6) weeks pursuant to Section 1.13(a); or

(vii) the other Party is unable to perform its duties for a period of thirty (30) days pursuant to Section 7.10.

(d) Immediately upon notification by either Party if the terms of this Agreement are determined by either Party in good faith to be inconsistent with any Applicable Law, or upon a change in law pursuant to Section 7.11.

(e) [***]

ARTICLE IV
CONFIDENTIALITY AND DATA

4.1 **CONFIDENTIALITY.** Each Party shall take all reasonable actions and do all things reasonably necessary to ensure that any information contained in this Agreement, as well as any information that is disclosed by one Party to the other under this Agreement (in any case, "Confidential Information") shall not be disclosed or used for purposes outside this Agreement. The foregoing prohibition shall not apply to disclosures: (a) to the disclosing Party's attorney or accountant; (b) made pursuant to a request from a legal or regulatory authority; (c) by the disclosing Party to its Affiliate, as defined below (provided such Affiliate is subject to the confidentiality restrictions herein), and for the purpose of this section "Affiliate" shall mean an entity in which the disclosing Party maintains an ownership position or an entity under common ownership or control with the disclosing Party; or (d) that are required pursuant to a court order or by law. The foregoing prohibition shall not apply to information that: (i) a Party can show it knew prior to disclosure without obligation of confidentiality; (ii) is or becomes public knowledge through no fault of said Party; or (iii) is lawfully disclosed by a third party under no obligation of confidentiality. This Section 4.1 shall survive any termination of this Agreement for a period of five (5) years thereafter. Each Party shall either return to the other Party, or destroy, all Confidential Information received hereunder upon the expiration or termination of this Agreement, except that each Party may retain one (1) copy of such Confidential Information in order to satisfy any future legal obligations it may have. Notwithstanding anything to the contrary contained herein, if reasonably necessary, Distributor shall be permitted to disclose to potential and existing customers of Distributor (and any potential purchaser of Distributor) the general terms of this Agreement.

4.2 Notwithstanding anything to the contrary in this Agreement, Distributor shall not sell its purchasing data, which may include data relating to the Product, to third parties (e.g., IMS or NDC).

ARTICLE V
REPRESENTATIONS AND WARRANTIES

5.1 **STATUTORY AND REGULATORY COMPLIANCE.** Distributor and UT shall comply with all Applicable Laws governing their activities related to this Agreement, including without limitation, laws related to

fraud and abuse, false claims, provision of samples, and prohibition on kickbacks. Without limiting the generality of the foregoing, the Parties further agree as follows:

(a) *Discounts/Rebates.* Although Distributor does not submit claims or requests for payment to Medicare or Medicaid, the Parties have structured any discounts and rebates under this Agreement in a manner consistent with the applicable characteristics of the statutory discount exception (42 U.S.C. § 1320a-7b(b)(3)(A)) and the discount safe harbor (42 C.F.R. § 1001.952(h)). The terms pursuant to which any discount or rebate will be paid are fixed and are set forth in this Agreement and the attached Exhibits. This Agreement is not dependent on, and does not operate in conjunction with, either explicitly or implicitly, any other arrangement or agreement between UT and Distributor. UT represents and warrants that: (i) it will refrain from doing anything that would impede Distributor from meeting any reporting obligations Distributor may have under Applicable Law; (ii) it will comply with all reporting requirements for pharmaceutical manufacturers under all Federal health care programs and, in particular, will include any and all discounts and rebates paid hereunder in its calculations of "average manufacturer price" or "best price" under the Medicaid drug rebate program, and in the calculations of "average sales price" under Medicare, to the extent applicable; (iii) it will properly report the existence of the discounts/rebates on the invoices or statements submitted by UT to Distributor; and (iv) no discount/rebate paid pursuant to this Agreement is intended in any way as a discount related to a drug formulary or drug formulary activities and no discount/rebate has been negotiated or discussed between the Parties in connection with any such drug formulary or formulary activities. To the extent required under Applicable Law, Distributor will report the discounts/rebates to appropriate Federal health care programs, and will, upon the request of a governmental agency, including the Secretary of Health and Human Services or a state healthcare agency, disclose information regarding the discounts/rebates to the requesting agency.

(b) *Services Fee.* UT represents and warrants that: (i) it has engaged Distributor to perform bona fide, legitimate, reasonable, and necessary Services; (ii) the Services are not intended to serve, either directly or indirectly, as a means of marketing the Product; (iii) the Services do not involve the counseling or promotion of any off-label use of the Products or a business arrangement or other activity that violates any Applicable Laws; (iv) the Service Fees (as set forth at **EXHIBIT B**) do not constitute a discount or other form of compensation that must be included in "best price," "average manufacturer price," or "average sales price" reporting; (v) the Service Fees are not intended in any way as remuneration for referrals or for other business generated; (vi) the Service Fees represent fair market value for the services based on arms-length negotiations; and (vii) the Service Fees paid pursuant to this Agreement are not intended in any way as payments related to a drug formulary or drug formulary activities and have not been negotiated or discussed between the Parties in connection with any such drug formulary or formulary activities.

(c) *Compliance With Drug Distribution Laws.* By executing this Agreement, UT hereby designates Distributor, and Distributor accepts such designation, as an authorized distributor of record for the Products for purposes of the Parties' compliance with the Prescription Drug Marketing Act of 1987, as amended by the Prescription Drug Amendments of 1992 and the Drug Quality and Security Act of 2013, including the Drug Supply Chain Security Act (DQSA), and as may be further amended from time to time, and any and all other applicable laws and regulations requiring the same or similar designation as an authorized pharmacy of record or authorized distributor of record. UT and Distributor represent and warrant that, to their knowledge, they are authorized trading partners under the DQSA and a party that experiences a change in its authorized status will notify the other party in writing promptly. UT agrees to provide any documentation of Distributor's authorized status and documentation of and statements relating

to pharmaceutical transactions as may be reasonably requested by Distributor as necessary for compliance with Applicable Laws.

(d) *Regulatory Approvals*. UT represents and warrants that it has received all applicable regulatory and statutory approvals in order for it to lawfully distribute the Product(s) to Distributor hereunder.

(e) *FDA Compliance*. UT hereby represents that, at the time of commercial sale of the Product, UT will have received clearance from FDA to market the Product in the United States. In the event FDA or any other governmental entity withdraws its marketing clearance for the Product, UT shall promptly notify Distributor. Furthermore, UT represents and warrants that, at the time of shipment or delivery from UT, the Products (i) shall not be adulterated, misbranded, or otherwise prohibited within the meaning of the Federal Food, Drug and Cosmetic Act, 21 U.S.C.A. 301 *et seq*., as amended, and in effect at the time of shipment or delivery ("FFDCA") or within the meaning of any Applicable Law in which the definition of adulteration or misbranding are substantially the same as those contained in the FFDCA; and (ii) shall not be merchandise that may not be introduced or delivered for introduction into interstate commerce under the provisions of Sections 301, 404 or 505 of the FFDCA (21 U.S.C.A. 331, 344 and 355).

5.2 PRODUCT MATERIALS. UT represents and warrants that any materials relating to Products that it provides to Distributor: (a) are limited to communications that are intended to describe the Product or provide important Product-related information; (b) if required under Applicable Law, have received all appropriate regulatory approvals prior to use (e.g., FDA approval); and (c) do not involve the counseling or promotion of any off-label use.

5.3 PRODUCT WARRANTY. UT hereby authorizes Distributor to rely upon, and to pass on the UT standard warranty set forth in **EXHIBIT D** to Distributor's Customers in the Territory, which may be revised by UT upon written notice to Distributor.

5.4 EXCLUDED CLAIMS. UT shall not have any additional warranty obligations to Distributor or Customers under Section 5.3 above or otherwise to the extent that Distributor has made any warranties, oral or written, beyond those expressly set forth in the standard UT warranty, set forth in **EXHIBIT D** hereto. Distributor shall not offer its customers any warranties different from or in addition to those given by UT hereunder.

5.5 FEDERAL PROGRAMS. UT represents, warrants, and certifies that neither it nor any of its principals were or are debarred, suspended, proposed for debarment, otherwise determined to be ineligible to participate in Federal health care programs (as that term is defined in 42 U.S.C. 1320a-7b(f)), convicted of a criminal offense related to the provision of health care items or services, or currently the subject of any Office of Inspector General investigation (collectively, an "Adverse Enforcement Action"). UT shall notify Distributor immediately if UT or any of its principals becomes the subject of an Adverse Enforcement Action.

ARTICLE VI
INDEMNIFICATION, LIMITATION OF LIABILITY, AND INSURANCE

6.1 MUTUAL INDEMNIFICATION.

(a) *Distributor Indemnification*. Distributor will indemnify and hold UT and its affiliates, officers, directors, agents and employees harmless from and against any loss, cost, damage, expense, or other liability, including, without limitation, reasonable costs and attorney fees (collectively, "Damages") incurred in connection with any and all actual or threatened third party claims, suits, investigations, enforcement actions, or any other judicial or quasi-judicial proceeding ("Claims")

arising out of (i) Distributor's negligent acts or omissions or willful misconduct, or (ii) Distributor's breach of this Agreement. Distributor shall have no obligation to indemnify UT in connection with any Claims caused by or based upon the negligence or intentional misconduct of UT or UT's breach of this Agreement.

(b) *UT Indemnification*. UT will indemnify and hold Distributor and its affiliates, officers, directors, agents and employees harmless from and against any Damages incurred in connection with any and all Claims arising out of (i) UT's manufacturing of the Products or any harm caused to a third party resulting from the use of the Product; (ii) any recall, quarantine, warning, or withdrawal of any Products; (iii) UT's negligent acts or omissions or willful misconduct; (iv) UT's breach of this Agreement; or (v) the use by any third party of any Product. UT shall have no obligation to indemnify Distributor in connection with any Claims caused by or based upon the negligence or intentional misconduct of Distributor or Distributor's breach of this Agreement.

(c) *Notification*. As a condition of indemnification, the Party seeking indemnification shall notify, to the extent possible under Applicable Law, the indemnifying Party in writing promptly upon learning of any Claim for which indemnification may be sought hereunder. The indemnifying Party shall have a right to participate in the defense of such Claim, and the Parties will cooperate in good faith in such defense. No Party shall have an obligation to indemnify the other Party as described herein with respect to any Claim settled without the mutual written consent of both Parties, which consent shall not be unreasonably withheld.

6.2 LIMITATION OF LIABILITY. In no event shall either Party be liable to the other under this Agreement for any special, incidental, indirect, exemplary, or consequential damages, whether based on breach of contract, warranty, tort (including negligence), lost profits or savings, punitive damages, injury to reputation, loss of customers or business, product liability, or otherwise, regardless of whether such Party has been advised of the possibility of such damage. The Parties acknowledge and agree that the foregoing limitations of liability are a condition and material consideration for their entry into this Agreement.

6.3 INSURANCE. Distributor and UT shall maintain such policies of general liability, professional liability, and other insurance of the types and in amounts customarily carried by their respective businesses. Notwithstanding the foregoing, UT shall, at a minimum, maintain throughout the term of this Agreement commercial products liability coverage, either through commercial insurance or a self-insured retention pool, in an amount no less than ten million dollars ($10,000,000). Each Party shall provide the other with reasonable proof of insurance upon written request.

ARTICLE VII
GENERAL TERMS

7.1 **NON-EXCLUSIVITY.** Nothing herein shall be construed to limit Distributor from entering into other agreements with other manufacturers or wholesalers that allow Distributor to distribute or wholesale products that compete with UT's Products.

7.2 **NOTICE.** Any notice, demand, request, consent, or approval required or permitted hereunder shall be in writing and shall be delivered: (a) personally; (b) by certified mail, return receipt requested, postage prepaid; (c) by facsimile transmission; or (d) by overnight courier by a nationally recognized courier service, to the address indicated below or to such other address as may be designated in writing by each Party from time to time.

If to UT:

United Therapeutics Corporation
1040 Spring Street

Silver Spring, Maryland 20910
Attention: Chief Financial Officer
Telefax: 301-508-9291

With a copy to:

United Therapeutics Corporation
1735 Connecticut Ave. NW, 2nd Floor
Washington, DC 20009
Attention: General Counsel
Telefax: 202-483-4005

If to Distributor:

Express Scripts, Inc.
c/o Priority Healthcare Distribution, Inc.
One Express Way
St. Louis, MO 63121
Attn: Legal Department

With a copy to:

Priority Healthcare Distribution, Inc.
255 Technology Park Drive
Lake Mary, FL 32746
Attn: General Manager

All such communications shall be deemed to have been received by the intended recipient: (i) on the day actually received if delivered personally; (ii) five (5) business days following deposit in the United States Mail if sent by certified mail; (iii) upon confirmation of receipt of a facsimile transmission if sent by facsimile; or (iv) on the next business day if sent by overnight courier.

7.3 **SEVERABILITY.** In the event any portion of this Agreement not material to the remaining portions hereof shall be held illegal, void, or ineffective, the remaining portions hereof shall remain in full force and effect. Subject to the consent of both Parties, such consent not to be unreasonably withheld, if any of the terms or provisions of this Agreement are in conflict with any Applicable Laws, then such terms or provisions shall be deemed inoperative to the extent that they may conflict with such Applicable Laws and shall be deemed to be modified to conform to such Applicable Laws.

7.4 **AUDIT.** No more than once during any twelve (12) month period with 30 business days written notice accompanied by a detailed scope during the term of this Agreement and for one hundred eighty (180) days thereafter, either Party shall permit a certified public accountant, engaged by the auditing Party and reasonably acceptable to the other Party ("Auditor") to audit the other's records relating to the twelve (12) month period preceding the date when the audit is conducted. Such audit shall be limited to tracking of rebates, data reports, and chargeback reports. This audit may include Distributor's facilities and quality systems as they relate to the Services covered by Exhibit B, with the exception of information and operations regarded by the Distributor as Proprietary information. If either Party elects to conduct an audit, the other Party agrees to make available upon thirty (30) days' advance written notice, during normal business hours, such documents and personnel in a manner as not to unduly interfere with the audited Party's operations. If any audit reveals (a) an error in the calculation, reporting, or payment of any rebates; or (b) that an overcharge or undercharge incurred, in the case of an error by either Party, such Party shall provide a written response or explanation, correct any error, and remit any monies

due within fifteen (15) days after receiving notice of the error or overcharge. Any Auditor hired by either Party must both enter into a confidentiality agreement executed by both Parties and be retained on an hourly or fixed rate basis, and not a contingency basis. Each Party shall pay their respective expenses associated with the audit. If an independent third party is used to conduct the audit, such third party shall execute a confidentiality agreement with the Distributor prior to any such audit. Audits during December and January are excluded unless the request is related to an inspection and timing stipulated by a government regulator that impacts the services defined in this agreement. Notwithstanding the foregoing, "for cause" audits may be performed with less than thirty (30) business days' notice, but with as much notice as reasonably practicable taking into account the level of urgency associated with a "for cause" audit. DISTRIBUTOR will issue responses in writing to UT within an agreed timeline to any "for cause" audit observations. These timelines may be accelerated for critical audit observations, relating to the distribution of UT Product.

7.5 **ENTIRE AGREEMENT.** With regard to the issues addressed herein, this Agreement and the Exhibits attached hereto contain the entire agreement and understanding of the Parties, and supersede any and all prior agreements and understandings regarding the same subject matter.

7.6 **AMENDMENT.** No amendment, modification, revision, representation, warranty, promise or waiver of or to this Agreement shall be effective unless the same shall be in writing and signed by both Parties. Notwithstanding the foregoing, **EXHIBIT A** (Product Pricing) may be modified with a written notification from UT to Distributor. Upon the effective date of the change, the Exhibit(s) will be deemed amended to reflect such change.

7.7 **COUNTERPARTS.** This Agreement may be executed in any number of counterparts, all of which together shall constitute one and the same instrument.

7.8 **ASSIGNMENT.** Neither Party may assign this Agreement without the written consent of the other; provided, however, that Distributor may assign this Agreement to any entity that, directly or indirectly, wholly owns or controls Distributor or any affiliate that is, directly or indirectly, wholly owned or controlled by any entity that, directly or indirectly, wholly owns or controls Distributor.

7.9 **DELEGATION OF RESPONSIBILITIES.** Distributor may engage a third party to conduct certain administrative functions on its behalf and may subcontract portions of certain limited functions and responsibilities of this Agreement, including, but not limited to, data compilation and reporting services, financial accounting and processing services, or any other function relating to any of Distributor's obligations set forth herein. UT agrees to cooperate with Distributor's reasonable requests relating to Distributor's engagement of any such third party. Such third party must perform in a manner conforming to this Agreement and will be bound by confidentiality restrictions no less restrictive than are set forth in Section 4.1 of this Agreement. Distributor shall retain full responsibility and liability for the performance of any subcontracted service.

7.10 **FORCE MAJEURE.** Notwithstanding anything to the contrary herein, neither Party shall be liable in any manner for any delay to perform its obligations under this Agreement where the cause of such delay is beyond a Party's reasonable control, including, without limitation, any delay or failure due to strikes, labor disputes, riots, earthquakes, storms, hurricanes, floods or other extreme weather conditions, fires, explosions, acts of God, embargoes, war or other outbreak of hostilities, government acts or regulations, or the failure or inability of carriers, suppliers, delivery services, or telecommunications providers to provide services necessary to enable a Party to perform its obligations hereunder. In any such circumstance, the Party unable to perform its obligations shall notify the other Party of such circumstance, and said other Party shall have the right to terminate this Agreement immediately pursuant to Section 3.2(c)(vii) if the Party continues to be unable to perform its obligations hereunder for a period of thirty (30) days.

7.11 **CHANGE IN LAW.** If, subsequent to the Effective Date (a) there is a change to any existing Applicable Laws; (b) any Applicable Law is promulgated, enacted, enforced, or otherwise applied; or (c) any decree, order, judgment, or permanent injunction is entered or enforced by any court of competent jurisdiction or any other government agency relating to the terms of this Agreement, which in the good faith opinion of UT or Distributor adversely and materially affects or will adversely and materially affect its business by reason of the terms of this Agreement, the affected Party shall notify the other Party in writing and the Parties will promptly negotiate alternative terms that would not adversely and materially affect the affected Party's business, and that would, subject to Applicable Law, provide reasonably equivalent benefits to both Parties as the modified or deleted terms. If the Parties do not so reach a mutually satisfactory agreement within thirty (30) days after notice from the affected Party, the relevant adverse terms may be terminated or, if the relevant adverse terms are material to the overall Agreement, the Agreement may be terminated pursuant to Section 3.2(d).

7.12 **WAIVER.** No waiver of any term of this Agreement shall be valid unless waived in writing and signed by the Party against whom the waiver is sought. The failure of either Party to require performance by the other Party of any provision of this Agreement shall not affect, in any way, the right to require such performance at any time thereafter.

7.13 **INDEPENDENT CONTRACTORS.** Nothing in this Agreement is intended to create any relationship between Distributor and UT other than as independent contractors and neither Party, nor any of their employees, staff, agents, officers, or directors shall be construed to be the agent, fiduciary, employee, or representative of the other.

7.14 **CHOICE OF LAW.** This Agreement and performance of the obligations hereunder, shall be governed by, and construed in accordance with, the laws of the State of Delaware, without regard to the conflicts of laws provision therein.

7.15 **SURVIVAL.** The confidentiality and indemnification obligations described in this Agreement shall survive the termination of this Agreement. These ongoing obligations shall be binding upon both Parties regardless of the reason for the termination of this Agreement.

7.16 **THIRD PARTY BENEFICIARIES.** This Agreement is not a third party beneficiary contract, and, therefore, there are no third party beneficiaries to this Agreement.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the undersigned, duly authorized, has executed this Agreement, effective as of the Effective Date.

PRIORITY HEALTHCARE DISTRIBUTION, INC.		**UNITED THERAPEUTICS CORPORATION**	
By:	/s/ Earl English	By:	/s/ Kevin T. Gray
Print Name:	Earl English	Print Name:	Kevin T. Gray
Title:	President	Title:	SVP, Strategic Operations
Date:	10.6.17	Date:	12/20/2017

EXHIBIT A
PRODUCT PRICING

UT shall notify the Distributor in writing of any change (and the amount of the change) in the Price of any respective UT Product in accordance with Section 7.2.

UT shall provide Distributor with a current list of UT Product prices to Discounted Entities, including FSS prices, Federal Ceiling Prices, and prices to section 340B entities, and shall promptly notify Distributor of any and all changes in such prices as well as the effective dates of such changes.

UT PRODUCT NAME	NDC	STRENGTH	PRICE
Orenitram	66302-300-01	0.125 mg	$487.50
Orenitram	66302-300-01	0.25 mg	$975.00
Orenitram	66302-300-01	1.0 mg	$3,900.00
Orenitram	66302-300-01	2.5 mg	$9,750.00
Orenitram	66302-350-01	5.0 MG	$19,500.00
Orenitram 10 Count Bottle	66302-300-10	0.125 mg	$48.75
Orenitram 10 Count Bottle	66302-300-10	0.25 mg	$97.50
Orenitram 10 Count Bottle	66302-300-10	1.0 mg	$390.00
Orenitram 10 Count Bottle	66302-300-10	2.5 mg	$975.00
Orenitram 10 Count Bottle	66302-350-10	5.0 mg	$1,950.00
Remodulin 1mg	66302-0101-01	1mg/20ml	$1,179.00
Remodulin 2.5mg	66302-0102-01	2.5mg/20ml	$2,947.50
Remodulin 5 mg	66302-0105-01	5mg/20ml	$5,895.00
Remodulin 10 mg	66302-0110-01	10mg/20ml	$11,790.00
Remodulin Diluent	66302-150-50	50 mL vial, carton of 1	No-Charge
Tyvaso Patient Starter Kit (PSK)	66302-206-01		$16,750.00
Tyvaso Patient Resupply Kit (RSK)	66302-206-02		$15,015.00
Tyvaso Supplemental Refill 4 ct	66302-206-03		$2,145.00
Tyvaso Institutional Starter Kit (ISK)	66302-206-04		$3,880.00

NDC 66302-206-01 Tyvaso Starter Kit includes:

- 28 ampules of Tyvaso
- Sets of Autoclavable Parts
- Tyvaso Inhalation Devices
- 2 AC Power Adapters
- 1 Rechargeable Battery Pack
- 1 Car Power Cord
- 1 Leather Carrying Case
- 32 Medicine Cups
- 64 Filter Membranes
- 1 Nose Clip

- 1 Measuring Cup
- 1 Safety Box
- 2 Sets of Safety Plugs

NDC 66303-206-02 Tyvaso Re-Supply Kit includes:

- 28 ampoules of Tyvaso
- 1 Set of Autoclavable Parts
- 32 Medicine Cups
- 64 Filter Membranes

NOC 66302-206-03 Tyvaso Supplemental Refill includes:

- 4 ampoules of Tyvaso

NDC 66302-206-04 Tyvaso Institutional Starter Kit (ISK) includes:

- 4 ampules of Tyvaso
- 2 Sets of Autoclavable Parts
- 2 Tyvaso Inhalation Devices
- 2 AC Power Adapters
- 1 Rechargeable Battery Pack
- 1 Car Power Cord
- 1 Leather Carrying Case
- 32 Medicine Cups
- 64 Filter Membranes
- 1 Nose Clip
- 1 Measuring Cup
- 1 Safety Box
- 2 Sets of Safety Plugs

EXHIBIT B

I. DISTRIBUTION SERVICES

SERVICE	DESCRIPTION
Development, Implementation and Management of internal requirements	• Hiring and ongoing participation in training of staff related to UT Product. Distributor will maintain, throughout the Territory, adequate order fulfillment staff who are adequately trained on PAH and UT Product. • Data and System set up to support timely and appropriate delivery of all required reports and data.
Account Management	• Call Center staffed to meet nationwide business hours of customer base • Online Order functionality, including inquiry features (not available at Memphis location) • Active management of Customer Relationships including but not limited to: responding to Product Inquiries; triage to clinical support for physicians and patients as appropriate; triage to sales and/or reimbursement support as provided by UT; designated account managers by disease state, etc.
Rush/Special Order	Orders that are received and processed outside normal parameters, such as expedited shipping, special instructions, etc. or at UT's requests. This service should include Saturday delivery service as well as early AM delivery options as requested.
Product Storage	Controlled temperature Product storage.
Order Processing	Order is defined as a shipment to a unique address that leaves the distribution center, regardless of the number of cartons or packages that constitute that shipment and/or the number of inbound requests for said Order. Line is defined as each SKU or product line picked on the order.
Receiving	Receiving product into the warehouse, including review and monitoring of any temp tale devices used in shipments to assure proper specifications were maintained for inbound receipts
Packing Supplies	Any packing materials that Distributor must provide for to ship Products. Review and provision of packaging and shipping materials to assure adherence to temperature and handling specifications.

SERVICE	DESCRIPTION
Credit/Rebill Transactions	Any UT requested/caused credit or rebill transactions keyed in the system.
RGA Initiation	RGA: Returned Goods Authorization. Processing return request from customer and sending the customer an RGA if at request of or as the result of an issue caused by UT.
Return Processing	Receipt of physical return at the distribution center; includes itemizing contents of the return if at request of or as the result of an issue caused by UT.
Returns Storage	Returns Storage, including providing controlled room temperature pallet storage in Distributor morgue until product is returnable to UT along with tracking of return quantities and reasons.
Chargeback Processing	Process chargebacks, if applicable, to manufacturer or designee.
Daily and Monthly Reports	See Exhibit E and F for reporting details.
Inventory Management	In accordance with Section 1.2, establish mechanism to ensure appropriate inventory to meet the needs of the Customers

II. [***]

III. SERVICE FEES

For sales to specialty pharmacies, Distributor will provide the Services described in Section I of this Exhibit B, and UT agrees to pay a Service Fee of [***] basis points from the WAC price for each Product purchased net returns for the Products defined below. Distributor will invoice UT monthly for this Service Fee.

- Remodulin 1MG VL
- Remodulin 2.5MG VL
- Remodulin 5MG VL
- Remodulin 10 MG VL
- Tyvaso 2.9ML ampules (4pack)
- Tyvaso starter kit
- Tyvaso refill kit
- Orenitram 5.0 MG tablet
- Orenitram 2.5MG tablet
- Orenitram 0.25MG tablet
- Orenitram 0.125MG tablet
- Orenitram 1MG tablet

The Service Fee is compensation to Distributor for all services described in exhibits and herein, except as otherwise noted below:

Custom Reports	UT to pay Distributor $[***]/hour	Fee for reports created that are not part of the standard reports provided by Distributor. Hourly report creation fees assessed for initial report creation but not thereafter for running the same report.
Custom Development Services	UT to pay Distributor $[***]/hour	Fee for customized processes developed at UT's request. Hourly fees will be assessed and approved by UT before development work is to begin.
[***]	[***]	[***]

EXHIBIT C
CUSTOMER LISTING

- Hospitals
- FSS (including VA and 340B)
- Specialty Pharmacies limited to the following:
  - Accredo Health Group

EXHIBIT D
UT WARRANTY

UT warrants that all of its UT Product shall as of the date such UT Product leaves UT' s facility:

(i) be free from defects in design, material and workmanship, (ii) be in compliance with all applicable law and regulation, including without limitation all regulatory requirements of the FDA, including those related to the adulteration or misbranding of UT Product within the meaning of Section 501 and 502 of the Food Drug and Cosmetics Act, (iii) not be articles which may not be introduced into interstate commerce pursuant to the requirements of Sections 505, 514, 515, 516 or 520 thereof, and (iv) be manufactured in accordance with current FDA Good Manufacturing Practice as required by 21 C.F.R. 210 and 820.

EXHIBIT E
DATA SPECIFICATIONS

Shipment

Field Name	Data Type	Required	Description
Ship Date	Date	Y	MMDDYYYY
Quantity Shipped	Numeric	Y	Including negative quantities
Customer #	Numeric	Y	CSD Ship To Account #
Ship to Name	Varchar	Y	
Ship to Address #1	Varchar	Y	
Ship to Address #2	Varchar	N	Field labeled "Additional Heading"
Ship to City	Varchar	Y	
Ship to State	Varchar	Y	
Ship to Zip	Numeric	Y	5 digits only
Ship to Phone	Varchar	N	
Bill to Name	Varchar	Y	
Bill to Address #1	Varchar	Y	
Bill to Address #2	Varchar	N	Field labeled "Additional Heading"
Bill to City	Varchar	Y	
Bill to State	Varchar	Y	
Bill to Zip	Numeric	Y	5 digits only
NDC Number	Varchar	Y	
HIN #	Varchar	N	
DEA#	Varchar	N	
NPI #	Varchar	N	
Warehouse	Varchar	Y	Warehouse location shipped from
Lot#	Varchar	Y	
Lot Expiration Date	Varchar	Y	
Invoice #	Numeric	Y	Document #
Order #	Numeric	Y	

Format	CSV
Frequency	Daily & Monthly
Distribution	FTP or email
Products to Report	TBD
File Name	CURASCRIPT_SD_SHIPMENT_DRUGXXXX_MMYYYY.CSV (monthly) or CURASCRIPT_SD_SHIPMENT_DRUGXXXX_MMDDYYYY.CSV (daily)
Other	Zero byte file if no records exist Include column headings in report Report shipments from all shipping locations

EXHIBIT E (CONT.)
DATA SPECIFICATIONS

Field Name	Data Type	Required	Description
NDC #	Varchar	Y	
Drug Name	Varchar	Y	
Reporting Period Start Date	Date	Y	MMDDYYYY
Reporting Period End Date	Date	Y	MMDDYYYY
Reporting Date	Date	Y	MMDDYYYY
Warehouse Name	Varchar	Y	
Quantity On Hand	Numeric	Y	If none then "0"
Quantity Received	Numeric	Y	If none then "0"
Quantity On Order	Numeric	Y	If none then "0"
Quantity Adjustment	Numeric	Y	If none then "0"; include negative quantity
Quantity Shipped	Numeric	Y	If none then "0"
Quantity Transferred	Numeric	Y	If none then "0"
Quantity Returned	Numeric	Y	If none then "0"

Format	CSV
Frequency	Daily & Monthly
Distribution	FTP or email
Products to Report	TBD
File Name	CURASCRIPT_SD_INVENTORY_DRUGXXXX_MMYYYY.CSV (monthly) or CURASCRIPT_SD_INVENTORY_DRUGXXXX_MMDDYYYY.CSV (daily)
Other	Zero byte file if no records exist Include column headings in report Report inventory for all shipping locations

EXHIBIT F

[***]

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EXHIBIT G
DISTRIBUTOR LOCATIONS

Priority Healthcare Distribution Inc.
2297 Southwest Blvd., Suite D
Grove City, OH 43123
614-539-8074 (Phone)
614-539-2798 (Fax)
DEA # RP0334540
HIN #K771N1N00

Priority Healthcare Distribution Inc.
2040 W. Rio Salado Parkway, Suite 101A
Tempe, AZ 85281
480-403-3689 (Phone)
480-403-3672 (Fax)
HIN# J343K1E00

Priority Healthcare Distribution
1680 Century Center Parkway Ste 8
Memphis, TN 38134
901-385-3600 (Phone)
866-628-8942 (Fax)
DEA # RA0401416

Other locations must be mutually agreed to in writing by the Parties.

Exhibit II

Adverse Events and Product Complaints Definitions

Adverse Drug Experience	Includes and adverse experience, LOE pregnancy or medication error, each as defined below
Adverse Event ("AE")/Adverse Experience	Any untoward medical occurrence in a patient or clinical investigation subject administered a pharmaceutical product and which does not necessarily have to have a causal relationship with this treatment. An adverse event can therefore be any unfavorable and unintended sign (including abnormal laboratory finding for example), symptom, or disease temporarily associated with the use of a medicinal product, whether or not related to the use of the medicinal product.
Lack of Effect repot ("LOE")	A report of a situation where there is apparent failure of the company product or medicinal technology to bring about the intended beneficial effect on individuals in a defined population with a given medical problem, under ideal condition of use.
Medication Error	Any preventable event that can cause or lead to inappropriate medication use or patient harm while the medication is in the control of a healthcare professional, patient or consumer.
Special Situations	Special Situations are not AEs but are similar to "events of special interests" that require similar reporting to regulatory authorities worldwide & they are: use of product during pregnancy/breastfeeding, product overdose (accidental or intentional), product misuse/abuse (accidental or intentional), Off Label product use (product used for indication not approved in USPI), accidental or occupational exposure.
Product Complaint ("PC")	Information concerning any incident that causes the drug or its label to be mistaken for, or applied to another article, and bacteriological contamination, or any significant changes in distributed drug product (chemical, physical, deterioration or

other change), and or failure of a batch of distributed drug product to meet specifications established for it in the application.

Exhibit 10.52

SPECIALTY PHARMACY NETWORK AGREEMENT

THIS SPECIALTY PHARMACY NETWORK AGREEMENT ("**Agreement**") is made as of January 1st 2018 (the "**Effective Date**"), by and between United Therapeutics Corporation ("**UT**"), a Delaware corporation, with offices at 1040 Spring Street, Silver Spring, Maryland and Accredo Health Group, Inc. ("**SPECIALTY PHARMACY**"), a Delaware corporation, with offices at 6272 Lee Vista Boulevard, Orlando, FL 32822.

Recitals

WHEREAS, UT manufacturers, markets and sells certain biopharmaceutical products, including Products;

WHEREAS, SPECIALTY PHARMACY is a licensed pharmacy that owns or operates one or more locations that dispense biopharmaceutical products to Patients within the Territory;

WHEREAS, this Agreement sets forth the terms and conditions upon which UT engages SPECIALTY PHARMACY as part of its distribution network to dispense Products to Patients in the Territory.

NOW, THEREFORE, in consideration of the mutual promises and covenants hereinafter set forth, the Parties agree as follows:

ARTICLE 1: INTRODUCTORY PROVISIONS

1.1 Defined Terms. The following terms, when used in capitalized form in this Agreement, shall have the meanings set forth below:

(a) **"Adverse Drug Reaction (ADR) / Adverse Reaction / Suspected Adverse (Drug) Reaction"** shall mean a response to a medicinal product which is noxious and unintended [DIR 2001/83/EC Art 1(11)]1. Response in this context means that a causal relationship between a medicinal product and an adverse event is at least a reasonable possibility (see Annex IV, ICH-E2A Guideline). Adverse reactions may arise from use of the product within or outside the terms of the marketing authorization or from occupational exposure [DIR 2001/83/EC Art 101(1)]. Conditions of use outside the marketing authorization include off-label use, overdose, misuse, abuse, occupational/accidental exposure and medication errors.

(b) **Adverse Event / Adverse Drug Experience (AE)** shall mean any untoward medical occurrence in a patient or clinical investigation subject administered a pharmaceutical product and which does not necessarily have to have a causal relationship with this treatment. [Dir 2001/20/EC Art 2(m)]. An adverse event can therefore be any unfavorable and unintended sign (including an abnormal laboratory finding for example), symptom, or disease temporally associated with the use of a medicinal product, whether or not related to the use of the medicinal product.

(c) "**Affiliate**" when used with reference to either Party shall mean any Person controlling, controlled by or under common control with the said Party and any officer, director or employee of such Party or Person, as the case may be. For purposes hereof, "control" shall mean ownership, directly or indirectly, of more than fifty percent (50%) of the securities having the right to vote for the election of directors, in the case of a corporation,

and more than fifty percent (50%) of the beneficial interest in the capital, in the case of a business entity other than a corporation.

(d) "**Agreement**" shall mean this Agreement and all attachments incorporated herein by reference.

(e) "**Applicable Laws**" shall mean all laws, statutes, ordinances, codes, rules, and regulations that have been enacted by a government authority and which are in force as of the Effective Date or come into force during the term of this Agreement, in each case to the extent that the same are applicable to the performance by the Parties of their respective obligations under this Agreement, including, with respect to the United States, the Prescription Drug Marketing Act, the Federal Food, Drug and Cosmetics Act of 1938, as amended, the Health Insurance Portability and Accountability Act, the Federal Anti-Kickback Statute, the Anti-Kickback Act of 1986, the Stark Anti-Referral Law, and any applicable FDA regulations.

(f) "**Approved Distributor**" shall mean a distributor engaged by UT as part of its distribution network to distribute Products in the Territory. Approved Distributors are listed in Attachment B, and may be amended at any time in UT's sole discretion upon written notice to SPECIALTY PHARMACY.

(g) "**Clean Prescription**" shall mean a referral for which benefits have been verified and that includes a valid prescription that does not: (i) require physician, patient, or any third party intervention or information; (ii) involve backorder, short supply, allocation, or recall; or (iii) involve a referral that is subsequently canceled or requested to be held for future processing.

(h) "**Commercially Reasonable Efforts**" shall mean with respect to each Party, commercially reasonable efforts in accordance with the business, legal, medical and scientific judgment of a similarly situated company, and in accordance with the efforts and resources a similarly situated company would use taking into account reasonable commercial judgment and other relevant factors.

(i) "**Confidential Information**" shall mean all information disclosed by one Party ("**Disclosing Party**") to the other Party ("**Receiving Party**"), regardless of the form in which it is disclosed, including information relating to the Disclosing Party's markets, product specific payer policies, databases, customers, products, patents, inventions, procedures, methods, designs, strategies, plans, assets, liabilities, prices, costs, revenues, profits, organization, employees, agents, resellers or business in general, and with respect to UT as Disclosing Party, information embodied in UT Product. The following shall not be considered Confidential Information:

(i.) Information which is or becomes in the public domain through no fault or act of the Receiving Party;

(ii.) Information which was independently developed by the Receiving Party without the use of or reliance on Confidential Information;

(iii.) Information which was provided to the Receiving Party by a third party under no duty of confidentiality to the Disclosing Party; or

(iv.) Information that is required to be disclosed by Applicable Laws, provided, however, prompt prior notice thereof shall be given to the Disclosing Party.

(j) "**Customer**" shall mean any physician or physician's office or practice or Patient to whom SPECIALTY PHARMACY is legally entitled to dispense Product.

(k) **Day 0:** The date when any representative of UT (including contractors) or business partners is made aware of the minimum information that constitutes a valid report (an identifiable patient, an identifiable reporter, a suspected event and a suspect drug/product). This includes both verbal and written communication and is classed as day 0 (zero) of the regulatory reporting process.

(l) "**Force Majeure**" shall mean any event, not existing as of the Effective Date and not reasonably within the control of the Parties as of such date, which, in whole or in material part, prevents or makes commercially unreasonable one Party's performance of its obligations under this Agreement. Force Majeure shall include, without limitation: fire, storm, earthquake, flood, acts of state, war or civil unrest, labor dispute, inability to obtain labor or materials, and prolonged shortage of energy or any other supplies.

(m) "**Master Services Agreement**" shall mean the Master Services Agreement entered into by and between UT and Specialty Pharmacy effective December 18, 2013, as amended; pursuant to which SPECIALTY PHARMACY is performing certain enhanced support services for UT related to Product.

(n) "**Patient**" shall mean an individual who has been prescribed and will be treated by the Product.

(o) "**Patient Information**" shall mean all information necessary for determining whether such Patient has insurance coverage for the cost of Product.

(p) "**Patient Referral**" shall mean a prescriber's request for dispensing a Product and all the necessary and relevant Patient and prescriber information to verify appropriate reimbursement.

(q) "**Patient Service Center**" shall mean the centralized call center established and operated by UT to (i) triage Patient Referrals and orders for the Product to applicable distributors, and (ii) respond to questions from Customers or refer Customers inquiries regarding the UT Product.

(r) "**Product**" shall include all products listed in Attachment A. UT reserves the right to add any new FDA approved strength or package size of Product to this Agreement at the same terms and conditions and to remove any Product (or, where applicable, Product NDC) from this Agreement, in its sole discretion, by giving written notice to SPECIALTY PHARMACY.

(s) "**Parties**" shall mean UT and SPECIALTY PHARMACY collectively.

(t) "**Party**" shall mean either UT or SPECIALTY PHARMACY.

(u) "**Person**" shall mean an individual, corporation, partnership, limited liability company, limited liability partnership, syndicate, person, trust, association, organization or other

entity, including any governmental authority, and including any successor, by merger or otherwise, of any of the foregoing.

(v) **"Product Compliant"** or "**PC**" shall mean any written, electronic or oral communication that alleges deficiencies of the identity, quality, durability, reliability, safety effectiveness or performance of a distributed UT device or drug product.

(w) **"Safety Information"** shall mean any and all safety data, including, but not limited to:

- Adverse events, reactions, or experiences from any source
- Adverse events, reactions, or experiences from Organized Data Collection Systems, which include non-interventional studies, registries, post-approval Named Patient Use, other patient support and disease management programs, surveys of patients or healthcare providers, Compassionate Use or Named Patient Use, or information gathering on efficacy or patient compliance
- Special reporting situations that are not AEs but should be treated as AE, which includes a) Overdose, accidental or intentional (outside of a prescriber's orders); b) Pregnancy ((maternal exposure or paternal exposure) plus reports of termination of pregnancy with or without further information), c) Breastfeeding/Lactation (Trans-mammary exposure of an infant) with the use of a UT product, d) product abuse or e) product misuse f) Medication errors associated with an adverse event g) Lack of therapeutic efficacy (i.e., "Lack of Effect Reports"), h) Off-label use of UT product associated with an adverse event and i) Occupational exposure with or without an adverse event, reaction, or experience.
- Other safety information includes:
  - Product exposure (including maternal, paternal, or fetal exposure) associated with a pregnancy when patient was not pregnant prior to start of therapy with or without an adverse reaction
  - Abnormal test findings identified post start using of UT product (e.g., CPK level of 10.5)
- Drug interactions (only if associated with an Adverse Event)
- Suspected transmission of an infectious agent, which will be classified as a serious adverse event, reaction, or experience
- Defective or falsified medicinal product
- An unexpected therapeutic or clinical benefit from use of the medicinal product

(x) "**Territory**" shall mean the United States, including its territories and possessions, the fifty states and the District of Columbia only, unless otherwise expressly agreed in writing by the Parties.

ARTICLE 2: MUTUAL REPRESENTATIONS AND WARRANTIES

2.1 Authority. Each Party represents and warrants that it possesses all corporate power and authority necessary to enter into this Agreement and to perform its obligations under this Agreement. All corporate acts and other proceedings required to be taken by or on the part of each Party to authorize it to perform its obligations under this Agreement have been duly and properly taken. This Agreement has been duly executed and delivered by each Party and constitutes legal, valid and binding obligations of each Party enforceable in accordance with its terms, subject to the application of general principles of equity.

2.2 No Conflicts. Each Party represents and warrants that the execution and performance of this Agreement will not conflict with or violate any other agreement or obligation binding on it.

2.3 Approvals. Except as expressly provided herein, each Party represents and warrants that no approval, authorization, consent or other order or action of or filing with any court, administrative agency or other governmental authority is required for the execution and delivery by such Party of this Agreement or its consummation of the transactions contemplated by this Agreement.

2.4 Debarment and Exclusion Certification Requirements. Each Party certifies that it has not been debarred under the provisions of the Generic Drug Enforcement Act of 1992, 21 U.S.C. § 335(a) and (b), and does not appear on the "list of excluded individuals/entities" ("**LEIE**") maintained by the Office of the Inspector General of the U.S. Department of Health & Human Services. In the event that, during the term of this Agreement, either Party (i) becomes debarred, (ii) is placed on the LEIE, or (iii) receives notice of an action or threat of an action with respect to its debarment or placement on the LEIE, such Party shall notify the other Party immediately. Each Party hereby certifies that it has not and will not use in any capacity the services of any individual, corporation, partnership or association that has been debarred under 21 U.S.C. § 335(a) and (b) or that appears on the LEIE. In the event that either Party becomes aware of the debarment, threatened debarment, appearance or threatened placement on the LEIE of any individual, corporation, partnership or association providing services to the other Party that directly or indirectly relate to activities under this Agreement, the other Party shall be immediately notified. In the event of an actual debarment or exclusion of SPECIALTY PHARMACY or its owners during the term of this Agreement, this Agreement shall, as of, or prior to, the effective date of such debarment or exclusion, automatically terminate. In the event of an actual debarment or exclusion of any SPECIALTY PHARMACY employee, agent or contractor during the term of this Agreement, such employee, agent or contractor must immediately cease providing any services to UT under this Agreement, and UT shall have the option of immediately terminating this Agreement.

ARTICLE 3: APPOINTMENT

3.1 Scope; Non-exclusive. UT hereby appoints SPECIALTY PHARMACY, and SPECIALTY PHARMACY hereby accepts such appointment, as a specialty pharmacy permitted to dispense Product to Patients in the Territory during the term of this Agreement, subject to the terms and conditions of this Agreement. This appointment is non-exclusive, and UT reserves the right to appoint additional specialty pharmacies in the Territory. UT shall notify SPECIALTY PHARMACY prior to adding additional specialty pharmacies within the Territory.

ARTICLE 4: OBLIGATIONS OF SPECIALTY PHARMACY

4.1 Product Purchase. SPECIALTY PHARMACY shall purchase all requirements of Product from an Approved Distributor.

4.2. Education and Information. SPECIALTY PHARMACY shall use its Commercially Reasonable Efforts to fund and support ongoing information and education related to its access and dispensing of Product, consistent with SPECIALTY PHARMACY's normal funding and support for its overall activities, and subject to SPECIALTY PHARMACY's internal policies regarding such activities. Such Commercially Reasonable Efforts shall include, but not be limited to, all of the following:

(a) Maintaining throughout the Territory adequate sales and order-fulfillment staff who are adequately trained the applicable disease state and Product to inform physicians about the availability of Product.

(b) Promptly responding to all inquiries from Customers, including responding to complaints, processing all orders and effecting all shipments of Product for Patients in accordance with the timelines and other terms and conditions contained within this Agreement.

(c) If SPECIALTY PHARMACY also dispenses a product that directly competes with the Product, giving fair and balanced representation to the Product and the competitive product with respect to both products' availability, attributes and communicating or messaging to Customers, subject to pharmacist's professional judgment regarding patient safety at SPECIALTY PHARMACY.

4.3 Policies and Procedures. SPECIALTY PHARMACY shall use Commercially Reasonable Efforts to comply with UT's Policies and Procedures as provided and updated by UT from time to time and as accepted by SPECIALTY PHARMACY. If any such Policies and Procedures contradict this Agreement, the terms of this Agreement shall control.

4.4 Written Assurance. SPECIALTY PHARMACY hereby assures UT that SPECIALTY PHARMACY shall not export Product from the Territory under any circumstances, including to any destination to which re-export requires a license under the United States Export Administration Regulations.

4.5 Product Storage and Specifications. SPECIALTY PHARMACY shall handle and store Product in accordance with all directions accompanying Product in order to maintain Product in accordance with UT- and FDA-approved specifications and Applicable Laws. SPECIALTY PHARMACY shall dispense Product as prescribed, in accordance with all applicable pharmacy requirements. The Parties acknowledge that UT shall not have any rights, obligations, responsibilities, oversight or role of any kind or nature concerning SPECIALTY PHARMACY's practice of pharmacy in compliance with all applicable state pharmacy regulations and consistent with SPECIALTY PHARMACY's then current practices. SPECIALTY PHARMACY shall maintain complete and accurate records for inspection by UT or its representatives, upon ten (10) business days' prior notice during regular business hours, of all movements and transactions involving Product. Such records shall reflect unit, lot number and Customer information, including defective or returned Product, such that Product may be traced for purposes of stock reconciliation, recall and general marketing and shipping review. UT shall also have the right to inspect SPECIALTY PHARMACY's storage conditions and shipping procedures for Product upon ten (10) business days' prior notice, during regular business hours. SPECIALTY PHARMACY shall not manufacture, mix, process, combine or incorporate Product alone or into any other substance.

4.6 Educational Materials. SPECIALTY PHARMACY may create its own educational materials concerning UT Product ("**Educational Materials**") for distribution by SPECIALTY PHARMACY in accordance with this Agreement and SPECIALTY PHARMACY's obligations as a health care provider and pharmacy; provided, however, that all such Educational Materials shall: (i) be consistent with the contents of UT Product package insert approved by the FDA; (ii) comply with the conditions and requirements of all applicable state pharmacy regulations mandating the provision of patient educational materials on prescription drugs and their administration, and (iii) not be used by SPECIALTY PHARMACY to promote, market or sell Product. To the extent that SPECIALTY PHARMACY desires to include UT trademarks or

Product branding within any Educational Materials, then SPECIALTY PHARMACY must obtain UT's prior written approval of such materials before dissemination to any third party.

4.7 No Product Promotion. SPECIALTY PHARMACY will not promote Products, but SPECIALTY PHARMACY will promote its own specialty pharmacy services to Customers in accordance with SPECIALTY PHARMACY's standard business practices. Accordingly, SPECIALTY PHARMACY shall not distribute or generate any promotional material containing claims relating to Product. SPECIALTY PHARMACY may, however, provide its customers with educational information concerning Product.

4.8 Inventory. SPECIALTY PHARMACY shall maintain at all times adequate inventory of Product (the "**Inventory**") as are mutually considered by UT and SPECIALTY PHARMACY to be sufficient to meet anticipated Patient demand. Notwithstanding the foregoing, SPECIALTY PHARMACY shall maintain an Inventory level at all times between the following minimum and maximum:

(a) At a minimum: no less than thirty (30) days' inventory on hand at any time based on current demand and usage of Product by SPECIALTY PHARMACY's Patients; and

(b) At a maximum: no greater than seventy-five (75) days' inventory on hand based on current demand and usage of Product by SPECIALTY PHARMACY's Patients; and

(c) Calculations of inventory levels shall be based on the current monthly average usage of Product by Patients (**"Usage"**). Usage shall be equal to the rolling average amount of Product distributed by SPECIALTY PHARMACY each month for the previous three (3) months. Inventory DOH shall be calculated as Estimated Inventory Count / (Usage * 30). Adjusted Inventory DOH shall be calculated as Adjusted Inventory Qty / (Usage * 30).

SPECIALTY PHARMACY shall ensure that it purchases enough Inventory each month to meet expected usage demand for Product in addition to the thirty (30) day minimum Inventory level requirement. From time to time, UT and SPECIALTY PHARMACY may mutually agree to reasonably change the above-listed minimum and maximum requirements and SPECIALTY PHARMACY shall adjust its Inventory accordingly.

4.9 Specialty Pharmacy Expenses. SPECIALTY PHARMACY shall bear all of its own costs and expenses incurred in carrying out its obligations under this Agreement, including, but not limited to, all rents, salaries, commissions, demonstration, travel and accommodation.

4.10 Reporting. SPECIALTY PHARMACY shall complete a series of regular reports as described in Attachment E hereto. Updated reporting template will be provided as needed with mutual consent of the Parties. The reports are due no later than the 10th day of each month following the end of the respective reporting periods and shall constitute Confidential Information of UT. Notwithstanding anything herein to the contrary, all reports are subject to Section 16.2 (Privacy Compliance). If UT requests material changes to reporting obligations after the program is implemented, the SPECIALTY PHARMACY will notify UT of the estimated hours/costs (which SPECIALTY PHARMACY represents and warrants shall be no more than fair market value) for necessary IT reporting and system changes to accommodate such request. Such hourly rate may not exceed $185/hour and SPECIALTY PHARMACY shall only proceed with the necessary changes upon written approval from UT.

4.11 Specialty Pharmacy Representations.

(a) SPECIALTY PHARMACY acknowledges that Products constitute sensitive therapeutic drugs, and that dispensing the Product requires specialized training and dedication to Patient needs. SPECIALTY PHARMACY represents and warrants that it will train and deploy its agents and employees in the manner necessary to meet these special requirements.

(b) SPECIALTY PHARMACY represents and warrants that it and its officers, directors, agents and/or employees as applicable are qualified to perform the activities described in this Agreement and that all licenses and/or approvals necessary to conduct such services and activities have been obtained and shall be maintained throughout the term of this Agreement.

4.12 Specialty Pharmacy Activities. SPECIALTY PHARMACY provides appropriate pharmacy services in accordance with Applicable Laws as part of its normal business operation. In addition to other obligations described in this Agreement, SPECIALTY PHARMACY shall perform the following activities and those outlined in Attachment C (Product Specific Network Requirements), in all cases subject to the requirements of Section 16.12 (Privacy Compliance).

(a) *Patient Benefit Verification*. Unless and to the extent specified in Attachment C such activities are performed by the Patient Service Center, SPECIALTY PHARMACY shall handle Patient enrollment, initial processing, insurance eligibility and benefits verification. If SPECIALTY PHARMACY is unable to service a patient, then SPECIALTY PHARMACY shall immediately, i.e., no more than five (5) business days from the receipt of the complete referral, re-direct the referral to an appropriate specialty pharmacy participating in the distribution network. If there is not a preferred specialty pharmacy that has access to the medication and a Letter of Agreement is required, response regarding referral should be within five (5) days to obtain an exception from a non-contracted payer. Specialty Pharmacy agrees to utilize the referral form provided by UT for referral collection purposes at all times, unless a customer specifically requests the use of a different form or a different form is required under Applicable Laws.

(i.) Upon receipt of a prescription for Product, SPECIALTY PHARMACY shall immediately fax the prescribing physician to confirm receipt of the prescription. No more than one (1) business day from receipt of the prescription, SPECIALTY PHARMACY shall perform verification of insurance coverage for Product. If the prescription is received after 2 p.m. Eastern time, SPECIALTY PHARMACY may have until the end of the next business day to perform verification of insurance coverage for UT Product.

(ii.) SPECIALTY PHARMACY shall take all necessary actions to verify Patients', insurance coverage for Product including, without limitation, researching and attempting to determine: (1) all Patient information and coverage parameters, including all relevant clinical documentation; (2) if Product is covered, under what type of plan (e.g., a "medical plan" or a "pharmacy plan"), the Patient cost share amount, if any, and the rate of reimbursement, if available; (3) whether prior authorization is required for reimbursement; (4) if prior authorization is required, what information the Patient must submit in order to receive such authorization; and (5) whether any other activities, submissions or approvals are required to obtain reimbursement promptly and to the fullest extent permitted by

the Third-Party Payer. During the process of benefit verification, SPECIALTY PHARMACY shall communicate with the referral source and provide information to the prescribing physician in a time and manner sufficient for the circumstances.

(iii.) SPECIALTY PHARMACY shall record the results of its research on the foregoing and shall use commercially reasonable efforts to report to the Patient within one (1) business day from receipt.

(iv.) If the Third-Party Payer requires prior authorization, then SPECIALTY PHARMACY shall, within one (1) business day, notify and assist the Customer with questions relating to the requirements for prior authorization.

(v.) If, prior to the submission of a claim for reimbursement, a Third-Party Payer informs SPECIALTY PHARMACY that UT Product is not eligible for coverage, then, within one (1) business day, SPECIALTY PHARMACY shall make such inquiries of the third-party payer as shall be necessary to determine the requirements for submission of an appeal of the denial of coverage. SPECIALTY PHARMACY shall promptly record the results of this inquiry and to the extent not prohibited by contract or Applicable Laws report such information to the UT managed markets designee.

(vi.) If SPECIALTY PHARMACY is notified of a denial of coverage and SPECIALTY PHARMACY determines that an appeal of the denial of coverage would require a Level 1 Appeal, then SPECIALTY PHARMACY, at its cost and discretion, shall use reasonable efforts to assist Customer, and if a Patient is pursuing the Level 1 Appeal on his/her own behalf, SPECIALTY PHARMACY, at its cost, shall promptly initiate (at the latest within one (1) business day) and pursue such Level 1 Appeal in accordance with the Third-Party Payer's processes. Upon request, UT shall provide reasonable assistance to SPECIALTY PHARMACY, including assistance with preparing applications and participation in telephone conferences and meetings with representatives of the Third-Party Payer. All documents prepared as part of a Level 1 Appeal, and any information obtained in connection therewith, shall be promptly recorded.

(vii.) If SPECIALTY PHARMACY determines that an appeal of the denial of coverage would require a Level 2 Appeal, SPECIALTY PHARMACY shall notify the physician, Patient and UT (if SPECIALTY PHARMACY deems necessary, if the Patient consents and to the extent not prohibited by contract or Applicable Laws) immediately of such determination. Patient, at his or her option, may elect to pursue the Level 2 Appeal directly or to request that SPECIALTY PHARMACY assist.

(b) *Dispensing Activities.*

(i.) Upon completion of benefits investigation and, if necessary, after prior authorization, SPECIALTY PHARMACY shall process the prescriber's order for Product if the prescriber chooses to place an order. If prescriber elects not to place an order at the time that Patient benefits are reported, SPECIALTY PHARMACY shall attempt to determine the reason for prescriber's choice (e.g., "Patient to receive Product at an alternate facility", "physician elected not to

order Product", or "Patient elected not to receive UT Product"). SPECIALTY PHARMACY shall immediately record this information and notify the Patient Service Center within one (1) business day to the extent not prohibited by contract or Applicable Laws.

(ii.) When the Referral originates from the prescriber, SPECIALTY PHARMACY shall attempt to contact the Patient on the same day that the benefit verification has been completed for the Patient in order to inform the Patient of his or her cost share amount, if any, and to make arrangements with the Patient for collection such cost share amount, if any, and to introduce the Patient to the SPECIALTY PHARMACY's services. SPECIALTY PHARMACY may delay shipment of Product until the Patient's cost share amount is satisfied in full. SPECIALTY PHARMACY shall be solely responsible for submitting claims for reimbursement directly to the third party payer for the applicable reimbursable amount (deducting any Patient cost share amount).

(iii.) SPECIALTY PHARMACY will dispense the Product (along with a current package insert) to Patients pursuant to a valid prescription and in accordance with Applicable Law, and in so doing will include certain nominal ancillary supplies (e.g., syringes, needles, and alcohol swabs) and certain related items (including the pump/device, as applicable) in connection with the Product as may be necessary or useful to the Patient in connection with the administration of the Product. All such supplies must comply with the technical administrative requirements specified in the package insert for Product for applicable administration and that offer the same level of reliability, effectiveness and customer service that have become industry standard for Product. Upon receipt of a Clean Prescription, SPECIALTY PHARMACY shall dispense Product within one (1) business day or at such other time as the Patient may request.

(c) *Follow up Activity Generally*. Unless SPECIALTY PHARMACY is otherwise required to contact Customer sooner or more often, SPECIALTY PHARMACY shall contact Customer two (2) business days after receipt of a prescription/referral and every two (2) business days thereafter to update Customer on the status of a benefits investigation/prior authorization/appeal or other related matter. When required to obtain additional information to complete a valid prescription/coverage determination/prior authorization/appeal or related matter, SPECIALTY PHARMACY shall communicate all required information to the appropriate party and continue to contact such party every business day until the needed information is received or the matter is otherwise closed.

(d) *Education*. SPECIALTY PHARMACY shall provide its standard educational support regarding Product administration and safety to Customers and caregivers involved in treating Patients. Upon UT's request and subject to Specialty Pharmacy's sole discretion, Educational Materials and educational materials created by UT may at times be included along with a Patient's standard shipment(s) of UT Product. In addition, SPECIALTY PHARMACY shall at all times comply with UT's requirements with respect to the provision of package inserts, updates thereto, and such other UT Materials as are required by Applicable Law. In the event that such materials increase shipping or dispensing expenses, the parties shall agree on appropriate payments. SPECIALTY PHARMACY shall promptly respond to questions from managed care organizations and other Third-Party Payers about Product. Notwithstanding the foregoing, the provision of such

educational services shall be performed in accordance with the obligations contained in this Agreement.

(e) *Nursing Services:*

(i.) SPECIALTY PHARMACY shall make available on an as-needed basis its standard telephonic nursing services in accordance with its standard policies and procedures. If SPECIALTY PHARMACY receives requests for administration or clinical support with respect to a Product, it shall facilitate such requests in accordance with its standard business practices. SPECIALTY PHARMACY's standard telephonic nursing services shall be rendered by nurses who have the requisite and necessary training, experience, licenses and permits in accordance with Applicable Laws. SPECIALTY PHARMACY may not seek reimbursement for its standard telephonic nursing services directly from UT, from the Patient, or from the third party payer.

(ii) The Parties shall work together in good faith to develop an integrated comprehensive care plan as part of SPECIALTY PHARMACY's standard business operations to adequately support Product, Patients and Customers with the following elements:

(a) All nurses shall be trained by SPECIALTY PHARMACY with respect to Product and the relevant disease area prior to any interaction with a Patient or Customer. All nurses (including per diem nurses) shall pass competency testing on the following topics (at a minimum): disease state and disease state drug classes; Product; Patient needs whether naïve or experienced; Administration of Product; Training Patients on administration of Product; Relevant nursing standards of care for administration of Product; Any and all devices/pumps that are to be used with Product; Appropriate patient encounters; and HIPAA, patient privacy and any other applicable legal requirements;

(b) SPECIALTY PHARMACY shall provide updated training as necessary for nurses to maintain competency in the foregoing competency areas;

(c) SPECIALTY PHARMACY shall update and refresh training and require regularly updated certification testing when new information becomes available or when a nurse has not provided services for an extended period of time;

(d) SPECIALTY PHARMACY shall make available to UT upon request, for UT's review and comment, training materials related to Product and the administration and support of Product;

SPECIALTY PHARMACY shall make available to UT records of completion related to training upon onsite audit.

(e) SPECIALTY PHARMACY shall manage nonperformance of nurses (including per diem nurses) through appropriate measures, including re-training, discipline or removal; and

(f) SPECIALTY PHARMACY shall reasonably provide nurses who are able to speak the same language as the Patient or a translation service.

(f) *Performance Requirements*: As part of the overall activities performed in support of the Product, SPECIALTY PHARMACY agrees to keep careful records of the following data points and maintain the requisite levels of competency for each data point and shall provide such data in reports to UT as UT reasonably requests, but no less than quarterly:

(i.) **ASA:** meaning the average speed SPECIALTY PHARMACY takes to answer a call measured over a calendar month. SPECIALTY PHARMACY shall use reasonable Efforts to ensure that the ASA does not exceed thirty (30) seconds, and in any event, at least 80% of all calls to SPECIALTY PHARMACY shall be answered within thirty (30) seconds;

(ii.) **Calls Dropped**: meaning the percentage of calls that are dropped before being answered over the course of a calendar month. SPECIALTY PHARMACY shall use its Commercially Reasonable Efforts to ensure that the Calls Dropped does not exceed 6%; and

(iii.) **AHT**: meaning the average hold time experienced by a caller as measured over the course of a calendar month. SPECIALTY PHARMACY shall use its Commercially Reasonable Efforts to ensure that the AHT does not exceed 45 seconds, and in any event, at least 95% of calls placed on hold will be on hold for less than forty-five (45) seconds.

4.13 SPECIALTY PHARMACY agrees to make available appropriate management personnel as mutually agreed upon responsible for overseeing/managing the activities related to the distribution of Product for quarterly meetings with UT personnel at reasonably agreed upon times and places in order to review and assess SPECIALTY PHARMACY's performance relative to the various obligations described in this Agreement. Content and reporting metrics of such meetings will be mutually agreed upon between UT and SPECIALTY PHARMACY in advance of the meetings.

ARTICLE 5: OBLIGATIONS OF UT

5.1 Training. UT may in its discretion provide training to SPECIALTY PHARMACY for Product at a time and in a manner as determined by SPECIALTY PHARMACY.

5.2 Hub Allocation Methodology. To the extent UT has a referral hub for any Product, UT represents and warrants that it is responsible for the methodology for allocating hub referrals to pharmacies, and such methodology (i) is intended to distribute referrals fairly, (ii) is not intended to promote or market the Product or SPECIALTY PHARMACY, (iii) is not intended as remuneration for referrals or other business generated, and (iv) is not intended to diminish the objectivity or professional judgment of SPECIALTY PHARMACY or any prescriber.

5.3 UT Materials. UT represents and warrants that any materials relating to Products that it provides to SPECIALTY PHARMACY: (a) are limited to communications that are intended to describe the Product or provide important Product-related information; (b) if required under Applicable Law, have received all appropriate regulatory approvals prior to use (e.g., FDA approval); and (c) do not involve the counseling or promotion of any off-label use.

ARTICLE 6: WARRANTY AND PRODUCTS SUPPORT

6.1 Product Warranty. UT warrants that all of its Product shall as of the date such UT Product leaves UT's facility: (i) be free from defects in design, material and workmanship, (ii) be in compliance with all applicable law and regulation, including without limitation all regulatory requirements of the FDA, including those related to the adulteration or misbranding of Product within the meaning of Section 501 and 502 of the Food Drug and Cosmetics Act, (iii) not be articles which may not be introduced into interstate commerce pursuant to the requirements of Sections 505, 514, 515, 516 or 520 thereof, and (iv) be manufactured in accordance with current FDA Good Manufacturing Practice as required by 21 C.F.R. 210 and 820.

6.2 Limited Warranty. THE WARRANTIES SET FORTH IN SECTION 6.1, AND THE OTHER TERMS AND CONDITIONS OF THIS AGREEMENT, ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH ARE HEREBY DISCLAIMED AND EXCLUDED BY UT, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE.

6.3 Limited Remedy. UT SHALL NOT BE LIABLE TO SPECIALTY PHARMACY OR ANY OF ITS AFFILIATES, EMPLOYEES, AGENTS OR CONTRACTORS FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSSES OR DAMAGES, EVEN IF SPECIALTY PHARMACY SHALL HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH POTENTIAL LOSS OR DAMAGE BY UT OR SUCH THIRD PARTY. NOTWITHSTANDING THE FOREGOING, IN CASE OF ANY CONFLICT BETWEEN THE PROVISIONS OF THIS SECTION AND OTHER PROVISIONS OF THIS AGREEMENT, THIS SECTION SHALL CONTROL.

ARTICLE 7: REGULATORY APPROVALS, COMPLIANCE AND AUDITS

7.1 Compliance with Applicable Laws. UT shall be solely responsible for, and comply with, Applicable Laws governing the regulation of the manufacture, importation, design, testing, inspection, labeling, sale, warning and instructions for use of Product in the Territory, or otherwise applicable to the performance of its obligations under this Agreement. SPECIALTY PHARMACY shall comply with all Applicable Laws governing its dispensing of Product in the Territory, or otherwise applicable to the performance of its obligations hereunder. Each Party shall comply with Applicable Laws intended to prevent fraud, waste and abuse in federal health care programs, including but not limited to Medicare and Medicaid, and shall conduct its activities hereunder in an ethical and professional manner.

7.2 Government Inquiries. In the event that SPECIALTY PHARMACY receives an inquiry, or similar notice from a government agency or entity for information or an inspection (a "**Notice**") which relates to Product or this Agreement, SPECIALTY PHARMACY shall, to the extent permitted under Applicable Laws: (a) notify and provide a copy to UT of such Notice promptly within twenty four (24) hours of receipt of such Notice; (b) unless expressly prohibited by the Notice, consult with UT regarding its response to the Notice to determine, among other things, whether any of UT's Confidential Information shall be disclosed (which in all events shall be

subject to SPECIALTY PHARMACY's obligations specified in Article 8 of this Agreement); (c) keep UT informed of the progress of any inspection and provide UT with prior notice of any documents related to Product or UT to be provided to such government entity; and (d) provide UT with a copy of any documents related to UT Product or UT ultimately produced pursuant to such Notice. Further, SPECIALTY PHARMACY shall provide UT with a summary of the results of any inspection and such actions, if any, taken to remedy conditions cited in such inspections. SPECIALTY PHARMACY further agrees to cooperate with any inspection of a shipment of Product by a governmental agency.

7.3 Safety Reporting General Provisions.

(a) UT has responsibility for all post marketing pharmacovigilance and safety regulatory reporting for Product in the Territory, including all reporting obligations to the applicable regulatory authorities, and shall comply with all Applicable Laws in carrying out those activities.

(b) SPECIALTY PHARMACY is responsible to maintain suitable Pharmacovigilance Systems along with supporting policies and procedures to ensure compliance with all Applicable Laws and this Agreement.

(c) SPECIALTY PHARMACY will identify and ensure all employees or contractors supporting UT activities, who require training on recognition of Safety Information, Adverse Events, Adverse Drug Reactions, Product Complaints, and all other applicable requirements set forth in this Agreement and shall ensure that training on the applicable Pharmacovigilance policies and procedures is completed within thirty (30) days of the Effective Date of this Agreement. Any addition of new staff will also require such training prior to them starting the project related activities. UT can make available training on recognition of Safety Information (AEs/ADRs/PCs including special situation) in an event SPECIALTY PHARMACY doesn't have such training in place. SERVICE PROVIDER shell retains the training certificate on record for any audits or inspections.

(d) SPECIALTY PHARMACY shall identify and notify UT of any potential ADR, AE, Safety Information, Special Reporting Situation and/or PC using the method of delivery and within the timelines set out in Attachment D. Either Party may update its contact information in Attachment D from time to time by providing written notice to the other Party.

(e) UT will acknowledge receipt of the individual AEs/ADRs safety reports/communication sent to UT's Drug Safety Common Mailbox (as set forth on **Attachment D**).

(f) UT has enabled an auto acknowledgement feature for the reports sent to DrugSafety@Unither.com to immediately notify the sender that the safety information submitted has been received by UT. This receipt of unique identification will serve as a confirmation of receipt of the AE/PC report. Specialty Pharmacy is not obligated to utilize or store these auto acknowledgements.

(g) UT is responsible and shall monitor the conduct of SPECIALTY PHARMACY's activities with respect to pharmacovigilance activity performed under section 7.3 of this Agreement and regularly review compliance with the terms set forth within this Agreement. During the term of this Agreement, SPECIALTY PHARMACY will permit

representatives of UT, including UT's quality assurance personnel, who are not competitors of SPECIALTY PHARMACY to examine and audit Pharmacovigilance obligations in accordance with section 7.5 of this agreement.

(h) SPECIALTY PHARMACY agrees to provide to UT for any necessary remedial or corrective actions identified by UT in any such audit, and shall undertake all such remedial or corrective actions according to mutually agreed timelines following the audit.

(i) UT represents and warrants that (i) safety reporting consistent with the provisions set forth in this Section 7.3 is required by UT for participation in the pharmacy network for Product and (ii) UT does not pay services fees for such reporting.

7.4 Withdrawal or Recall of Product. Any recalls of Product shall be conducted in compliance with FDA requirements and the UT standard operating procedure for recalls ("**UT Recall SOP**"). SPECIALTY PHARMACY shall prepare and maintain a written standard operating procedure that provides processes for conducting recall-related activities for Product as directed by UT and in accordance with the UT Recall SOP. The decision to recall Product shall be made solely by UT, unless otherwise dictated by a governmental authority. UT shall be responsible for the expenses related to recall activities as described below, unless the recall results from a breach of any of SPECIALTY PHARMACY's representations and warranties under this Agreement or SPECIALTY PHARMACY's negligence or willful misconduct, in which event SPECIALTY PHARMACY shall be responsible for all of recall-related expenses. For purposes of this Agreement, the expenses of the activities shall be: (i) the reasonable and direct expenses of notification and return or destruction (if authorized by UT) of Product, (ii) the cost to replace UT Product, (iii) the costs directly associated with the distribution of replacement Product. SPECIALTY PHARMACY and UT shall cooperate fully with one another in conducting any activity contemplated by this Section 7.4. Destruction of recalled product shall be conducted in accordance with the recall plan, as approved by UT under the UT Recall SOP and by any applicable governmental authorities. If instructed by UT, SPECIALTY PHARMACY may return recalled Product to UT at UT's expense within thirty (30) days from completion of the recall and UT shall replace the Product recalled or refund the cost of such returned UT Product. Any Product returned to UT under this Section 7.4 shall be shipped by common carrier in a manner that preserves the integrity of the Product shipped, as instructed by UT. Title to the recalled Product and risk of loss, theft, destruction or damage to Product during shipment as described above shall pass from SPECIALTY PHARMACY to UT upon delivery of recalled Product at UT's facility. SPECIALTY PHARMACY's obligation to insure Product shall continue with respect to recalled Product until UT's receipt of such Product.

7.5 Visits by Parties. SPECIALTY PHARMACY shall permit UT to visit its place of business and inspect its records, inventories and other relevant materials and records relating solely to its performance of this Agreement, at SPECIALTY PHARMACY's expense. Such inspections may be made no more than once each calendar year, at reasonable times during normal business hours and on not fewer than thirty (30) business days' notice, accompanied by a detailed scope. UT shall have the right to conduct additional "for cause" audits as needed to address specific quality problems and/or if issues arise that need inspection to ensure SPECIALTY PHARMACY compliance with and ability to comply with the terms of this Agreement. For-cause audits may be performed with fewer than 30 days notice, but with as much notice as reasonably practicable, taking into account the level of urgency associated with a for cause audit. If a designated agent of UT conducts the audit, the designated agent shall enter into a confidentiality agreement with SPECIALTY PHARMCY. Audits during the months of December and January are limited to

regulatory needs. UT may choose to share a confidential audit report summarizing all audit observations with SPECIALTY PHARMACY. SPECIALTY PHARMACY will issue responses to all observations in writing to UT's Quality Assurance unit within 30 calendar days of receipt. UT will evaluate the acceptability of the audit observation responses (as acceptable, incomplete response, inadequate response and/or other. Both parties shall bring to resolution any audit response deemed unacceptable by UT. SPECIALTY PHARMACY will incorporate in its commitment tracking system any corrective actions and related timelines committed to by SPECIALTY PHARMACY.

ARTICLE 8: PROPERTY OWNERSHIP; CONFIDENTIALITY

All Confidential Information and other proprietary materials, documents, information, databases, complete and incomplete case report forms and all data that one Party ("**Disclosing Party**") supplies to the other Party ("**Receiving Party**") shall be the sole and exclusive property of the Disclosing Party ("**Disclosing Party Property**"). All Confidential Information shall be deemed confidential and proprietary to the Disclosing Party. During the term of this Agreement and for a period of five (5) years following thereafter, the Receiving Party shall: (a) not disclose or provide any Confidential Information to any third party, and (b) take reasonable measures to prevent any unauthorized disclosure of Confidential Information by its employees, agents, contractors or consultants during the term hereof including advising such individuals of applicable confidentiality obligations. Upon termination of this Agreement, the Receiving Party shall return to the Disclosing Party or destroy, at the Disclosing Party's request and expense, all unused Disclosing Party Property, except the Receiving Party may keep one (1) copy of such Disclosing Party Property for legal archival purposes.

SPECIALTY PHARMACY as described in section 7.2 of this agreement has responsibility to ensure employees or contractors supporting UT activities to, implement all reasonable physical, technical and administrative safeguards to protect Safety Information and Company Confidential Information and will promptly, but not later than 48 hours after becoming aware, notify UT of any loss, misuse, unauthorized access, disclosure, alteration or destruction of Safety Information or Company Confidential Information.

ARTICLE 9: TRADEMARKS

9.1 Trademark License Grant. UT hereby grants to SPECIALTY PHARMACY, and SPECIALTY PHARMACY hereby accepts from UT, a nonexclusive, nontransferable, and royalty-free right and license, during the term of this Agreement, to reproduce and use the UT trademarks in connection with the dispensing of Product in the Territory and in accordance with UT's standards and instructions and for no other purpose. SPECIALTY PHARMACY shall not use any other marks or trade names in connection with the marketing and distribution of Product, except that SPECIALTY PHARMACY may use its marks or trade names in a manner consistent with its normal course of business, such as adding a label on the packaging identifying SPECIALTY PHARMACY as a Specialty Pharmacy of Product, and such use shall not confer on UT any rights or license in SPECIALTY PHARMACY's marks or trade names. UT may inspect and monitor SPECIALTY PHARMACY's use of the UT trademarks. SPECIALTY PHARMACY shall not remove or alter any UT trade names, trademarks, copyright notices, serial numbers, labels, tags or other identifying marks, symbols or legends affixed to any UT Product, documentation or containers or packages.

9.2 Termination of Use. Immediately upon termination of this Agreement, SPECIALTY PHARMACY's license and right granted in Section 9.1 shall be revoked and SPECIALTY PHARMACY shall cease and desist from use of any UT trademark in any manner, other than to liquidate its then-existing inventory of UT Product within six months of such termination.

SPECIALTY PHARMACY hereby grants to UT or its designee, in the event of such termination, full power of attorney, with the right of substitution, to cancel, revoke or withdraw any governmental registration or authorization permitting SPECIALTY PHARMACY to use any UT trademark in the Territory, and SPECIALTY PHARMACY shall provide such further documentation and assistance as UT may reasonably request in connection therewith.

9.3 Reservation of Rights. SPECIALTY PHARMACY acknowledges UT's proprietary rights in and to any UT trademark, subject to the license and right granted in Section 9.1. SPECIALTY PHARMACY shall not adopt, use or register any words, phrases or symbols that are identical to or confusingly similar to any UT trademark and shall not use any UT trademark as part of SPECIALTY PHARMACY's corporate or trade name or permit any third party to do so.

9.4 Infringements. Each Party shall promptly notify the other Party in writing if it becomes aware of any use in the Territory by any third party of trademark or of any similar mark, which may constitute an infringement of a UT trademark or SPECIALTY PHARMACY's trademarks. Subject to the provisions of this Article 9, each Party shall have the exclusive right, in its sole discretion, to institute proceedings against third-party infringers of its trademarks.

ARTICLE 10: INSURANCE AND INDEMNIFICATION

10.1 Insurance. Both Parties shall maintain in effect during the term of this Agreement a comprehensive general liability policy (which may be in the form of primary or excess coverage) in an amount not less than Two Million Dollars ($2,000,000) per occurrence and Three Million Dollars ($3,000,000) in the aggregate. UT shall also maintain a product liability policy (which may be in the form of primary or excess coverage) in an amount not less than Ten Million Dollars per occurrence and in the aggregate. These policies shall provide for thirty (30) days' written notice to the other Party in the event of any modifications, cancellations or terminations thereof. If such policies are written on a claims made policy form, the Party shall maintain coverage for claims arising out of this Agreement for a period of at least five years following termination of this Agreement or any renewal thereof. The insured Party agrees to provide the other Party with a certificate of insurance evidencing compliance with this section within ten days of execution of this Agreement and prior to the policy's renewal date each year thereafter.

10.2 Claims. For the purposes of this Article 10 a "**Claim**" shall mean any liabilities, damages, costs or expenses, including, without limitation, reasonable attorneys' fees arising from any claim, lawsuit, demand or other action by a third party.

10.3 SPECIALTY PHARMACY Indemnification of UT. SPECIALTY PHARMACY shall indemnify, defend and hold harmless UT, its Affiliates, and their respective officers, directors, employees, agents, successors and assigns from and against any Claim to the extent such Claim relates to or is based on: (a) property damage, personal injury or death resulting from SPECIALTY PHARMACY's negligent or reckless provision or maintenance of Product (except to the extent the same results from any wrongful act or omission of UT); (b) SPECIALTY PHARMACY's violation of Applicable Laws; or (c) any breach by SPECIALTY PHARMACY of any of its representations, warranties, covenants or agreements under this Agreement.

10.4 UT Indemnification of SPECIALTY PHARMACY for UT Product. UT shall indemnify, defend and hold harmless SPECIALTY PHARMACY and its Affiliates, and their respective officers, directors, employees, agents and successors and assigns from and against any Claim to the extent such Claim relates to or is based on: (a) property damage, personal injury or death resulting from use of UT Product (except to the extent the same results from any wrongful action or omission of

SPECIALTY PHARMACY); (b) UT's violation of Applicable Laws; or (c) any breach by UT of any of its representations, warranties, covenants or agreements under this Agreement.

10.5 Indemnification Procedure. A Party seeking indemnification under this Article 10 ("**Indemnified Party**") shall give prompt written notice to the indemnifying Party ("**Indemnifying Party**") of any Claim covered by the indemnification obligations hereunder; *provided, however*, that a delay in such notice shall not terminate the Indemnifying Party's indemnification obligations hereunder, unless such delay shall have materially impaired the defense of such Claim. Such Indemnifying Party shall have sole and exclusive control of the defense of any such Claim, including the choice and direction of any legal counsel; *provided, however*, if Indemnifying Party's choice of legal counsel would be subject to a material conflict of interest under the applicable rules of professional conduct governing such counsel, the Indemnified Party shall not be obligated to waive such conflict and may request separate legal counsel at the Indemnifying Party's expense. The Indemnifying Party may not settle or compromise any such Claim without the written consent of the Indemnified Party, which consent shall not be unreasonably withheld.

10.6 Litigation Support. In the event and for so long as an Indemnifying Party actively is contesting or defending against any Claim under this Article 10, the Indemnified Party shall cooperate with the Indemnifying Party and its legal counsel in the contest or defense of such Claim, make available its personnel, and provide such testimony and access to its books and records as shall be reasonably necessary in connection with the contest or defense of such Claim, all at the sole cost and expense of the Indemnifying Party.

10.7 Subrogation. The Indemnifying Party shall be subrogated to the rights of the Indemnified Party against any third party bringing a Claim, and such Indemnified Party hereby assigns to the Indemnifying Party all claims, causes of action and other rights that the Indemnified Party may then have against such third party. Conversely, and without in any way limiting the obligation of either Party to indemnify the other Party as herein provided, to the extent that an Indemnifying Party fails to perform its indemnification obligations under Section 10.3 or Section 10.4 above, the Indemnifying Party hereby assigns to the Indemnified Party all claims, causes of action and other rights which the Indemnifying Party may then have against any third party with respect to any Claim for which indemnification is provided hereunder.

ARTICLE 11: JOINT PUBLICITY

11.1 Public Disclosure. If either Party wishes to make a public disclosure concerning this Agreement or the relationship established hereunder and such disclosure mentions the other Party by name or description, such other Party shall be provided with an advance copy of the disclosure and shall have (to the extent reasonably practicable) five (5) business days within which to approve or disapprove such use or its name of description (including mention of the name of the Product); *provided, however*: (a) approval shall not be unreasonably withheld by either Party; (b) failure to respond within five (5) business days shall be deemed approval; and (c) if approval is denied, no disclosure shall use the name of or otherwise describe such Party except to the extent required by Applicable Laws, or the extent that the description of the other Party is limited to public information about the availability of Product.

11.2 Filings with Securities and Exchange Commission. Notwithstanding the foregoing, each Party acknowledges that both Parties are, or are affiliates of, a publicly traded company and each Party hereby consents to the disclosure of this Agreement and the relationship between the Parties in their respective filings with the Securities and Exchange Commission and disclosures to their stockholders; *provided, however*, that each Party shall use commercially reasonable efforts not to

disclose the specific financial terms and conditions of this Agreement except when such disclosure is required by Applicable Laws or by this Agreement.

ARTICLE 12: FORCE MAJEURE

12.1 Notice. A Party affected by an event of Force Majeure shall promptly provide the other Party with written notice describing the event, its cause and foreseeable duration, and its possible consequences upon performance under this Agreement.

12.2 Suspension of Performance. After an affected Party has given notice under Section 12.1, that Party shall be relieved of any performance obligation under this Agreement for obligations which the Force Majeure event prevents, but only to the extent and only for so long as the Force Majeure prevents performance. The other Party may likewise suspend the performance of all or part of its obligations, except for the obligation to pay any amount due and owing and those obligations specified in Section 13 of this Agreement.

12.3 Substitute Performance. If SPECIALTY PHARMACY is delayed by an event of Force Majeure, UT shall, at its sole option, allow a third party to cover the services related to the dispensing of Product that SPECIALTY PHARMACY was unable to complete due to its delay and such third party shall receive the fees SPECIALTY PHARMACY would have received during its period of delay.

12.4 Termination. If the period of Force Majeure continues for more than sixty (60) days, either Party may terminate this Agreement upon giving notice to the other Party without incurring liability other than the obligation to make payments due up to and including such date of termination.

ARTICLE 13: TERM AND TERMINATION

13.1 Term. The initial term of this Agreement shall begin on the Effective Date and shall continue in force for one (1) year from the Effective Date. Thereafter, this Agreement shall automatically renew for additional periods of one (1) year each, unless either of the Parties shall have given the other Party written notice of its non-renewal of this Agreement no later than ninety (90) days prior to the end of the initial or any renewal term hereof.

13.2 Termination. This Agreement may be terminated prior to the expiration of the then current term as follows:

(a) Either Party may terminate this Agreement immediately upon written notice to the other Party if the other Party files a petition of any type as to its bankruptcy, is declared bankrupt, becomes insolvent, makes an assignment for the benefit of creditors, goes into liquidation or receivership, a proceeding is commenced against it which will substantially impair its ability to perform hereunder or such Party otherwise loses legal control of its business;

(b) Either Party may terminate this Agreement upon the occurrence of a material breach by the other Party, which breach has not been cured within thirty (30) days of written notice of such breach from the non-breaching Party;

(c) The Parties may agree in writing to terminate this Agreement for their mutual convenience at any time and for any reason, subject to such terms and conditions as they may then adopt; and

(d) Either Party may terminate this Agreement at any time, with or without cause, by written notice to the other Party, which shall be effective ninety (90) days after its date.

13.3 Rights and Obligations on Termination. If this Agreement is terminated for any reason, the Parties shall have the following rights and obligations:

(a) Termination of this Agreement shall not release either Party from the obligation to make payments of all amounts then or thereafter due and payable, and shall not release UT from its obligations to provide Product to SPECIALTY PHARMACY at SPECIALTY PHARMACY's request to service its existing patients as of the effective termination date and until such existing patients are transitioned to another specialty pharmacy. SPECIALTY PHARMACY and UT shall use their Commercially Reasonable Efforts to achieve such transition as expeditiously as possible after the effective termination date;

(b) Each Party's respective obligations of confidentiality and record retention under shall survive as provided in such articles; and

(c) Each Party's respective obligations under 'Compliance with Laws,' the indemnification provisions and 'Dispute Resolution,' shall survive termination of this Agreement.

ARTICLE 14: DISPUTE RESOLUTION

14.1 Negotiation. The Parties agree to consult and negotiate in good faith to try to resolve any dispute, controversy or claim that arises out of or relates to this Agreement. No formal dispute resolution shall be used by either Party unless and until senior executive officers of each Party have used Commercially Reasonable Efforts to meet in person to achieve such an amicable resolution.

ARTICLE 15: RECORDS

SPECIALTY PHARMACY shall maintain accurate records as required to meet Applicable Laws. Except as otherwise required by Applicable Laws, SPECIALTY PHARMACY shall provide UT with access to any reasonably requested documentation related solely to this Agreement during reasonable business hours. UT shall give SPECIALTY PHARMACY seven (7) days' prior written notice of such examinations, which will not occur more than once annually, and such examinations shall be undertaken only to such extent necessary to verify that the SPECIALTY PHARMACY has complied with the terms of this Agreement.

ARTICLE 16: GENERAL PROVISIONS

16.1 Entire Agreement. This Agreement constitutes the entire agreement of the Parties with respect to the subject matter hereof and supersedes all the Parties' previous or contemporaneous correspondence, term sheets, understandings, agreements and representations, oral or written between the Parties.

16.2 Assignment. Neither Party shall assign or otherwise transfer its rights or obligations under this Agreement except with the prior written consent of the other Party, which shall not be unreasonably withheld or delayed; *provided, however*, that no such consent shall be required and either Party may transfer all rights and obligations arising hereunder to an entity if it is: (a) an Affiliate; (b) the successor in interest by reason of sale, merger or operation of law; or (c) has acquired all or substantially all of the assets and business. Any unauthorized attempted assignment or delegation shall be null and void and of no force or effect.

16.3 Amendment. Except for provisions, which, by their terms, may be unilaterally modified or updated by one Party, this Agreement may not be modified or amended, in whole or in part, except by a written agreement signed by both Parties, and specifically stating that it modifies or amends this Agreement.

16.4 Severability. If one or more of the provisions of this Agreement is subsequently declared invalid or unenforceable, this Agreement shall be treated as though that provision were not in this Agreement, and this shall not affect the validity or enforceability of the remaining provisions of this Agreement (unless those provisions that are invalidated or unenforceable are clearly material and inseparable from the other provisions). The Agreement as modified shall be applied and construed to reflect substantially the good faith intent of the Parties and to achieve the economic effects originally intended by the terms hereof.

16.5 Notices; Language. Except as may be otherwise provided in this Agreement, any notice, demand or request given, made or required to be made shall be in writing and shall be effective, unless otherwise provided herein, either (a) when delivered in person to the other Party, or (b) on the same business day that it is transmitted by facsimile to the facsimile number (s) set forth below, with electronic confirmation of receipt, if transmitted prior to 5:00 p.m. Eastern Time on such business day, or on the first business day following such transmission if transmitted after 5:00 p.m. Eastern Time or if transmitted on a day other than a business day; provided a hard copy is deposited within one (1) day after such transmissions in the U.S. mail, postage prepaid, and addressed as set forth below for notices by U.S. mail; or (c) on the third business day following its deposit in the U.S. mail, postage and addressed as follows:

If to UT:

United Therapeutics Corporation
[***]
[***]
Attention: [***]
Telefax: [***]

With a copy to:
United Therapeutics Corporation
[***]
[***]

Attention: [***]
Telefax: [***]

If to SPECIALTY PHARMACY:

Express Scripts, Inc.
[***]
[***] Attention: [***]

With a copy to:

Accredo Health Group, Inc.
[***]
[***]
Attn: [***]

16.6 Waiver. Either Party's failure or delay in exercising any remedy for default shall not be deemed a waiver of that or any subsequent defaults of that provision or of any other provision hereof. No

waiver shall be effective unless made in writing with specific reference to the relevant provision(s) of this Agreement and signed by a duly authorized representative of the Party granting the waiver.

16.7 Counterparts. This Agreement shall be executed in two (2) or more counterparts in the English language, each of which shall be deemed an original, which taken together shall constitute one and the same instrument.

18.2. Governing Law. Except as provided by federal law, this Agreement shall be governed by, and interpreted and construed in accordance with, the laws of the State of Delaware excluding any conflict-of-laws rule or principle therein contained under which any other law would be applicable.

16.8 Relationship. This Agreement does not make either Party the employee, agent or legal representative of the other Party for any purpose whatsoever. Neither Party is granted any right or authority to assume or to create any obligation or responsibility, express or implied, on behalf of or in the name of the other Party. In fulfilling its obligations pursuant to this Agreement each Party shall be acting as an independent contractor and shall not be deemed to have formed any partnership, joint venture or other relationship.

16.9 Headings. The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

16.10 Cumulative Remedies. Except as expressly provided in this Agreement, and to the extent permitted by Applicable Laws, any remedies described in this Agreement are cumulative and not alternative to any other remedies available at law or equity.

16.11 Privacy Compliance.

(a) HIPAA Compliance. SPECIALTY PHARMACY shall only provide information to UT in a manner consistent with the Health Insurance Portability and Accountability Act of 1996, as amended, 42 U.S.C. § 1320d, et seq., and the implementing regulations promulgated thereunder (collectively referred to herein as "**HIPAA**"). Accordingly, the Parties agree that SPECIALTY PHARMACY shall only provide UT with information that is de-identified in accordance with HIPAA's de-identification provision, 45 C.F.R. § 164.514(b), unless SPECIALTY PHARMACY: (i) has on file a valid, HIPAA-compliant authorization for each Patient whose protected health information ("**PHI**") is sought to be disclosed, or (ii) authorization is not required under Applicable Laws in order to disclose the PHI. SPECIALTY PHARMACY acknowledges that UT has developed internal policies and mechanisms designed to ensure certain patient- and prescriber- specific information is made available only to certain personnel within the Patient Service Center, and not to other UT employees. UT cannot and will not, and will ensure any of its vendors that receive data from SPECIALTY PHARMACY do not, re-identify any information that is received de-identified from SPECIALTY PHARMACY. If UT seeks PHI from SPECIALTY PHARMACY for UT's public health activities purposes, UT represents and warrants that the disclosure of such PHI by SPECIALTY PHARMACY to UT, either directly to UT or to UT's data collection agent, satisfies the conditions of 45 C.F.R. § 164.512(b) in that: (i) if UT uses a third party to collect data for UT, such third party is serving in the capacity as UT's agent for the purpose of, among other things, collecting data on behalf of UT; (ii) the data to be collected is to be used and/or disclosed by UT, or its data collection agent, solely for public health activities purposes and for no other purpose; (iii) de-identified data (as

described in 45 C.F.R. § 164.514(b)) is not sufficient under the circumstances to enable UT to satisfy its public health activities purposes; and (iv) the data to be collected includes the minimal amount of PHI required in order for UT to conduct its public health activities purposes.

(b) Prescriber Identifiable Data. The Parties acknowledge that prescriber identifiable data ("**PID**") laws currently exist and others may be enacted or amended from time to time. Accordingly, data provided hereunder may need to be modified in order to comply with such PID laws. Consistent therewith, SPECIALTY PHARMACY may de-identify any information required hereunder to the extent necessary to comply with any such PID laws, and SPECIALTY PHARMACY s so doing shall not be deemed a breach of this Agreement so long as the de-identification imposed by SPECIALTY PHARMACY is the minimal amount reasonably needed for compliance. Furthermore, UT agrees that it shall not access, provide access to, use, or otherwise disclose, any data provided or made available by SPECIALTY PHARMACY hereunder if doing so would result in a violation of any PID laws.

16.12 Nothing herein shall be construed to limit SPECIALTY PHARMACY from entering into other agreements with other manufacturers or wholesalers that allow SPECIALTY PHARMACY to dispense products that compete with Products. Notwithstanding the preceding sentence, SPECIALTY PHARMACY warrants and represents that it will not disparage or disadvantage UT or Product.

16.13 Each Party shall promptly notify the other Party upon learning of any activity that appears to improperly or inappropriately portray or affect the other Party, its products or Affiliates.

16.14 The Parties do not intend for this Agreement to benefit any third party and, therefore, there are no third party beneficiaries to this Agreement.

[Signature page follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

UNITED THERAPEUTICS CORPORATION	**ACCREDO HEALTH GROUP, INC.**
By /s/ Kevin Gray	By /s/ Bill Martin
Kevin Gray	Name: Bill Martin
Sr. Vice President, Strategic Operations and Logistics	Title: VP
Date: 12/20/17	Date: 12/18/17

Attachment A

Products

Product Description	NDC Number
Remodulin 1 mg	66302-0101-01
Remodulin 2.5 mg	66302-0102-01
Remodulin 5 mg	66302-0105-01
Remodulin 10 mg	66302-0110-01
Remodulin Diluent*	66302-150-50
Tyvaso Patient Starter Kit (PSK)	66302-206-01
Tyvaso Patient Resupply Kit (RSK)	66302-206-02
Tyvaso Supplemental Refill 4 vial pack	66302-206-03
Tyvaso Institutional Starter Kit (ISK)	66302-206-04
Orenitram 0.125 mg (100 Count Bottle)	66302-300-001
Orenitram 0.25 mg (100 Count Bottle)	66302-302-01
Orenitram 1.0 mg (100 Count Bottle)	66302-310-01
Orenitram 2.5 mg (100 Count Bottle)	66302-325-01
Orenitram 5.0 mg (100 Count Bottle)	66302-350-01
Orenitram 0.125 mg (10 Count Bottle)	66302-300-10
Orenitram 0.25 mg (10 Count Bottle)	66302-302-10
Orenitram 1.0 mg (10 Count Bottle)	66302-310-10
Orenitram 2.5 mg (10 Count Bottle)	66302-325-10
Orenitram 5 mg (10 Count Bottle)	66302-350-10

*Remodulin Diluent will be made available to patients utilizing Remodulin free of charge

Attachment B

Specialty Pharmacy, for purposes of this Agreement, includes each of the locations identified below:

Designated Specialty Pharmacy Locations

Name/Address/Phone/Fax	Name/Address/Phone/Fax	Name/Address/Phone/Fax
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
BioPartners in Care, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	AHG of New York, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	
Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]	Accredo Health Group, Inc. [***]
Accredo Health Group, Inc. [***]	Lynnfield Drug, Inc. [***]	Lynnfield Compounding Center, Inc. dba Freedom FP Fertility Pharmacy [***]

Attachment C-1

Product Specific Network Requirements — Remodulin

1.0 ***Defined Terms.***

*1.1 "**Diluent**" shall mean Remodulin Diluent NDC 66302-150-50, available in 50mL vials and provided as part of any dispensing of UT Product for intravenous use. Diluent is designed solely for use with and as part of UT Product and does not have any independent value.*

*1.2 "**UT Product**" or "**Product**" shall mean Remodulin® (treprostinil) Injection, a pharmaceutical product administered subcutaneously and intravenously only for the treatment of PAH to be marketed in the Territory under the brand name REMODULIN®. In addition, Diluent is considered part of "UT Product" or "Product" when dispensed for intravenous use.*

2.0 ***Diluent Dispensing Activities.***

2.1 *Diluent Dispensing*. The Parties agree to make available and/or dispense Diluent as part of shipments of UT Product for intravenous use as set forth below.

(i) SPECIALTY PHARMACY will maintain adequate inventory of Diluent as mutually considered by the Parties to be sufficient to meet Customers' anticipated demands in conjunction with the intravenous use of UT Product, as set forth in Section 4.7.

SPECIALTY PHARMACY will dispense and/or make available Diluent on as necessary and appropriate for the applicable site of service. SPECIALTY PHARMACY acknowledges and agrees that Diluent is being provided solely for use as part of UT Product and will notify Customers at the time of dispensing that Diluent is being provided solely as part of UT Product for Intravenous use, and not for any other use. Further, neither SPECIALTY PHARMACY nor Customer shall charge or seek reimbursement from patients, Customers or any other parties for any Diluent provided.

Attachment C-2

Product Specific Network Requirements - Orenitram

Orenitram Referrals are centralized through the Patient Service Center and therefore, the SPECIALTY PHARMACY activities and the PSC activities shall be as described below:

The PSC shall perform the following activities in order to manage the initial intake and processing of a Patient Referral:

1. Notify the Prescriber or Prescriber's designee immediately of the receipt of a Prescription for the Product from a Patient Referral.

2. Conduct an Introduction call with the Patient and/or Patient Representative to describe next steps.

3. During the Introduction call, verify Patient Information included on the Referral Form, with the Patient and verify/secure accurate and detailed Third-Party Payer information.

4. Determine any financial assistance needs and/or need to explore alternate coverage options.

Subsequently, the PSC shall take all reasonable and necessary actions within the scope of what is available to UT, to obtain accurate Third-Party Payer information and anticipated insurance coverage for the UT Product including, without limitation, researching and attempting to determine:

1. Coverage parameters, including all relevant clinical documentation required by the Payer.

2. If UT Product is covered, Plan Name(s), Plan Address or Location, Contact Information, Plan Type(s), Subscriber #(s), Group # (s), under what benefit (e.g. a "medical plan" or "pharmacy plan").

3. The anticipated/Patient's Financial Responsibility and initiate the referral of the Patient to the appropriate Financial Assistance Program if the patient expresses an inability to pay. The PSC shall coordinate Financial Assistance Programs and Alternate Coverage education in collaboration with SPECIALTY PHARMACY.

4. Whether a Prior Authorization is required for reimbursement and which Plan benefit provides review (e.g. pharmacy or medical).

5. If Prior Authorization is required, what information, forms and supporting documentation the Prescriber or SPECIALTY PHARMACY must submit in order to receive such authorization and all relevant contact information for the appropriate Specialty Pharmacy based on Third-Party Payer/Specialty Pharmacy Contracting and Preferred Pharmacy status and secondarily as per Prescriber's preference.

After the Initial Intake process as described above has been completed, the PSC shall notify the Prescriber in a time and manner sufficient for the circumstances and preferences of the Prescriber the following:

(1) Of any missing/incomplete items on the Referral Form or missing/incomplete documents (to the extent known after a preliminary, non-clinical review conducted by the PSC). The PSC shall advise the Prescriber of expected delays due to missing or incomplete information.

(2) Of the Patient's anticipated Financial Assistance Program eligibility information.

(3) The designated Specialty Pharmacy, Name, Contact Information and Triage Date/Time.

(4) The expectations related to Specialty Pharmacy follow-up.

The PSC shall record the results of its research on the foregoing and shall enter all such information in the PSC database. Subsequently, the PSC shall prepare and submit the Patient Referral, Clinical Documentation, any supporting data, Third-Party Payer information obtained from the Patient/Patient Representative **and** any applicable Financial Assistance Program information to SPECIALTY PHARMACY, via the established automated secure data and document transmission protocol.

Subject to compliance with Section 16.11 of the Agreement, the PSC shall receive daily files from SPECIALTY PHARMACY with accurate Status updates, Change Details, any applicable compliance program data, and details on Insurance Issues with Third-Party Payers. This Third-Party Payer information shall include coverage criteria

information, formulary additions and updates, any Payer exception processes, and updated Specialty Pharmacy/Payer Contracting Status. The PSC will communicate this information to the UT Managed Markets Team and make any necessary updates to the UT Payer Database.

The PSC will facilitate processing of all Referrals and troubleshoot delays until the Patient's first shipment is sent. The PSC shall communicate information to the appropriate stakeholders, including Patients, Prescribers, Financial Assistance Program Partners and to UT Managed Markets Team during the time the Patient Referral is Pending. The PSC shall coordinate with SPECIALTY PHARMACY as necessary to avoid duplication of communication efforts while ensuring timely delivery of accurate information.

The PSC dedicated single point of contact will communicate regularly, but not less than weekly, both through file sharing and telephonically with SPECIALTY PHARMACY's designated contact with access to Patient records.

SPECIALTY PHARMACY **shall:**

1. Agree to utilize the UT Referral Form format for Patient Referral collection purposes at all times, provided SPECIALTY PHARMACY's review and approval.

2. Accept Patient Referrals solely from the Patient Service Center.

3. Forward to the Patient Service Center complete information on any Patient Referrals received directly from Customer, and notify Patient's Prescriber of such transfer. This does not include Refill Prescriptions, except in the event of a Change in Details involving the Patient demographic or Prescriber Information.

4. Notify the PSC of any Change of Details involving Patient Information (e.g. demographics, Patient Representative, etc.) or Prescriber Information at any time after the initial shipment via the established data exchange and reporting protocol.

5. Use the unique identification number assigned by the Patient Service Center in all communications and reports containing Customer/ Patient information.

6. Notify the PSC, no more than one (1) business day from receipt of Patient Referral Packet; via established data exchange/reporting protocol, of receipt of the Prescription/Patient Enrollment Packet received from the Patient Service Center.

7. Identify and expedite any Patient Referrals marked "Urgent".

SPECIALTY PHARMACY shall, *subject to compliance with Section 16.11 of the Agreement,* ***take all necessary actions to obtain and verify accurate Third-Party Payer information, insurance coverage, reimbursement criteria, and patient share of cost for the UT Product. These activities include, but are not limited to the following:***

1. Conduct an independent validation of the Patient Information and Prescriber Information provided by the Patient Service Center during intake/reimbursement and dispensing process. SPECIALTY PHARMACY shall notify the PSC of any data discrepancy or changes through the established Change Details data exchange/reporting protocol.

2. Conduct an independent insurance coverage and benefit verification no more than two (2) business days from receipt of Patient Referral. If, after conducting an independent validation/verification of the data and/or documents submitted to them by the PSC, specific to Payer information, SPECIALTY PHARMACY identifies erroneous details as provided by the PSC, SPECIALTY PHARMACY will notify the PSC of the corrected information through the established Change Details data exchange/reporting protocol.

3. Verify coverage for the UT Product, Plan Name(s), Plan Address or Location, Contact Information, Plan Type(s), Subscriber #(s), Group # (s), under what benefit (e.g. a "medical plan" or "pharmacy plan").

4. Determine if Prior Authorization is required, what information, forms and supporting documentation the Prescriber or SPECIALTY PHARMACY must submit in order to receive such authorization and all relevant contact information for same. SPECIALTY PHARMACY shall **notify the Prescriber** of the details of the requirement, within one (1) business day of learning about such requirement and provide the Prescriber with any necessary forms or documents.

5. Determine what other activities, submissions or approvals are required to obtain reimbursement promptly and to the fullest extent permitted by the Third-Party Payer.

6. Conduct a review of the submitted clinical documentation and **notify the Prescriber** of any additional clinical or supporting documentation necessary to fulfill the prior authorization/re-authorization and/or appeal requirements.

7. In the event, a Third-Party Payer informs SPECIALTY PHARMACY that the UT Product is not eligible for coverage, then within (1) business day of receipt of such information, SPECIALTY PHARMACY shall make such inquiries of the Third-Party Payer as shall be necessary to determine the requirements for submission of an appeal of the denial of coverage, including any requirements for exception requests. ACCREDO shall notify the Prescriber, and the Patient Service Center immediately of such determination. The Prescriber and if necessary, the **Patient**, at his or her option, may elect to pursue the Appeal. SPECIALTY PHARMACY shall provide reasonable assistance to the Prescriber and/or Patient, including assistance with preparing applications and participation in telephone conferences and meetings with representatives of the Third-Party Payer. SPECIALTY PHARMACY shall provide reasonable assistance at the request of the Prescriber and/or Patient, until **all levels of** appeal options are exhausted. Notwithstanding the foregoing, in no event shall SPECIALTY PHARMACY prepare or complete appeals forms, or draft or ghostwrite letters (*e.g.,* letters of medical necessity) on behalf of any physician or other referral source, nor shall SPECIALTY PHARMACY pursue any Appeal in connection with an off-label use of the Product or otherwise include off-label information in connection with any appeal.

8. If SPECIALTY PHARMACY is unable to service a Patient, SPECIALTY PHARMACY shall immediately (no more than two (2) business days from receipt of referral or final appeal determination) return the Patient Referral to the PSC.

9. Coordinate with providers of financial assistance programs to accept Secondary Billing reimbursements for those Patients identified either by the PSC or by SPECIALTY PHARMACY as needing financial assistance.

10. Conduct on-going reviews of all Patient's Third-Party Payer situation(s) and identify any Patient's stated need for a financial assistance program, including Alternate Coverage counseling, and refer Patient's appropriately and timely to ensure no interruption in service. SPECIALTY PHARMACY shall utilize available internal and UT provided assistance programs for Patients that qualify.

After the reimbursement clearance process as described above has been completed, SPECIALTY PHARMACY shall notify the Prescriber in a time and manner sufficient for the circumstances and preferences of the Prescriber of the following:

1. send a letter to the Prescriber after the Product ships.

2. coordinate as necessary to avoid duplication of communication efforts while ensuring timely delivery of accurate information.

SPECIALTY PHARMACY shall record the results of its research and activities on the foregoing and shall enter all such information in the database and transmit, via the established automated secure data exchange/transmission protocol, the data specs to the Patient Service Center.

SPECIALTY PHARMACY shall, *subject to compliance with Section16.11 of the Agreement,* ***take all necessary actions to validate, verify and relay accurate and timely data to the Patient Service Center. These activities include, but are not limited to the following:***

1. Communicate with and provide information to the Prescriber and Patient in a time and manner sufficient for the circumstances and preferences of the Prescriber and Patient. In addition, coordinate with Patient Service Center as necessary to avoid duplicate telephone calls/communications to the Prescriber and Patient.

2. Communicate details to the PSC of the Status of Pending Referrals daily via the established data exchange and reporting protocol.

3. Communicate Change Details to the PSC daily via the established data exchange and reporting protocol.

4. Communicate to the PSC any applicable compliance program data via the established data exchange and reporting protocol.

5. Provide, upon execution of this agreement and updated monthly for the term on this agreement a comprehensive listing of all contracted Third-Party Payers and the Preferred Status of same.

6. Communicate details to the PSC on Insurance Issues with Third-Party Payers including but not limited to coverage criteria information, formulary additions and updates, Payer exception processes, updates and/or changes in Payer Medical or Coverage polices, etc.

7. Coordinate Start of Care and Shipments with Patients and notify PSC of dates of same via the established data exchange and reporting protocol.

8. Notify the PSC of any Patient or Prescriber that is unreachable.

9. Provide a designated point of contact with access to Patient records to attend calls at least weekly with the Patient Service Center in the time and manner reasonably required by UT.

Attachment D

Timelines for delivery of reports from SPECIALTY PHARMACY to UT (Post Marketing)

Type of Report	Timeline from Specialty Pharmacy to UT Following Day 0*	Format	Means of Delivery**
AEs/ADRs/Special Reporting Situations/Safety Information (including follow-up report or information to previously submitted reports & reports that have minimal safety data)	As soon as possible but no later than 3*days	Source Data in English**	Secure E-Mail, FAX as set forth below
Product Complaints	As soon as possible but no later than 3*days	Source Data in English**	Secure E-Mail, FAX as set forth below

* Timelines for delivery are presented in Calendar Days unless otherwise noted.
*UT-GDS team is open to discuss format of the data & not create any burden on SPECIALITY PHARMACY staffs supporting UT project and be able to receive full patient data to UT GDS team to perform necessary medical assessment of the report & reduce # of follow-ups.

United Therapeutics Corp

AE/PC Reporting/Training Contact
[***]
Telephone: [***]
E-mail: [***]

PV Vendor Audits/Compliance & Oversight Contact
[***]
Telephone: [***]
E-mail: [***]

Drug Safety Common Mailbox and Fax

[***] (primary submission method)
Fax: [***] (back-up submission method)

SPECIALTY PHARMACY

Pharmacovigilance Contact or designee
[***]
Telephone: [***]
E-mail: [***]

and
[***]
Telephone: [***]
E-mail: [***]

Safety and General Correspondence
[***]
Telephone: [***]
E-mail: [***]

REMODULIN®
(treprostinil sodium) Injection

Remodulin® Monthly Utilization Report

This completed Summary Report and all supporting documentation is due to United Therapeutics Corp. no later than the **10th of each month**.

Distributor Name: **ACCREDO**

For Month Ending: (*specify MM/YY*)

Report Date: (specify mm/dd/yy)

For Calendar Year:

Section I: Vial Utilization Data (running totals) & Ordering Patients/Month

Remodulin Vial Sizes

Month	1.0 mg	2.5 mg	5.0 mg	10.0 mg	Diluent 50 ml	Compound 1mg
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
2017-2018 Totals	0	0	0	0	0	0

* Includes patient and hospital who received Remodulin including those with multiple strength orders during the reporting period

Active Patient Census Values:	S.C.	I.V.:	PAP S.C.	PAP I.V.	TOTAL
Start of Reporting Period					
End of Reporting Period					

Gain/Loss

Comments:

Section II: Commercial Inventory On Hand Summary

Remodulin Vial Sizes	1.0 mg	2.5 mg	5.0 mg	10.0 mg	Diluent 50 ml	Compound 1mg
Inventory Count (First of Month):						
Estimated 15 days usage:						
Estimated Inventory Count (Order Receipt Date):						
3 Month Avg of Total Vials Shipped/Month:						
Inventory Days On Hand:						
Expected Purchase Order Request						
Adjusted Inventory Qty (Est. Inventory + new PO):						
Adjusted Inventory Days On Hand:						

Revision Date: March 31, 2006

Section III: Patient Assistance Program (PAP) • Patients & Inventory Summary

Active PAP Patient Census

Start of Reporting Period:	S.C.:	0		0	0
End of Reporting Period:	S.C.:	0		0	0
Gain/Loss	S.C.:	0	I.V.:	0	0

Consigned PAP Remodulin Vial Sizes

	1.0 mg	2.5 mg	5.0 mg	10.0 mg	Diluent 50 ml	Compound 1mg
PAP Inventory Count (end of Reporting Period):						
3 Month Avg of Total PAP Vials Shipped/Month:						
Projected PAP Inventory Days On Hand:						
PAP Consignment PO Request (if applicable)						
Adjusted PAP Inventory Qty (Invent count + new PO):						
Adjusted PAP Inventory Days On Hand:						

MiniMed 407c® Pumps

MiniMed Supplies ONLY:

Item Name: (enter)	Item Number:	Qty Requested:
Sof-Set Sub Cut Adm Set		
Sof-Serter Inf Set Insertion Sys		
MiniMed Syringe/Reservoir		
MiniMed Shower Pack		
Opsite IV Prep		
Alcohol Prep Pads		
IV Prep Antiseptic Wipe		
Batteries Remodulin		
Tape		

Regarding Patient Assistance Program (PAP):

United Therapeutics Corporation will provide Remodulin Vials as consigned inventory for the sole purposes of managing approved Remodulin PAP patients (i.v. or s.c. administration routes) enrolled on your specialty pharmacy service. You are responsible for tracking this inventory and insuring it is only used for Remodulin PAP patients. You will be required to pay the current transfer price per Remodulin vial in the event any consigned inventory discrepancies occur that cannot be properly validated. In addition, United Therapeutics Corporation will replace the supplies listed above to support subcutaneous (s.c.) therapy only. Additional supplies needed to support patient care regardless of administration route will be the responsibility of the Remodulin Specialty Pharmacy Services Distributor and not United Therapeutics Corporation. Commercial and Consignment Remodulin Purchase Orders (PO's) requests listed in Sections II and III are informational and are not replacements for actual PO's. All PO's for Remodulin should be listed in quantities of 10.

Electronic Copies to: United Therapeutics:

TYVASO® Monthly Utilization Report

This completed Summary Report and all supporting documentation is due to United Therapeutics Corp. no later than the 10th of each month.

Distributor Name: ACCREDO

For Month Ending: (*specify MM/YY*)

Report Date: (specify mm/dd/yy)

For Calendar Year:

Section I: Utilization Data (running totals) & Ordering Patients/Month

	Tyvaso Package Size			
Month	Starter Kit TD100	Re-supply Kit	4Ct package	Re-supply Kit-TD100
Jan-17				
Feb-17				
Mar-17				
Apr-17				
May-17				
Jun-17				
Jul-17				
Aug-17				
Sep-17				
Oct-17				
Nov-17				
Dec-17				
2017-2018 Totals	0	0	0	0

Section II Active Patient Census Values:

	Commercial	Pap	Total
Start of Reporting Period			
End of Reporting Period			
Gain/Loss			

Comments:

Section III: Commercial Inventory On Hand Summary

	Starter Kit	Re-Supply Kit	4 CT Package	Re-supply Kit-TD100
Inventory Count (First of Month):				
Estimated 15 days usage:				
Estimated Inventory Count (Order Receipt Date):				
3 Month Avg of Total Tyvase Shipped/Month:				
Inventory Days On Hand:				
Expected Purchase Order Request				
Adjusted Inventory Qty (Est. Inventory + new PO):				

Adjusted Inventory Days On Hand:	

Section IV: Patient Assistance Program (PAP) • Patients & Inventory Summary

Active PAP Patient Census

Start of Reporting Period:	0
End of Reporting Period:	0
Gain/Loss	0

Secvtion V:Tyvaso PAP Inventory

	Starter Kit	Re-Supply Kit	4CT Package	Re-supply Kit-TD100
PAP Inventory Count (end of Reporting Period):				
3 Month Avg of Total PAP Vials Shipped/Month:				
Projected PAP Inventory Days On Hand:				
PAP PO Request (if applicable)				
Adjusted PAP Inventory Qty (Invent count + new PO):				
Adjusted PAP Inventory Days On Hand:				

Electronic Copies to: United Therapeutics:

Orenitram
(treprostinil) extended-release tablets

This completed Summary Report and all supporting documentation is due to United Therapeutics Corp. no later than the **10th of each month**

Orenitram Monthly Utilization Report

Distributor Name: Accredo

For Month Ending: (*specify MM/YY*)

Report Date: (specify mm/dd/yy)

For Calendar Year:

Section I: Vial Utilization Data (running totals) & Ordering Patients/Month

Month	Orenitram Strengths - Total Number of Tablets Shipped 0.125 mg	0.25 mg	1 mg	2.5 mg	5 mg	Orenitram Orders*
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
2017-2018 Totals	0	0	0	0	0	0

Active Patient Census Values:

Start of Reporting Period	
End of Reporting Period	
Gain/Loss	0

Comments:

Section II: Commercial Inventory On Hand Summary

Orenitram Strengths	0.125 mg	0.25 mg	1 mg	2.5 mg	5 mg
Inventory Count (end of Reporting Period):					
Estimated 15 days usage:					
Estimated Inventory Count (Order Receipt Date):					
3 Month Avg of Total Tablets Shipped/Month:					
Inventory Days On Hand:					
Expected Purchase Order Total # of Tablets					
Adjusted Inventory Qty (Est. Inventory + new PO):					
Adjusted Inventory Days On Hand:	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total Number of Bottles on the expected PO	0	0	0	0	0

Section III:Continued Access Program (CAP) • Patients & Inventory Summary

Consigned CAP Orenitram Tablets	0.125 mg	0.25 mg	1 mg	2.5 mg	5 mg
CAP Inventory Count (end of Reporting Period):					
3 Month Avg of Total CAP Tablets Shipped/Month:					
Projected CAP Inventory Days On Hand:					

CAP Consignment PO Request (if applicable)					

Adjusted CAP Inventory Qty (Invent count + new PO):
Adjusted CAP Inventory Days On Hand:

Exhibit 21

SUBSIDIARIES OF THE REGISTRANT

Lung Bioengineering Inc., a Delaware corporation

Lung Biotechnology Hong Kong Limited, a Hong Kong company

Lung Biotechnology PBC, a Delaware public benefit corporation

Revivicor, Inc., a Delaware corporation

United Therapeutics Europe, Ltd., a company incorporated under the laws of England and Wales

Unither Biotech Inc., a Canadian corporation

Unither Bioelectronics, Inc., a Canadian corporation

Unither Pharma, LLC, a Delaware limited liability company

Unither Pharmaceuticals, LLC, a Delaware limited liability company

Unither Telmed, Ltd., a Delaware corporation

Unither Therapeutik GmbH, a German company

Unither.com, Inc., a Delaware corporation

UTASIA Inc., a Delaware corporation

1109 Spring Managing Holdings, LLC, a Delaware limited liability company

1109 Spring Managing Member, LLC, a Delaware limited liability company

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-108169) pertaining to Employee Options and Consultant Options Granted Outside the United Therapeutics Corporation's Equity Incentive Plan,

(2) Registration Statement (Form S-8 No. 333-56922) pertaining to Employee Options and Consultant Options Granted Outside the United Therapeutics Corporation's Equity Incentive Plan,

(3) Registration Statement (Form S-8 No. 333-95419) pertaining to the United Therapeutics Corporation's Equity Incentive Plan,

(4) Registration Statement (Form S-8 No. 333-153695) pertaining to the United Therapeutics Corporation Share Tracking Awards Plan,

(5) Registration Statement (Form S-8 No. 333-173858) pertaining to the United Therapeutics Corporation 2011 Share Tracking Awards Plan,

(6) Registration Statement (Form S-4 No. 333-173857) pertaining United Therapeutics Corporation common stock,

(7) Registration Statement (Form S-8 No. 333-179746) pertaining to the United Therapeutics Corporation 2011 Share Tracking Awards Plan,

(8) Registration Statement (Form S-8 No. 333-182851) pertaining to the United Therapeutics Corporation Employee Stock Purchase Plan,

(9) Registration Statement (Form S-8 No. 333-188241) pertaining to the United Therapeutics Corporation 2011 Share Tracking Awards Plan,

(10) Registration Statement (Form S-8 No. 333-197685) pertaining to the United Therapeutics Corporation 2011 Share Tracking Awards Plan, and

(11) Registration Statement (Form S-8 No. 333-205309) pertaining to the United Therapeutics Corporation 2015 Stock Incentive Plan.

of our reports dated February 21, 2018, with respect to the consolidated financial statements and schedule of United Therapeutics Corporation and the effectiveness of United Therapeutics Corporation's internal control over financial reporting, included in this Annual Report (Form 10-K) for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Tysons, Virginia
February 21, 2018

Exhibit 31.1

CERTIFICATION PURSUANT TO RULE 13a-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934

I, Martine A. Rothblatt, certify that:

1. I have reviewed this annual report on Form 10-K of United Therapeutics Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2018

/s/ MARTINE A. ROTHBLATT
By: Martine A. Rothblatt, Ph.D.
Chairman and Chief Executive Officer
Title: *(Principal Executive Officer)*

Exhibit 31.2

CERTIFICATION PURSUANT TO RULE 13a-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934

I, James C. Edgemond, certify that:

1. I have reviewed this annual report on Form 10-K of United Therapeutics Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2018

/s/ JAMES C. EDGEMOND
By: James C. Edgemond
Chief Financial Officer and Treasurer
Title: *(Principal Financial Officer)*

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the annual report of United Therapeutics Corporation (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission (the "Report"), I, Martine A. Rothblatt, Chairman and Chief Executive Officer of the Company, certify, to the best of my knowledge, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ MARTINE A. ROTHBLATT
Martine A. Rothblatt
Chairman and Chief Executive Officer
(Principal Executive Officer)
United Therapeutics Corporation
February 21, 2018

THE FOREGOING CERTIFICATION IS BEING FURNISHED SOLELY PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002 AND IS NOT BEING FILED AS PART OF THE FORM 10-K OR AS A SEPARATE DISCLOSURE DOCUMENT.

A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906, OR OTHER DOCUMENT AUTHENTICATING, ACKNOWLEDGING, OR OTHERWISE ADOPTING THE SIGNATURE THAT APPEARS IN TYPED FORM WITHIN THE ELECTRONIC VERSION OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906, HAS BEEN PROVIDED TO UNITED THERAPEUTICS CORPORATION AND WILL BE RETAINED BY UNITED THERAPEUTICS CORPORATION AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the annual report of United Therapeutics Corporation (the "Company") on Form 10-K for the period ended December 31, 2017 as filed with the Securities and Exchange Commission (the "Report"), I, James C. Edgemond, Chief Financial Officer and Treasurer of the Company, certify, to the best of my knowledge, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ JAMES C. EDGEMOND
James C. Edgemond
Chief Financial Officer and Treasurer
(Principal Financial Officer)
United Therapeutics Corporation
February 21, 2018

THE FOREGOING CERTIFICATION IS BEING FURNISHED SOLELY PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002 AND IS NOT BEING FILED AS PART OF THE FORM 10-K OR AS A SEPARATE DISCLOSURE DOCUMENT.

A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906, OR OTHER DOCUMENT AUTHENTICATING, ACKNOWLEDGING, OR OTHERWISE ADOPTING THE SIGNATURE THAT APPEARS IN TYPED FORM WITHIN THE ELECTRONIC VERSION OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906, HAS BEEN PROVIDED TO UNITED THERAPEUTICS CORPORATION AND WILL BE RETAINED BY UNITED THERAPEUTICS CORPORATION AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.