UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

x **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
FOR THE QUARTERLY PERIOD ENDED MARCH 31, 2019

or

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
FOR THE TRANSITION PERIOD FROM TO

Commission File Number: 001-36326

ENDO INTERNATIONAL PLC
(Exact name of registrant as specified in its charter)

Ireland	**68-0683755**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
First Floor, Minerva House, Simmonscourt Road, Ballsbridge, Dublin 4, Ireland	**Not Applicable**
(Address of principal executive offices)	(Zip Code)

011-353-1-268-2000
(Registrant's telephone number, including area code)

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

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

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

Large accelerated filer	☑	Accelerated filer	o
Non-accelerated filer	o	Smaller reporting company	o
		Emerging growth company	o

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

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

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading symbol(s)**	**Name of each exchange on which registered**
Ordinary shares, nominal value $0.0001 per share	ENDP	The NASDAQ Global Market

Indicate the number of shares outstanding of each of the issuer's classes of ordinary shares, as of the latest practicable date.

Ordinary shares, $0.0001 par value	Number of ordinary shares outstanding as of May 2, 2019: 226,181,657

ENDO INTERNATIONAL PLC

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FORWARD-LOOKING STATEMENTS

Statements contained or incorporated by reference in this document contain information that includes or is based on "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (Securities Act) and Section 21E of the Securities Exchange Act of 1934, as amended (Exchange Act). These statements, including estimates of future revenues, future expenses, future net income and future net income per share contained in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this document, are subject to risks and uncertainties. Forward-looking statements include the information concerning our possible or assumed results of operations. We have tried, whenever possible, to identify such statements by words such as "believe," "expect," "anticipate," "intend," "estimate," "plan," "project," "forecast," "will," "may" or similar expressions. We have based these forward-looking statements on our current expectations and projections about the growth of our business, our financial performance and the development of our industry. Because these statements reflect our current views concerning future events, these forward-looking statements involve risks and uncertainties. Investors should note that many factors, as more fully described under the caption "Risk Factors" in Part II, Item 1A of this document and in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2018 filed with the Securities and Exchange Commission (SEC) on February 28, 2019 (the Annual Report), and as otherwise enumerated herein, could affect our future financial results and could cause our actual results to differ materially from those expressed in forward-looking statements contained or incorporated by reference in this document.

We do not undertake any obligation to update our forward-looking statements after the date of this document for any reason, even if new information becomes available or other events occur in the future, except as may be required under applicable securities law. You are advised to consult any further disclosures we make on related subjects in our reports filed with the SEC and with securities regulators in Canada on the System for Electronic Document Analysis and Retrieval (SEDAR). Also note that, in Part II, Item 1A of this document and in Part I, Item 1A of the Annual Report, and as otherwise enumerated herein, we provide a cautionary discussion of the risks, uncertainties and possibly inaccurate assumptions relevant to our business. These are factors that, individually or in the aggregate, we think could cause our actual results to differ materially from expected and historical results. We note these factors for investors as permitted by Section 27A of the Securities Act and Section 21E of the Exchange Act. You should understand that it is not possible to predict or identify all such factors. Consequently, you should not consider this to be a complete discussion of all potential risks or uncertainties.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

ENDO INTERNATIONAL PLC
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)
(Dollars in thousands, except share and per share data)

	March 31, 2019	December 31, 2018
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 981,739	$ 1,149,113
Restricted cash and cash equivalents	332,547	305,368
Accounts receivable, net	487,974	470,570
Inventories, net	331,391	322,179
Prepaid expenses and other current assets	104,899	56,139
Income taxes receivable	33,583	39,781
Total current assets	$ 2,272,133	$ 2,343,150
MARKETABLE SECURITIES	969	738
PROPERTY, PLANT AND EQUIPMENT, NET	494,429	498,892
OPERATING LEASE ASSETS	57,771	—
GOODWILL	3,679,801	3,764,636
OTHER INTANGIBLES, NET	3,235,594	3,457,306
DEFERRED INCOME TAXES	—	678
OTHER ASSETS	62,627	66,993
TOTAL ASSETS	$ 9,803,324	$ 10,132,393
LIABILITIES AND SHAREHOLDERS' DEFICIT		
CURRENT LIABILITIES:		
Accounts payable and accrued expenses	$ 840,830	$ 1,009,200
Current portion of legal settlement accrual	861,325	905,085
Current portion of operating lease liabilities	12,051	—
Current portion of long-term debt	35,940	34,150
Income taxes payable	1,142	1,661
Total current liabilities	$ 1,751,288	$ 1,950,096
DEFERRED INCOME TAXES	33,581	34,487
LONG-TERM DEBT, LESS CURRENT PORTION, NET	8,075,337	8,224,269
OPERATING LEASE LIABILITIES, LESS CURRENT PORTION	54,258	—
OTHER LIABILITIES	383,310	421,824
COMMITMENTS AND CONTINGENCIES (NOTE 13)		
SHAREHOLDERS' DEFICIT:		
Euro deferred shares, $0.01 par value; 4,000,000 shares authorized and issued at both March 31, 2019 and December 31, 2018	45	46
Ordinary shares, $0.0001 par value; 1,000,000,000 shares authorized; 224,864,678 and 224,382,791 shares issued and outstanding at March 31, 2019 and December 31, 2018, respectively	22	22
Additional paid-in capital	8,878,133	8,855,810
Accumulated deficit	(9,148,151)	(9,124,932)
Accumulated other comprehensive loss	(224,499)	(229,229)
Total shareholders' deficit	$ (494,450)	$ (498,283)
TOTAL LIABILITIES AND SHAREHOLDERS' DEFICIT	$ 9,803,324	$ 10,132,393

See accompanying Notes to Condensed Consolidated Financial Statements.

ENDO INTERNATIONAL PLC
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (UNAUDITED)
(Dollars in thousands, except per share data)

	Three Months Ended March 31,	
	2019	2018
TOTAL REVENUES, NET	$ 720,411	$ 700,527
COSTS AND EXPENSES:		
Cost of revenues	391,909	403,598
Selling, general and administrative	151,123	166,667
Research and development	33,486	38,646
Litigation-related and other contingencies, net	6	(2,500)
Asset impairment charges	165,448	448,416
Acquisition-related and integration items	(37,501)	6,835
Interest expense, net	132,675	123,990
Gain on extinguishment of debt	(119,828)	—
Other expense (income), net	4,802	(2,878)
LOSS FROM CONTINUING OPERATIONS BEFORE INCOME TAX	$ (1,709)	$ (482,247)
INCOME TAX EXPENSE	10,903	15,491
LOSS FROM CONTINUING OPERATIONS	$ (12,612)	$ (497,738)
DISCONTINUED OPERATIONS, NET OF TAX (NOTE 3)	(5,961)	(7,751)
NET LOSS	$ (18,573)	$ (505,489)
NET LOSS PER SHARE—BASIC:		
Continuing operations	$ (0.06)	$ (2.23)
Discontinued operations	(0.02)	(0.03)
Basic	$ (0.08)	$ (2.26)
NET LOSS PER SHARE—DILUTED:		
Continuing operations	$ (0.06)	$ (2.23)
Discontinued operations	(0.02)	(0.03)
Diluted	$ (0.08)	$ (2.26)
WEIGHTED AVERAGE SHARES:		
Basic	224,594	223,521
Diluted	224,594	223,521

See accompanying Notes to Condensed Consolidated Financial Statements.

ENDO INTERNATIONAL PLC
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS (UNAUDITED)
(Dollars in thousands)

	Three Months Ended March 31,	
	2019	2018
NET LOSS	$ (18,573)	$ (505,489)
OTHER COMPREHENSIVE INCOME (LOSS):		
Net unrealized gain (loss) on foreign currency:		
Foreign currency translation gain (loss) arising during the period	$ 4,730	$ (5,797)
Less: reclassification adjustments for (gain) loss realized in net loss	—	4,730	—	(5,797)
OTHER COMPREHENSIVE INCOME (LOSS)	$ 4,730	$ (5,797)
COMPREHENSIVE LOSS	$ (13,843)	$ (511,286)

See accompanying Notes to Condensed Consolidated Financial Statements.

ENDO INTERNATIONAL PLC
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)
(Dollars in thousands)

	Three Months Ended March 31,	
	2019	**2018**
OPERATING ACTIVITIES:		
Net loss	$ (18,573)	$ (505,489)
Adjustments to reconcile Net loss to Net cash (used in) provided by operating activities:		
Depreciation and amortization	162,733	191,590
Inventory step-up	—	66
Share-based compensation	24,733	17,890
Amortization of debt issuance costs and discount	5,586	5,025
Deferred income taxes	(785)	11,615
Change in fair value of contingent consideration	(37,501)	6,835
Gain on extinguishment of debt	(119,828)	—
Asset impairment charges	165,448	448,416
Loss (gain) on sale of business and other assets	1,294	(2,416)
Changes in assets and liabilities which (used) provided cash:		
Accounts receivable	(14,389)	39,710
Inventories	(11,928)	4,791
Prepaid and other assets	5,059	15,668
Accounts payable, accrued expenses and other liabilities	(258,202)	(187,426)
Income taxes payable/receivable	5,770	2,571
Net cash (used in) provided by operating activities	$ (90,583)	$ 48,846
INVESTING ACTIVITIES:		
Purchases of property, plant and equipment, excluding capitalized interest	(15,386)	(24,874)
Capitalized interest payments	(1,094)	(751)
Proceeds from sale of business and other assets, net	103	13,350
Other investing activities	—	(3,322)
Net cash used in investing activities	$ (16,377)	$ (15,597)

	Three Months Ended March 31,	
	2019	2018
FINANCING ACTIVITIES:		
Proceeds from issuance of notes, net	1,483,125	—
Repayments of notes	(1,499,998)	—
Repayments of term loans	(8,538)	(8,538)
Repayments of other indebtedness	(1,174)	(1,283)
Payments of deferred financing fees	(211)	—
Payments for contingent consideration	(4,565)	(11,947)
Payments of tax withholding for restricted shares	(2,414)	(1,642)
Proceeds from exercise of options	4	—
Net cash used in financing activities	$ (33,771)	$ (23,410)
Effect of foreign exchange rate	537	(627)
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS, RESTRICTED CASH AND RESTRICTED CASH EQUIVALENTS	$ (140,194)	$ 9,212
CASH, CASH EQUIVALENTS, RESTRICTED CASH AND RESTRICTED CASH EQUIVALENTS, BEGINNING OF PERIOD	1,476,837	1,311,014
CASH, CASH EQUIVALENTS, RESTRICTED CASH AND RESTRICTED CASH EQUIVALENTS, END OF PERIOD	$ 1,336,643	$ 1,320,226
SUPPLEMENTAL INFORMATION:		
Cash paid into Qualified Settlement Funds for mesh legal settlements	$ 81,582	$ 66,108
Cash paid out of Qualified Settlement Funds for mesh legal settlements	$ 54,984	$ 50,636
Other cash distributions for mesh legal settlements	$ 10,239	$ 4,547

See accompanying Notes to Condensed Consolidated Financial Statements.

ENDO INTERNATIONAL PLC
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE MONTHS ENDED MARCH 31, 2019

NOTE 1. BASIS OF PRESENTATION

Endo International plc is an Ireland-domiciled, global specialty pharmaceutical company focused on generic and branded pharmaceuticals. We aim to be the premier partner to healthcare professionals and payment providers, delivering an innovative suite of generic and branded drugs to meet patients' needs.

Unless otherwise indicated or required by the context, references throughout to "Endo," the "Company," "we," "our" or "us" refer to financial information and transactions of Endo International plc and its subsidiaries.

The accompanying unaudited Condensed Consolidated Financial Statements of Endo International plc and its subsidiaries have been prepared in accordance with United States (U.S.) generally accepted accounting principles (U.S. GAAP) for interim financial information and the instructions to Form 10-Q and Article 10 of Regulation S-X of the SEC for interim financial information. Accordingly, they do not include all of the information and footnotes required by U.S. GAAP for complete financial statements. In the opinion of management, the accompanying Condensed Consolidated Financial Statements of Endo International plc and its subsidiaries, which are unaudited, include all normal and recurring adjustments necessary for a fair statement of the Company's financial position as of March 31, 2019 and the results of our operations and our cash flows for the periods presented. Operating results for the three months ended March 31, 2019 are not necessarily indicative of the results that may be expected for the year ending December 31, 2019. The year-end Condensed Consolidated Balance Sheet data as of December 31, 2018 was derived from audited financial statements but does not include all disclosures required by U.S. GAAP.

The information included in this Quarterly Report on Form 10-Q should be read in conjunction with our Consolidated Financial Statements and accompanying notes included in the Annual Report.

Certain prior period amounts have been reclassified to conform to the current period presentation.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Significant Accounting Policies Added or Updated since December 31, 2018

Significant changes to our significant accounting policies since December 31, 2018 are detailed below. For additional discussion of the Company's significant accounting policies, see Note 2. Summary of Significant Accounting Policies in the Consolidated Financial Statements, included in Part IV, Item 15 of the Annual Report.

Lease Accounting. The Company adopted *Accounting Standards Codification Topic 842, Leases* (ASC 842) on January 1, 2019. For further discussion of the adoption, refer to the "Recent Accounting Pronouncements Adopted or Otherwise Effective as of March 31, 2019" section below. ASC 842 applies to a number of arrangements to which the Company is party.

Whenever the Company enters into a new arrangement, it must determine, at the inception date, whether the arrangement is or contains a lease. This determination generally depends on whether the arrangement conveys to the Company the right to control the use of an explicitly or implicitly identified asset for a period of time in exchange for consideration. Control of an underlying asset is conveyed to the Company if the Company obtains the rights to direct the use of and to obtain substantially all of the economic benefits from using the underlying asset.

If a lease exists, the Company must then determine the separate lease and nonlease components of the arrangement. Each right to use an underlying asset conveyed by a lease arrangement should generally be considered a separate lease component if it both: (i) can benefit the Company without depending on other resources not readily available to the Company and (ii) does not significantly affect and is not significantly affected by other rights of use conveyed by the lease. Aspects of a lease arrangement that transfer other goods or services to the Company but do not meet the definition of lease components are considered nonlease components. The consideration owed by the Company pursuant to a lease arrangement is generally allocated to each lease and nonlease components for accounting purposes. However, the Company has elected, for all of its leases, to not separate lease and nonlease components. Each lease component is accounted for separately from other lease components, but together with the associated nonlease components.

For each lease, the Company must then determine the lease term, the present value of lease payments and the classification of the lease as either an operating or finance lease.

The lease term is the period of the lease not cancellable by the Company, together with periods covered by: (i) renewal options the Company is reasonably certain to exercise, (ii) termination options the Company is reasonably certain not to exercise and (iii) renewal or termination options that are controlled by the lessor.

The present value of lease payments is calculated based on:

- Lease payments—Lease payments include fixed and certain variable payments, less lease incentives, together with amounts probable of being owed by the Company under residual value guarantees and, if reasonably certain of being paid, the cost of certain renewal options and early termination penalties set forth in the lease arrangement. Lease payments exclude consideration that is not related to the transfer of goods and services to the Company.
- Discount rate—The discount rate must be determined based on information available to the Company upon the commencement of a lease. Lessees are required to use the rate implicit in the lease whenever such rate is readily available; however, as the implicit rate in the Company's leases is generally not readily determinable, the Company generally uses the hypothetical incremental borrowing rate it would have to pay to borrow an amount equal to the lease payments, on a collateralized basis, over a timeframe similar to the lease term.

In making the determination of whether a lease is an operating lease or a finance lease, the Company considers the lease term in relation to the economic life of the leased asset, the present value of lease payments in relation to the fair value of the leased asset and certain other factors, including the lessee's and lessor's rights, obligations and economic incentives over the term of the lease.

Generally, upon the commencement of a lease, the Company will record a lease liability and a right-of-use (ROU) asset. However, the Company has elected, for all underlying assets with initial lease terms of twelve months or less (known as short-term leases), to not recognize a lease liability or ROU asset. Lease liabilities are initially recorded at lease commencement as the present value of future lease payments. ROU assets are initially recorded at lease commencement as the initial amount of the lease liability, together with the following, if applicable: (i) initial direct costs incurred by the lessee and (ii) lease payments made by the lessor, net of lease incentives received, prior to lease commencement.

Over the lease term, the Company generally increases its lease liabilities using the effective interest method and decreases its lease liabilities for lease payments made. The Company generally amortizes its ROU assets over the shorter of the estimated useful life and the lease term and assesses its ROU assets for impairment, similar to other long-lived assets.

For finance leases, amortization expense and interest expense are recognized separately in the Condensed Consolidated Statements of Operations, with amortization expense generally recorded on a straight-line basis and interest expense recorded using the effective interest method. For operating leases, a single lease cost is generally recognized in the Condensed Consolidated Statements of Operations on a straight-line basis over the lease term unless an impairment has been recorded with respect to a leased asset. Lease costs for short-term leases not recognized in the Condensed Consolidated Balance Sheets are recognized in the Condensed Consolidated Statements of Operations on a straight-line basis over the lease term. Variable lease costs not initially included in the lease liability and ROU asset impairment charges are expensed as incurred.

Cloud Computing Arrangements. The Company may from time to time incur costs in connection with hosting arrangements that are service contracts. Subsequent to the Company's January 1, 2019 adoption of Accounting Standards Update (ASU) No. 2018-15, *"Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract"* (ASU 2018-15), which is further described below, the Company capitalizes any such implementation costs, expenses them over the terms of the respective hosting arrangements and subjects them to impairment testing consistent with other long-lived assets.

Recent Accounting Pronouncements

Recently Issued Accounting Pronouncements Not Yet Adopted as of March 31, 2019

In August 2018, the Financial Accounting Standards Board (FASB) issued ASU No. 2018-13, *"Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement"* (ASU 2018-13). ASU 2018-13 modifies the disclosure requirements on fair value measurements in *Accounting Standards Codification Topic 820, Fair Value Measurement*. ASU 2018-13 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Certain aspects of ASU 2018-13 require prospective treatment, while others require retrospective treatment. Early adoption is permitted. The Company is currently evaluating the impact of ASU 2018-13 on the Company's disclosures.

In November 2018, the FASB issued ASU No. 2018-18, *"Clarifying the Interaction Between Topic 808 and Topic 606"* (ASU 2018-18). The main provisions of ASU 2018-18 include: (i) clarifying that certain transactions between collaborative arrangement participants should be accounted for as revenue when the collaborative arrangement participant is a customer in the context of a unit of account and (ii) precluding the presentation of transactions with collaborative arrangement participants that are not directly related to sales to third parties together with revenue. ASU 2018-18 is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. ASU 2018-18 should be applied retrospectively to the date of initial application of *Accounting Standards Codification Topic 606, Revenue from Contracts with Customers* (ASC 606), which was January 1, 2018 for the Company. Early adoption is permitted. The Company is currently evaluating the impact of ASU 2018-18 on the Company's consolidated results of operations, financial position and disclosures.

Recent Accounting Pronouncements Adopted or Otherwise Effective as of March 31, 2019

In February 2016, the FASB issued ASU No. 2016-02, *"Leases (Topic 842)"* (ASU 2016-02) to establish a comprehensive new accounting standard for leases. ASU 2016-02, together with a series of subsequently-issued related ASUs, have been codified in ASC 842. ASC 842 supersedes the lease accounting requirements in *Accounting Standards Codification Topic 840, Leases* (ASC 840), and requires lessees to, among other things, recognize on the balance sheet a right-of-use asset and a right-of-use lease liability, representing the present value of future minimum lease payments, for most leases.

The Company adopted ASC 842 using the modified retrospective approach with an effective date of January 1, 2019 for leases that existed on that date. Prior period results continue to be presented under ASC 840 based on the accounting standards originally in effect for such periods.

The Company has elected certain practical expedients permitted under the transition guidance within ASC 842 to leases that commenced before January 1, 2019, including the package of practical expedients, as well as the practical expedient permitting the Company to not assess whether certain land easements contain leases. Due to the Company's election of these practical expedients, the Company has carried forward certain historical conclusions for existing contracts, including conclusions relating to initial direct costs and to the existence and classification of leases.

On January 1, 2019, as a result of adopting ASC 842, the Company recognized new ROU assets, current lease liabilities and noncurrent lease liabilities associated with operating leases of $59.4 million, $11.0 million and $57.3 million, respectively, which were recorded in the Condensed Consolidated Balance Sheets as Operating lease assets, Current portion of operating lease liabilities and Operating lease liabilities, less current portion, respectively. The Company also derecognized certain assets and liabilities related to existing build-to-suit lease arrangements for which construction was completed prior to the date of transition and recognized new finance lease ROU assets and lease liabilities related to those lease arrangements. The net effect of the Company's adoption of ASC 842 resulted in a net increase to Accumulated deficit of $4.6 million.

In August 2018, the FASB issued ASU 2018-15. ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (including hosting arrangements where a software license is deemed to exist). ASU 2018-15 also requires the customer to expense any such capitalized implementation costs over the term of the hosting arrangement and to apply the existing impairment guidance for long-lived assets to such capitalized costs. Additionally, ASU 2018-15 sets forth required disclosures and guidance on financial statement classification for expenses, cash flows and balances related to implementation costs within the scope of ASU 2018-15. The Company early adopted this guidance during the first quarter of 2019 on a prospective basis.

NOTE 3. DISCONTINUED OPERATIONS

Astora

The operating results of the Company's Astora business, which the Board of Directors resolved to wind-down in 2016, are reported as Discontinued operations, net of tax in the Condensed Consolidated Statements of Operations for all periods presented.

The following table provides the operating results of Astora Discontinued operations, net of tax, for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Loss from discontinued operations before income taxes	$ (5,961)	$ (7,751)
Income tax benefit	$ —	$ —
Discontinued operations, net of tax	$ (5,961)	$ (7,751)

Loss from discontinued operations before income taxes includes Litigation-related and other contingencies, net, mesh-related legal defense costs and certain other items.

The cash flows from discontinued operating activities related to Astora included the impact of net losses of $6.0 million and $7.8 million for the three months ended March 31, 2019 and 2018, respectively, and the impact of cash activity related to vaginal mesh cases. There were no material net cash flows related to Astora discontinued investing activities during the three months ended March 31, 2019 and 2018. There was no depreciation or amortization during the three months ended March 31, 2019 or 2018 related to Astora.

NOTE 4. RESTRUCTURING

Set forth below are disclosures relating to restructuring initiatives that resulted in material expenses or cash expenditures during any of the three months ended March 31, 2019 and 2018 or had material restructuring liabilities at either March 31, 2019 or December 31, 2018. Employee separation, retention and certain other employee benefit-related costs related to our restructurings are expensed ratably over the requisite service period. Other restructuring costs are generally expensed as incurred.

2017 Generic Pharmaceuticals Restructuring Initiative

On July 21, 2017, the Company announced that after completing a comprehensive review of its manufacturing network, it would be ceasing operations and closing its manufacturing and distribution facilities in Huntsville, Alabama (the 2017 Generic Pharmaceuticals Restructuring Initiative). The closure of the facilities was completed in June 2018 and the facilities were sold in the fourth quarter of 2018 for net cash proceeds of $23.1 million, resulting in a net gain on disposal of $12.5 million.

As a result of the 2017 Generic Pharmaceuticals Restructuring Initiative, the Company incurred pre-tax charges of $27.7 million during the three months ended March 31, 2018. The expenses consisted of charges relating to accelerated depreciation of $17.1 million, employee separation, retention and other benefit-related costs of $3.8 million, asset impairment charges of $2.6 million and certain other charges of $4.2 million. These charges are included in the Generic Pharmaceuticals segment. Accelerated depreciation and employee separation, retention and other benefit-related costs are primarily included in Cost of revenues in the Condensed Consolidated Statements of Operations. Certain other charges are included in both Cost of revenues and Selling, general and administrative expenses in the Condensed Consolidated Statements of Operations.

The Company did not incur any material pre-tax charges as a result of the 2017 Generic Pharmaceuticals Restructuring Initiative during the three months ended March 31, 2019 and does not expect to incur additional material pre-tax restructuring-related expenses related to this initiative.

The liability related to the 2017 Generic Pharmaceuticals Restructuring Initiative is primarily included in Accounts payable and accrued expenses in the Condensed Consolidated Balance Sheets. Changes to this liability during the three months ended March 31, 2019 were as follows (in thousands):

	Employee Separation and Other Benefit-Related Costs	Other Restructuring Costs	Total
Liability balance as of January 1, 2019	$ 4,239	$ 48	$ 4,287
Cash distributions	(2,827)	(48)	(2,875)
Liability balance as of March 31, 2019	$ 1,412	$ —	$ 1,412

Substantially all cash payments are expected to be made by the end of the third quarter in 2019.

January 2018 Restructuring Initiative

In January 2018, the Company initiated a restructuring initiative that included a reorganization of its Generic Pharmaceuticals segment's research and development network, a further simplification of the Company's manufacturing networks and a company-wide unification of certain corporate functions (the January 2018 Restructuring Initiative). As a result of the January 2018 Restructuring Initiative, the Company incurred pre-tax charges of $22.9 million during the three months ended March 31, 2018. The expenses primarily consisted of employee separation, retention and other benefit-related costs of $21.9 million and certain other charges of $1.0 million. Of the total charges incurred, $10.2 million are included in the Generic Pharmaceuticals segment, $5.2 million are included in Corporate unallocated costs, $3.8 million are included in the Sterile Injectables segment, $3.0 million are included in the International Pharmaceuticals segment and $0.7 million are included in the Branded Pharmaceuticals segment. Employee separation, retention and other benefit-related costs are included in Cost of revenues, Selling, general and administrative and Research and development expenses in the Condensed Consolidated Statements of Operations. Certain other charges are primarily included in Selling, general and administrative expenses in the Condensed Consolidated Statements of Operations.

The Company did not incur any material pre-tax charges as a result of the January 2018 Restructuring Initiative during the three months ended March 31, 2019 and does not expect to incur additional material pre-tax restructuring-related expenses related to this initiative. At December 31, 2018, the remaining liability balance was $1.1 million. Substantially all related cash payments were made by the end of the first quarter of 2019.

NOTE 5. SEGMENT RESULTS

During the first quarter of 2019, the Company changed the names of its reportable segments. This change, which was intended to simplify the segments' names, had no impact on the Company's unaudited Condensed Consolidated Financial Statements or segment results for any of the periods presented. The Company's four reportable business segments are set forth below. These segments reflect the level at which the chief operating decision maker regularly reviews financial information to assess performance and to make decisions about resources to be allocated. Each segment derives revenue from the sales or licensing of its respective products and is discussed in more detail below.

We evaluate segment performance based on each segment's adjusted income from continuing operations before income tax, which we define as Loss from continuing operations before income tax and before certain upfront and milestone payments to partners; acquisition-related and integration items, including transaction costs and changes in the fair value of contingent consideration; cost reduction and integration-related initiatives such as separation benefits, retention payments, other exit costs and certain costs associated with integrating an acquired company's operations; asset impairment charges; amortization of intangible assets; inventory step-up recorded as part of our acquisitions; litigation-related and other contingent matters; gains or losses from early termination of debt; gains or losses from the sales of businesses and other assets; foreign currency gains or losses on intercompany financing arrangements; and certain other items.

Certain of the corporate expenses incurred by the Company are not directly attributable to any specific segment. Accordingly, these costs are not allocated to any of the Company's segments and are included in the results below as "Corporate unallocated costs." Interest income and expense are also considered corporate items and not allocated to any of the Company's segments. The Company's consolidated adjusted income from continuing operations before income tax is equal to the combined results of each of its segments less these unallocated corporate items.

Branded Pharmaceuticals

Our Branded Pharmaceuticals segment includes a variety of branded prescription products to treat and manage conditions in urology, urologic oncology, endocrinology, pain and orthopedics. The products in this segment include XIAFLEX®, SUPPRELIN® LA, NASCOBAL® Nasal Spray, AVEED®, PERCOCET®, TESTOPEL®, LIDODERM®, VOLTAREN® Gel, EDEX®, FORTESTA® Gel and TESTIM®, among others.

Sterile Injectables

Our Sterile Injectables segment consists primarily of branded sterile injectable products such as VASOSTRICT®, ADRENALIN® and APLISOL®, among others, and certain generic sterile injectable products, including ertapenem for injection, the authorized generic of Merck Sharp & Dohme Corp's Invanz®, and ephedrine sulfate injection, among others.

Generic Pharmaceuticals

Our Generic Pharmaceuticals segment consists of a differentiated product portfolio including solid oral extended-release, solid oral immediate-release, liquids, semi-solids, patches, powders, ophthalmics and sprays and includes products in the pain management, urology, central nervous system disorders, immunosuppression, oncology, women's health and cardiovascular disease markets, among others.

International Pharmaceuticals

Our International Pharmaceuticals segment includes a variety of specialty pharmaceutical products sold outside the U.S., primarily in Canada through our operating company Paladin Labs Inc. (Paladin). This segment's key products serve growing therapeutic areas, including attention deficit hyperactivity disorder, pain, women's health and oncology.

The following represents selected information for the Company's reportable segments for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Net revenues from external customers:		
Branded Pharmaceuticals	$ 203,525	$ 200,235
Sterile Injectables	270,048	215,854
Generic Pharmaceuticals	218,526	249,240
International Pharmaceuticals (1)	28,312	35,198
Total net revenues from external customers	$ 720,411	$ 700,527
Adjusted income from continuing operations before income tax:		
Branded Pharmaceuticals	$ 79,008	$ 93,814
Sterile Injectables	196,183	169,445
Generic Pharmaceuticals	49,997	74,280
International Pharmaceuticals	12,095	13,718
Total segment adjusted income from continuing operations before income tax	$ 337,283	$ 351,257

(1) Revenues generated by our International Pharmaceuticals segment are primarily attributable to external customers located in Canada.

There were no material revenues from external customers attributed to an individual country outside of the U.S. during any of the periods presented. There were no material tangible long-lived assets in an individual country other than the U.S. as of March 31, 2019 or December 31, 2018.

The table below provides reconciliations of our Total consolidated loss from continuing operations before income tax, which is determined in accordance with U.S. GAAP, to our total segment adjusted income from continuing operations before income tax for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Total consolidated loss from continuing operations before income tax	$ (1,709)	$ (482,247)
Interest expense, net	132,675	123,990
Corporate unallocated costs (1)	48,095	52,460
Amortization of intangible assets	145,599	157,172
Inventory step-up	—	66
Upfront and milestone payments to partners	939	1,332
Separation benefits and other cost reduction initiatives (2)	2,025	48,987
Certain litigation-related and other contingencies, net (3)	6	(2,500)
Asset impairment charges (4)	165,448	448,416
Acquisition-related and integration items (5)	(37,501)	6,835
Gain on extinguishment of debt	(119,828)	—
Foreign currency impact related to the remeasurement of intercompany debt instruments	1,534	(2,514)
Other, net (6)	—	(740)
Total segment adjusted income from continuing operations before income tax	$ 337,283	$ 351,257

(1) Amounts include certain corporate overhead costs, such as headcount, facility and corporate litigation expenses and certain other income and expenses.
(2) Amounts for the three months ended March 31, 2019 primarily relate to employee separation costs of $1.8 million and other charges of $0.2 million. Amounts for the three months ended March 31, 2018 primarily relate to employee separation costs of $25.2 million, accelerated depreciation of $17.1 million, charges to increase excess inventory reserves of $2.4 million and other charges of $4.3 million. These charges were related primarily to our restructuring initiatives. See Note 4. Restructuring for discussion of our material restructuring initiatives.
(3) Amounts include adjustments for Litigation-related and other contingencies, net as further described in Note 13. Commitments and Contingencies.
(4) Amounts primarily relate to charges to impair goodwill and intangible assets as further described in Note 9. Goodwill and Other Intangibles.
(5) Amounts primarily relate to changes in the fair value of contingent consideration.
(6) Amounts primarily relate to gains on sales of businesses and other assets.

Asset information is not reviewed or included within our internal management reporting. Therefore, the Company has not disclosed asset information for each reportable segment.

The Company disaggregates its revenue from contracts with customers into the categories included in the table below (in thousands). The Company believes these categories depict how the nature, timing and uncertainty of revenue and cash flows are affected by economic factors.

	Three Months Ended March 31,	
	2019	2018
Branded Pharmaceuticals:		
Specialty Products:		
XIAFLEX®	$ 68,507	$ 57,141
SUPPRELIN® LA	22,056	20,577
Other Specialty (1)	24,403	19,027
Total Specialty Products	$ 114,966	$ 96,745
Established Products:		
PERCOCET®	$ 30,760	$ 31,976
TESTOPEL®	15,814	15,170
Other Established (2)	41,985	56,344
Total Established Products	$ 88,559	$ 103,490
Total Branded Pharmaceuticals (3)	$ 203,525	$ 200,235
Sterile Injectables:		
VASOSTRICT®	$ 139,137	$ 113,725
ADRENALIN®	47,322	29,740
Ertapenem for injection	32,219	—
Other Sterile Injectables (4)	51,370	72,389
Total Sterile Injectables (3)	$ 270,048	$ 215,854
Total Generic Pharmaceuticals (5)	$ 218,526	$ 249,240
Total International Pharmaceuticals (6)	$ 28,312	$ 35,198
Total revenues, net	$ 720,411	$ 700,527

(1) Products included within Other Specialty are NASCOBAL® Nasal Spray and AVEED®. Beginning with our first quarter 2019 reporting, TESTOPEL®, which was previously included in Other Specialty, has been reclassified and is now included in the Established Products portfolio for all periods presented.

(2) Products included within Other Established include, but are not limited to, LIDODERM®, VOLTAREN® Gel, EDEX®, FORTESTA® Gel, and TESTIM®, including the authorized generics of TESTIM® and FORTESTA® Gel.

(3) Individual products presented above represent the top two performing products in each product category for the three months ended March 31, 2019 and/or any product having revenues in excess of $25 million during any quarterly period in 2019 or 2018.

(4) Products included within Other Sterile Injectables include, but are not limited to, APLISOL® and ephedrine sulfate injection.

(5) The Generic Pharmaceuticals segment is comprised of a portfolio of products that are generic versions of branded products, are distributed primarily through the same wholesalers, generally have no intellectual property protection and are sold within the U.S. During the three months ended March 31, 2019, colchicine tablets, the authorized generic of Takeda Pharmaceuticals U.S.A., Inc.'s Colcrys®, which launched in July 2018, made up 6% of consolidated total revenue. No other individual product within this segment has exceeded 5% of consolidated total revenues for the periods presented.

(6) The International Pharmaceuticals segment, which accounted for 4% and 5% of consolidated total revenues during the three months ended March 31, 2019 and 2018, respectively, includes a variety of specialty pharmaceutical products sold outside the U.S., primarily in Canada through our operating company Paladin.

NOTE 6. FAIR VALUE MEASUREMENTS

Financial Instruments

The financial instruments recorded in our Condensed Consolidated Balance Sheets include cash and cash equivalents (including money market funds), restricted cash and cash equivalents, accounts receivable, marketable securities, equity and cost method investments, accounts payable and accrued expenses, acquisition-related contingent consideration and debt obligations. Included in cash and cash equivalents and restricted cash and cash equivalents are money market funds representing a type of mutual fund required by law to invest in low-risk securities (for example, U.S. government bonds, U.S. Treasury Bills and commercial paper). Money market funds pay dividends that generally reflect short-term interest rates. Due to their short-term maturity, the carrying amounts of non-restricted and restricted cash and cash equivalents (including money market funds), accounts receivable, accounts payable and accrued expenses approximate their fair values.

The following table presents current and noncurrent restricted cash and cash equivalent balances at March 31, 2019 and December 31, 2018 (in thousands):

	March 31, 2019	December 31, 2018
Restricted cash and cash equivalents—current portion (1)	$ 332,547	$ 305,368
Restricted cash and cash equivalents—noncurrent portion (2)	22,357	22,356
Restricted cash and cash equivalents—total (3)	$ 354,904	$ 327,724

(1) These amounts are reported in our Condensed Consolidated Balance Sheets as Restricted cash and cash equivalents.
(2) These amounts are reported in our Condensed Consolidated Balance Sheets as Other assets.
(3) Approximately $327.4 million and $299.7 million of our restricted cash and cash equivalents are held in qualified settlement funds (QSFs) for mesh-related matters at March 31, 2019 and December 31, 2018, respectively. The remaining amount of restricted cash and cash equivalents at March 31, 2019 primarily relates to other litigation-related matters. See Note 13. Commitments and Contingencies for further information.

Fair value guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. These tiers include:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Marketable Securities

Equity securities consist of investments in the stock of publicly traded companies, the values of which are based on quoted market prices and thus represent Level 1 measurements within the above-defined fair value hierarchy. These securities are not held to support current operations and are therefore classified as noncurrent assets. Equity securities are included in Marketable securities in our Condensed Consolidated Balance Sheets at March 31, 2019 and December 31, 2018.

Acquisition-Related Contingent Consideration

The fair value of contingent consideration liabilities is determined using unobservable inputs; hence these instruments represent Level 3 measurements within the above-defined fair value hierarchy. These inputs include the estimated amount and timing of projected cash flows, the probability of success (achievement of the contingent event) and the risk-adjusted discount rate used to present value the probability-weighted cash flows. Subsequent to the acquisition date, at each reporting period, the contingent consideration liability is remeasured at current fair value with changes recorded in earnings. Changes in any of these estimated inputs used as of the date of this report could have resulted in significant adjustments to fair value. See Recurring Fair Value Measurements below for additional information on acquisition-related contingent consideration.

Recurring Fair Value Measurements

The Company's financial assets and liabilities measured at fair value on a recurring basis at March 31, 2019 and December 31, 2018 were as follows (in thousands):

	Fair Value Measurements at March 31, 2019 using:			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Assets:				
Money market funds	$ 641,012	$ —	$ —	$ 641,012
Equity securities	969	—	—	969
Total	$ 641,981	$ —	$ —	$ 641,981
Liabilities:				
Acquisition-related contingent consideration—current	$ —	$ —	$ 28,305	$ 28,305
Acquisition-related contingent consideration—noncurrent	—	—	39,537	39,537
Total	$ —	$ —	$ 67,842	$ 67,842

	Fair Value Measurements at December 31, 2018 using:			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Assets:				
Money market funds	$ 137,215	$ —	$ —	$ 137,215
Equity securities	738	—	—	738
Total	$ 137,953	$ —	$ —	$ 137,953
Liabilities:				
Acquisition-related contingent consideration—current	$ —	$ —	$ 36,514	$ 36,514
Acquisition-related contingent consideration—noncurrent	—	—	80,189	80,189
Total	$ —	$ —	$ 116,703	$ 116,703

At March 31, 2019 and December 31, 2018, money market funds include $69.1 million and $86.9 million, respectively, in QSFs to be disbursed to mesh-related or other product liability claimants. Amounts in QSFs are considered restricted cash equivalents. See Note 13. Commitments and Contingencies for further discussion of our product liability cases. At March 31, 2019 and December 31, 2018, the differences between the amortized cost and the fair value of our money market funds and equity securities, as well as the related gross unrealized gains or losses, were not material, individually or in the aggregate.

Fair Value Measurements Using Significant Unobservable Inputs

The following table presents changes to the Company's liability for acquisition-related contingent consideration, which was measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Beginning of period	$ 116,703	$ 190,442
Amounts settled	(11,591)	(27,767)
Changes in fair value recorded in earnings	(37,501)	6,835
Effect of currency translation	231	(223)
End of period	$ 67,842	$ 169,287

At March 31, 2019, the fair value measurements of the contingent consideration obligations were determined using risk-adjusted discount rates ranging from approximately 9.5% to 15.0% (weighted average rate of approximately 11.7%). Changes in fair value recorded in earnings related to acquisition-related contingent consideration are included in our Condensed Consolidated Statements of Operations as Acquisition-related and integration items. Amounts recorded for the current and noncurrent portions of acquisition-related contingent consideration are included in Accounts payable and accrued expenses and Other liabilities, respectively, in our Condensed Consolidated Balance Sheets.

The following table presents changes to the Company's liability for acquisition-related contingent consideration during the three months ended March 31, 2019 by acquisition (in thousands):

	Balance as of December 31, 2018	Changes in Fair Value Recorded in Earnings	Amounts Settled and Other	Balance as of March 31, 2019
Auxilium acquisition	$ 14,157	$ 388	$ —	$ 14,545
Lehigh Valley Technologies, Inc. acquisitions	34,700	(400)	(5,000)	29,300
VOLTAREN® Gel acquisition (1)	56,240	(37,784)	(6,260)	12,196
Other	11,606	295	(100)	11,801
Total	$ 116,703	$ (37,501)	$ (11,360)	$ 67,842

(1) The change in fair value recorded in earnings includes the impact of certain competitive events occurring during the three months ended March 31, 2019.

Nonrecurring Fair Value Measurements

The Company's financial assets and liabilities measured at fair value on a nonrecurring basis during the three months ended March 31, 2019 were as follows (in thousands):

	Fair Value Measurements during the Three Months Ended March 31, 2019 (1) using:			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Expense for the Three Months Ended March 31, 2019
Assets:				
Intangible assets, excluding goodwill (Note 9)	$ —	$ —	$ 41,839	$ (78,700)
Certain property, plant and equipment	—	—	—	(748)
Total	$ —	$ —	$ 41,839	$ (79,448)

(1) The fair value amounts are presented as of the date of the fair value measurement as these assets are not measured at fair value on a recurring basis. Such measurements generally occur in connection with our quarter-end financial reporting close procedures.

Additionally, the Company recorded aggregate pre-tax non-cash goodwill impairment charges during the three months ended March 31, 2019 of $86.0 million. Refer to Note 9. Goodwill and Other Intangibles for further description, including the valuation methodologies utilized.

NOTE 7. INVENTORIES

Inventories consist of the following at March 31, 2019 and December 31, 2018 (in thousands):

	March 31, 2019	December 31, 2018
Raw materials (1)	$ 127,622	$ 122,825
Work-in-process (1)	84,801	70,458
Finished goods (1)	118,968	128,896
Total	$ 331,391	$ 322,179

(1) The components of inventory shown in the table above are net of allowance for obsolescence.

Inventory that is in excess of the amount expected to be sold within one year is classified as noncurrent inventory and is not included in the table above. At March 31, 2019 and December 31, 2018, $9.9 million and $8.1 million, respectively, of noncurrent inventory was included in Other assets in the Condensed Consolidated Balance Sheets. As of March 31, 2019 and December 31, 2018, the Company's Condensed Consolidated Balance Sheets included approximately $10.5 million and $12.5 million, respectively, of capitalized pre-launch inventories related to generic and sterile injectable products that were not yet available to be sold.

NOTE 8. LEASES

We have entered into contracts with third parties to lease a variety of assets, including certain real estate, machinery, equipment, automobiles and other assets.

Our leases frequently allow for lease payments that could vary based on factors such as inflation or the degree of utilization of the underlying asset and the incurrence of contractual charges such as those for common area maintenance or utilities.

Renewal and/or early termination options are common in our lease arrangements, particularly with respect to our real estate leases. Our ROU assets and lease liabilities generally exclude periods covered by renewal options and include periods covered by early termination options (based on our conclusion that it is not reasonably certain that we will exercise such options).

Our most significant lease is for our U.S. headquarters in Malvern, Pennsylvania. The initial term of the lease is through 2024 and includes three renewal options, each for an additional 60-month period. These renewal options are not considered reasonably certain of exercise and are therefore excluded from the ROU asset and lease liability.

We are party to certain sublease arrangements, primarily related to our real estate leases, where we act as the lessee and intermediate lessor. For example, we sublease portions of our Malvern, Pennsylvania facility to multiple tenants through sublease arrangements ending in 2024, with certain limited renewal and early termination options.

The following table presents information about the Company's ROU assets and lease liabilities at March 31, 2019 (in thousands):

	Condensed Consolidated Balance Sheets Line Items	March 31, 2019
ROU assets:		
Operating lease ROU assets	Operating lease assets	$ 57,771
Finance lease ROU assets	Property, plant and equipment, net	57,935
Total ROU assets		$ 115,706
Operating lease liabilities:		
Current operating lease liabilities	Current portion of operating lease liabilities	$ 12,051
Noncurrent operating lease liabilities	Operating lease liabilities, less current portion	54,258
Total operating lease liabilities		$ 66,309
Finance lease liabilities:		
Current finance lease liabilities	Accounts payable and accrued expenses	$ 5,105
Noncurrent finance lease liabilities	Other liabilities	33,979
Total finance lease liabilities		$ 39,084

The following table presents information about lease costs and expenses and sublease income for the three months ended March 31, 2019 (in thousands):

	Condensed Consolidated Statements of Operations Line Items	Three Months Ended March 31, 2019
Operating lease cost	Various (1)	$ 3,499
Finance lease cost:		
Amortization of ROU assets	Various (1)	$ 2,296
Interest on lease liabilities	Interest expense, net	$ 500
Other lease costs and income:		
Variable lease costs (2)	Various (1)	$ 2,089
Sublease income	Various (1)	$ (964)

(1) Amounts are included in Cost of revenues, Selling, general and administrative and/or Research and development based on the function that the underlying leased asset supports. Of these amounts, a total of $2.7 million was Cost of revenues, $4.1 million was Selling, general and administrative and $0.1 million was Research and development.

(2) Amounts represent variable lease costs incurred that were not included in the initial measurement of the lease liability, such as common area maintenance and utilities costs associated with leased real estate and certain costs associated with our automobile leases.

The following table, determined in accordance with ASC 842, provides the undiscounted amount of future cash flows included in our lease liabilities at March 31, 2019 for each of the five years subsequent to December 31, 2018 and thereafter, as well as a reconciliation of such undiscounted cash flows to our lease liabilities at March 31, 2019 (in thousands):

	Operating Leases	Finance Leases
2019, excluding amounts already paid	$ 11,135	$ 5,240
2020	13,667	7,329
2021	13,021	7,476
2022	12,309	7,626
2023	9,890	7,780
Thereafter	20,622	10,521
Total future lease payments	$ 80,644	$ 45,972
Less: amount representing interest	14,335	6,888
Present value of future lease payments (lease liability)	$ 66,309	$ 39,084

The Company's future minimum lease commitments as of December 31, 2018 under ASC 840, as reported in the Annual Report, were as follows:

	Capital Leases (1)	Operating Leases
2019	$ 6,884	$ 15,800
2020	6,819	14,519
2021	6,921	12,883
2022	7,072	12,454
2023	7,225	9,945
Thereafter	9,127	20,573
Total minimum lease payments	$ 44,048	$ 86,174
Less: Amount representing interest	4,084	
Total present value of minimum payments	$ 39,964	
Less: Current portion of such obligations	5,845	
Long-term capital lease obligations	$ 34,119	

(1) The Malvern, Pennsylvania headquarters lease arrangement is included under Capital Leases.

The following table provides the weighted average remaining lease term and weighted average discount rates for our leases as of March 31, 2019:

	March 31, 2019
Weighted average remaining lease term (years), weighted based on lease liability balances:	
Operating leases	6.5 years
Finance leases	6.2 years
Weighted average discount rate (percentages), weighted based on the remaining balance of lease payments:	
Operating leases	5.8%
Finance leases	5.1%

The following table provides certain cash flow and supplemental noncash information related to our lease liabilities for the three months ended March 31, 2019 (in thousands):

	Three Months Ended March 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash payments for operating leases	$ 3,692
Operating cash payments for finance leases	$ 473
Financing cash payments for finance leases	$ 1,174
Lease liabilities arising from obtaining right-of-use assets:	
Operating leases	$ —
Finance leases	$ —

NOTE 9. GOODWILL AND OTHER INTANGIBLES

Goodwill

Changes in the carrying amount of our goodwill for the three months ended March 31, 2019 were as follows (in thousands):

	Branded Pharmaceuticals	Sterile Injectables	Generic Pharmaceuticals	International Pharmaceuticals	Total
Goodwill as of December 31, 2018	$ 828,818	$ 2,731,193	$ 151,108	$ 53,517	$ 3,764,636
Effect of currency translation	—	—	—	1,165	1,165
Goodwill impairment charges	—	—	(86,000)	—	(86,000)
Goodwill as of March 31, 2019	$ 828,818	$ 2,731,193	$ 65,108	$ 54,682	$ 3,679,801

The carrying amounts of goodwill at March 31, 2019 and December 31, 2018 are net of the following accumulated impairments (in thousands):

	Branded Pharmaceuticals	Sterile Injectables	Generic Pharmaceuticals	International Pharmaceuticals	Total
Accumulated impairment losses as of December 31, 2018	$ 855,810	$ —	$ 2,991,549	$ 456,408	$ 4,303,767
Accumulated impairment losses as of March 31, 2019	$ 855,810	$ —	$ 3,077,549	$ 466,317	$ 4,399,676

Other Intangible Assets

Changes in the amount of other intangible assets for the three months ended March 31, 2019 are set forth in the table below (in thousands).

Cost basis:	Balance as of December 31, 2018	Acquisitions	Impairments	Effect of Currency Translation	Balance as of March 31, 2019
Indefinite-lived intangibles:					
In-process research and development	$ 93,900	$ —	$ —	$ —	$ 93,900
Total indefinite-lived intangibles	$ 93,900	$ —	$ —	$ —	$ 93,900
Finite-lived intangibles:					
Licenses (weighted average life of 14 years)	$ 457,402	$ —	$ —	$ —	$ 457,402
Tradenames	6,409	—	—	—	6,409
Developed technology (weighted average life of 11 years)	6,182,015	—	(78,700)	5,356	6,108,671
Total finite-lived intangibles (weighted average life of 11 years)	$ 6,645,826	$ —	$ (78,700)	$ 5,356	$ 6,572,482
Total other intangibles	$ 6,739,726	$ —	$ (78,700)	$ 5,356	$ 6,666,382

Accumulated amortization:	Balance as of December 31, 2018	Amortization	Impairments	Effect of Currency Translation	Balance as of March 31, 2019
Finite-lived intangibles:					
Licenses	$ (398,182)	$ (4,869)	$ —	$ —	$ (403,051)
Tradenames	(6,409)	—	—	—	(6,409)
Developed technology	(2,877,829)	(140,730)	—	(2,769)	(3,021,328)
Total other intangibles	$ (3,282,420)	$ (145,599)	$ —	$ (2,769)	$ (3,430,788)
Net other intangibles	$ 3,457,306				$ 3,235,594

Amortization expense for the three months ended March 31, 2019 and 2018 totaled $145.6 million and $157.2 million, respectively. Amortization expense is included in Cost of revenues in the Condensed Consolidated Statements of Operations. Estimated amortization of intangibles for the five fiscal years subsequent to December 31, 2018 is as follows (in thousands):

2019	$ 545,757
2020	$ 461,267
2021	$ 419,045
2022	$ 403,142
2023	$ 372,939

Impairments

Endo tests goodwill and indefinite-lived intangible assets for impairment annually, or more frequently whenever events or changes in circumstances indicate that the asset might be impaired. Our annual assessment is performed as of October 1st.

As part of our goodwill and intangible asset impairment assessments, we estimate the fair values of our reporting units and our intangible assets using an income approach that utilizes a discounted cash flow model or, where appropriate, a market approach. The discounted cash flow models are dependent upon our estimates of future cash flows and other factors. These estimates of future cash flows involve assumptions concerning (i) future operating performance, including future sales, long-term growth rates, operating margins, tax rates, variations in the amount and timing of cash flows and the probability of achieving the estimated cash flows and (ii) future economic conditions. These assumptions are based on significant inputs not observable in the market and thus represent Level 3 measurements within the fair value hierarchy. The discount rates applied to the estimated cash flows are based on the overall risk associated with the particular assets and other market factors. We believe the discount rates and other inputs and assumptions are consistent with those that a market participant would use. Any impairment charges resulting from annual or interim goodwill and intangible asset impairment assessments are recorded to Asset impairment charges in our Condensed Consolidated Statements of Operations.

During the three months ended March 31, 2019 and 2018, the Company incurred the following goodwill and other intangible asset impairment charges (in thousands):

	Three Months Ended March 31,	
	2019	2018
Goodwill impairment charges	$ 86,000	$ 391,000
Other intangible asset impairment charges	$ 78,700	$ 54,200

A summary of significant goodwill and other intangible asset impairment tests and related charges is included below. Pre-tax non-cash intangible asset impairment charges related primarily to certain in-process research and development and/or developed technology intangible assets that were tested for impairment following changes in market conditions and certain other factors impacting recoverability.

As a result of certain competitive events that occurred during the first quarter of 2019, we tested the goodwill of our Generic Pharmaceuticals reporting unit for impairment as of March 31, 2019. The fair value of the reporting unit was estimated using an income approach that utilized a discounted cash flow model. The discount rate utilized in this test was 10.5%. This goodwill impairment test resulted in a pre-tax non-cash goodwill impairment charge of $86.0 million during the three months ended March 31, 2019, representing the excess of this reporting unit's carrying amount over its estimated fair value. The Generic Pharmaceuticals impairment can be primarily attributed to the impact of the competitive events referenced above and an increase in the discount rate used in the determination of fair value.

During the first quarter of 2018, a change in segments resulted in changes to our reporting units for goodwill impairment testing purposes, including the creation of a new Sterile Injectables reporting unit, which was previously part of our Generics reporting unit. As a result of these changes, under U.S. GAAP, we tested the goodwill of the former Generics reporting unit immediately before the segment realignment and the goodwill of both the new Sterile Injectables and Generic Pharmaceuticals reporting units immediately after the segment realignment. These goodwill tests were performed using an income approach that utilizes a discounted cash flow model. The results of these goodwill impairment tests were as follows:

- The former Generics reporting unit's estimated fair value exceeded its carrying amount, resulting in no related goodwill impairment charge.
- The new Sterile Injectables reporting unit's estimated fair value exceeded its carrying amount, resulting in no related goodwill impairment charge.
- The new Generic Pharmaceuticals reporting unit's carrying amount exceeded its estimated fair value, resulting in a pre-tax non-cash goodwill impairment charge of $391.0 million.

NOTE 10. CONTRACT ASSETS AND LIABILITIES

Our revenue consists almost entirely of sales of our pharmaceutical products to customers, whereby we ship products to a customer pursuant to a purchase order. Revenue contracts such as these do not generally give rise to contract assets or contract liabilities because: (i) the underlying contracts generally have only a single performance obligation and (ii) we do not generally receive consideration until the performance obligation is fully satisfied. At March 31, 2019, the unfulfilled performance obligations for these types of contracts relate to ordered but undelivered products. We generally expect to fulfill the performance obligations and recognize revenue within one week of entering into the underlying contract. Based on the short-term initial contract duration, additional disclosure about the remaining performance obligations is not required.

Certain of our other revenue-generating contracts, including license and collaboration agreements, may result in contract assets and/or contract liabilities. For example, we may recognize contract liabilities upon receipt of certain upfront and milestone payments from customers when there are remaining performance obligations.

The following table shows the opening and closing balances of contract assets and contract liabilities from contracts with customers (dollars in thousands):

	March 31, 2019	December 31, 2018	$ Change	% Change
Contract assets, net (1)	$ 9,406	$ 12,065	$ (2,659)	(22)%
Contract liabilities, net (2)	$ 22,756	$ 19,217	$ 3,539	18 %

(1) At March 31, 2019 and December 31, 2018, approximately $9.4 million and $9.3 million, respectively, of these contract asset amounts are classified as current assets and are included in Prepaid expenses and other current assets in the Company's Condensed Consolidated Balance Sheets. The remaining amounts are classified as noncurrent and are included in Other assets. The net decrease in contract assets during the three months ended March 31, 2019 was primarily due to reclassifications to accounts receivable following the resolution of certain conditions other than the passage of time affecting the Company's rights to consideration for the sale of certain goods, partially offset by certain sales activity during the period.

(2) At March 31, 2019 and December 31, 2018, approximately $2.8 million and $1.7 million, respectively, of these contract liability amounts are classified as current liabilities and are included in Accounts payable and accrued expenses in the Company's Condensed Consolidated Balance Sheets. The remaining amounts are classified as noncurrent and are included in Other liabilities. During the three months ended March 31, 2019, the Company entered into new contracts resulting in an increase to contract liabilities of approximately $4.0 million. This increase was partially offset by approximately $0.5 million in revenue recognized during the period.

During the three months ended March 31, 2019, we recognized revenue of $10.1 million relating to performance obligations satisfied, or partially satisfied, in prior periods. Such revenue generally relates to changes in estimates with respect to our variable consideration.

NOTE 11. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

Accounts payable and accrued expenses include the following at March 31, 2019 and December 31, 2018 (in thousands):

	March 31, 2019	December 31, 2018
Trade accounts payable	$ 97,592	$ 96,024
Returns and allowances	223,156	236,946
Rebates	118,658	144,860
Chargebacks	2,481	2,971
Accrued interest	45,351	130,182
Accrued payroll and related benefits	45,037	89,895
Accrued royalties and other distribution partner payables	103,649	122,028
Acquisition-related contingent consideration—current	28,305	36,514
Other	176,601	149,780
Total	$ 840,830	$ 1,009,200

NOTE 12. DEBT

The following table presents information about the Company's total indebtedness at March 31, 2019 and December 31, 2018 (dollars in thousands):

	March 31, 2019			December 31, 2018		
	Effective Interest Rate	Principal Amount	Carrying Amount	Effective Interest Rate	Principal Amount	Carrying Amount
7.25% Senior Notes due 2022	7.25%	$ 10,084	$ 10,083	7.91%	$ 400,000	$ 392,947
5.75% Senior Notes due 2022	5.75%	182,479	182,462	6.04%	700,000	694,464
5.375% Senior Notes due 2023	5.61%	210,440	208,733	5.62%	750,000	743,438
6.00% Senior Notes due 2023	6.28%	1,439,840	1,424,854	6.28%	1,635,000	1,616,817
5.875% Senior Secured Notes due 2024	6.14%	300,000	296,205	6.14%	300,000	296,062
6.00% Senior Notes due 2025	6.27%	1,200,000	1,183,979	6.27%	1,200,000	1,183,415
7.50% Senior Secured Notes due 2027	7.71%	1,500,000	1,480,876		—	—
Term Loan B Facility Due 2024	6.96%	3,355,238	3,324,085	7.02%	3,363,775	3,331,276
Total long-term debt, net		$ 8,198,081	$ 8,111,277		$ 8,348,775	$ 8,258,419
Less current portion, net		35,940	35,940		34,150	34,150
Total long-term debt, less current portion, net		$ 8,162,141	$ 8,075,337		$ 8,314,625	$ 8,224,269

The Company and its subsidiaries, with certain customary exceptions, guarantee or serve as issuers or borrowers of the debt instruments representing substantially all of the Company's indebtedness at March 31, 2019. The obligations under (i) the senior secured notes and (ii) the Credit Agreement (as defined below) and related loan documents are secured on a *pari passu* basis by a perfected first priority (subject to certain permitted liens) lien on the collateral securing such instruments, which collateral represents substantially all of the assets of the issuers or borrowers and the guarantors party thereto (subject to customary exceptions). Our senior unsecured notes are unsecured and effectively subordinated in right of priority to our credit agreement and our senior secured notes, in each case to the extent of the value of the collateral securing such instruments.

The aggregate estimated fair value of the Company's long-term debt, which was estimated using inputs based on quoted market prices for the same or similar debt issuances, was $7.5 billion and $7.2 billion at March 31, 2019 and December 31, 2018, respectively. Based on this valuation methodology, we determined these debt instruments represent Level 2 measurements within the fair value hierarchy.

Senior Notes and Senior Secured Notes

At March 31, 2019 and December 31, 2018, we were in compliance with all covenants contained in the indentures governing our various senior notes and senior secured notes.

Credit Facilities

The credit facilities consist of a $1,000.0 million revolving credit facility (the Revolving Credit Facility) and a senior secured term loan facility (the Term Loan Facility and, together with the Revolving Credit Facility, the Credit Facilities). As of March 31, 2019, we had $996.8 million of remaining credit available through the Revolving Credit Facility. At March 31, 2019 and December 31, 2018, we were in compliance with all covenants contained in the Credit Agreement (as defined below).

March 2019 Refinancing

In March 2019, the Company executed several transactions (the March 2019 Refinancing Transactions), which included:

- the entry into an amendment (the Revolving Credit Facility Amendment) to the Company's existing credit agreement, which was originally dated April 27, 2017 (the Credit Agreement);
- the issuance of $1,500.0 million of 7.50% Senior Secured Notes due 2027 (the 2027 Notes);
- the repurchase of $1,642.2 million aggregate principal amount of certain of the Company's senior unsecured notes for $1,500.0 million in cash, excluding accrued interest (the Notes Repurchases); and
- the solicitation of consents from the holders of the existing 7.25% Senior Notes due 2022 and 5.75% Senior Notes due 2022 (together, the Consent Notes) to certain amendments to the indentures governing such notes, which eliminated substantially all of the restrictive covenants, certain events of default and other provisions contained in each such indenture.

The Revolving Credit Facility Amendment amended the Credit Agreement to, among other things, (i) extend the maturity of the commitments under the Revolving Credit Facility from April 2022 to March 2024 (with the exception of $76.0 million of commitments that were not extended), (ii) provide greater covenant flexibility by increasing the maximum Secured Net Leverage Ratio described in the Financial Covenant (as defined in the Credit Agreement) from 3.50:1.00 to 4.50:1.00 and (iii) limit the scenarios under which such Financial Covenant will be tested.

The 2027 Notes were issued by Par Pharmaceutical, Inc. (PPI), a wholly-owned indirect subsidiary of the Company, in a private offering to "qualified institutional buyers" (as defined in Rule 144A under the Securities Act) and outside the U.S. to non-U.S. persons in compliance with Regulation S under the Securities Act. The 2027 Notes are guaranteed on a senior secured basis by the Company and its subsidiaries that also guarantee the Credit Agreement (collectively, the Guarantors). The 2027 Notes are senior secured obligations of PPI and the Guarantors and are secured by the same collateral that secures the Credit Agreement and the Company's existing senior secured notes. Interest on the 2027 Notes is payable semiannually in arrears on April 1 and October 1 of each year, beginning on October 1, 2019.

The 2027 Notes will mature on April 1, 2027; however, the indenture governing these notes allows for redemption prior to maturity, in whole or in part, subject to certain restrictions and limitations described therein, in the following ways:

- Before April 1, 2022, the 2027 Notes may be redeemed, in whole or in part, by paying the sum of: (i) 100% of the principal amount being redeemed, (ii) an applicable make-whole premium as described in the indenture and (iii) accrued and unpaid interest, if any, to, but not including, the date of redemption.
- On or after April 1, 2022, the 2027 Notes may be redeemed, in whole or in part, at redemption prices set forth in the indenture, plus accrued and unpaid interest, if any, to, but not including, the date of redemption. The redemption prices for the 2027 Notes vary over time pursuant to a step-down schedule set forth in the indenture, beginning at 105.625% of the principal amount redeemed and decreasing to 100% by April 1, 2025.
- Before April 1, 2022, the 2027 Notes may be redeemed, in part (up to 35% of the principal amount outstanding) with the net cash proceeds from specified equity offerings at 107.500% of the principal amount redeemed, plus accrued and unpaid interest, if any, to, but not including, the date of redemption.

The 2027 Notes indenture contains covenants that, among other things, restrict the Company's ability and the ability of its Restricted Subsidiaries (as defined in the indenture) to incur certain additional indebtedness and issue preferred stock; make certain dividends, distributions, investments and other restricted payments; sell certain assets; enter into sale and leaseback transactions; agree to certain restrictions on the ability of restricted subsidiaries to make certain payments to the Company or any of its restricted subsidiaries; create certain liens; merge, consolidate or sell all or substantially all of the Company's assets; enter into certain transactions with affiliates or designate subsidiaries as unrestricted subsidiaries. These covenants are subject to a number of exceptions and qualifications, including the fall away or revision of certain of these covenants and release of collateral upon the 2027 Notes receiving investment grade credit ratings.

The Company used the net proceeds of the 2027 Notes and cash on hand primarily to fund the Notes Repurchases and to pay certain premiums, fees and expenses related thereto. The Notes Repurchases were completed by Endo Finance LLC (Endo Finance), a wholly-owned subsidiary of the Company, pursuant to a tender offer to repurchase portions of the Company's outstanding 7.25% Senior Notes due 2022, 5.75% Senior Notes due 2022, 5.375% Senior Notes due 2023 and 6.00% Senior Notes due 2023. In connection with the Notes Repurchases, Endo Finance repurchased $1,642.2 million of senior unsecured note indebtedness, representing the aggregate principal amount repurchased, for $1,500.0 million in cash (including certain cash premiums related thereto). The $1,642.2 million aggregate repurchase amount consisted of (i) $389.9 million aggregate principal amount of the 7.25% Senior Notes due 2022, (ii) $517.5 million aggregate principal amount of the 5.75% Senior Notes due 2022, (iii) $539.6 million aggregate principal amount of the 5.375% Senior Notes due 2023 and (iv) $195.2 million aggregate principal amount of the 6.00% Senior Notes due 2023. The aggregate carrying amount of notes repurchased was $1,624.0 million. In conjunction with the Notes Repurchases, Endo Finance also solicited consents from holders of the Consent Notes to certain proposed amendments to the applicable indentures under which each series of Consent Notes were issued, which would eliminate substantially all restrictive covenants, certain events of default and certain other provisions contained in each such indenture. The proposed amendments were effected pursuant to a supplemental indenture to each such indenture executed by Endo Finance and the guarantors of the Consent Notes, which became operative upon the repurchase of at least the requisite consent amount of the applicable series of Consent Notes tendered.

The difference between the cash paid and the carrying amount of notes repurchased in the Notes Repurchases resulted in a $124.0 million gain recorded as Gain on extinguishment of debt in the Condensed Consolidated Statements of Operations. In connection with the March 2019 Refinancing Transactions, we also incurred costs and fees totaling $26.2 million, of which $4.2 million related to the Notes Repurchases, $19.1 million related to the 2027 Notes issuance and $2.9 million related to the Revolving Credit Facility Amendment. The costs incurred in connection with the Notes Repurchases were charged to expense in the first quarter of 2019 and recorded as an offset to the Gain on extinguishment of debt. The costs incurred in connection with the 2027 Notes issuance and the Revolving Credit Facility Amendment, together with previously deferred debt issuance costs associated with the Revolving Credit Facility, have been deferred and will be amortized as interest expense over the terms of the respective instruments.

Maturities

The following table presents the maturities on our long-term debt for each of the five fiscal years subsequent to December 31, 2018 (in thousands):

	Maturities (1)
2019 (2)	$ 34,150
2020	$ 34,150
2021	$ 34,150
2022 (2)	$ 226,713
2023	$ 1,684,430

(1) Certain amounts borrowed pursuant to the Credit Facilities will immediately mature if certain of our senior notes are not refinanced or repaid in full prior to the date that is 91 days prior to the respective stated maturity dates thereof. Accordingly, we may seek to repay or refinance certain senior notes prior to their stated maturity dates. The amounts in this maturities table do not reflect any such early repayment or refinancing; rather, they reflect stated maturity dates.

(2) In April 2019, the Company redeemed $1.8 million of senior notes, which had a stated maturity date in 2022. The amounts in this table do not reflect this early redemption; rather, they reflect stated maturity dates.

NOTE 13. COMMITMENTS AND CONTINGENCIES

Legal Proceedings and Investigations

We and certain of our subsidiaries are involved in various claims, legal proceedings and internal and governmental investigations (collectively, proceedings) that arise from time to time, including, among others, those relating to product liability, intellectual property, regulatory compliance, consumer protection, tax and commercial matters. While we cannot predict the outcome of these proceedings and we intend to vigorously prosecute or defend our position as appropriate, there can be no assurance that we will be successful or obtain any requested relief, and an adverse outcome in any of these proceedings could have a material adverse effect on our business, financial condition, results of operations and cash flows. Matters that are not being disclosed herein are, in the opinion of our management, immaterial both individually and in the aggregate with respect to our financial position, results of operations and cash flows. If and when such matters, in the opinion of our management, become material, either individually or in the aggregate, we will disclose them.

We believe that certain settlements and judgments, as well as legal defense costs, relating to certain product liability or other matters are or may be covered in whole or in part under our insurance policies with a number of insurance carriers. In certain circumstances, insurance carriers reserve their rights to contest or deny coverage. We intend to contest vigorously any and all disputes with our insurance carriers and to enforce our rights under the terms of our insurance policies. Accordingly, we will record receivables with respect to amounts due under these policies only when the realization of the potential claim for recovery is considered probable. Amounts recovered under our insurance policies could be materially less than the stated coverage limits and may not be adequate to cover damages, other relief and/or costs relating to claims. In addition, there is no guarantee that insurers will pay claims or that coverage will otherwise be available.

As of March 31, 2019, our accrual for loss contingencies totaled $861.3 million, the most significant components of which relate to product liability and related matters associated with vaginal mesh and testosterone. Although we believe there is a reasonable possibility that a loss in excess of the amount recognized exists, we are unable to estimate the possible loss or range of loss in excess of the amount recognized at this time. While the timing of the resolution of certain of the matters accrued for as loss contingencies remains uncertain and could extend beyond 12 months, as of March 31, 2019, the entire liability accrual amount is classified in the Current portion of legal settlement accrual in the Condensed Consolidated Balance Sheets.

Product Liability and Related Matters

We and certain of our subsidiaries have been named as defendants in numerous lawsuits in various U.S. federal and state courts, as well as in Canada and other countries, alleging personal injury resulting from the use of certain products of our subsidiaries. These and other related matters are described below in more detail.

Vaginal Mesh. Since 2008, we and certain of our subsidiaries, including American Medical Systems Holdings, Inc. (subsequently converted to Astora Women's Health Holding LLC and merged into Astora Women's Health LLC and referred to herein as AMS) and/or Astora, have been named as defendants in multiple lawsuits in various state and federal courts in the U.S. (including a federal multidistrict litigation (MDL) pending in the U.S. District Court for the Southern District of West Virginia (MDL No. 2325)), and in Canada and other countries, alleging personal injury resulting from the use of transvaginal surgical mesh products designed to treat pelvic organ prolapse (POP) and stress urinary incontinence (SUI). In January 2018, a representative proceeding (class action) was filed in the Federal Court of Australia against American Medical Systems, LLC. In the various class action and individual complaints, plaintiffs claim a variety of personal injuries, including chronic pain, incontinence, inability to control bowel function and permanent deformities, and seek compensatory and punitive damages, where available.

We and certain plaintiffs' counsel representing mesh-related product liability claimants have entered into various Master Settlement Agreements (MSAs) and other agreements to resolve up to approximately 71,000 filed and unfiled mesh claims handled or controlled by the participating counsel. These MSAs and other agreements were entered into at various times between June 2013 and the present, were solely by way of compromise and settlement and were not in any way an admission of liability or fault by us or any of our subsidiaries.

All MSAs are subject to a process that includes guidelines and procedures for administering the settlements and the release of funds. In certain cases, the MSAs provide for the creation of QSFs into which funds may be deposited pursuant to certain schedules set forth in those agreements. All MSAs have participation requirements regarding the claims represented by each law firm party to the MSA. In addition, one agreement gives us a unilateral right of approval regarding which claims may be eligible to participate under that settlement. To the extent fewer claims than are authorized under an agreement participate, the total settlement payment under that agreement will be reduced by an agreed-upon amount for each such non-participating claim. Funds deposited in QSFs are considered restricted cash and/or restricted cash equivalents.

Distribution of funds to any individual claimant is conditioned upon the receipt of documentation substantiating the validity of the claim, a full release and dismissal of the entire action or claim as to all AMS parties and affiliates. Prior to receiving funds, an individual claimant is required to represent and warrant that liens, assignment rights or other claims identified in the claims administration process have been or will be satisfied by the individual claimant. Confidentiality provisions apply to the amount of settlement awards to participating claimants, the claims evaluation process and procedures used in conjunction with award distributions, and the negotiations leading to the settlements.

In June 2017, the MDL court entered a case management order which, among other things, requires plaintiffs in newly-filed MDL cases to provide expert disclosures on specific causation within one hundred twenty (120) days of filing a claim (the Order). Under the Order, a plaintiff's failure to meet the foregoing deadline may be grounds for the entry of judgment against such plaintiff. In July 2017, a similar order was entered in Minnesota state court. In June 2018, at the request of the MDL court, the Judicial Panel on Multidistrict Litigation entered a minute order suspending the transfer of cases into the MDL. Subsequently, the MDL court issued a pretrial order discontinuing the direct filing of claims in MDL No. 2325. The MDL court also issued similar orders in other MDLs involving claims against other mesh manufacturers.

Although the Company believes it has appropriately estimated the probable total amount of loss associated with all mesh-related matters as of the date of this report, fact and expert discovery is ongoing in certain cases that have not settled, and it is reasonably possible that further claims may be filed or asserted and that adjustments to our liability accrual may be required. This could have a material adverse effect on our business, financial condition, results of operations and cash flows.

The following table presents the changes in the QSFs and mesh liability accrual balances during the three months ended March 31, 2019 (in thousands):

	Qualified Settlement Funds	Mesh Liability Accrual
Balance as of January 1, 2019	$ 299,733	$ 748,606
Additional charges	—	—
Cash contributions to Qualified Settlement Funds	81,582	—
Cash distributions to settle disputes from Qualified Settlement Funds	(54,984)	(54,984)
Cash distributions to settle disputes	—	(10,239)
Other (1)	1,057	1,057
Balance as of March 31, 2019	$ 327,388	$ 684,440

(1) Amounts deposited in the QSFs may earn interest, which is generally used to pay administrative costs of the fund and is reflected in the table above as an increase to the QSF and Mesh Liability Accrual balances. Any interest remaining after all claims have been paid will generally be distributed to the claimants who participated in that settlement.

Charges related to vaginal mesh liability and associated legal fees and other expenses for all periods presented are reported in Discontinued operations, net of tax in our Condensed Consolidated Statements of Operations.

To date, the Company has made total mesh liability payments of approximately $3.4 billion, $327.4 million of which remains in the QSFs as of March 31, 2019. We currently expect to fund into the QSFs the remaining payments under all settlement agreements during 2019. As the funds are disbursed out of the QSFs from time to time, the liability accrual will be reduced accordingly with a corresponding reduction to restricted cash and cash equivalents. In addition, we may pay cash distributions to settle disputes separate from the QSFs, which will also decrease the liability accrual and decrease cash and cash equivalents.

We were contacted in October 2012 regarding a civil investigation initiated by various state attorneys general into mesh products, including transvaginal surgical mesh products designed to treat POP and SUI. In November 2013, we received a subpoena relating to this investigation from the state of California, and we have subsequently received additional subpoenas from California and other states. We are cooperating with these investigations.

We will continue to vigorously defend any unresolved claims and to explore other options as appropriate in our best interests. Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any additional losses that could be incurred.

Testosterone. Various manufacturers of prescription medications containing testosterone, including our subsidiaries Endo Pharmaceuticals Inc. (EPI) and Auxilium Pharmaceuticals, Inc. (subsequently converted to Auxilium Pharmaceuticals, LLC and hereinafter referred to as Auxilium), have been named as defendants in multiple lawsuits alleging personal injury resulting from the use of such medications, including FORTESTA® Gel, DELATESTRYL®, TESTIM®, TESTOPEL®, AVEED® and STRIANT®. Plaintiffs in these suits generally allege various personal injuries, including pulmonary embolism, stroke or other vascular and/or cardiac injuries, and seek compensatory and/or punitive damages, where available.

As of May 2, 2019, we were aware of approximately 935 testosterone cases (some of which may have been filed on behalf of multiple plaintiffs) pending against one or more of our subsidiaries in federal or state court. Most of these cases have been coordinated in a federal MDL pending in the U.S. District Court for the Northern District of Illinois (MDL No. 2545). An MDL trial against Auxilium involving TESTIM® took place in November 2017 and resulted in a defense verdict. A trial against Auxilium involving TESTIM® was scheduled for January 2018 in the Philadelphia Court of Common Pleas but resolved prior to trial.

In June 2018, counsel for plaintiffs, on the one hand, and Auxilium and EPI, on the other, executed an MSA allowing for the resolution of all known testosterone replacement therapy product liability claims against our subsidiaries. The MSA was solely by way of compromise and settlement and was not in any way an admission of fault by us or any of our subsidiaries.

The MSA is subject to a process that includes guidelines and procedures for administering the settlement and the release of funds. Among other things, the MSA provides for the creation of a QSF into which the settlement funds will be deposited, establishes participation requirements and allows for a reduction of the total settlement payment in the event the participation threshold is not met. Distribution of funds to any individual claimant is conditioned upon the receipt of documentation substantiating product use and injury as determined by a third-party special master, the dismissal of any lawsuit and the release of the claim as to us and all affiliates. Prior to receiving funds, an individual claimant must represent and warrant that liens, assignment rights or other claims identified in the claims administration process have been or will be satisfied by the individual claimant. Confidentiality provisions apply to the settlement funds, amounts allocated to individual claimants and other terms of the agreement.

Although the Company believes it has appropriately estimated the probable total amount of loss associated with testosterone-related product liability matters as of the date of this report, it is reasonably possible that further claims may be filed or asserted and that adjustments to our liability accrual may be required. This could have a material adverse effect on our business, financial condition, results of operations and cash flows.

The MDL also included a lawsuit filed in November 2014 in the U.S. District for the Northern District of Illinois against EPI, Auxilium and various other manufacturers of testosterone products on behalf of a proposed class of health insurance companies and other third party payers that claim to have paid for certain testosterone products. This lawsuit is not part of the settlement described above. After a series of motions to dismiss, plaintiff filed a third amended complaint in April 2016, asserting civil claims for alleged violations of the Racketeer Influenced and Corrupt Organizations Act and negligent misrepresentation based on defendants' marketing of certain testosterone products. The court denied a motion to dismiss this complaint in August 2016. In July 2018, the court denied plaintiff's motion for class certification. In February 2019, the court granted defendants' motion for summary judgment. Plaintiffs have appealed to the U.S. Court of Appeals for the Seventh Circuit.

We will continue to vigorously defend any unresolved claims and to explore other options as appropriate in our best interests. Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any additional losses that could be incurred.

Opioid-Related Matters

Since 2014, multiple U.S. states, counties, other governmental persons or entities and private plaintiffs have filed suit against us and/or certain of our subsidiaries, including Endo Health Solutions Inc. (EHSI), EPI, PPI, Par Pharmaceutical Companies, Inc. (PPCI), Vintage Pharmaceuticals, LLC, Generics Bidco I, LLC and DAVA Pharmaceuticals, LLC, as well as various other manufacturers, distributors and/or others, asserting claims relating to defendants' alleged sales, marketing and/or distribution practices with respect to prescription opioid medications, including certain of our products. As of May 2, 2019, the cases of which we were aware include, but are not limited to, approximately 13 cases filed by or on behalf of states; approximately 1,925 cases filed by counties, cities, Native American tribes and/or other government-related persons or entities; approximately 136 cases filed by hospitals, health systems, unions, health and welfare funds or other third-party payers and approximately 59 cases filed by individuals. Certain of the cases have been filed as putative class actions. In addition to the litigation in the U.S., in August 2018, an action against Paladin Labs Inc., EPI, the Company and various other manufacturers and distributors was commenced in British Columbia on behalf of all federal, provincial and territorial governments and agencies in Canada that paid healthcare, pharmaceutical and treatment costs related to opioids.

Many of the U.S. cases have been coordinated in a federal MDL pending in the U.S. District Court for the Northern District of Ohio (MDL No. 2804). In March 2018, the U.S. Department of Justice (DOJ) filed a statement of interest in the case, and in April 2018 it filed a motion to participate in settlement discussions as a friend of the court, which the MDL court granted. The MDL court has issued a series of case management orders permitting motions to dismiss addressing threshold legal issues in certain cases (and has issued orders granting in part and denying in part some of those motions), setting a trial date in October 2019 for the claims of two Ohio counties, allowing certain discovery and establishing certain other deadlines and procedures, among other things.

Other cases remain pending in various state courts. In some jurisdictions, such as Connecticut, Illinois, New York, Pennsylvania, South Carolina and Texas, certain state court cases have been transferred to a single court within their respective state court systems for coordinated pretrial proceedings. The state cases are generally at the pleading and/or discovery stage with certain of these cases scheduled for trial beginning in 2020.

The complaints in the cases assert a variety of claims including, but not limited to, claims for alleged violations of public nuisance, consumer protection, unfair trade practices, racketeering, Medicaid fraud and/or drug dealer liability statutes and/or common law claims for public nuisance, fraud/misrepresentation, strict liability, negligence and/or unjust enrichment. The claims are generally based on alleged misrepresentations and/or omissions in connection with the sale and marketing of prescription opioid medications and/or an alleged failure to take adequate steps to prevent abuse and diversion. Plaintiffs generally seek declaratory and/or injunctive relief; compensatory, punitive and/or treble damages; restitution, disgorgement, civil penalties, abatement, attorneys' fees, costs and/or other relief.

We will continue to vigorously defend the foregoing matters and to explore other options as appropriate in our best interests. Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any losses that could be incurred. Such matters could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In addition to the lawsuits described above, the Company and/or its subsidiaries have received certain subpoenas, civil investigative demands (CIDs) and informal requests for information concerning the sale, marketing and/or distribution of prescription opioid medications, including the following:

Various state attorneys general have served subpoenas and/or CIDs on EHSI and/or EPI. We are cooperating with these investigations.

In January 2018, our subsidiary EPI received a federal grand jury subpoena from the U.S. District Court for the Southern District of Florida in connection with an investigation being conducted by the U.S. Attorney's Office for the Southern District of Florida in conjunction with the U.S. Food and Drug Administration (FDA). The subpoena seeks information related to OPANA® ER and other oxymorphone products. EPI is cooperating with the investigation.

Similar investigations may be brought by others or the foregoing matters may be expanded or result in litigation. We are unable to predict the outcome of these matters or to estimate the possible range of any losses that could be incurred. Such matters could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Generic Drug Pricing Matters

In December 2014, we received a grand jury subpoena from the Antitrust Division of the DOJ issued by the U.S. District Court for the Eastern District of Pennsylvania addressed to Par Pharmaceuticals. The subpoena requested documents and information focused primarily on product and pricing information relating to the authorized generic version of Lanoxin (digoxin) oral tablets and generic doxycycline products, and on communications with competitors and others regarding those products. We are cooperating with the investigation.

In May 2018, we and our subsidiary PPCI each received a CID from the DOJ in relation to a False Claims Act investigation concerning whether generic pharmaceutical manufacturers engaged in price-fixing and market allocation agreements, paid illegal remuneration and caused the submission of false claims. We are cooperating with the investigation.

Similar investigations may be brought by others or the foregoing matters may be expanded or result in litigation. We are unable to predict the outcome of these matters or to estimate the possible range of any losses that could be incurred.

Since March 2016, various private plaintiffs and state attorneys general have filed cases against our subsidiary PPI and/or, in some instances, the Company, Generics Bidco I, LLC, DAVA Pharmaceuticals, LLC and/or PPCI, as well as other pharmaceutical manufacturers and, in some instances, other corporate and/or individual defendants, alleging price-fixing and other anticompetitive conduct with respect to generic pharmaceutical products. These cases, which include proposed class actions filed on behalf of direct purchasers, end-payers and indirect purchaser resellers, as well as non-class action suits, have been consolidated and/or coordinated for pretrial proceedings in a federal MDL pending in the U.S. District Court for the Eastern District of Pennsylvania under the caption *In re Generic Pharmaceuticals Pricing Antitrust Litigation* (MDL No. 2724).

The various complaints and amended complaints generally assert claims under federal and/or state antitrust law, state consumer protection statutes and/or state common law, and seek damages, treble damages, civil penalties, disgorgement, declaratory and injunctive relief, costs and attorneys' fees. Some claims are based on alleged product-specific conspiracies. With respect to our subsidiaries, the allegations in the various complaints focus on amitriptyline, baclofen, digoxin, divalproex ER, doxycycline hyclate, doxycycline monohydrate, nystatin, propranolol and/or zoledronic acid. Other claims allege broader, multiple-product conspiracies involving various combinations of these and/or other products. Under these overarching conspiracy theories, plaintiffs seek to hold all alleged participants in a particular conspiracy jointly and severally liable for all harms caused by the alleged conspiracy, not just harms related to the products manufactured and/or sold by a particular defendant.

In October 2018, the MDL court denied defendants' motions to dismiss federal antitrust claims relating to digoxin, divalproex ER and doxycycline hyclate, among other products. In February 2019, the MDL court dismissed certain state law claims relating to these same products, but allowed other state law claims relating to those products to proceed. In February 2019, the defendants moved to dismiss plaintiffs' overarching conspiracy claims; that motion remains pending. The MDL court has also allowed certain discovery.

In May 2019, our subsidiary PPCI received written notice from certain state attorneys general that they intend to assert federal and/or state antitrust and/or consumer protection law claims with respect to additional generic pharmaceutical products. We do not know when or against whom such claims will be filed or the substance of such claims.

We will continue to vigorously defend the foregoing matters and to explore other options as appropriate in our best interests. Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any losses that could be incurred.

Other Antitrust Matters

Beginning in November 2013, multiple direct and indirect purchasers of LIDODERM® filed a number of cases against our subsidiary EPI and other pharmaceutical companies generally alleging that they had entered into an anticompetitive agreement to restrain trade through the settlement of patent infringement litigation concerning U.S. Patent No. 5,827,529 (the '529 patent) and other patents. The complaints asserted claims under Sections 1 and 2 of the Sherman Act (15 U.S.C. §§ 1, 2), and/or various state antitrust and consumer protection statutes, as well as common law claims, and generally sought damages, treble damages, disgorgement of profits, restitution, injunctive relief and attorneys' fees. The cases were consolidated and/or coordinated in April 2014 in a federal MDL in the U.S. District Court for the Northern District of California (MDL No. 2521). The MDL court certified classes of direct and indirect purchasers in February 2017. EPI settled with certain opt-out retailer plaintiffs in October 2017. In September 2018, the court approved EPI's settlement with the class plaintiffs and entered judgment dismissing the class cases with prejudice. In connection with the settlements, several indirect purchasers which previously had opted out were permitted to rejoin the class. The class settlement agreements provide for aggregate payments of approximately $100 million. As of May 2, 2019, EPI had paid approximately $90 million of this total, including approximately $60 million in 2018 and $30 million in the first quarter of 2019. The remaining $10 million is included in our accrual for loss contingencies.

Beginning in June 2014, multiple direct and indirect purchasers of OPANA® ER filed cases against our subsidiaries EHSI and EPI and other pharmaceutical companies, including Impax Laboratories, LLC (formerly Impax Laboratories, Inc. and referred to herein as Impax) and Penwest Pharmaceuticals Co., which our subsidiary EPI had acquired. Some cases were filed on behalf of putative classes of direct and indirect purchasers, while others were filed on behalf of individual retailers or health care benefit plans. All cases have been consolidated and/or coordinated for pretrial proceedings in a federal MDL pending in the U.S. District Court for the Northern District of Illinois (MDL No. 2580). Plaintiffs generally allege that an agreement reached by EPI and Impax to settle patent infringement litigation concerning multiple patents pertaining to OPANA® ER and EPI's introduction of reformulated OPANA® ER violated antitrust laws. The complaints assert claims under Sections 1 and 2 of the Sherman Act, various state antitrust and consumer protection statutes and/or state common law. Plaintiffs generally seek damages, treble damages, disgorgement of profits, restitution, injunctive relief and attorneys' fees. In February 2016, the MDL court issued orders (i) denying defendants' motion to dismiss the claims of the direct purchasers, (ii) denying in part and granting in part defendants' motion to dismiss the claims of the indirect purchasers, but giving them permission to file amended complaints and (iii) granting defendants' motion to dismiss the complaints filed by certain retailers, but giving them permission to file amended complaints. In response to the MDL court's orders, the indirect purchasers filed an amended complaint to which the defendants filed a renewed motion to dismiss certain claims, and certain retailers also filed amended complaints. The court has dismissed the indirect purchaser unjust enrichment claims arising under the laws of the states of California, Rhode Island and Illinois. The cases are currently in expert discovery. In March 2019, direct and indirect purchaser plaintiffs filed motions for class certification. We will continue to vigorously defend these matters and to explore other options as appropriate in our best interests.

Beginning in February 2009, the FTC and certain private plaintiffs, including distributors and retailers, filed suit against our subsidiary Par Pharmaceutical Companies, Inc. (since June 2016, Endo Generics Holdings, Inc., and referred to in this Commitments and Contingencies note as EGHI) and other pharmaceutical companies alleging violations of antitrust law arising out of their settlement of certain patent litigation concerning the generic version of AndroGel®. Generally, the complaints seek damages, treble damages, equitable relief and attorneys' fees and costs. The cases have been consolidated and/or coordinated for pretrial proceedings in a federal MDL pending in the U.S. District Court for the Northern District of Georgia (MDL No. 2084). In September 2012, the MDL court granted summary judgment to defendants on plaintiffs' claims of sham litigation. In May 2016, plaintiffs representing a putative class of indirect purchasers voluntarily dismissed their claims with prejudice. In February 2017, the FTC voluntarily dismissed its claims against EGHI with prejudice. Claims by certain alleged direct purchasers or their assignees are still pending against EGHI and other defendants. In June 2018, the MDL court granted in part and denied in part various summary judgment and evidentiary motions filed by defendants. In particular, the court rejected two of direct purchasers' three causation theories, rejected damages claims related to AndroGel® 1.62% and granted in part a motion seeking to exclude part of plaintiffs' proposed manufacturing expert's opinions. The motions were denied in all other respects, and the court denied a motion for reconsideration, or in the alternative leave to file an interlocutory appeal, in October 2018. In July 2018, the district court denied certain plaintiffs' motion for certification of a direct purchaser class. The MDL court has scheduled trial for February 2020. We will continue to vigorously defend these matters and to explore other options as appropriate in our best interests.

Beginning in May 2018, multiple alleged direct and indirect purchasers filed complaints in the U.S. District Court for the Southern District of New York against PPI, EPI and/or us, as well as others, alleging a conspiracy to delay generic competition and monopolize the market for Exforge® (amlodipine/valsartan) and its generic equivalents. Some cases were filed on behalf of putative classes of direct and indirect purchasers; others are non-class action suits. The plaintiffs generally assert claims under Sections 1 and 2 of the Sherman Act, various state antitrust and consumer protection statutes and state common law and seek damages, treble damages, equitable relief and attorneys' fees and costs. In September 2018, the putative class plaintiffs stipulated to the dismissal without prejudice of their claims against EPI and us, and the retailer plaintiffs later did the same. PPI filed a partial motion to dismiss certain claims in September 2018. We intend to vigorously defend these matters and to explore other options as appropriate in our best interests.

Beginning in February 2018, several alleged indirect purchasers filed proposed class actions against our subsidiary PPI and others alleging a conspiracy to delay generic competition and monopolize the market for Zetia® (ezetimibe) and its generic equivalents. The complaints generally asserted claims under Sections 1 and 2 of the Sherman Act, various state antitrust and consumer protection statutes and state common law and seek injunctive relief, damages, treble damages, attorneys' fees and costs. In June 2018, these and other cases, including proposed direct purchaser class actions in which PPI was not named as a defendant, were consolidated and/or coordinated for pretrial proceedings in a federal MDL pending in the U.S. District Court for the Eastern District of Virginia (MDL No. 2836). In May 2019, the direct purchaser plaintiffs filed a motion seeking leave of court to file an amended consolidated class complaint adding PPI as a defendant in the direct purchaser actions.

In November 2014, EPI received a CID from Florida's Office of the Attorney General seeking documents and other information concerning EPI's agreement with Actavis settling the LIDODERM® patent litigation, as well as information concerning marketing and sales of LIDODERM®. EPI and/or EHSI later received similar CIDs from other states. A CID from Alaska's Office of the Attorney General in February 2015 included requests for documents and information concerning agreements with Actavis and Impax settling the OPANA® ER patent litigation. We are cooperating with these investigations.

In February 2015, EGHI and affiliates received a CID from the Office of the Attorney General for the state of Alaska seeking production of certain documents and information regarding EGHI's settlement of the AndroGel® patent litigation as well as documents produced in the aforementioned litigation filed by the FTC. We are cooperating with this investigation.

Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any additional losses that could be incurred.

Securities Litigation

In May 2016, a putative class action entitled *Craig Friedman v. Endo International plc, Rajiv Kanishka Liyanaarchchie de Silva and Suketu P. Upadhyay* was filed in the U.S. District Court for the Southern District of New York by an individual shareholder on behalf of himself and all similarly situated shareholders. In August 2016, the court appointed Steamfitters' Industry Pension Fund and Steamfitters' Industry Security Benefit Fund as lead plaintiffs in the action. In October 2016, plaintiffs filed a second amended complaint that, among other things, added Paul Campanelli as a defendant, and we filed a motion to dismiss. In response, and without resolving the motion, the court permitted lead plaintiffs to file a third amended complaint. The amended complaint alleged violations of Sections 10(b) and 20(a) of the Exchange Act based on the Company's revision of its 2016 earnings guidance and certain disclosures about its generics business, the integration of Par Pharmaceutical Holdings, Inc. and its subsidiaries, certain other alleged business issues and the receipt of a CID from the U.S. Attorney's Office for the Southern District of New York regarding contracts with pharmacy benefit managers concerning FROVA®. Lead plaintiffs sought class certification, damages in an unspecified amount and attorneys' fees and costs. We filed a motion to dismiss the third amended complaint in December 2016. In January 2018, the court granted our motion and dismissed the case with prejudice. In February 2018, lead plaintiffs filed a motion for relief from the judgment and leave to file a fourth amended complaint; the court denied this motion in April 2018. Lead plaintiffs appealed to the U.S. Court of Appeals for the Second Circuit. In April 2019, the Court of Appeals affirmed the District Court's decision in full.

In February 2017, a putative class action entitled *Public Employees' Retirement System of Mississippi v. Endo International plc* was filed in the Court of Common Pleas of Chester County, Pennsylvania by an institutional purchaser of shares in our June 2, 2015 public offering, on behalf of itself and all similarly situated purchasers. The lawsuit alleges violations of Sections 11, 12(a)(2) and 15 of the Securities Act of 1933 against Endo, certain of its current and former directors and officers, and the underwriters who participated in the offering, based on certain disclosures about Endo's generics business. In March 2017, defendants removed the case to the U.S. District Court for the Eastern District of Pennsylvania. In August 2017, the court remanded the case back to the Chester County Court of Common Pleas. In October 2017, plaintiff filed an amended complaint. In December 2017, defendants filed preliminary objections to the amended complaint. The court denied those preliminary objections in April 2018. Plaintiff filed its motion for class certification in July 2018. In April 2019, the parties informed the court that they had reached a settlement in principle. The settlement in principle would provide the investor class $50 million in exchange for a release of their claims; the settlement is subject to court approval. As a result, during the first quarter of 2019, the Company recorded an increase of approximately $50 million to its accrual for loss contingencies. As the Company's insurers have agreed to fund the foregoing settlement, the Company also recorded a corresponding insurance receivable of approximately $50 million during the first quarter of 2019, which is included in Prepaid expenses and other current assets in the Condensed Consolidated Balance Sheets.

In April 2017, a putative class action entitled *Phaedra A. Makris v. Endo International plc, Rajiv Kanishka Liyanaarchchie de Silva and Suketu P. Upadhyay* was filed in the Superior Court of Justice in Ontario, Canada by an individual shareholder on behalf of herself and similarly-situated Canadian-based investors who purchased Endo's securities between January 11 and May 5, 2016. The statement of claim generally seeks class certification, declaratory relief, damages, interest and costs based on alleged violations of the Ontario Securities Act. The statement of claim alleges negligent misrepresentations concerning the Company's revenues, profit margins and earnings per share; its receipt of a subpoena from the state of Connecticut regarding doxycycline hyclate, amitriptyline hydrochloride, doxazosin mesylate, methotrexate sodium and oxybutynin chloride; and the erosion of the Company's U.S. generic pharmaceuticals business. In January 2019, plaintiff amended her statement of claim to add a claim on behalf of herself and similarly-situated Canadian investors who purchased Endo's securities between January 11, 2016 and June 8, 2017. This new claim is based on the Company's decision to remove reformulated OPANA® ER from the market.

In August 2017, a putative class action entitled *Bier v. Endo International plc, et al.* was filed in the U.S. District Court for the Eastern District of Pennsylvania by an individual shareholder on behalf of himself and all similarly situated shareholders. The original complaint alleged violations of Section 10(b) and 20(a) of the Exchange Act against Endo and four current and former directors and officers, based on the Company's decision to remove reformulated OPANA® ER from the market. In December 2017, the court appointed SEB Investment Management AB lead plaintiff in the action. In February 2018, the lead plaintiff filed an amended complaint, which added claims alleging violations of Sections 11 and 15 of the Securities Act in connection with the June 2015 offering. The amended complaint named the Company, EHSI and 20 current and former directors, officers and employees of Endo as defendants. In April 2018, the defendants moved to dismiss the amended complaint. In December 2018, the court dismissed the plaintiff's claims against four individual defendants, but otherwise denied the motion to dismiss. The case is currently in discovery.

In November 2017, a putative class action entitled *Pelletier v. Endo International plc, Rajiv Kanishka Liyanaarchchie De Silva, Suketu P. Upadhyay and Paul V. Campanelli* was filed in the U.S. District Court for the Eastern District of Pennsylvania by an individual shareholder on behalf of himself and all similarly situated shareholders. The lawsuit alleges violations of Section 10(b) and 20(a) of the Exchange Act relating to the pricing of various generic pharmaceutical products. In June 2018, the court appointed Park Employees' Annuity and Benefit Fund of Chicago lead plaintiff in the action. In August 2018, the lead plaintiff filed an amended complaint. In September 2018, the defendants moved to dismiss the amended complaint. That motion remains pending.

We will continue to vigorously defend the foregoing matters and to explore other options as appropriate in our best interests. Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any losses that could be incurred.

VASOSTRICT® Related Matters

In July 2016, Fresenius Kabi USA, LLC (Fresenius) filed a complaint against PPCI and its affiliate Par Sterile Products, LLC (PSP) in the U.S. District Court for the District of New Jersey alleging that Par Pharmaceutical Companies, Inc. and its affiliate engaged in an anticompetitive scheme to exclude competition for PPCI's VASOSTRICT® (vasopressin) product. The complaint alleges violations of Sections 1 and 2 of the Sherman Antitrust Act, as well as state antitrust and common law, based on assertions that PPCI and its affiliate entered into exclusive supply agreements with one or more active pharmaceutical ingredient (API) manufacturers and that, as a result, Fresenius has been unable to obtain vasopressin API in order to file an Abbreviated New Drug Application (ANDA) to obtain FDA approval for its own vasopressin product. Fresenius seeks actual, treble and punitive damages, attorneys' fees and costs and injunctive relief. In September 2016, PPCI and its affiliate filed a motion to dismiss, which the district court denied in February 2017. The case is currently in discovery.

In August 2017, our subsidiaries PPI and PSP filed a complaint for actual, exemplary and punitive damages, injunctive relief and other relief against QuVa Pharma, Inc. (QuVa), Stuart Hinchen, Peter Jenkins and Mike Rutkowski in the U.S. District Court for the District of New Jersey. The complaint alleges misappropriation in violation of the federal Defend Trade Secrets Act, New Jersey's Trade Secrets Act and New Jersey common law, as well as unfair competition, breach of contract, breach of fiduciary duty, breach of the duty of loyalty, tortious interference with contractual relations and breach of the duty of confidence in connection with VASOSTRICT®, a vasopressin-based cardiopulmonary drug. In November 2017, we filed a motion for preliminary injunction seeking various forms of relief. In January 2018, we filed a first amended complaint adding four former employees and one former consultant of PSP as defendants and numerous causes of action against some or all of those individuals, including misappropriation under the federal Defend Trade Secrets Act, New Jersey's Trade Secrets Act and New Jersey common law, as well as breach of contract, breach of the duty of loyalty and breach of the duty of confidence. In March 2018, the court granted in part our motion for preliminary injunction and enjoined QuVa from marketing and releasing its planned vasopressin product through the conclusion of trial. We subsequently deposited a bond to the court's interest-bearing account to secure the preliminary injunction. Defendants filed a motion asking the court to reconsider the bond amount, which the court denied. Also in March 2018, QuVa and seven of the individual defendants filed a motion to dismiss the New Jersey common law claims, four of the individual defendants filed a motion to dismiss for lack of personal jurisdiction and one of the individuals filed a motion to dismiss the breach of contract claim. In April 2018, another individual defendant filed a motion to dismiss asserting numerous arguments, including lack of personal jurisdiction, improper venue and choice of law. Discovery began in May 2018. Also in May 2018, defendants filed a notice of appeal to the Third Circuit Court of Appeal indicating intent to appeal the court's preliminary injunction. The parties completed appellate briefing in January 2019. Also in January 2019, the court denied all four of defendants' pending motions to dismiss. In February 2019, the defendants filed their answers and affirmative defenses, and certain defendants also filed counterclaims for defamation, tortious interference with contract, tortious interference with prospective business relations and witness interference. The counterclaims seek actual, exemplary and punitive damages and other relief. In March 2019, we filed a motion to dismiss all of the defendants' counterclaims. This motion is still pending. In April 2019, the Third Circuit Court of Appeals affirmed the court's preliminary injunction but remanded for additional fact-finding concerning the duration of the preliminary injunction and, if needed, consideration of the additional trade secrets raised in our motion for preliminary injunction but not addressed by the preliminary injunction order.

In October 2017, Endo Par Innovation Company, LLC (EPIC) and PSP filed a complaint in the U.S. District Court for the District of Columbia challenging the legality of the FDA's *Interim Policy on Compounding Using Bulk Drug Substances Under Section 503B of the Federal Food, Drug, and Cosmetic Act* (January 2017) with respect to the listing of vasopressin in Category 1 of the *Interim Policy*. The complaint contends that the *Interim Policy* is unlawful because it is inconsistent with the Federal Food, Drug, and Cosmetic Act, including, but not limited to, Section 503B of that Act. The complaint sought (i) a declaration that FDA's *Interim Policy* and its listing of vasopressin in Category 1 of the *Interim Policy* are unlawful and (ii) an order enjoining and vacating the *Interim Policy* and the FDA's listing of vasopressin in Category 1 of the *Interim Policy*. In January 2018, EPIC and PSP agreed to a temporary 60-day stay of the litigation in light of the FDA's announcement that forthcoming guidance would address the concerns set forth in the Company's complaint. In March 2018, the FDA released new draft guidance for industry entitled "Evaluation of Bulk Drug Substances Nominated for Use in Compounding Under Section 503B of the Federal Food, Drug, and Cosmetic Act." Shortly thereafter, the parties agreed to extend the temporary stay for an additional 180 days. In August 2018, before the 180-day stay period expired, Athenex Pharma Solutions, LLC and Athenex Pharmaceutical Division, LLC announced they had commenced bulk compounding of vasopressin, and moved to intervene in EPIC and PSP's case against the FDA. Later that month, EPIC and PSP invoked their ability to terminate the stay and filed a Motion for Preliminary Injunction. Before responding to the Motion for Preliminary Injunction, the FDA issued a notice containing a proposed finding that there is no clinical need to bulk compound vasopressin under Section 503B in August 2018. In September 2018, the FDA advised EPIC and PSP that it would agree to use its best efforts to finalize the vasopressin clinical need rulemaking by December 31, 2018, if the case were again stayed. EPIC and PSP agreed to the requested stay. In December 2018, the appropriations act that had been funding the DOJ and components of the FDA expired, resulting in a lapse of appropriations; therefore, the FDA moved the court for a further stay of the case until appropriations were restored. The court granted the motion in January 2019, ordering the FDA to file a notification with the court within three business days of DOJ operations resuming. After government appropriations were restored, the FDA advised that it would use its best efforts to finalize the vasopressin clinical need determination by March 15, 2019. The FDA finalized the vasopressin clinical need determination on March 4, 2019, finding that because of VASOSTRICT®'s availability, there is no clinical need for outsourcing facilities to compound drugs using bulk vasopressin. That same day, Athenex, Inc., Athenex Pharma Solutions, LLC, and Athenex Pharmaceutical Division, LLC filed a complaint in the U.S. District Court for the District of Columbia, challenging the FDA's clinical need determination for vasopressin. EPIC and PSP intervened as defendants in the action. The parties and the court agreed to an expedited summary judgment briefing, and a hearing on cross-motions for summary judgment was held in April 2019. EPIC and PSP expect a ruling by early summer. EPIC and PSP's suit against the FDA remains stayed until that ruling issues.

In August 2018, Athenex filed a declaratory judgment action in the U.S. District Court for the Western District of New York, a case styled *Athenex v. Par*, alleging non-infringement and/or invalidity of the patents the Company has listed in the Orange Book in view of VASOSTRICT®. The Company moved to dismiss Athenex's case on multiple grounds in October 2018, which motion was opposed by Athenex in December 2018. The Company responded to this opposition in December 2018. This motion has not yet been decided.

In April 2018, PSP and PPI received a notice letter from Eagle Pharmaceuticals, Inc. (Eagle) advising of the filing by such company of an ANDA for a generic version of VASOSTRICT® (vasopressin IV solution (infusion)) 20 units/ml. In May 2018, PSP and PPI received a second notice letter from Eagle advising of the same filing, but adding an additional patent. The Paragraph IV notices refer to U.S. Patent Nos. 9,375,478; 9,687,526; 9,744,209; 9,744,239; 9,750,785; and 9,937,223, which variously cover either vasopressin-containing pharmaceutical compositions or methods of using a vasopressin-containing dosage form to increase blood pressure in humans. In May 2018, PPI, PSP and EPIC filed a lawsuit against Eagle in the U.S. District Court for the District of Delaware within the 45-day deadline to invoke a 30-month stay of FDA approval pursuant to the Hatch-Waxman legislative scheme. In August 2018, Eagle filed an answer and a counterclaim for non-infringement and invalidity of asserted patents. A claim construction hearing is scheduled for May 2019, with a bench trial scheduled for May 2020.

In September 2018, PSP and PPI received a notice letter from Sandoz Inc. (Sandoz) advising of the filing by such company of an ANDA for a generic version of VASOSTRICT® (vasopressin IV solution (infusion)) 200 units/10 ml. In October 2018, PPI, PSP and EPIC filed a lawsuit against Sandoz in the U.S. District Court for the District of New Jersey within the 45-day deadline to invoke a 30-month stay of FDA approval pursuant to the Hatch-Waxman legislative scheme. In October 2018, PSP and PPI received an additional notice letter from Sandoz advising of the filing by such company of an ANDA for a generic version of the 20 units/1 ml presentation for VASOSTRICT®. In November 2018, the complaint was amended to add a claim for the additional notice letter, within the 45-day deadline to invoke a 30-month stay of FDA approval pursuant to the Hatch-Waxman legislative scheme. The Company continues to vigorously defend its intellectual property.

In November 2018, PSP and PPI received a notice letter from Amphastar Pharmaceuticals, Inc. (Amphastar) advising of the filing by such company of an ANDA for a generic version of VASOSTRICT® (vasopressin IV solution (infusion)) 20 units/1 ml. In December 2018, PPI, PSP and EPIC filed a lawsuit against Amphastar in the U.S. District Court for the District of Delaware within the 45-day deadline to invoke a 30-month stay of FDA approval pursuant to the Hatch-Waxman legislative scheme. The Company continues to vigorously defend its intellectual property.

In March 2019, PSP and PPI received a notice letter from Amneal Pharmaceuticals LLC (Amneal) advising of the filing by such company of an ANDA for a generic version of VASOSTRICT® (vasopressin IV solution (infusion)) 20 units/1 ml and 200 units/10 ml. In April 2019, PPI, PSP and EPIC filed a lawsuit against Amneal in the U.S. District Court for the District of Delaware within the 45-day deadline to invoke a 30-month stay of FDA approval pursuant to the Hatch-Waxman legislative scheme. The Company continues to vigorously defend its intellectual property.

The Company's accrual for loss contingencies includes, among other things, an estimated accrual for certain VASOSTRICT®-related matters. We will continue to vigorously defend or prosecute the foregoing matters as appropriate, to protect our intellectual property rights, to pursue all available legal and regulatory avenues and to explore other options as appropriate in our best interests. Similar matters may be brought by others or the foregoing matters may be expanded. We are unable to predict the outcome of these matters or to estimate the possible range of any additional losses that could be incurred.

Paragraph IV Certifications on OPANA® ER

In August 2014 and October 2014, the U.S. Patent Office issued U.S. Patent Nos. 8,808,737 (the '737 patent) and 8,871,779 (the '779 patent) respectively, which cover a method of using OPANA® ER and a highly pure version of the API of OPANA® ER. In November 2014, EPI filed lawsuits against Teva, ThoRx, Actavis, Impax, Ranbaxy, Roxane, Amneal and Sandoz Inc. based on their ANDAs filed against both the INTAC® technology and non-INTAC® technology versions of OPANA® ER. Those lawsuits were filed in the U.S. District Court for the District of Delaware alleging infringement of these new patents, which expire in 2027 and 2029, respectively. On November 17, 2015, the District Court held the '737 patent invalid for claiming unpatentable subject matter. That patent has been dismissed from all suits and the suits administratively closed as to that patent, subject to appeal at the end of the case on the '779 patent. In July 2016, a three-day trial was held in the U.S. District Court for the District of Delaware against Teva and Amneal for infringement of the '779 patent. In October 2016, the District Court issued an opinion holding that the defendants infringed the claims of U.S. Patent No. 8,871,779. The opinion also held that the defendants had failed to show that the '779 patent was invalid. The District Court issued an order enjoining the defendants from launching their generic products until the expiration of the '779 patent in November 2029. A trial for infringement of the '779 patent by Actavis was held in February 2017 in the same court (U.S. District Court for the District of Delaware) in front of the same judge. In August 2017, the District Court issued an opinion holding that Actavis infringed the claims of the '779 patent and that Actavis had failed to show that the '779 patent was invalid. Teva, Amneal and Actavis have appealed these holdings. We have appealed the holding that the '737 patent is invalid. A hearing on those appeals took place in December 2018. We are awaiting decisions on the Teva, Amneal and Actavis appeals. On Endo's appeal, the court ruled in Endo's favor in April 2019, holding that the '737 patent is not invalid for claiming a natural law. Once the remaining appeals are decided, this case will be referred back to the District Court.

We will continue to vigorously defend or prosecute the foregoing matter as appropriate, to protect our intellectual property rights, to pursue all available legal and regulatory avenues and to explore other options as appropriate in our best interests in defense of our intellectual property, including enforcement of the product's intellectual property rights and approved labeling. We are unable to predict the outcome of these matters or to estimate the possible range of any losses that could be incurred.

Other Proceedings and Investigations

Proceedings similar to those described above may also be brought in the future. Additionally, we are involved in, or have been involved in, arbitrations or various other proceedings that arise from the normal course of our business. We cannot predict the timing or outcome of these other proceedings. Currently, neither we nor our subsidiaries are involved in any other proceedings that we expect to have a material effect on our business, financial condition, results of operations and cash flows.

NOTE 14. OTHER COMPREHENSIVE INCOME (LOSS)

There were no tax effects allocated to any component of Other comprehensive income (loss) for the three months ended March 31, 2019 and 2018. Substantially all of the Company's Accumulated other comprehensive loss at March 31, 2019 and December 31, 2018 consists of Foreign currency translation loss.

NOTE 15. SHAREHOLDERS' DEFICIT

The following table presents a reconciliation of the beginning and ending balances in Total shareholders' deficit for the three months ended March 31, 2019 (in thousands):

	Euro Deferred Shares	Ordinary Shares	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Shareholders' Deficit
BALANCE, DECEMBER 31, 2018, PRIOR TO THE ADOPTION OF ASC 842 (1)	$ 46	$ 22	$ 8,855,810	$ (9,124,932)	$ (229,229)	$ (498,283)
Effect of adopting ASC 842 (1)	—	—	—	(4,646)	—	(4,646)
BALANCE, JANUARY 1, 2019	$ 46	$ 22	$ 8,855,810	$ (9,129,578)	$ (229,229)	$ (502,929)
Net loss	—	—	—	(18,573)	—	(18,573)
Other comprehensive income	—	—	—	—	4,730	4,730
Compensation related to share-based awards	—	—	24,733	—	—	24,733
Exercise of options	—	—	4	—	—	4
Tax withholding for restricted shares	—	—	(2,414)	—	—	(2,414)
Other	(1)	—	—	—	—	(1)
BALANCE, MARCH 31, 2019	$ 45	$ 22	$ 8,878,133	$ (9,148,151)	$ (224,499)	$ (494,450)

(1) Refer to Note 2. Summary of Significant Accounting Policies for further description of ASC 842.

The following table presents a reconciliation of the beginning and ending balances in Total shareholders' equity (deficit) for the three months ended March 31, 2018 (in thousands):

	Euro Deferred Shares	Ordinary Shares	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Shareholders' Equity (Deficit)
BALANCE, DECEMBER 31, 2017, PRIOR TO THE ADOPTION OF ASC 606 (1)	$ 48	$ 22	$ 8,791,170	$ (8,096,539)	$ (209,821)	$ 484,880
Effect of adopting ASC 606 (1)	—	—	—	3,076	—	3,076
BALANCE, JANUARY 1, 2018	$ 48	$ 22	$ 8,791,170	$ (8,093,463)	$ (209,821)	$ 487,956
Net loss	—	—	—	(505,489)	—	(505,489)
Other comprehensive loss	—	—	—	—	(5,797)	(5,797)
Compensation related to share-based awards	—	—	17,890	—	—	17,890
Tax withholding for restricted shares	—	—	(1,642)	—	—	(1,642)
Other	1	—	(12)	—	—	(11)
BALANCE, MARCH 31, 2018	$ 49	$ 22	$ 8,807,406	$ (8,598,952)	$ (215,618)	$ (7,093)

(1) The Company adopted ASC 606 on January 1, 2018 using the modified retrospective method for all revenue-generating contracts, including modifications thereto, that were not completed contracts at the date of adoption. As a result of adopting ASC 606, the Company recorded a net decrease of $3.1 million to its accumulated deficit at January 1, 2018, representing the cumulative impact of adopting ASC 606.

Share-Based Compensation

The Company recognized share-based compensation expense of $24.7 million and $17.9 million during the three months ended March 31, 2019 and 2018, respectively. As of March 31, 2019, the total remaining unrecognized compensation cost related to non-vested share-based compensation awards amounted to $88.4 million.

There are 0.2 million performance share units outstanding as of March 31, 2019, representing target amounts, for which a grant date has not been established. No fair value has been ascribed to these awards as no grant date has been established. Accordingly, they are not reflected in the remaining unrecognized compensation cost above or the weighted average remaining requisite service period below.

As of March 31, 2019, the weighted average remaining requisite service period for non-vested stock options was 1.5 years and for non-vested restricted stock units was 2.2 years.

NOTE 16. OTHER EXPENSE (INCOME), NET

The components of Other expense (income), net for the three months ended March 31, 2019 and 2018 are as follows (in thousands):

	Three Months Ended March 31,	
	2019	2018
Net loss (gain) on sale of business and other assets	$ 1,294	$ (2,416)
Foreign currency loss (gain), net	1,716	(2,085)
Net loss from our investments in the equity of other companies	2,086	2,626
Other miscellaneous, net	(294)	(1,003)
Other expense (income), net	$ 4,802	$ (2,878)

Net loss (gain) on sale of business and other assets primarily relates to the sales of various ANDAs. Amounts of Foreign currency loss (gain), net result from the remeasurement of the Company's foreign currency denominated assets and liabilities. Net loss from our investments in the equity of other companies includes the income statement impacts of our investments in the equity of other companies, including those accounted for under the equity method and those classified as marketable securities.

NOTE 17. INCOME TAXES

The following table displays our Loss from continuing operations before income tax, Income tax expense and Effective tax rate for the three months ended March 31, 2019 and 2018 (dollars in thousands):

	Three Months Ended March 31,	
	2019	2018
Loss from continuing operations before income tax	$ (1,709)	$ (482,247)
Income tax expense	$ 10,903	$ 15,491
Effective tax rate	*(638.0)%*	*(3.2)%*

The income tax expense for the three months ended March 31, 2019 primarily relates to a taxable gain arising from the extinguishment of debt in the March 2019 Refinancing Transactions. As of March 31, 2019, we had valuation allowances established against our deferred tax assets in most jurisdictions in which we operate, with the exception of Canada and India. The income tax expense for the comparable 2018 period primarily relates to the geographic mix of pre-tax earnings and discrete tax expense incurred in connection with an intercompany asset restructuring.

NOTE 18. NET LOSS PER SHARE

The following is a reconciliation of the numerator and denominator of basic and diluted net loss per share for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Numerator:		
Loss from continuing operations	$ (12,612)	$ (497,738)
Loss from discontinued operations, net of tax	(5,961)	(7,751)
Net loss	$ (18,573)	$ (505,489)
Denominator:		
For basic per share data—weighted average shares	224,594	223,521
Dilutive effect of ordinary share equivalents	—	—
For diluted per share data—weighted average shares	224,594	223,521

Basic net loss per share amounts are computed based on the weighted average number of ordinary shares outstanding during the period. Diluted net loss per share amounts are computed based on the weighted average number of ordinary shares outstanding and, if there is net income from continuing operations during the period, the dilutive impact of ordinary share equivalents outstanding during the period.

The dilutive effect of ordinary share equivalents is measured using the treasury stock method. Stock options and awards that have been issued but for which a grant date has not yet been established, such as the performance share units discussed in Note 15. Shareholders' Deficit, are not considered in the calculation of basic or diluted weighted average shares.

All potentially dilutive items were excluded from the diluted share calculation for the three months ended March 31, 2019 and 2018 because their effect would have been anti-dilutive, as the Company was in a loss position.

Item 2. ***Management's Discussion and Analysis of Financial Condition and Results of Operations***

The following Management's Discussion and Analysis of Financial Condition and Results of Operations describes the principal factors affecting the results of operations, liquidity and capital resources and critical accounting estimates of Endo International plc. This discussion should be read in conjunction with the accompanying quarterly unaudited Condensed Consolidated Financial Statements and related notes thereto and the Annual Report. The Annual Report includes additional information about our significant accounting policies, practices and the transactions that underlie our financial results, as well as a detailed discussion of the most significant risks and uncertainties associated with our financial and operating results. Except for the historical information contained in this report, including the following discussion, this report contains forward-looking statements that involve risks and uncertainties. See "Forward-Looking Statements" beginning on page i of this report.

Unless otherwise indicated or required by the context, references throughout to "Endo," the "Company," "we," "our" or "us" refer to financial information and transactions of Endo International plc and its subsidiaries.

RESULTS OF OPERATIONS

Our quarterly results have fluctuated in the past, and may continue to fluctuate. These fluctuations are primarily due to (1) the timing of new product launches, (2) purchasing patterns of our customers, (3) market acceptance of our products, (4) the impact of competitive products and products we recently acquired, (5) pricing of our products, (6) the timing of mergers, acquisitions, divestitures and other related activity and (7) other actions taken by the Company which may impact the availability of our products. These fluctuations are also attributable to charges incurred for compensation related to share-based payments, amortization of intangible assets, asset impairment charges, litigation-related charges, restructuring charges and certain upfront, milestone and other payments made or accrued pursuant to acquisition or licensing agreements. Additionally, the Company adopted ASC 842 on January 1, 2019 for leases that existed on that date. The Company has elected to apply the provisions of ASC 842 retrospectively at January 1, 2019 through a cumulative-effect adjustment. Prior period results continue to be presented under ASC 840 based on the accounting standards originally in effect for such periods. Refer to Note 2. Summary of Significant Accounting Policies of the Condensed Consolidated Financial Statements included in Part I, Item 1 for additional information.

Consolidated Results Review

The following table displays our revenue, gross margin, gross margin percentage and other pre-tax expense or income for the three months ended March 31, 2019 and 2018 (dollars in thousands):

	Three Months Ended March 31,		% Change
	2019	2018	2019 vs. 2018
Total revenues, net	$ 720,411	$ 700,527	3 %
Cost of revenues	391,909	403,598	(3)%
Gross margin	$ 328,502	$ 296,929	11 %
Gross margin percentage	*45.6%*	*42.4%*	
Selling, general and administrative	$ 151,123	$ 166,667	(9)%
Research and development	33,486	38,646	(13)%
Litigation-related and other contingencies, net	6	(2,500)	NM
Asset impairment charges	165,448	448,416	(63)%
Acquisition-related and integration items	(37,501)	6,835	NM
Interest expense, net	132,675	123,990	7 %
Gain on extinguishment of debt	(119,828)	—	NM
Other expense (income), net	4,802	(2,878)	NM
Loss from continuing operations before income tax	$ (1,709)	$ (482,247)	(100)%

NM indicates that the percentage change is not meaningful or is greater than 100%.

Total revenues, net. The increase for the three months ended March 31, 2019 is primarily due to continued strong performance from our Sterile Injectables segment, including VASOSTRICT®, ADRENALIN® and ertapenem for injection, the authorized generic of Invanz®, our Branded Pharmaceuticals segment's Specialty Products portfolio, led by XIAFLEX®, and new product launches such as colchicine tablets, the authorized generic of Colcrys®. These increases were partially offset by continued competitive pressure on commoditized generic products and generic competition on our Branded Pharmaceuticals segment's Established Products portfolio.

Cost of revenues and gross margin percentage. During the three months ended March 31, 2019 and 2018, we incurred certain charges that impact the comparability of total Cost of revenues, including those related to amortization expense and separation benefits and other cost reduction initiatives, including restructurings. The following table summarizes such amounts (in thousands):

	Three Months Ended March 31,	
	2019	2018
Amortization of intangible assets (1)	$ 145,599	$ 157,172
Separation benefits and other cost reduction initiatives (2)	$ —	$ 29,606

(1) Amortization expense fluctuates based on changes in the total amount of amortizable intangible assets and the rate of amortization in effect for each intangible asset, both of which can vary based on factors such as the amount and timing of acquisitions, dispositions, asset impairment charges, transfers between indefinite- and finite-lived intangibles assets, changes in foreign currency rates and changes in the composition of our intangible assets impacting the weighted average useful lives and amortization methodologies being utilized. The decrease during the three months ended March 31, 2019 was primarily driven by asset impairment charges and decreases in the rate of amortization expense for certain assets, partially offset by the impact of certain in-process research and development assets put into service.

(2) Amounts in 2018 primarily relate to certain accelerated depreciation charges, employee separation costs, charges to increase excess inventory reserves related to restructurings and other cost reduction and restructuring charges. See Note 4. Restructuring of the Condensed Consolidated Financial Statements included in Part I, Item 1 for discussion of our material restructuring initiatives.

The decrease to amortization expense and decreased restructuring charges were the primary factors leading to the overall period-over-period decrease in Cost of revenues for the three months ended March 31, 2019. Partially offsetting these decreases was the impact of the previously described increase in total revenues.

The changes in gross margin percentage for the three months ended March 31, 2019 were primarily attributable to the gross margin effects of the net Cost of revenues decreases included in the table above and the impact of changes in product mix, which included the favorable impact of a shift in product mix to higher margin Sterile Injectables revenues, offset by the impact of the revenue performance of certain authorized generic products launched in 2018.

Selling, general and administrative expenses. The decrease for the three months ended March 31, 2019 was primarily driven by a lower branded prescription drug fee and the impact of certain restructuring and other cost reduction initiatives. Partially offsetting these decreases was an increase in costs related to our continued investment and promotional efforts behind XIAFLEX®. Our material restructuring initiatives are described more fully in Note 4. Restructuring of the Condensed Consolidated Financial Statements included in Part I, Item 1.

Research and development expenses. In November 2018, we reported positive results from two Phase 3 clinical trials of collagenase clostridium histolyticum (CCH) for the treatment of cellulite in the buttocks. Trial subjects receiving CCH showed highly statistically significant levels of improvement in the appearance of cellulite with treatment, as measured by the trials' primary endpoint. In addition, the RELEASE-1 trial passed 8 out of 8 key secondary endpoints and the RELEASE-2 trial passed 7 out of 8 key secondary endpoints. Finally, CCH was well-tolerated in the actively-treated subjects with most adverse events being mild to moderate in severity and primarily limited to the local injection area. These trials had been initiated during the first quarter of 2018.

Also during the first quarter of 2018, we announced the January 2018 Restructuring Initiative, which included a reorganization of our Generic Pharmaceuticals segment's research and development network. The January 2018 Restructuring Initiative is described more fully in Note 4. Restructuring of the Condensed Consolidated Financial Statements included in Part I, Item 1.

The decrease in R&D expense for the three months ended March 31, 2019 was primarily a result of the January 2018 Restructuring Initiative and other cost reduction initiatives. Additionally, costs associated with our clinical trials of CCH for the treatment of cellulite decreased for the three months ended March 31, 2019. Partially offsetting these decreases was the impact of costs associated with certain post-marketing commitments.

Litigation-related and other contingencies, net. Included within Litigation-related and other contingencies, net are changes to our accruals for litigation-related settlement charges and certain settlement proceeds related to suits filed by our subsidiaries. Our material legal proceedings and other contingent matters are described in more detail in Note 13. Commitments and Contingencies of the Condensed Consolidated Financial Statements included in Part I, Item 1.

Asset impairment charges. The following table presents the components of our total Asset impairment charges for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Goodwill impairment charges	$ 86,000	$ 391,000
Other intangible asset impairment charges	78,700	54,200
Property, plant and equipment impairment charges	748	3,216
Total asset impairment charges	$ 165,448	$ 448,416

The factors leading to our material goodwill and intangible asset impairment tests, as well as the results of these tests, are further described in Note 9. Goodwill and Other Intangibles of the Condensed Consolidated Financial Statements included in Part I, Item 1. A discussion of critical accounting estimates made in connection with certain of our impairment tests is included below under the caption "CRITICAL ACCOUNTING ESTIMATES."

Acquisition-related and integration items. Acquisition-related and integration items for the three months ended March 31, 2019 and 2018 primarily consist of the net (benefit) expense from changes in the fair value of acquisition-related contingent consideration resulting from changes to our estimates regarding the timing and amount of the future revenues of the underlying products and changes in other assumptions impacting the probability of, and extent to which we will incur related contingent obligations. See Note 6. Fair Value Measurements of the Condensed Consolidated Financial Statements included in Part I, Item 1 for further discussion of our acquisition-related contingent consideration.

Interest expense, net. The components of Interest expense, net for the three months ended March 31, 2019 and 2018 are as follows (in thousands):

	Three Months Ended March 31,	
	2019	2018
Interest expense	$ 137,106	$ 127,513
Interest income	(4,431)	(3,523)
Interest expense, net	$ 132,675	$ 123,990

The increase in interest expense for the three months ended March 31, 2019 was primarily attributable to higher interest rates driven by increases in the London Interbank Offered Rate (LIBOR) that impacted our variable-rate debt.

Although we cannot predict future interest rates with certainty, absent actions to reduce the weighted average interest rate or to further reduce the principal amount of our debt, interest expense is likely to increase in 2019 as compared to 2018, primarily as a result of increases in LIBOR, together with the March 2019 Refinancing Transactions that increased the weighted average interest rate and reduced the outstanding principal of our debt. Refer to Note 12. Debt of the Condensed Consolidated Financial Statements included in Part I, Item 1 for further discussion of these transactions.

Interest income varies primarily based on the amounts of our interest-bearing investments, such as money markets, as well as changes in the corresponding interest rates.

Gain on extinguishment of debt. Gain on extinguishment of debt totaled $119.8 million for the three months ended March 31, 2019, with no such amounts recorded in any of the other periods presented. The amount during the three months ended March 31, 2019 related to the March 2019 Refinancing Transactions. Refer to Note 12. Debt of the Condensed Consolidated Financial Statements included in Part I, Item 1 for further discussion.

Other expense (income), net. The components of Other expense (income), net for the three months ended March 31, 2019 and 2018 are as follows (in thousands):

	Three Months Ended March 31,	
	2019	2018
Net loss (gain) on sale of business and other assets	$ 1,294	$ (2,416)
Foreign currency loss (gain), net	1,716	(2,085)
Net loss from our investments in the equity of other companies	2,086	2,626
Other miscellaneous, net	(294)	(1,003)
Other expense (income), net	$ 4,802	$ (2,878)

Net loss (gain) on sale of business and other assets primarily relates to the sales of various ANDAs. Amounts of Foreign currency loss (gain), net result from the remeasurement of the Company's foreign currency denominated assets and liabilities. Net loss from our investments in the equity of other companies includes the income statement impacts of our investments in the equity of other companies, including those accounted for under the equity method and those classified as marketable securities.

Income tax expense. The following table displays our Loss from continuing operations before income tax, Income tax expense and Effective tax rate for the three months ended March 31, 2019 and 2018 (dollars in thousands):

	Three Months Ended March 31,	
	2019	2018
Loss from continuing operations before income tax	$ (1,709)	$ (482,247)
Income tax expense	$ 10,903	$ 15,491
Effective tax rate	*(638.0)%*	*(3.2)%*

Our tax rate is affected by recurring items, such as tax rates in non-U.S. jurisdictions as compared to the notional U.S. federal statutory tax rate, and the relative amount of income or loss in those various jurisdictions. It is also impacted by certain items that may occur in any given period, but are not consistent from period to period.

The income tax expense for the three months ended March 31, 2019 primarily relates to a taxable gain arising from the extinguishment of debt in the March 2019 Refinancing Transactions. The income tax expense for the comparable 2018 period primarily relates to the geographic mix of pre-tax earnings and discrete tax expense incurred in connection with an intercompany asset restructuring.

We have valuation allowances established against our deferred tax assets in most jurisdictions in which we operate, with the exception of Canada and India. Accordingly, it would be unlikely for future pre-tax losses to create a tax benefit that would be more likely than not to be realized. Although the Company has valuation allowances established against deferred tax assets in most major jurisdictions as of March 31, 2019, it is possible that there could be material reversals if certain proposed law changes were to be enacted.

The Internal Revenue Service (IRS) presently is examining certain of our subsidiaries' U.S. income tax returns for fiscal years ending between December 31, 2011 and December 31, 2015 and, in connection with those examinations, is reviewing our tax positions related to, among other things, certain intercompany arrangements, including the level of profit earned by our U.S. subsidiaries pursuant to such arrangements, and a worthless stock deduction directly attributable to product liability losses. The IRS may examine our tax returns for other fiscal years and/or for other tax positions. Similarly, other tax authorities may examine our non-U.S. tax returns and propose adjustments to our taxes. Such examinations may lead to proposed or actual adjustments to our taxes that may be material, individually or in the aggregate. An adverse outcome of these tax examinations could have a material adverse effect on our business, financial condition, results of operations and cash flows.

For additional information on our income taxes, see Note 17. Income Taxes of the Condensed Consolidated Financial Statements included in Part I, Item 1.

Discontinued operations, net of tax. The operating results of our Astora business are reported as Discontinued operations, net of tax in the Condensed Consolidated Statements of Operations for all periods presented. The results of our discontinued operations, net of tax, were losses of $6.0 million and $7.8 million during the three months ended March 31, 2019 and 2018, respectively. Included in these amounts are Litigation-related and other contingencies, net, mesh-related legal defense costs and certain other items. For additional discussion of mesh-related matters, refer to Note 13. Commitments and Contingencies of the Condensed Consolidated Financial Statements included in Part I, Item 1.

Key Trends. We estimate that the following factors will impact our 2019 total revenues as compared to 2018:

- growth in the Specialty Products portfolio of our Branded Pharmaceuticals segment, primarily driven by increased revenues following continued investments in XIAFLEX®;
- growth in the Sterile Injectables segment, driven by continued performance of VASOSTRICT® and ADRENALIN® and the full-year impact of ertapenem for injection, which launched during the third quarter of 2018; and
- declines in the Generic Pharmaceuticals segment, the Established Products portfolio of the Branded Pharmaceuticals segment and the International Pharmaceuticals segment, primarily driven by continued competitive pressures impacting these product portfolios.

These estimated trends reflect the current expectations of the Company's management team based on information currently known to them. These estimates are subject to risks and uncertainties that could cause our actual results to differ materially from those indicated by such estimated trends.

Business Segment Results Review

During the first quarter of 2019, the Company changed the names of its reportable segments. This change, which was intended to simplify the segments' names, had no impact on the Company's unaudited Condensed Consolidated Financial Statements or segment results for any of the periods presented. For further details regarding this change and a discussion of our reportable segments and how we evaluate segment performance, refer to Note 5. Segment Results of the Condensed Consolidated Financial Statements included in Part I, Item 1.

We refer to adjusted income from continuing operations before income tax, a financial measure not determined in accordance with U.S. GAAP, in making operating decisions because we believe it provides meaningful supplemental information regarding our operational performance. For instance, we believe that this measure facilitates internal comparisons to our historical operating results and comparisons to competitors' results. We believe this measure is useful to investors in allowing for greater transparency related to supplemental information used in our financial and operational decision-making. Further, we believe that adjusted income from continuing operations before income tax may be useful to investors as we are aware that certain of our significant shareholders utilize adjusted income from continuing operations before income tax to evaluate our financial performance. Finally, adjusted income from continuing operations before income tax is utilized in the calculation of other non-GAAP financial measures, which are used by the Compensation Committee of the Company's Board of Directors in assessing the performance and compensation of substantially all of our employees, including our executive officers.

There are limitations to using financial measures such as adjusted income from continuing operations before income tax. Other companies in our industry may define adjusted income from continuing operations before income tax differently than we do. As a result, it may be difficult to use adjusted income from continuing operations before income tax or similarly named adjusted financial measures that other companies may use to compare the performance of those companies to our performance. Because of these limitations, adjusted income from continuing operations before income tax is not intended to represent cash flow from operations as defined by U.S. GAAP and should not be used as an indicator of operating performance, a measure of liquidity or as alternative to net income, cash flows or any other financial measure determined in accordance with U.S. GAAP. We compensate for these limitations by providing reconciliations of our total segment adjusted income from continuing operations before income tax to our Total consolidated loss from continuing operations before income tax, which is determined in accordance with U.S. GAAP and included in our Condensed Consolidated Statements of Operations.

Revenues, Net. The following table displays our revenue by reportable segment for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,		% Change
	2019	2018	2019 vs. 2018
Branded Pharmaceuticals	$ 203,525	$ 200,235	2 %
Sterile Injectables	270,048	215,854	25 %
Generic Pharmaceuticals	218,526	249,240	(12)%
International Pharmaceuticals (1)	28,312	35,198	(20)%
Total net revenues from external customers	$ 720,411	$ 700,527	3 %

(1) Revenues generated by our International Pharmaceuticals segment are primarily attributable to external customers located in Canada.

Branded Pharmaceuticals. The following table displays the significant components of our Branded Pharmaceuticals revenues from external customers for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,		% Change
	2019	2018	2019 vs. 2018
Specialty Products:			
XIAFLEX®	$ 68,507	$ 57,141	20 %
SUPPRELIN® LA	22,056	20,577	7 %
Other Specialty (1)	24,403	19,027	28 %
Total Specialty Products	$ 114,966	$ 96,745	19 %
Established Products:			
PERCOCET®	$ 30,760	$ 31,976	(4)%
TESTOPEL®	15,814	15,170	4 %
Other Established (2)	41,985	56,344	(25)%
Total Established Products	$ 88,559	$ 103,490	(14)%
Total Branded Pharmaceuticals (3)	$ 203,525	$ 200,235	2 %

(1) Products included within Other Specialty are NASCOBAL® Nasal Spray and AVEED®. Beginning with our first quarter 2019 reporting, TESTOPEL®, which was previously included in Other Specialty, has been reclassified and is now included in the Established Products portfolio for all periods presented.
(2) Products included within Other Established include, but are not limited to, LIDODERM®, VOLTAREN® Gel, EDEX®, FORTESTA® Gel, and TESTIM®, including the authorized generics of TESTIM® and FORTESTA® Gel.
(3) Individual products presented above represent the top two performing products in each product category for the three months ended March 31, 2019 and/or any product having revenues in excess of $25 million during any quarterly period in 2019 or 2018.

Specialty Products

The increase in net sales of XIAFLEX® for the three months ended March 31, 2019 was primarily attributable to demand growth driven by the continued investment and promotional efforts behind XIAFLEX®, as well as price.

The increase in net sales of SUPPRELIN® LA for the three months ended March 31, 2019 was primarily attributable to increases in both volume and price.

The increase in net sales of Other Specialty Products for the three months ended March 31, 2019 was primarily attributable to increased sales of both NASCOBAL® Nasal Spray and AVEED®. When compared to the three months ended March 31, 2018, these products generally benefited from increased volumes.

Established Products

The decrease in net sales of PERCOCET® for the three months ended March 31, 2019 was primarily attributable to volume decreases, partially offset by price increases.

The increase in net sales of TESTOPEL® for the three months ended March 31, 2019 was primarily attributable to volume increases.

The decrease in net sales of Other Established Products for the three months ended March 31, 2019 was primarily attributable to volume decreases as a result of ongoing competitive pressure from generic competition, partially offset by price increases.

Sterile Injectables. The following table displays the significant components of our Sterile Injectables revenues from external customers for the three months ended March 31, 2019 and 2018 (dollars in thousands):

	Three Months Ended March 31,		% Change
	2019	2018	2019 vs. 2018
VASOSTRICT®	$ 139,137	$ 113,725	22 %
ADRENALIN®	47,322	29,740	59 %
Ertapenem for injection	32,219	—	NM
Other Sterile Injectables (1)	51,370	72,389	(29)%
Total Sterile Injectables (2)	$ 270,048	$ 215,854	25 %

NM indicates that the percentage change is not meaningful or is greater than 100%.
(1) Products included within Other Sterile Injectables include, but are not limited to, APLISOL® and ephedrine sulfate injection.
(2) Individual products presented above represent the top two performing products within the Sterile Injectables segment for the three months ended March 31, 2019 and/or any product having revenues in excess of $25 million during any quarterly period in 2019 or 2018.

Net sales of VASOSTRICT® and ADRENALIN® increased during the three months ended March 31, 2019 due to both increased price and volume. The increase in volume for VASOSTRICT® reflects a benefit from the timing of shipments.

As further discussed in Note 13. Commitments and Contingencies of the Condensed Consolidated Financial Statements included in Part I, Item 1, as a result of the FDA finalizing the vasopressin clinical need determination in March 2019, it is unlawful for outsourcing facilities to sell compounded vasopressin products unless they manufacture those products using an FDA-approved vasopressin. VASOSTRICT® is currently the only vasopressin product approved by the FDA. However, Athenex, Inc., Athenex Pharma Solutions, LLC, and Athenex Pharmaceutical Division, LLC filed a complaint in the U.S. District Court for the District of Columbia, challenging the FDA's clinical need determination for vasopressin. EPIC and PSP intervened as defendants in the action. The parties and the court agreed to an expedited summary judgment briefing, and a hearing on cross-motions for summary judgment was held in April 2019. The FDA has indicated that they will exercise enforcement discretion against the Athenex entities until the court reaches its decision.

As of March 31, 2019, we have six patents for VASOSTRICT® listed in the Orange Book and additional patents pending with the U.S. Patent and Trademark Office. The FDA requires any applicant seeking FDA approval for vasopressin prior to patent expiry and relying on VASOSTRICT® as the Reference Listed Drug to notify us of its filing before the FDA will issue an approval.

We are aware of certain competitive actions taken by other pharmaceutical companies related to VASOSTRICT®. These matters are further discussed in Note 13. Commitments and Contingencies of the Condensed Consolidated Financial Statements included in Part I, Item 1 under the heading "VASOSTRICT® Related Matters." We have taken and plan to continue to take actions in our best interest to protect our rights with respect to VASOSTRICT®. The introduction of any competing versions of VASOSTRICT® could result in reductions to our market share, revenues, profitability and cash flows.

Ertapenem for injection, the authorized generic of Invanz®, launched during the third quarter of 2018 and had no sales during the three months ended March 31, 2018.

The decrease in net sales of Other Sterile Injectables for the three months ended March 31, 2019 was primarily driven by the timing of shipments for certain products in this portfolio and certain competitive pressures.

Generic Pharmaceuticals. The decrease in revenue for the Generic Pharmaceuticals segment for the three months ended March 31, 2019 was primarily attributable to continued competitive pressure on commoditized generic products. Partially offsetting the decrease was the impact of certain recent product launches including, among others, colchicine tablets.

International Pharmaceuticals. The decrease in revenue for the International Pharmaceuticals segment for the three months ended March 31, 2019 was primarily attributable to competitive pressures in the Canadian market and a shift in timing of sales on certain products compared to the same period in 2018.

Adjusted income from continuing operations before income tax. The following table displays our Adjusted income from continuing operations before income tax by reportable segment for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,		% Change
	2019	2018	2019 vs. 2018
Branded Pharmaceuticals	$ 79,008	$ 93,814	(16)%
Sterile Injectables	196,183	169,445	16 %
Generic Pharmaceuticals	49,997	74,280	(33)%
International Pharmaceuticals	12,095	13,718	(12)%
Total segment adjusted income from continuing operations before income tax	$ 337,283	$ 351,257	(4)%

Branded Pharmaceuticals. The decrease for the three months ended March 31, 2019 was primarily attributable to increased expenses, including legal costs related to certain litigation matters and costs related to our continued investment and promotional efforts behind XIAFLEX®, partially offset by increased gross margin resulting from the revenue increases described above.

Sterile Injectables. The increase for the three months ended March 31, 2019 was primarily attributable to increased revenues and gross margins resulting from strong performance of a variety of products in this segment as described above.

Generic Pharmaceuticals. The decrease for the three months ended March 31, 2019 was primarily attributable to decreased revenues as described above and the resulting reduction to gross margin. This decrease was partially offset by reduced expenses including a lower branded prescription drug fee and the cost savings associated with the restructuring initiatives described in Note 4. Restructuring of the Condensed Consolidated Financial Statements included in Part I, Item 1.

International Pharmaceuticals. The decrease for the three months ended March 31, 2019 was primarily attributable to decreased revenues as described above and the resulting reduction to gross margin, partially offset by decreases to selling, general and administrative expenses.

The table below provides reconciliations of our Total consolidated loss from continuing operations before income tax, which is determined in accordance with U.S. GAAP, to our total segment adjusted income from continuing operations before income tax for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
	2019	2018
Total consolidated loss from continuing operations before income tax	$ (1,709)	$ (482,247)
Interest expense, net	132,675	123,990
Corporate unallocated costs (1)	48,095	52,460
Amortization of intangible assets	145,599	157,172
Inventory step-up	—	66
Upfront and milestone payments to partners	939	1,332
Separation benefits and other cost reduction initiatives (2)	2,025	48,987
Certain litigation-related and other contingencies, net (3)	6	(2,500)
Asset impairment charges (4)	165,448	448,416
Acquisition-related and integration items (5)	(37,501)	6,835
Gain on extinguishment of debt	(119,828)	—
Foreign currency impact related to the remeasurement of intercompany debt instruments	1,534	(2,514)
Other, net (6)	—	(740)
Total segment adjusted income from continuing operations before income tax	$ 337,283	$ 351,257

(1) Amounts include certain corporate overhead costs, such as headcount, facility and corporate litigation expenses and certain other income and expenses.
(2) Amounts for the three months ended March 31, 2019 primarily relate to employee separation costs of $1.8 million and other charges of $0.2 million. Amounts for the three months ended March 31, 2018 primarily relate to employee separation costs of $25.2 million, accelerated depreciation of $17.1 million, charges to increase excess inventory reserves of $2.4 million and other charges of $4.3 million. These charges were related primarily to our restructuring initiatives. See Note 4. Restructuring of the Condensed Consolidated Financial Statements included in Part I, Item 1 for discussion of our material restructuring initiatives.
(3) Amounts include adjustments for Litigation-related and other contingencies, net as further described in Note 13. Commitments and Contingencies.
(4) Amounts primarily relate to charges to impair goodwill and intangible assets as further described in Note 9. Goodwill and Other Intangibles.
(5) Amounts primarily relate to changes in the fair value of contingent consideration.
(6) Amounts primarily relate to gains on sales of businesses and other assets.

LIQUIDITY AND CAPITAL RESOURCES

Our principal source of liquidity is cash generated from operations. Our principal liquidity requirements are primarily for working capital for operations, licenses, milestone payments, capital expenditures, acquisitions, contingent liabilities, debt service payments and litigation-related matters, including vaginal mesh liability payments. The Company's working capital was $520.8 million at March 31, 2019 compared to working capital of $393.1 million at December 31, 2018. The amounts at March 31, 2019 and December 31, 2018 include restricted cash and cash equivalents of $327.4 million and $299.7 million, respectively, held in QSFs for mesh-related matters. Although these amounts in QSFs are included in working capital, they are required to be used for mesh product liability settlement agreements.

Cash and cash equivalents, which primarily consisted of bank deposits and money market accounts, totaled $981.7 million at March 31, 2019 compared to $1,149.1 million at December 31, 2018. We expect cash generated from operations together with our cash, cash equivalents, restricted cash, restricted cash equivalents and the Revolving Credit Facility to be sufficient to cover our principal liquidity requirements over the next year. However, on a longer term basis, we may not be able to accurately predict the effect of certain developments on our sales and gross margins, such as the degree of market acceptance, patent protection and exclusivity of our products, pricing pressures (including those due to the impact of competition), the effectiveness of our sales and marketing efforts and the outcome of our current efforts to develop, receive approval for and successfully launch our product candidates. We may also face unexpected expenses in connection with our business operations, including expenses related to our ongoing and future legal proceedings and governmental investigations and other contingent liabilities. Furthermore, we may not be successful in implementing, or may face unexpected changes or expenses in connection with our strategic direction, including the potential for opportunistic corporate development transactions. Any of the above could have a material adverse effect on our business, financial condition, results of operations and cash flows.

From time to time, we may seek to enter into certain transactions to reduce the extent of our leverage and/or interest expense and/or to extend the maturities of our outstanding indebtedness. Such transactions could include, for example, transactions to exchange existing indebtedness for our ordinary shares, to issue equity (including convertible securities) or to repurchase, redeem or refinance our existing indebtedness (including the Credit Agreement). In order to finance any such transactions, we may need to obtain additional funding. Any of these transactions could impact our liquidity.

We may also require additional financing to fund our future operational needs or for future corporate transactions, including acquisitions. We have historically had broad access to financial markets that provide liquidity; however, we cannot be certain that funding will be available to us in the future on terms acceptable to us, or at all. Any issuances of equity securities or convertible securities, in connection with an acquisition or otherwise, could have a dilutive effect on the ownership interest of our current shareholders and may adversely impact net income per share in future periods. An acquisition may be accretive or dilutive and, by its nature, involves numerous risks and uncertainties. As a result of acquisition efforts, if any, we are likely to experience significant charges to earnings for merger and related expenses (whether or not the acquisitions are consummated) that may include transaction costs, closure costs or costs of restructuring activities.

Borrowings. The Company and/or certain of its subsidiaries are party to the Credit Agreement, which governs the Credit Facilities, and the indentures governing our various senior secured and senior unsecured notes. As of March 31, 2019, approximately $3.4 billion was outstanding under the Term Loan Facility, approximately $4.8 billion was outstanding under the senior secured and senior unsecured notes and approximately $996.8 million was available under the Revolving Credit Facility.

The Company and its subsidiaries, with certain customary exceptions, guarantee or serve as issuers or borrowers of the debt instruments representing substantially all of the Company's indebtedness at March 31, 2019.

The Credit Agreement contains affirmative and negative covenants that the Company believes to be usual and customary for a senior secured credit facility of this type. The negative covenants include, among other things, limitations on asset sales, mergers and acquisitions, indebtedness, liens, dividends and other restricted payments, investments and transactions with the Company's affiliates. As of March 31, 2019 and December 31, 2018, we were in compliance with all such covenants.

The Company's notes mature between 2022 and 2027, subject to earlier repurchase or redemption in accordance with the terms of the respective indentures. Interest rates on these notes range from 5.375% to 7.50%. Certain of these notes are senior unsecured obligations of the Company's subsidiaries party to the applicable indentures governing such notes.

The indentures governing our various senior notes contain affirmative and negative covenants that the Company believes to be usual and customary for similar indentures. Under the senior secured notes indentures, the negative covenants, among other things, restrict the Company's ability and the ability of its Restricted Subsidiaries (as defined in the indentures) to incur certain additional indebtedness and issue preferred stock; make certain dividends, distributions, investments and other restricted payments; sell certain assets; enter into sale and leaseback transactions; agree to certain restrictions on the ability of restricted subsidiaries to make certain payments to the Company or any of its restricted subsidiaries; create certain liens; merge, consolidate or sell all or substantially all of the Company's assets; enter into certain transactions with affiliates or designate subsidiaries as unrestricted subsidiaries. Under the senior unsecured notes indentures, the negative covenants, among other things, restrict the ability of Endo Designated Activity Company and its Restricted Subsidiaries (as defined in the indentures) to incur certain additional indebtedness and issue preferred stock; make certain dividends, distributions, investments and other restricted payments; sell certain assets; enter into sale and leaseback transactions; agree to certain restrictions on the ability of restricted subsidiaries to make certain payments to the issuer or any of the restricted subsidiaries; create certain liens; merge, consolidate or sell all or substantially all of Endo Designated Activity Company's, its co-issuers' or guarantors' assets; enter into certain transactions with affiliates or designate subsidiaries as unrestricted subsidiaries. These covenants are subject to a number of exceptions and qualifications, including the fall away or revision of certain of these covenants and release of collateral in the case of the senior secured notes, upon the notes receiving investment grade credit ratings. As of March 31, 2019 and December 31, 2018, we were in compliance with all such covenants.

The obligations under (i) the Credit Agreement and related loan documents and (ii) the indentures governing the senior secured notes and related documents are secured on a *pari passu* basis by a perfected first priority (subject to certain permitted liens) lien on substantially all of the assets of the borrowers and the guarantors (subject to customary exceptions).

Credit ratings. The Company's corporate credit ratings assigned by Moody's Investors Service and Standard & Poor's are B2 with a negative outlook and B with a stable outlook, respectively.

Working capital. The components of our working capital and our liquidity at March 31, 2019 and December 31, 2018 are below (dollars in thousands):

	March 31, 2019	December 31, 2018
Total current assets	$ 2,272,133	$ 2,343,150
Less: total current liabilities	(1,751,288)	(1,950,096)
Working capital	$ 520,845	$ 393,054
Current ratio (total current assets divided by total current liabilities)	1.3:1	1.2:1

Net working capital increased by $127.8 million from December 31, 2018 to March 31, 2019. This increase primarily reflects the favorable impact to net current assets resulting from operations during the three months ended March 31, 2019. These increases were partially offset by certain items that occurred during the three months ended March 31, 2019 including, but not limited to, the impact of adopting ASC 842, which resulted in a net decrease to working capital of approximately $10.7 million, purchases of property, plant and equipment, excluding capitalized interest, of $15.4 million and our incurrence of financing fees in connection with the March 2019 Refinancing Transactions.

The following table summarizes our Condensed Consolidated Statements of Cash Flows for the three months ended March 31, 2019 and 2018 (in thousands):

	2019	2018
Net cash flow provided by (used in):		
Operating activities	$ (90,583)	$ 48,846
Investing activities	(16,377)	(15,597)
Financing activities	(33,771)	(23,410)
Effect of foreign exchange rate	537	(627)
Movement in cash held for sale	—	—
Net (decrease) increase in cash, cash equivalents, restricted cash and restricted cash equivalents	$ (140,194)	$ 9,212

Operating activities. Net cash (used in) provided by operating activities represents the cash receipts and cash disbursements from all of our activities other than investing activities and financing activities. Changes in cash from operating activities reflect, among other things, the timing of cash collections from customers, payments to suppliers, managed care organizations, government agencies, collaborative partners and employees, as well as tax payments and refunds in the ordinary course of business.

The $139.4 million change in Net cash (used in) provided by operating activities during the three months ended March 31, 2019 compared to the prior year period was primarily the result of the timing of cash collections and cash payments related to our operations. Cash outlays for legal matters increased during the three months ended March 31, 2019 compared to the prior year period as a result of increased cash outflows for certain mesh-related and LIDODERM®-related matters of approximately $10.0 million and $30.0 million, respectively. Additionally, cash paid for interest during the three months ended March 31, 2019 increased as compared to the prior year period as a result of increased interest rates and approximately $20.3 million of interest paid early as a result of the Notes Repurchases described in Note 12. Debt of the Condensed Consolidated Financial Statements included in Part I, Item 1.

Investing activities. The $0.8 million increase in Net cash used in investing activities during the three months ended March 31, 2019 compared to the prior year period reflects a decrease in Proceeds from sale of business and other assets, net of $13.2 million, offset in part by a decrease in Purchases of property, plant and equipment, excluding capitalized interest of $9.5 million and a decrease in payments for Other investing activities of $3.3 million.

Financing activities. Net cash used in financing activities increased $10.4 million during the three months ended March 31, 2019 compared to the prior year period. This increase was primarily due to the March 2019 Refinancing Transactions, which resulted in Proceeds from issuance of notes, net of $1,483.1 million, cash used for Repayments of notes totaling $1,500.0 million and Payments of deferred financing fees of $0.2 million during the three months ended March 31, 2019. Partially offsetting this increase was a decrease in Payments for contingent consideration of $7.4 million.

Contractual Obligations. As of March 31, 2019, there were no material changes in our contractual obligations from those disclosed in the Annual Report except for those related to the March 2019 Refinancing Transactions described in Note 12. Debt of the Condensed Consolidated Financial Statements included in Part I, Item 1. Additionally, Note 8. Leases of the Condensed Consolidated Financial Statements included in Part I, Item 1 includes the undiscounted amounts of future cash flows included in our lease liabilities at March 31, 2019 for each of the five years subsequent to December 31, 2018 and thereafter.

Fluctuations. Our quarterly results have fluctuated in the past and may continue to fluctuate. These fluctuations may be due to the timing of new product launches, purchasing patterns of our customers, market acceptance of our products, the impact of competitive products and pricing, certain actions taken by us which may impact the availability of our products, asset impairment charges, litigation-related charges, restructuring costs, including separation benefits, business combination transaction costs, upfront, milestone and certain other payments made or accrued pursuant to licensing agreements and changes in the fair value of financial instruments and contingent assets and liabilities recorded as part of business combinations. Further, a substantial portion of our total revenues are through three wholesale drug distributors who in turn supply our products to pharmacies, hospitals and physicians. Accordingly, we are potentially subject to a concentration of credit risk with respect to our trade receivables.

Inflation. We do not believe that inflation had a material adverse effect on our financial statements for the periods presented.

Off-balance sheet arrangements. We have no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K.

CRITICAL ACCOUNTING ESTIMATES

Significant changes to our critical accounting estimates since December 31, 2018 are detailed below. For additional discussion of the Company's critical accounting estimates, see "Critical Accounting Estimates" in Item 7 of the Annual Report.

Goodwill and indefinite-lived intangible assets

As further described in Note 9. Goodwill and Other Intangibles of the Condensed Consolidated Financial Statements included in Part I, Item 1, we recorded a pre-tax, non-cash goodwill impairment charge relating to our Generic Pharmaceuticals reporting unit of $86.0 million during the first quarter of 2019. A 50 basis point increase in the assumed discount rate used in the impairment test would have increased this goodwill impairment charge by approximately $46 million.

We have not made any substantial changes to our methodology used in our impairment tests since our previous assessment. Determination of the fair value of a reporting unit is a matter of judgment and involves the use of estimates and assumptions, which are based on management's best estimates at the time. The use of different assumptions would increase or decrease our estimated discounted future cash flows and the resulting estimated fair value of our reporting units, and could result in the fair value of a reporting unit being less than its carrying amount in the impairment test. Any resulting non-cash impairment charges could be material.

RECENT ACCOUNTING PRONOUNCEMENTS

For a discussion of recent accounting pronouncements, refer to Note 2. Summary of Significant Accounting Policies of the Condensed Consolidated Financial Statements included in Part I, Item 1.

Item 3. *Quantitative and Qualitative Disclosures About Market Risk*

Market risk is the potential loss arising from adverse changes in the financial markets, including interest rates and foreign currency exchange rates.

Interest Rate Risk

Our exposure to interest rate risk relates primarily to our variable-rate indebtedness associated with our Term Loan Facility and Revolving Credit Facility. At March 31, 2019 and December 31, 2018, the aggregate principal amounts of such variable-rate indebtedness were $3,355.2 million and $3,363.8 million, respectively. Borrowings under the Credit Facilities may from time to time bear interest at variable rates, which rates are further described in Note 12. Debt of the Condensed Consolidated Financial Statements included in Part I, Item 1, in certain cases subject to a floor. At both March 31, 2019 and December 31, 2018, a hypothetical 1% increase in the applicable rate over the floor would have resulted in $33.6 million of incremental annual interest expense related to our variable-rate debt borrowings.

To the extent that we utilize amounts under the Revolving Credit Facility or take on additional variable rate indebtedness, we will be exposed to additional interest rate risk.

As of March 31, 2019 and December 31, 2018, we had no other assets or liabilities with significant interest rate sensitivity.

Foreign Currency Exchange Risk

We operate and transact business in various foreign countries and are therefore subject to risks associated with foreign currency exchange rate fluctuations. The Company manages this foreign currency risk, in part, through operational means including managing foreign currency revenues in relation to same currency costs and foreign currency assets in relation to same currency liabilities. The Company is also exposed to the potential earnings effects from intercompany foreign currency assets and liabilities that arise from normal trade receivables and payables and other intercompany loans. Additionally, certain of the Company's subsidiaries maintain their books of record in currencies other than their respective functional currencies. These subsidiaries' financial statements are remeasured into their respective functional currencies using current or historic exchange rates. Such remeasurement adjustments could have a material adverse effect on the Company's results of operations.

All assets and liabilities of our international subsidiaries, which maintain their financial statements in local currency, are translated to U.S. dollars at period-end exchange rates. Translation adjustments arising from the use of differing exchange rates are included in Accumulated other comprehensive loss. Gains and losses on foreign currency transactions and short-term intercompany receivables from foreign subsidiaries are included in Other expense (income), net in the Condensed Consolidated Statements of Operations. Refer to Note 16. Other Expense (Income), Net of the Condensed Consolidated Financial Statements included in Part I, Item 1 for the amount of Foreign currency loss (gain), net.

Based on the Company's significant foreign currency denominated intercompany loans existing at March 31, 2019 and December 31, 2018, we estimate that a 10% change in the underlying currencies of our foreign currency denominated intercompany loans, relative to the U.S. Dollar, could have resulted in approximately $8 million and $9 million in incremental foreign currency losses, respectively.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

The Company's management, with the participation of the Company's Chief Executive Officer and Principal Financial Officer, has evaluated the effectiveness of the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of March 31, 2019. Based on that evaluation, the Company's Chief Executive Officer and Principal Financial Officer concluded that the Company's disclosure controls and procedures were effective as of March 31, 2019.

Changes in Internal Control over Financial Reporting

During the fiscal quarter ended March 31, 2019, in connection with the adoption of ASC 842, the Company made certain changes to processes and controls related to lease accounting and disclosure. There have been no other changes in the Company's internal control over financial reporting during the fiscal quarter ended March 31, 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

The disclosures under Note 13. Commitments and Contingencies of the Condensed Consolidated Financial Statements included in Part I, Item 1 are incorporated into this Part II, Item 1 by reference.

Item 1A. Risk Factors

For a discussion of our risk factors, see the information in Part 1, Item 1A. "Risk Factors" in the Annual Report. There have been no material changes to our risk factors from those described in the Annual Report or our Quarterly Reports on Form 10-Q, except as set forth below.

If other pharmaceutical companies use litigation and regulatory means to obtain approval for generic, over-the-counter or other competing versions of our drugs, our sales may suffer.

Under the Hatch-Waxman Act, the FDA can approve an ANDA for a generic bioequivalent version of a previously approved drug without requiring the ANDA applicant to undertake the full clinical testing necessary to obtain approval to market a new branded drug. In place of such clinical studies, an ANDA applicant usually needs only to submit data demonstrating that its generic product is the same as the referenced listed drug with respect to the active ingredient and is bioequivalent to the branded product. Over-the-counter (OTC) drugs may be developed under either the New Drug Applications (NDA) or OTC monograph process. The OTC monograph process allows for OTC products to be marketed without pre-market approval and generally does not require clinical studies.

Various manufacturers have filed ANDAs seeking FDA approval for generic versions of certain of our key pharmaceutical products including, but not limited to, LIDODERM®, VASOSTRICT® and AVEED®. In connection with such filings, these manufacturers have challenged the validity and/or enforceability of one or more of the underlying patents protecting our products. In the case of LIDODERM®, we no longer have patent protection in the markets where we sell these products. Our revenues from LIDODERM® have been negatively affected by multiple competing generic versions of LIDODERM®, the first of which launched in September 2013. We anticipate that these revenues could decrease further should one or more additional generic versions of LIDODERM® launch.

Additionally, we recently received notice from a competing pharmaceutical company that manufactures one of our products that it intends to seek approval to launch a competing OTC version of such product. We cannot assure you that this, or any other manufacturer, will not take similar actions with respect to other products. Any launch of competing OTC versions of any of our products could have a material adverse effect on our business, financial condition, results of operations and cash flows.

With respect to AVEED®, VASOSTRICT® and other branded pharmaceutical products, it has been and continues to be our practice to vigorously defend and pursue all available legal and regulatory avenues in defense of the intellectual property rights protecting our products. Despite our efforts to defend our products, litigation is inherently uncertain, and we cannot predict the timing or outcome of our efforts. If we are not successful in defending our intellectual property rights or opt to settle, or if a product's marketing exclusivity rights expire or become otherwise unenforceable, our competitors could ultimately launch generic, OTC or other competing versions of our products, which would likely cause sales and revenues of the affected products to decline rapidly and materially, could require us to write off a portion or all of the intangible assets associated with the affected product and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In the case of VASOSTRICT®, PSP and PPI received a notice letter from Eagle in April 2018 advising of the filing by such company of an ANDA for a generic version of VASOSTRICT® (vasopressin IV solution (infusion)). The Paragraph IV notice refers to patents the Company has listed in the Orange Book covering either vasopressin-containing pharmaceutical compositions or methods of using a vasopressin-containing dosage form to increase blood pressure in humans. In May 2018, PPI, PSP and EPIC filed a lawsuit against Eagle in the U.S. District Court for the District of Delaware within the 45-day deadline to invoke a 30-month stay of FDA approval pursuant to the Hatch-Waxman legislative scheme. We intend to vigorously defend VASOSTRICT®'s intellectual property rights and to pursue all available legal, business and regulatory avenues in defense of VASOSTRICT®, including enforcement of the product's intellectual property rights. However, there can be no assurance that our defense will be successful. If a generic version of VASOSTRICT® were introduced to the market before 2020, our revenues from VASOSTRICT® would decrease significantly and, depending on the timing of such introduction and its effect on VASOSTRICT® pricing, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

There are currently ongoing legal proceedings brought by us and/or our subsidiaries, and in certain cases our third party partners, against manufacturers seeking FDA approval for generic versions of our products. For a description of the material related legal proceedings, see Note 13. Commitments and Contingencies of the Condensed Consolidated Financial Statements included in Part I, Item 1.

We also believe it is likely that manufacturers may seek FDA approvals for generic, OTC or other competing versions of other of our key pharmaceutical products, either through the filing of ANDAs, through the OTC monograph process or the use of other means.

We have been, continue to be and may be the subject of lawsuits, product liability claims, other significant legal proceedings, government investigations or product recalls for which we may not have and may be unable to obtain or maintain insurance adequate to cover potential liabilities.

Our business exposes us to significant potential risks from lawsuits, product liability claims, other significant legal proceedings, government investigations or product recalls, including, but not limited to, such matters associated with the testing, manufacturing, marketing and sale of our products. Some plaintiffs have received substantial damage awards in some jurisdictions against healthcare companies based upon various legal theories, including without limitation claims for injuries allegedly caused by the use of their products. We have been, continue to be and may be subject to various product liability cases, as well as other significant legal proceedings and government investigations.

For example, we and our subsidiaries, along with other manufacturers of prescription opioid medications, are the subject of lawsuits and have received subpoenas and other requests for information from various state and local government agencies regarding the sale, marketing and/or distribution of prescription opioid medications. Numerous claims against opioid manufacturers have been and may continue to be filed by or on behalf of states, counties, cities, Native American tribes, other government-related persons or entities, hospitals, health systems, unions, health and welfare funds, other third-party payers and/or individuals. See Note 13. Commitments and Contingencies in the Condensed Consolidated Financial Statements included in Part I, Item 1 for more information. In these cases, plaintiffs seek various remedies, including without limitation declaratory and/or injunctive relief; compensatory, punitive and/or treble damages; restitution, disgorgement, civil penalties, abatement, attorneys' fees, costs and/or other relief. In addition to direct expenditures for damages, settlement and defense costs in connection with these claims, proceedings and investigations, there is a possibility of loss of revenues, injunctions and disruption of business. Furthermore, we and other manufacturers of prescription opioid medications have been, and will likely continue to be, subject to negative publicity and press, which could harm our brand and the demand for our products. There are also regulatory and legislative proposals being made that could impact us and other manufacturers of prescription opioid medications. See the risk factor "Our business and financial condition may be adversely affected by legislation" in Part 1, Item 1A. "Risk Factors" in the Annual Report for more information.

Our current and former products may cause, or may appear to cause, serious adverse side effects or potentially dangerous drug interactions if misused or improperly prescribed or as a result of faulty surgical technique. For example, we and/or certain of our subsidiaries and certain other manufacturers have been named as defendants in multiple lawsuits in various federal and state courts alleging personal injury resulting from use of transvaginal surgical mesh products designed to treat POP and SUI. The FDA held a public advisory committee meeting in February 2019 during which the members of the Obstetrics and Gynecology Devices Panel of the Medical Devices Advisory Committee discussed and made recommendations regarding the safety and effectiveness of surgical mesh to treat POP. In April 2019, following the meeting, the FDA ordered that the manufacturers of all remaining surgical mesh products indicated for the transvaginal repair of POP cease selling and distributing their products in the U.S. effective immediately. Although we have not sold transvaginal surgical mesh products since March 2016, it is possible that the FDA's order and any additional FDA actions based on the outcome of the advisory committee meeting could result in additional litigation against the Company. See Note 13. Commitments and Contingencies in the Condensed Consolidated Financial Statements included in Part I, Item 1 for more information.

Any failure to effectively identify, analyze, report and protect adverse event data and/or to fully comply with relevant laws, rules and regulations around adverse event reporting could expose the Company to penalties, fines and reputational damage.

In addition, in the age of social media, plaintiffs' attorneys have a wide variety of tools to advertise their services and solicit new clients for litigation, including using judgments obtained in litigation against other pharmaceutical companies as an advertising tool. For these or other reasons, any significant product liability or mass tort litigation in which we are a defendant could have a larger number of plaintiffs than such actions have seen historically and we could also see an increase in number of cases filed against us because of the increasing use of widespread and media-varied advertising. Furthermore, a ruling against other pharmaceutical companies in product liability or mass tort litigation in which we are not a defendant could have a negative impact on pending litigation where we are a defendant.

In addition, in the case of products that do not meet approved specifications or for which subsequent data demonstrate such products may be unsafe, ineffective or misused, it may be necessary for us to initiate voluntary or mandatory recalls or withdraw such products from the market. Any such recall or withdrawal could result in adverse publicity, costs connected to the recall and loss of revenue. Adverse publicity could also result in an increased number of additional product liability claims, whether or not these claims have a basis in scientific fact. See the risk factor "Public concern around the abuse of opioids, including law enforcement concerns over diversion and marketing of opioids, and regulatory efforts to combat abuse, could result in costs to our business" in Part 1, Item 1A. "Risk Factors" in the Annual Report for more information.

If we are found liable in any lawsuits, such as a product liability claim or series of claims, including those described above and below, or in connection with other legal proceedings, including those related to sales, marketing or pricing practices, government investigations, product recalls or the sale, marketing and/or distribution of prescription opioid medications, it could result in the imposition of damages, including punitive damages, substantial fines, significant reputational harm, civil lawsuits and criminal penalties, interruptions of business, modification of business practices, equitable remedies and other sanctions against us or our personnel as well as significant legal and other costs. We may also voluntarily settle cases even if we believe that we have meritorious defenses because of the significant legal and other costs that may be required to defend such actions. As a result, we may experience significant negative impacts on our operations. To satisfy judgments or settlements, we also may need to seek financing, which may not be available on terms acceptable to us, or at all, when required. Judgments also could cause defaults under our debt agreements and/or restrictions on our product use and we could incur losses as a result. Any of the risks above could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Any such result may cause us to pursue one or more remedial measures, including internal reorganizations and/or other restructuring activities, strategic corporate alignment and cost-saving initiatives or other significant corporate transactions. See the risk factor “Our ability to fund our operations, maintain liquidity and meet our financing obligations is reliant on our operations, which are subject to significant risks and uncertainties” in Part 1, Item 1A. “Risk Factors” in the Annual Report for more information. Likewise, any internal reorganizations and/or other restructuring activities, strategic corporate alignment and cost-saving initiatives or other significant corporate transactions may be complex, could entail significant cost and charges or could otherwise negatively impact shareholder value and there can be no assurance that we will be able to accomplish any of these alternatives on terms acceptable to us, or at all.

We may not have and may be unable to obtain or maintain in the future insurance on acceptable terms or with adequate coverage against potential liabilities or other losses, such as the cost of a recall, if any claim is brought against us, regardless of the success or failure of the claim. For example, we generally no longer have product liability insurance to cover the claims in connection with the mesh-related litigation described above. Additionally, we may be limited by the surviving insurance policies of our acquired subsidiaries, which may not be adequate to cover against potential liabilities or other losses. Even where claims are submitted to insurance carriers for defense and indemnity, there can be no assurance that the claims will be fully covered by insurance or that the indemnitors or insurers will remain financially viable. The failure to generate sufficient cash flow or to obtain other financing could affect our ability to pay the amounts due under those liabilities not covered by insurance.

See Note 13. Commitments and Contingencies in the Condensed Consolidated Financial Statements included in Part I, Item 1 for further discussion of the forgoing and other material legal proceedings.

The pharmaceutical industry is heavily regulated, which creates uncertainty about our ability to bring new products to market and imposes substantial compliance costs on our business.

Governmental authorities such as the FDA impose substantial requirements on the development, manufacture, holding, labeling, marketing, advertising, promotion, distribution and sale of therapeutic pharmaceutical products through lengthy and detailed laboratory and clinical testing and other costly and time-consuming procedures. In addition, before obtaining regulatory approvals for certain generic products, we must conduct limited bioequivalence studies and other research to show comparability to the branded products. A failure to obtain satisfactory results in required pre-marketing trials may prevent us from obtaining required regulatory approvals. The FDA may also require companies to conduct post-approval studies and post-approval surveillance regarding their drug products and to report adverse events.

Before obtaining regulatory approvals for the sale of any new product candidate, we must demonstrate through preclinical studies and clinical trials that such product candidate is safe and effective for each intended use. Preclinical and clinical studies may fail to demonstrate the safety and effectiveness of a product candidate. Likewise, we may not be able to demonstrate through clinical trials that a product candidate’s therapeutic benefits outweigh its risks. Even promising results from preclinical and early clinical studies do not always accurately predict results in later, large scale trials. A failure to demonstrate safety and efficacy would result in our failure to obtain regulatory approvals. Clinical trials can be delayed for reasons outside of our control, which can lead to increased development costs and delays in regulatory approval. For example, there is substantial competition to enroll patients in clinical trials, and such competition has delayed clinical development of our products in the past. For example, patients may not enroll in clinical trials at the rate expected or patients may drop out after enrolling in the trials or during the trials. In addition, we rely on collaboration partners that may control or make changes in trial protocol and design enhancements, or encounter clinical trial compliance-related issues, which may also delay clinical trials. Product supplies may be delayed or be insufficient to treat the patients participating in the clinical trials, or manufacturers or suppliers may not meet the requirements of the FDA or foreign regulatory authorities, such as those relating to Good Manufacturing Practice (cGMP). We also may experience delays in obtaining, or we may not obtain, required initial and continuing approval of our clinical trials from institutional review boards. We may experience delays or undesired results in these or any other of our clinical trials.

The FDA and/or foreign regulatory agencies may not approve, clear for marketing or certify any products developed by us. Any approval by regulatory agencies may subject the marketing of our products to certain limits on indicated use. The FDA or foreign regulatory authorities may not agree with our assessment of the clinical data or they may interpret it differently. Such regulatory authorities may require additional or expanded clinical trials. Any limitation on use imposed by the FDA or delay in or failure to obtain FDA approvals or clearances of products developed by us would adversely affect the marketing of these products and our ability to generate product revenue, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In addition, specifically with respect to pharmaceutical products, the submission of an NDA, ANDA, Biologics License Application or supplemental Biologics License Application to the FDA with supporting clinical safety and efficacy data, for example, does not guarantee that the FDA will grant approval to market the product. Meeting the FDA's regulatory requirements to obtain approval to market a drug product, which varies substantially based on the type, complexity and novelty of the pharmaceutical product, typically takes years, if approved at all, and is subject to uncertainty. In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we may request, may grant approval contingent on conditions such as the performance and results of costly post-marketing clinical trials or Risk Evaluation and Mitigation Strategy (REMS) or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate, or reimbursement by government payers or other payers may not be approved at the price we intend to charge for our products. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Additional delays may result if an FDA Advisory Committee or other regulatory authority recommends non-approval or restrictions on approval. Although the FDA is not required to follow the recommendations of its Advisory Committees, it usually does. A negative Advisory Committee meeting could signal a lower likelihood of approval, although the FDA may still end up approving our application. Regardless of an Advisory Committee meeting outcome or the FDA's final approval decision, public presentation of our data may shed positive or negative light on our application.

With respect to our Supplemental New Drug Application for OPANA® ER, the FDA scheduled a Joint Meeting of the Drug Safety and Risk Management Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee in March 2017 to discuss pre- and post-marketing data about the abuse of OPANA® ER and the overall risk-benefit of this product. The Advisory Committees were also scheduled to discuss abuse of generic oxymorphone ER and oxymorphone immediate-release products. In March 2017, the Advisory Committees voted 18 to eight, with one abstention, that the benefits of reformulated OPANA® ER no longer outweigh its risks. While several of the Advisory Committee members acknowledged the role of OPANA® ER in clinical practice, others believed its benefits were overshadowed by the continuing public health concerns around the product's misuse, abuse and diversion. In June 2017, the FDA requested that we voluntarily withdraw OPANA® ER from the market and, in July 2017, after careful consideration and consultation with the FDA, we decided to voluntarily remove OPANA® ER from the market to the Company's financial detriment. During the second quarter of 2017, we began to work with the FDA to coordinate an orderly withdrawal of the product from the market. By September 1, 2017, we ceased shipments of OPANA® ER to customers and we expect the NDA will be withdrawn. These actions had an adverse effect on our revenues and, as a result of these actions, we have incurred and expect to incur certain charges. Actions similar to these, such as recalls or withdrawals, could divert management time and attention, reduce market acceptance of all of our products, harm our reputation, reduce our revenues, lead to additional charges or expenses or result in product liability claims, any of which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Some drugs are available in the U.S. that are not the subject of an FDA-approved NDA. In 2011, the FDA's Center for Drug Evaluation and Research (CDER) Office of Compliance modified its enforcement policy with regard to the marketing of such "unapproved" marketed drugs. Under CDER's revised guidance, the FDA encourages manufacturers to obtain NDA approvals for such drugs by requiring unapproved versions to be removed from the market after an approved version has been introduced, subject to a grace period at the FDA's discretion. This grace period is intended to allow an orderly transition of supply to the market and to mitigate any potential related drug shortage. Depending on the length of the grace period and the time it takes for subsequent applications to be approved, this may result in a period of de facto market exclusivity to the first manufacturer that has obtained an approved NDA for the previously unapproved marketed drug. We may seek FDA approval for certain unapproved marketed drug products through the 505(b)(2) regulatory pathway. Even if we receive approval for an NDA under section 505(b)(2) of the Federal Food, Drug, and Cosmetic Act (FFDCA), the FDA may not take timely enforcement action against companies marketing unapproved versions of the drug; therefore, we cannot be sure that that we will receive the benefit of any de facto exclusive marketing period or that we will fully recoup the expenses incurred to obtain an approval. In addition, certain competitors and others have objected to the FDA's interpretation of Section 505(b)(2). If the FDA's interpretation of Section 505(b)(2) is successfully challenged, this could delay or even prevent the FDA from approving any NDA that we submit under Section 505(b)(2).

Moreover, even if our product candidates are approved under Section 505(b)(2), the approval may be subject to limitations on the indicated uses for which the products may be marketed or to other conditions of approval, or may contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the products.

The ANDA approval process for a new product varies in time, generally requiring a minimum of 10 months following submission of the ANDA to FDA, but could also take several years from the date of application. The timing for the ANDA approval process for generic products is difficult to estimate and can vary significantly. ANDA approvals, if granted, may not include all uses (known as indications) for which a company may seek to market a product.

Further, once a product is approved or cleared for marketing, failure to comply with applicable regulatory requirements can result in, among other things, suspensions or withdrawals of approvals or clearances; seizures or recalls of products; injunctions against the manufacture, holding, distribution, marketing and sale of a product; and civil and criminal sanctions. Furthermore, changes in existing regulations or the adoption of new regulations could prevent us from obtaining, or affect the timing of, future regulatory approvals or clearances. Meeting regulatory requirements and evolving government standards may delay marketing of our new products for a considerable period of time, impose costly procedures upon our activities and result in a competitive advantage to larger companies that compete against us.

Based on scientific developments, post-market experience or other legislative or regulatory changes, the current FDA standards of review for approving new pharmaceutical products, or new indications or uses for approved or cleared products, are sometimes more stringent than those that were applied in the past.

Some new or evolving FDA review standards or conditions for approval or clearance were not applied to many established products currently on the market, including certain opioid products. As a result, the FDA does not have safety databases on these products that are as extensive as some products developed more recently. Accordingly, we believe the FDA has expressed an intention to develop such databases for certain of these products, including many opioids. In particular, the FDA has expressed interest in specific chemical structures that may be present as impurities in a number of opioid narcotic active pharmaceutical ingredients, such as oxycodone, which, based on certain structural characteristics and laboratory tests, may indicate the potential for having mutagenic effects. The FDA has required, and may continue to require, more stringent controls of the levels of these impurities in drug products for approval.

Also, the FDA may require labeling revisions, formulation or manufacturing changes and/or product modifications for new or existing products containing such impurities. The FDA's more stringent requirements, together with any additional testing or remedial measures that may be necessary, could result in increased costs for, or delays in, obtaining approval for certain of our products. Although we do not believe that the FDA would seek to remove a currently marketed product from the market unless such mutagenic effects are believed to indicate a significant risk to patient health, we cannot make any such assurance.

In May of 2016, an FDA advisory panel recommended mandatory training of all physicians who prescribe opioids on the risks of prescription opioids. In 2016, the Centers for Disease Control and Prevention also issued a guideline for prescribing opioids for chronic pain that provides recommendations for primary care clinicians who are prescribing opioids for chronic pain outside of active cancer treatment, palliative care and end-of-life care. In addition, state health departments and boards of pharmacy have authority to regulate distribution and may modify their regulations with respect to prescription narcotics in an attempt to curb abuse. In either case, these or any new regulations or requirements may be difficult and expensive for us to comply with, may delay our introduction of new products, may adversely affect our total revenues and may have a material adverse effect on our business, financial condition, results of operations and cash flows.

The FDA has the authority to require companies to undertake additional post-approval studies to assess known or signaled safety risks, to make any labeling changes to address those risks and to formulate approved REMS to confirm a drug's benefits outweigh its risks. For example, in 2015, the FDA sent letters to a number of manufactures, including Endo, requiring that a randomized, double-blind, placebo-controlled clinical trial be conducted to evaluate the effect of testosterone replacement therapy on the incidence of major adverse cardiovascular events in men. The letter received by Endo required that we include new safety information in the labeling and Medication Guide for certain prescription medications containing testosterone, such as TESTIM®.

The FDA's exercise of its authority under the FFDCA could result in delays or increased costs during product development, clinical trials and regulatory review, increased costs to comply with additional post-approval regulatory requirements and potential restrictions on sales of approved products. Foreign regulatory agencies often have similar authority and may impose comparable requirements and costs. Post-marketing studies and other emerging data about marketed products, such as adverse event reports, may also adversely affect sales of our products. Furthermore, the discovery of significant safety or efficacy concerns or problems with a product in the same therapeutic class as one of our products that implicate or appear to implicate the entire class of products could have an adverse effect on sales of our product or, in some cases, result in product withdrawals. The FDA has continuing authority over the approval of an NDA or ANDA and may withdraw approval if, among other reasons, post-marketing clinical or other experience, tests or data show that a drug is unsafe for use under the conditions upon which it was approved, or if FDA determines that there is a lack of substantial evidence of the drug's efficacy under the conditions described in its labeling. Furthermore, new data and information, including information about product misuse or abuse at the user level, may lead government agencies, professional societies, practice management groups or patient or trade organizations to recommend or publish guidance or guidelines related to the use of our products, which may lead to reduced sales of our products.

The FDA and the Drug Enforcement Administration (DEA) have important and complementary responsibilities with respect to our business. The FDA administers an application and post-approval monitoring process to confirm that products that are available in the market are safe, effective and consistently of uniform, high quality. The DEA administers registration, drug allotment and accountability systems to satisfy against loss and diversion of controlled substances. Both agencies have trained investigators that routinely, or for cause, conduct inspections, and both have authority to seek to enforce their statutory authority and regulations through administrative remedies as well as civil and criminal enforcement actions.

The FDA regulates and monitors the quality of drug clinical trials to provide human subject protection and to support marketing applications. The FDA may place a hold on a clinical trial and may cause a suspension or withdrawal of product approvals if regulatory standards are not maintained. The FDA also regulates the facilities, processes and procedures used to manufacture and market pharmaceutical products in the U.S. Manufacturing facilities must be registered with the FDA and all products made in such facilities must be manufactured in accordance with the latest cGMP regulations, which are enforced by the FDA. Compliance with clinical trial requirements and cGMP regulations requires significant expenditures and the dedication of substantial resources. In the event an approved manufacturing facility for a particular drug is required by the FDA to curtail or cease operations, or otherwise becomes inoperable, or a third party contract manufacturing facility faces manufacturing problems, obtaining the required FDA authorization to manufacture at the same or a different manufacturing site could result in production delays, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

The FDA is authorized to perform inspections of U.S. and foreign facilities under the FFDCA. At the end of such an inspection, the FDA could issue a Form 483 Notice of Inspectional Observations, which could cause us to modify certain activities identified during the inspection. Following such inspections, the FDA may issue an untitled letter as an initial correspondence that cites violations that do not meet the threshold of regulatory significance for a Warning Letter. FDA guidelines also provide for the issuance of Warning Letters for violations of "regulatory significance" for which the failure to adequately and promptly achieve correction may be expected to result in an enforcement action. The FDA also may issue Warning Letters and untitled letters in connection with events or circumstances unrelated to an FDA inspection.

Similar to other healthcare companies, our facilities in multiple countries across the full range of our business units are subject to routine and new-product related inspections by regulatory authorities including the FDA, the Medicines and Healthcare products Regulatory Agency, the Health Products Regulatory Authority and Health Canada. In the past, some of these inspections have resulted in inspection observations (including FDA Form 483 observations). We have responded to all inspection observations within the required timeframe and have implemented, or are continuing to implement, the corrective action plans as agreed with the relevant regulatory agencies.

Several of our core products contain controlled substances. The stringent DEA regulations on our use of controlled substances include restrictions on their use in research, manufacture, distribution and storage. A breach of these regulations could result in imposition of civil penalties, refusal to renew or action to revoke necessary registrations, or other restrictions on operations involving controlled substances. In addition, failure to comply with applicable legal requirements subjects the manufacturing facilities of our subsidiaries and manufacturing partners to possible legal or regulatory action, including shutdown. Any such shutdown may adversely affect their ability to supply us with product and thus, our ability to market affected products. This could have a negative impact on our business, results of operations, financial condition, cash flows and competitive position. See also the risk described under the caption "The DEA limits the availability of the active ingredients used in many of our products as well as the production of these products, and, as a result, our procurement and production quotas may not be sufficient to meet commercial demand or complete clinical trials" in Part 1, Item 1A. "Risk Factors" in the Annual Report.

In addition, we are subject to the Federal Drug Supply Chain Security Act (DSCSA) enacted by the U.S. government, which requires development of an electronic pedigree to track and trace each prescription drug at the salable unit level through the distribution system, which will be effective incrementally over a 10-year period. Compliance with DSCSA and future U.S. federal or state electronic pedigree requirements may increase our operational expenses and impose significant administrative burdens.

We cannot determine what effect changes in regulations or legal interpretations or requirements by the FDA, the courts or others, when and if promulgated or issued, or advisory committee meetings may have on our business in the future. Changes could, among other things, require different labeling, monitoring of patients, interaction with physicians, education programs for patients or physicians, curtailment of necessary supplies or limitations on product distribution. Any such changes could result in additional litigation and may have a material adverse effect on our business, financial condition, results of operations and cash flows. The evolving and complex nature of regulatory science and regulatory requirements, the broad authority and discretion of the FDA and the generally high level of regulatory oversight results in a continuing possibility that, from time to time, we will be adversely affected by regulatory actions despite our ongoing efforts and commitment to achieve and maintain full compliance with all regulatory requirements.

We are currently dependent on outside manufacturers for the manufacture of a significant amount of our products; therefore, we have and will continue to have limited control of the manufacturing process and related costs. Certain of our manufacturers currently constitute the sole source of one or more of our products.

Third party manufacturers currently manufacture a significant amount of our products pursuant to contractual arrangements. Certain of our manufacturers currently constitute the sole source of our products. For example, Teikoku Seiyaku Co., Ltd. is our sole source of LIDODERM® and GlaxoSmithKline plc is our sole source of VOLTAREN® Gel. Because of contractual restraints and the lead-time necessary to obtain FDA approval and/or DEA registration of a new manufacturer, there are no readily accessible alternatives to these manufacturers and replacement of any of these manufacturers may be expensive and time consuming and may cause interruptions in our supply of products to customers. Our business and financial viability are dependent on these third party manufacturers for continued manufacture of our products, the continued regulatory compliance of these manufacturers and the strength, validity and terms of our various contracts with these manufacturers. Any interruption or failure by these manufacturers to meet their obligations pursuant to various agreements with us on schedule or in accordance with our expectations, or any termination by these manufacturers of our supply arrangements, which, in each case, could be the result of one or many factors outside of our control, could delay or prevent our ability to achieve sales expectations, cause interruptions in our supply of products to customers, cause us to incur failure-to-supply penalties, disrupt our operations or cause reputational harm to our company, any or all of which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

There were no purchases or sales of equity securities by the Company during the three months ended March 31, 2019.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Number	Description	Incorporated by Reference from: File Number	Filing Type	Filing Date
4.1	Indenture, dated as of March 28, 2019, among Par Pharmaceutical, Inc., the guarantors named therein and Wells Fargo Bank, National Association, as trustee, relating to the 7.500% Senior Secured Notes due 2027	001-36326	Current Report on Form 8-K	March 28, 2019
4.2	Form of 7.500% Senior Secured Notes due 2027 (included in Exhibit 4.1)	001-36326	Current Report on Form 8-K	March 28, 2019
10.1	First Amendment, dated as of March 28, 2019 (to the Credit Agreement, dated as of April 27, 2017), by and among Endo International plc, Endo Luxembourg Finance Company I Sarl and Endo LLC, as borrowers, the lenders and other parties party thereto and JPMorgan Chase Bank, N.A. as administrative agent, issuing bank and swingline lender	001-36326	Current Report on Form 8-K	March 28, 2019
10.2	Second Amendment to Second Amended and Restated Development and License Agreement, dated February 26, 2019, by and between BioSpecifics Technologies Corp. and Endo Global Ventures	Not applicable; filed herewith		
10.3	Form of Performance Award Agreement under the Endo International plc Amended and Restated 2015 Stock Incentive Plan	Not applicable; filed herewith		
10.4	Executive Employment Agreement between Endo Health Solutions Inc. and Paul Campanelli, dated as of April 24, 2019	001-36326	Current Report on Form 8-K	April 26, 2019
10.5	Retirement Agreement between Endo Health Solutions Inc. and Tony Pera, dated as of April 25, 2019	001-36326	Current Report on Form 8-K	April 26, 2019
31.1	Certification of the President and Chief Executive Officer of Endo pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Not applicable; filed herewith		
31.2	Certification of the Chief Financial Officer of Endo pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Not applicable; filed herewith		
32.1	Certification of the President and Chief Executive Officer of Endo pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Not applicable; furnished herewith		
32.2	Certification of the Chief Financial Officer of Endo pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Not applicable; furnished herewith		
101	The following materials from Endo International plc's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019, formatted in XBRL (eXtensible Business Reporting Language): (i) the Condensed Consolidated Balance Sheets, (ii) the Condensed Consolidated Statements of Operations, (iii) the Condensed Consolidated Statements of Comprehensive Loss, (iv) the Condensed Consolidated Statements of Cash Flows and (v) the Notes to Condensed Consolidated Financial Statements	Not applicable; submitted herewith		

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, thereunto duly authorized.

ENDO INTERNATIONAL PLC

(Registrant)

/s/ PAUL V. CAMPANELLI

Name: **Paul V. Campanelli**

Title: **President and Chief Executive Officer**
(Principal Executive Officer)

/s/ BLAISE COLEMAN

Name: **Blaise Coleman**

Title: **Executive Vice President, Chief Financial Officer**
(Principal Financial Officer)

Date: May 9, 2019

Exhibit 10.2

EXECUTION VERSION

SECOND AMENDMENT TO SECOND AMENDED AND RESTATED DEVELOPMENT AND LICENSE AGREEMENT

This **SECOND AMENDMENT TO SECOND AMENDED AND RESTATED DEVELOPMENT AND LICENSE AGREEMENT** dated February 26, 2019, with an effective date as of January 1, 2019 (the "Second Amendment Effective Date"), is by and between BioSpecifics Technologies Corp., a Delaware corporation ("BTC"), and Endo Global Ventures, a Bermuda unlimited liability company ("Endo"). BTC and Endo shall sometimes be referred to herein collectively as "Parties."

RECITALS

WHEREAS, BTC and Auxilium Pharmaceuticals, Inc. ("Auxilium") entered into a Second Amended and Restated Development and License Agreement dated August 31, 2011 (the "Agreement");

WHEREAS, Auxilium assigned the Agreement to Auxilium Bermuda ULC ("Auxilium Bermuda") on January 20, 2015;

WHEREAS, an affiliate of Endo International plc acquired Auxilium and Auxilium Bermuda on January 29, 2015, and Auxilium Bermuda changed its name to Endo Global Ventures;

WHEREAS, the Parties entered into the First Amendment to the Second Amended and Restated Development and License Agreement effective as of January 1, 2016.

WHEREAS, Endo now desires to assign the Agreement (the "Assignment") to Endo Global Aesthetics Limited, an Irish private company limited by shares and an affiliate of Endo that is indirectly wholly-owned by Endo International plc in connection with the internal restructuring of Endo and certain of its subsidiaries (the "Reorganization") and Endo desires to obtain BTC's consent to such Assignment; and

WHEREAS, BTC now desires to obtain royalty reporting estimates from Endo in order to avoid material misstatements of its estimated royalty income from Endo

WHEREAS, the Parties now desire to provide the BTC consent to the Assignment and amend the Agreement to enhance the royalty reporting by Endo.

TERMS

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, BTC and Endo agree as follows:

1. Consent to Assignment. BTC hereby (i) acknowledges and consents to the Assignment, (ii) acknowledges that the Assignment does not constitute a default under, or breach of, the Agreement; (iii) waives any right (if any exists) to terminate the Agreement based on the Assignment; (iv) waives any right (if any exists) to any period of prior notice; (v) agrees not to exercise any other remedies based solely on such Assignment for purposes of the Agreement; (vi) confirms that no other notice or documentation is required under the Agreement in connection with the Assignment; and (vii) agrees that the Agreement will remain in full force and effect after the consummation of the Assignment. The acknowledgement, consent and waivers set forth above will only be effective for, and relate to, the Assignment specifically described herein relating to the Reorganization and will not be effective for or relate to any other transactions involving BTC. Notwithstanding the foregoing, Assignment to Endo Global Aesthetics Limited, Endo Designated Activity Company, an Irish designated activity company ("Endo DAC") hereby guarantees to BTC Endo Global Aesthetics Limited's performance of all obligations under the Agreement, provided however, that in the event of a transfer or sale of all or substantially all of the assets or business of Endo Global Aesthetics Limited to a third party not under the control of Endo International PLC, or in the event of a merger or consolidation of Endo Global Aesthetics Limited with a third party not under the control of Endo International PLC, Endo DAC will use commercially reasonable efforts to cause the guarantee to be replaced by a guarantee that is reasonably satisfactory to BTC made by the purchaser or successor of Endo Global Aesthetics Limited, following which Endo DAC and its affiliates shall be released in full from any and all liabilities arising from the foregoing guarantee.

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2. Royalty Reporting. Section 7.1(d) of the Agreement shall be amended and restated in its entirety as follows:

"With respect to Auxilium Territory, Auxilium shall report to BTC Net Sales of Products on a country-by-country basis and where such information is available, on an Indication-by-Indication basis. With respect to Partner Territory, Japan Territory and Partner II Territory, as the case may be, Auxilium shall use Commercially Reasonable Efforts to obtain Net Sales of Products on a country-by-country basis and where such information is available, on an Indication-by-Indication basis. Such reporting shall be made by Endo as follows: (1) in the case of royalties in respect of Net Sales of Product in the first, second and third calendar quarters, Endo will provide (a) gross estimated Xiaflex sales for the U.S. within fifteen (15) days after the last day of each such quarter, and for Canada, Sobi and Asahi within twenty (20) days after the last day of each such quarter; and (b) draft royalty reports within thirty-five (35) days and final reports within forty-

five (45) days after the last day of each such quarter; and (2) in the case of royalties in respect of Net Sales of Product in the fourth calendar quarter, Endo will provide (a) gross estimated Xiaflex sales for the U.S. within fifteen (15) days after the last day of the fourth quarter, and for Canada, Sobi and Asahi within twenty (20) days after the last day of the end of the fourth quarter; and (b) draft royalty reports within sixty (60) days and final reports within seventy-five (75) days after the last day of the fourth quarter. Until otherwise publicly disclosed by Endo, BTC acknowledges that all information given or disclosed to BTC pursuant to this section 7.1(d) is Endo Confidential Information and shall be treated by BTC as confidential in accordance with Article 10 of this Agreement. For the avoidance of doubt, BTC agrees not to disclose any information it receives pursuant to this section 7.1(d) until after Endo has publicly disclosed such information and such disclosure is limited solely to disclosure required to enable BTC to comply with periodic public reporting requirements with the Securities and Exchange Commission (the "SEC"); provided, however, that BTC agrees to obtain prior written consent from Endo to such disclosure, which will not be reasonably withheld or delayed, if Endo has not publicly disclosed such information and BTC is required to make such a disclosure to comply with SEC periodic public reporting requirements; and provided, further, that such Endo consent shall be deemed to have been given if Endo fails to publicly disclose such information by the periodic reporting filing deadlines set by the SEC as applicable to Endo with respect to such information without an extension. To the extent available, such reports shall contain gross sales less any specifically allowable deductions on a line item by line item basis as provided under the defined term "Net Sales.""

3. Amendment. Except to the extent amended hereby, the provisions of the Agreement shall remain unmodified, and the Agreement, as amended by this Amendment shall remain in full force and effect in accordance with its terms.

4. Governing Law. This Amendment shall be governed by and construed in accordance with the law of the State of New York, without regard to the conflicts of law rules of such state.

5. Counterparts. This Amendment may be executed simultaneously in counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date last written below.

BIOSPECIFICS TECHNOLOGIES CORP.

/s/ Ronald Law

Name: Ronald Law
Title: Senior Vice President-Business Development
Date: February 26, 2019

/s/ Carl A Valenstein

Name: Carl Valenstein
Title: Corporate Secretary
Date: February 26, 2019

ENDO GLOBAL VENTURES

/s/ MT Bolger

Name: Marie-Therese Bolger
Title: Secretary
Date: February 26, 2019

ACKNOWLEDGED AND AGREED WITH RESPECT TO THE GUARANTY AS OF THE DATE FIRST WRITTEN ABOVE:

ENDO DESIGNATED ACTIVITY COMPANY

/s/ MT Bolger

Name: Marie-Therese Bolger
Title: Secretary
Date: February 26, 2019

ENDO INTERNATIONAL PLC
PERFORMANCE AWARD AGREEMENT
UNDER THE AMENDED AND RESTATED 2015 STOCK INCENTIVE PLAN

This Performance Award Agreement, which shall include the TSR Performance Award Grant Notice, the FCF Performance Award Grant Notice and the Terms and Conditions (collectively, the "Award Agreement") is made and entered into as of [ ] by and between Endo International plc, an Irish public limited company (the "Company"), and the participant named below (the "Participant"). The Performance Award granted pursuant to this Award Agreement shall consist of [ ] restricted stock units subject to the TSR Performance Award and [ ] restricted stock units subject to the FCF Performance Award (each at target levels of performance and each as defined in the Terms and Conditions). Capitalized terms not defined herein shall have the meanings ascribed to them in the Company's Amended and Restated 2015 Stock Incentive Plan (the "Plan"). Where the context permits, references to the Company shall include any successor to the Company.

Grant No. [A####]

ENDO INTERNATIONAL PLC
PERFORMANCE AWARD AGREEMENT
UNDER THE AMENDED AND RESTATED 2015 STOCK INCENTIVE PLAN

TSR Performance Award Grant Notice

Name of Participant:	
Total Target TSR Performance Award (Total Number of Restricted Stock Units Underlying the Target TSR Performance Award):	
Date of Grant:	
Performance Period for the TSR Performance Award:	The period beginning on the Date of Grant and ending on the third anniversary of the Date of Grant.

Grant No. [B####]

ENDO INTERNATIONAL PLC
PERFORMANCE AWARD AGREEMENT
UNDER THE AMENDED AND RESTATED 2015 STOCK INCENTIVE PLAN

FCF Performance Award Grant Notice

Name of Participant:	
Total Target FCF Performance Award (Total Number of Restricted Stock Units Underlying the Target FCF Performance Award):	
Date of Grant:	
Performance Period for the FCF Performance Award:	The period beginning on January 1, 2019 and ending on December 31, 2021.

ENDO INTERNATIONAL PLC
PERFORMANCE AWARD AGREEMENT
UNDER THE AMENDED AND RESTATED 2015 STOCK INCENTIVE PLAN

TERMS AND CONDITIONS

1. Grant of Performance Awards. The Company hereby grants to the Participant the total number of restricted stock units set forth in the TSR Performance Award Grant Notice and the FCF Performance Award Grant Notice, fifty percent (50%) of which shall be subject to Total Shareholder Return performance targets (the "TSR Performance Award") and the other fifty percent (50%) of which shall be subject to Adjusted Free Cash Flow performance targets (the "FCF Performance Award," and together with the TSR Performance Award, the "Performance Award"). The Performance Award shall be subject to all of the terms and conditions of this Award Agreement and the Plan.

2. Form of Payment and Vesting.

(a) The TSR Performance Award shall vest on the last day of the TSR Performance Period (the "TSR Vesting Date") in a number of shares of Company Stock equal to the multiple of the TSR Performance Award achieved, as determined by the Committee (or its designee) in accordance with the performance conditions set forth in Exhibit A hereto ("Exhibit A"), provided that the Participant is providing service to the Company or one of its Subsidiaries on the TSR Vesting Date (other than as is provided by Paragraph 4 of this Award Agreement). Any shares of Company Stock earned in accordance with the prior sentence shall be delivered to the Participant as soon as practicable following the TSR Vesting Date, but no later than the later to occur of (i) the end of the calendar year in which the TSR Vesting Date occurs and (ii) the fifteenth day of the third calendar month following the TSR Vesting Date. Any portion of the TSR Performance Award that could have been earned in accordance with the provisions of Exhibit A that is not earned as of the TSR Vesting Date, as determined by the Committee (or its designee), shall be immediately forfeited.

(b) The FCF Performance Award shall vest on the third anniversary of the Date of Grant of the FCF Performance Award (the "FCF Vesting Date") in a number of shares of Company Stock equal to the sum of the number of shares of Company Stock so earned for the FCF Performance Period, as determined by the Committee (or its designee) in accordance with the performance conditions set forth in Exhibit B hereto ("Exhibit B"), provided that the Participant is providing service to the Company or one of its Subsidiaries on the FCF Vesting Date (other than as is provided by Paragraph 4 of this Award Agreement). Any shares of Company Stock earned and vested in accordance with the foregoing shall be delivered to the Participant as soon as practicable following the FCF Vesting Date, but no later than the later to occur of (i) the end of the calendar year in which the FCF Vesting Date occurs and (ii) the fifteenth day of the third calendar month following the FCF Vesting Date. Any portion of the FCF Performance Award that could have been earned in accordance with the provisions of Exhibit B that is not earned as of the last day of the FCF Performance Period, as determined by the Committee (or its designee), shall be immediately forfeited.

3. Restrictions. The Performance Award granted hereunder may not be sold, assigned, transferred, pledged, hypothecated or otherwise disposed of or encumbered, and shall be subject to a risk of forfeiture until any requirements or restrictions contained in this Award Agreement or in the Plan have been otherwise satisfied, terminated or expressly waived by the Company in writing.

4. Termination of Service; Disability.

(a) Termination of Service for Cause. Upon the Participant's termination of service with the Company and its Subsidiaries for Cause prior to the TSR Vesting Date or the FCF Vesting Date, the unvested portion, if any, of the Participant's Performance Award shall be forfeited as of the date of such termination of service.

(b) Termination of Service on Account of Death. Upon termination of the Participant's service with the Company and its Subsidiaries on account of death prior to the TSR Vesting Date or the FCF Vesting Date, the unvested portion, if any, of the Participant's Performance Award shall vest as of the date of such termination of service at target levels (as set forth on Exhibit A and Exhibit B, as applicable). The vested Performance Award (determined in accordance with the foregoing) shall be settled in shares of Company Stock for the benefit of the Participant's estate no later than the later to occur of (i) the end of the calendar year in which the Participant's death occurs or (ii) the fifteenth day of the third calendar month following the Participant's death.

(c) Termination of Service on Account of Voluntary Retirement with Consent of Company. If the Participant voluntarily Retires with the consent of the Company prior to the TSR Vesting Date or the FCF Vesting Date, the Participant's Performance Award shall continue to be eligible to vest in accordance with the performance-based vesting conditions set forth on Exhibit A and Exhibit B, as applicable, regardless of such termination of service.

(d) Disability. If the Participant incurs a Disability that also constitutes a "disability" within the meaning of Section 409A of the Code prior to the TSR Vesting Date or the FCF Vesting Date, the Participant's Performance Award shall continue to be eligible to vest in accordance with the performance-based vesting conditions set forth on Exhibit A and Exhibit B, as applicable, regardless of any subsequent termination of service.

(e) Termination of Service by the Company without Cause or by the Participant for Good Reason.

(i) Upon termination of the Participant's service with the Company and its Subsidiaries by the Company or its Subsidiaries without Cause prior to the TSR Vesting Date, a portion of the Participant's TSR Performance Award shall vest based upon achievement of the TSR Performance Criteria (as defined in Exhibit A) measured as of the date of the Participant's termination of service, multiplied by a fraction, the numerator of which is the number of full months of the Participant's service during the TSR Performance Period and the denominator of which is the total number of months in the TSR Performance Period. The vested portion of the TSR Performance Award shall be settled in shares of Company Stock as soon as

practicable following the Participant's termination of service, but no later than the later to occur of (A) the end of the calendar year in which such termination occurs or (B) the fifteenth day of the third calendar month following such termination. Notwithstanding the foregoing, the Committee (or such individual or individuals authorized by the Committee) may exercise discretion to determine payout achievement. Any portion of the TSR Performance Award that could have been earned in accordance with the provisions of this Section 4(e)(i) that is not earned as of the date of the Participant's termination of service shall be immediately forfeited on the date of the Participant's termination of service.

(ii) Upon termination of the Participant's service with the Company and its Subsidiaries by the Company or its Subsidiaries without Cause prior to the FCF Vesting Date, a portion of the Participant's FCF Performance Award shall vest based on achievement of the FCF Performance Criteria (as defined in Exhibit B) measured as of the date of the Participant's termination of service, multiplied by a fraction, the numerator of which is the number of full months of Participant's service during the FCF Performance Period and the denominator of which is total number of months in the FCF Performance Period. The vested portion of the FCF Performance Award shall be settled in shares of Company Stock as soon as practicable following the Participant's termination of service, but no later than the later to occur of (A) the end of the calendar year in which such termination occurs or (B) the fifteenth day of the third calendar month following such termination. Notwithstanding the foregoing the Committee (or such individual or individuals authorized by the Committee) may exercise discretion to determine payout achievement. Any portion of the FCF Performance Award that could have been earned in accordance with the provisions of this Section 4(e)(ii) that is not earned as of the date of the Participant's termination of service shall be immediately forfeited on the date of the Participant's termination of service.

(iii) If a Participant is a party to an employment agreement with the Company or a Subsidiary and such employment agreement provides for benefits on a termination of employment for "Good Reason," (x) a termination of the Participant's employment for Good Reason shall constitute a termination without Cause for purposes of Sections 4 and 5 and (y) Good Reason will also include the Participant's termination of employment within ninety (90) days following the expiration of the employment term of the Participant's employment agreement under circumstances that would have constituted Good Reason had such termination occurred during the employment term.

(f) Termination of Service for any Other Reason. Unless otherwise provided in an individual agreement with the Participant, if the Participant has a termination of service with the Company and its Subsidiaries prior to the TSR Vesting Date or the FCF Vesting Date for any reason other than the reasons enumerated in Subparagraphs (a) through (e) above, the Participant's Performance Award as of the date of termination of service shall be forfeited.

5. Change in Control. Notwithstanding anything to the contrary in the Plan, in the event of a Change in Control prior to the TSR Vesting Date or the FCF Vesting Date, as applicable, the provisions of this Section 5 shall apply.

(a) if the entire Performance Award is assumed or substituted (within the meaning of the Plan) in connection with such Change in Control, and the Participant incurs a termination of service from the Company and its Subsidiaries by the Company or its Subsidiary without Cause during the 24-month period following such Change in Control, then the restrictions, deferral limitations, payment conditions, and forfeiture conditions applicable to any portion of the Performance Award shall lapse and:

(i) the TSR Performance Award shall be settled in shares of Company Stock as soon as practicable following the Participant's termination of service, but no later than the later to occur of the end of the calendar year in which such termination occurs or the fifteenth day of the third calendar month following such termination, based on the greater of (y) actual achievement of TSR Performance Criteria or (z) target achievement of the TSR Performance Criteria, in either case measured as of the date of such termination, and

(ii) the FCF Performance Award shall be settled as soon as practicable following the Participant's termination of service, but no later than the later to occur of the end of the calendar year in which such termination occurs or the fifteenth day of the third calendar month following such termination, with the number of shares equal to the number of shares of Company Stock subject to the FCF Performance Award multiplied by one (1) or, if greater, a multiple determined based upon achievement of the most recently approved estimate of Adjusted Free Cash Flow.

(b) if any portion of the Performance Award is not assumed or substituted in connection with such Change in Control, then the restrictions, deferral limitations, payment conditions, and forfeiture conditions applicable to any portion of the Performance Award shall lapse and:

(i) the TSR Performance Award shall be settled in shares of Company Stock immediately prior to the Change in Control based on the greater of (1) actual achievement of TSR Performance Criteria or (2) target achievement of the TSR Performance Criteria, in either case measured as of the date of the Change in Control, and

(ii) the FCF Performance Award shall be settled immediately prior to the Change in Control, with the number of shares equal to the number of shares of Company Stock subject to the FCF Performance Award multiplied by one (1) or, if greater, a multiple determined based upon achievement of the most recently approved estimate of Adjusted Free Cash Flow.

(c) Any portion of the Performance Award that could have been earned in accordance with Section 5(a) or Section 5(b) that is not earned shall be immediately forfeited on the date of termination of service or the date the Change in Control occurs, as applicable.

6. Change in Control Definition. Notwithstanding anything to the contrary in the Plan, for purposes of this Award Agreement, "Change in Control" means and shall be deemed to have occurred upon the first of the following events to occur:

(a) Any "Person" (as defined below) is or becomes the "beneficial owner" ("Beneficial Owner") within the meaning set forth in Rule 13d-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), directly or indirectly, of securities of the Company (not including in the securities beneficially owned by such Person any securities acquired directly from the Company or its "Affiliates" (as defined in Rule 12b-2 promulgated under Section 12 of the Exchange Act)) representing 30% or more of the combined voting power of the Company's then outstanding securities, excluding any Person who becomes such a Beneficial Owner in connection with a transaction described in clause (A) of Subparagraph (c) below; or

(b) The following individuals cease for any reason to constitute a majority of the number of directors then serving: individuals who, on the date hereof, constitute the Board of Directors and any new director (other than a director whose initial assumption of office is in connection with an actual or threatened election contest, including but not limited to a consent solicitation, relating to the election of directors of the Company) whose appointment or election by the Board of Directors or nomination for election by the Company's shareholders was approved or recommended by a vote of at least two-thirds (2/3) of the directors then still in office who either were directors on the date hereof or whose appointment, election or nomination for election was previously so approved or recommended; or

(c) There is consummated a merger or consolidation of the Company or any direct or indirect subsidiary of the Company with any other corporation or other entity, other than (A) a merger or consolidation which results in (i) the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or any parent thereof), in combination with the ownership of any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any subsidiary of the Company, at least 60% of the combined voting power of the securities of the Company or such surviving entity or any parent thereof outstanding immediately after such merger or consolidation and (ii) the individuals who comprise the Board of Directors immediately prior thereto constituting immediately thereafter at least a majority of the board of directors of the Company, the entity surviving such merger or consolidation or, if the Company or the entity surviving such merger is then a subsidiary, the ultimate parent thereof, or (B) a merger or consolidation effected to implement a recapitalization of the Company (or similar transaction) in which no Person is or becomes the Beneficial Owner, directly or indirectly, of securities of the Company (not including in the securities Beneficially Owned by such Person any securities acquired directly from the Company or its Affiliates) representing 30% or more of the combined voting power of the Company's then outstanding securities; or

(d) The shareholders of the Company approve a plan of complete liquidation or dissolution of the Company or there is consummated an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets (it being conclusively presumed that any sale or disposition is a sale or disposition by the Company of all or substantially all of its assets if the consummation of the sale or disposition is contingent upon approval by the Company's shareholders unless the Board of Directors expressly determines in

writing that such approval is required solely by reason of any relationship between the Company and any other Person or an Affiliate of the Company and any other Person), other than a sale or disposition by the Company of all or substantially all of the Company's assets to an entity (A) at least 60% of the combined voting power of the voting securities of which are owned by shareholders of the Company in substantially the same proportions as their ownership of the Company immediately prior to such sale or disposition and (B) the majority of whose board of directors immediately following such sale or disposition consists of individuals who comprise the Board of Directors immediately prior thereto.

For purposes hereof, "Person" shall have the meaning given in Section 3(a)(9) of the Exchange Act, as modified and used in Sections 13(d) and 15(d) thereof, except that such term shall not include (i) the Company or any of its Subsidiaries, (ii) a trustee or other fiduciary holding securities under an employee benefit plan of the Company or any of its Affiliates, (iii) an underwriter temporarily holding securities pursuant to an offering of such securities, or (iv) a corporation owned, directly or indirectly, by the shareholders of the Company in substantially the same proportions as their ownership of stock of the Company.

Notwithstanding the foregoing, (i) a "Change in Control" shall not be deemed to have occurred by virtue of the consummation of any transaction or series of integrated transactions immediately following which the record holders of Company Stock immediately prior to such transaction or series of transactions continue to have substantially the same proportionate ownership in an entity which owns all or substantially all of the assets of the Company immediately following such transaction or series of transactions and (ii) to the extent required to avoid the imposition of taxes or penalties under Section 409A of the Code with respect to any Award that constitutes a deferral of compensation subject to Section 409A of the Code, no such Award shall become payable as a result of the occurrence of a Change in Control unless such Change in Control also constitutes a change in the ownership or effective control of the Company or a change in ownership of a substantial portion of the assets of the Company under Section 409A of the Code.

For the avoidance of doubt, any one or more of the events described in subparagraphs (a) through (d) may be effected pursuant to (A) a takeover under Irish takeover rules; (B) a compromise or arrangement under Chapter 1 of Part 9 of the Companies Act 2014 of the Republic of Ireland or (C) Chapter 2 of Part 9 of the Companies Act 2014 of the Republic of Ireland.

7. No Shareholder Rights Prior to Delivery. The Participant shall not have any rights of a shareholder (including the right to distributions or dividends) with respect to the Performance Award until shares of Company Stock are issued pursuant to the terms of this Award Agreement.

8. Performance Award Agreement Subject to Plan. This Award Agreement is made pursuant to all of the provisions of the Plan, which is incorporated herein by reference, and is intended, and shall be interpreted, in a manner to comply therewith. In the event of any conflict between the provisions of this Award Agreement and the provisions of the Plan, the provisions of

the Plan shall govern, except as expressly provided by Sections 5 and 6 of this Award Agreement.

9. No Rights to Continuation of Service. Nothing in the Plan or this Award Agreement shall confer upon the Participant any right to continue in the employ of the Company or any Subsidiary thereof or shall interfere with or restrict the right of the Company or its shareholders (or of a Subsidiary or its shareholders, as the case may be) to terminate the Participant's service at any time for any reason whatsoever, with or without Cause.

10. Tax Withholding. The Company shall be entitled to require a cash payment by or on behalf of the Participant and/or to deduct from the Performance Award granted hereunder or other compensation payable to the Participant any sums required by federal, state or local tax law to be withheld or to satisfy any applicable payroll deductions with respect to the vesting of, lapse of restrictions on, or payment of the Performance Award, up to the maximum statutory tax rates. A Participant who is an officer or director subject to the provisions of Section 16 of the Exchange Act as of the date of the withholding requirement may satisfy the foregoing requirement by electing to have the Company withhold from delivery shares of Company Stock in accordance with Section 12(b) of the Plan.

11. Section 409A Compliance. The Performance Award is intended to comply with Code Section 409A to the extent subject thereto and shall be interpreted in accordance with Code Section 409A and Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the Date of Grant. Notwithstanding any provision in the Plan or Award Agreement to the contrary, no payment or distribution under this Award Agreement that constitutes an item of deferred compensation under Code Section 409A and becomes payable by reason of the Participant's termination of service with the Company and its Subsidiaries will be made to the Participant until the Participant's termination of service constitutes a "separation from service" (as defined in Code Section 409A). For purposes of this Award Agreement, each amount to be paid or benefit to be provided shall be construed as a separate identified payment for purposes of Code Section 409A. If a participant is a "specified employee" (as defined in Code Section 409A), then to the extent necessary to avoid the imposition of taxes under Code Section 409A, such Participant shall not be entitled to any payments upon a termination of his or her service until the earlier of: (i) the expiration of the six (6)-month period measured from the date of such Participant's "separation from service" and (ii) the date of such Participant's death. Upon the expiration of the applicable waiting period set forth in the preceding sentence, all payments and benefits deferred pursuant to this Paragraph 11 (whether they would have otherwise been payable in a single lump sum or in installments in the absence of such deferral) shall be paid to such Participant in a lump sum as soon as practicable, but in no event later than sixty (60) calendar days, following such expired period, and any remaining payments due under this Award Agreement will be paid in accordance with the normal payment dates specified for them herein.

12. Governing Law. This Award Agreement shall be governed by, interpreted under, and construed and enforced in accordance with the internal laws, and not the laws pertaining to

conflicts or choice of laws, of the State of Delaware applicable to agreements made and to be performed wholly within the State of Delaware.

13. Binding on Successors. The terms of this Award Agreement shall be binding upon the Participant and upon the Participant's heirs, executors, administrators, personal representatives, transferees, assignees and successors in interest, and upon the Company and its successors and assignees, subject to the terms of the Plan.

14. No Assignment. Notwithstanding anything to the contrary in this Award Agreement, neither this Award Agreement nor any rights granted herein shall be assignable by the Participant.

15. Necessary Acts. The Participant hereby agrees to perform all acts, and to execute and deliver any documents that may be reasonably necessary to carry out the provisions of this Award Agreement, including but not limited to all acts and documents related to compliance with federal and/or state securities and/or tax laws and applicable Irish law.

16. Entire Performance Award Agreement. This Award Agreement (including Exhibits A and B and Annex A) and the Plan contain the entire agreement and understanding among the parties as to the subject matter hereof.

17. Headings. Headings are used solely for the convenience of the parties and shall not be deemed to be a limitation upon or descriptive of the contents of any such Paragraph.

18. Counterparts. This Award Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which together shall be deemed to be one and the same instrument.

19. Notices. All notices and other communications under this Award Agreement shall be in writing and shall be given by first class mail, certified or registered with return receipt requested, and shall be deemed to have been duly given three days after mailing to the respective parties named below:

If to Company:

Endo International plc
c/o Endo Health Solutions Inc.
1400 Atwater Drive
Malvern, PA 19355
Attention: Treasurer

If to the Participant:

At the address on file with the Company.

Either party hereto may change such party's address for notices by notice duly given pursuant hereto.

20. Amendment. No amendment or modification hereof shall be valid unless it shall be in writing and signed by all parties hereto.

21. Acceptance. The Participant hereby acknowledges receipt of a copy of the Plan and this Award Agreement. The Participant has read and understands the terms and provisions thereof, and accepts the Performance Award subject to all the terms and conditions of the Plan and this Award Agreement.

22. No Compensation for Loss of Rights. The Participant hereby acknowledges that under no circumstances will s/he, on ceasing to be an employee or director of the Company and its Subsidiaries, be entitled to any compensation for any loss of any right or benefit or prospective right or benefit under the Plan that s/he might otherwise have enjoyed whether such compensation is claimed by way of damages for wrongful dismissal or other breach of contract or by way of compensation for loss of office or otherwise howsoever.

23. Severability. All the terms and provisions of this Award Agreement are distinct and severable, and if any term or provision is held unenforceable, illegal or void in whole or in part by any court, regulatory authority or other competent authority it shall to that extent be deemed not to form part of this Award Agreement, and the enforceability, legality and validity of the remainder of this Award Agreement will not be affected; if any invalid, unenforceable or illegal provision would be valid, enforceable or legal if some part of it were deleted, the provision shall apply with whatever modification is necessary to make it valid, enforceable and legal.

24. Data Protection. The Participant hereby acknowledges and consents to the Company and any Subsidiary sharing and exchanging his/her information held in order to administer and operate the Plan (including personal details, data relating to participation, salary, taxation and employment and sensitive personal data, e.g. data relating to physical or mental health, criminal conviction or the alleged commission of offences) (the "Information") and providing the Company and/or the Subsidiary's agents and/or third parties with the Information for the administration and operation of the Plan and the Participant further accepts that this may involve the Information being sent to a country outside the country in which the Participant provides service including to a country which may not have the same level of data protection laws as his/her home country. The Participant acknowledges that s/he has the right to request a list of the names and addresses of any potential recipients of the Information and to review and correct the Information by contacting his/her local human resources representative. The Participant acknowledges that the collection, processing and transfer of the Information is important to Plan administration and that failure to consent to same may prohibit participation in the Plan.

25. Additional Matters. This Award Agreement is intended to comply with the applicable laws of any country or jurisdiction where the Performance Award is granted under the Plan, and all provisions hereof shall be construed in a manner to so comply. The following provisions apply to Participants providing service in the country noted:

Canada:

Section 4 above shall be amended to add the following language at the end thereof as a new sub-section (g):

> (g) The Participant's date of termination of service shall be the Participant's last day of active service with the Company and its Subsidiaries and shall not include any period of statutory, contractual or common law reasonable notice or any period of deemed employment or salary continuance.

Section 10 above shall be deleted in its entirety and replaced with the following language:

> The Company shall be entitled to receive either a cash payment by or on behalf of the Participant or a sufficient amount of the proceeds from the sale of Company Stock to be acquired pursuant to this Award Agreement by the Participant's delivery to the Company of an assignment of such proceeds and an authorization to the broker or selling agent to pay that amount to the Company and to effect such sale at the time of exercise or other delivery of shares of Company Stock for any sums required by federal, state or local tax law to be withheld or to satisfy any applicable payroll deductions with respect to the vesting of, lapse of restrictions on, or payment of any Performance Award.

India:

As used herein, "Participant" shall have the meaning set forth in the Plan, except the term shall not include consultants of any Subsidiary in India.

Section 4(b) shall be deleted in its entirety and replaced with the following language:

> Termination of Service on Account of Death. Upon termination of the Participant's service on account of death prior to the either the TSR Vesting Date or the FCF Vesting Date, the Participant's Performance Award shall immediately vest in his legal heirs or nominees, subject to fulfilment of the performance conditions specified in Exhibits A and B and shall be settled in shares of Company Stock for the benefit of the Participant's estate no later than the later of the end of the calendar year in which the Participant's death occurs or the fifteenth day of the third calendar month following the Participant's death.

Section 4(c) shall be deleted in its entirety and replaced with the following language:

> Termination of Service on Account of Voluntary Retirement with Consent of Company. If the Participant voluntarily Retires with the consent of the Company, the unvested portion, if any, of the Participant's Performance Award as of the date of termination shall stand vested on the date of termination of service, subject to the fulfilment of the performance conditions specified in Exhibits A and B.

Section 4(d) shall be deleted in its entirety and replaced with the following language:

Disability. If the Participant incurs a Disability that also constitutes a "disability" within the meaning of Section 409A, the unvested portion, if any, of the Participant's Performance Award as of the date of such Disability shall continue to be eligible to vest in accordance with the performance-based vesting conditions set forth on Exhibits A and B regardless of any subsequent termination of service, provided such Disability does not result in termination of service. In the event of termination of service, the unvested portion, if any, of the Performance Award shall vest in him on the date of termination.

Section 10 shall be deleted in its entirety and replaced with the following language:

Tax Withholding. The Subsidiary under whose payroll the Participant is registered shall have the right to deduct or withhold from the Performance Award or payroll of the Participant an amount sufficient to satisfy income taxes required by law to be withheld with respect to the vesting of, lapse of restrictions on, or payment of the Performance Award or to satisfy any applicable payroll deductions. The obligations of the Company under this Award Agreement will be conditioned on such arrangement and the Company or such Subsidiary will, to the extent permitted by law, have the right to deduct any such taxes from any payment of any kind otherwise due to the Participant. A Participant who is an officer or director subject to the provisions of Section 16 of the Exchange Act as of the date of the withholding requirement may satisfy the foregoing requirement by electing to have the Subsidiary under whose payroll the Participant is registered withhold from delivery shares of Company Stock in accordance with Section 12(b) of the Plan.

Section 13 shall be amended to delete the term "transferees".

Section 14 shall be deleted in its entirety and replaced with the following language:

No Assignment. Notwithstanding anything to the contrary in this Award Agreement, but subject to the assignment of the Performance Award upon death of the Participant, neither this Award Agreement nor any rights granted herein shall be assignable by the Participant.

Section 15 shall be deleted in its entirety and replaced with the following language:

Necessary Acts. The Participant hereby agrees to perform all acts, and to execute and deliver any documents that may be reasonably necessary to carry out the provisions of this Award Agreement, including but not limited to all acts and documents related to compliance with federal and/or state securities and/or tax laws and applicable Indian law. The rights and interests of the Participant under the Award Agreement shall be subject to compliance under the Foreign Exchange Management Act, 1999 and the related rules thereto.

Ireland:

Section 4(c) above shall be deleted and be of no force and effect.

Section 13 above shall be amended to delete the words "transferees, assignees" therefrom.

Section 14 above shall be deleted in its entirety and replaced with the following language:

> No Assignment or Transfer. Notwithstanding anything to the contrary in this Award Agreement, neither this Award Agreement nor any rights granted herein shall be assignable by the Participant. Neither this Award Agreement nor any rights granted herein shall be transferable by the Participant in any circumstances, except on the death of the Participant.

Luxembourg:

Section 4(c) above shall be deleted in its entirety and replaced with the following language:

> Termination of Service on Account of Retirement. If the Participant voluntarily retires according to Luxembourg employment law prior to the TSR Vesting Date or the FCF Vesting Date, any unvested portion of the Participant's Performance Award as of the Participant's termination date shall vest on that date and be eligible to be settled subject to the satisfaction of the performance conditions specified in Exhibits A and B, determined at a time and manner as is determined for employees generally, disregarding such termination of service.

Section 4(d) above shall be amended to (i) delete the phrase "that also constitutes a 'disability' within the meaning of Section 409A of the Code" therefrom and (ii) add the following language at the end thereof:

> As used herein, "Disability" shall mean either (i) the Participant's inability to, solely because of injury or physical or mental illness, perform the material duties of his or her regular occupation in a situation where the Participant receives paid sickness, incapacity or invalidity benefits from any of the Luxembourg competent authorities for a period that lasts or can reasonably be expected to last for a continuous period of 6 months, or (ii) the Participant's *reclassement* by the competent commission following an irrevocable decision from said commission.

Section 4(e)(iii) above shall be deleted in its entirety and be of no force and effect.

Section 4 above shall be amended to add the following language at the end thereof as a new sub-section (g):

> It is understood that the Participant's termination of service for any reason shall take place in accordance with applicable Luxembourg employment law rules.

Section 10 above shall be amended to add the following language at the end thereof:

For Participants subject to Luxembourg employment law, the Company shall comply with Circular L.I.R. n°104/2 dated 29 November 2017 and issued by the Luxembourg Tax Administration to the extent subject thereto and shall be interpreted in accordance with its provisions and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the Date of Grant.

Section 13 above shall be amended to delete the word "transferees" therefrom.

Section 14 above shall be deleted in its entirety and replaced with the following language:

No Assignment or Transfer. Notwithstanding anything to the contrary in this Award Agreement, neither this Award Agreement nor any rights granted herein shall be assignable by the Participant. Neither this Award Agreement nor any rights granted herein shall be transferable by the Participant in any circumstances, except on the death of the Participant.

Section 24 above shall be amended to add the following language at the end thereof:

, it being understood that for the purposes hereunder any Information on the Participant shall be processed in accordance with the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, as well as any applicable local laws.

United Kingdom:

As used herein, "Cause" shall have the meaning set forth in the Plan and, with respect to any Participant who is a party to an employment agreement with the Company, the definition of "Cause" shall include any circumstances in which the Company may terminate the Participant's employment agreement without notice in accordance with its terms.

As used herein, "Disability" shall mean the Participant's inability to, solely because of injury or physical or mental illness: (i) perform the material duties of his or her regular occupation and (ii) earn 80% or more of his or her base salary or wages in respect of his or her regular occupation, for a period that lasts or can reasonably be expected to last for a continuous period of 12 months.

Section 4(c) above shall be deleted and be of no force and effect.

Section 10 above shall be deleted in its entirety and replaced with the following:

Tax Liabilities. The Participant irrevocably agrees (A) to pay, or enter into arrangements to the satisfaction of the Company to pay, to the Company, the Participant's employer or former employer (as appropriate) the amount of any Tax Liability, (B) that the Company, the Participant's employer or former employer (as appropriate) may, if it so elects by written notice to the Participant, recover the whole or any part of any Employer NICs from the Participant, (C) that the

Participant shall, promptly upon being requested to do so by the Company, the Participant's employer or former employer (as appropriate), elect (using a form approved by HM Revenue & Customs) that the whole or any part of the liability for Employer NICs shall be transferred to the Participant; (D) to enter into a joint election, under section 431(1) or 431(2) of the Income Tax (Earnings & Pensions) Act 2003 ("ITEPA"), in respect of the Company Stock delivered pursuant to a Performance Award, if required to do so by the Company, the Participant's employer or former employer, before, on or within 14 days after any date of delivery of such Company Stock. For the purposes of this section the following capitalized terms shall have the meanings set out below:

"Employer NICs": any secondary class 1 (employer) national insurance contributions that the Company or any employer (or former employer) of the Participant is liable to pay as a result of any Taxable Event (or which that person would be liable to pay in the absence of an election of the type referred to in (C) above) and that may be lawfully recovered from the Participant.

"Taxable Event": any event or circumstance that gives rise to a liability for the Participant to pay income tax and national insurance contributions or either of them in respect of: (a) the Performance Award, including its assignment or surrender for consideration, or the receipt of any benefit in connection with it; (b) any shares (or other securities or assets): (i) earmarked or held to satisfy the Performance Award; (ii) acquired pursuant to the Performance Award; or (iv) acquired in consideration of the assignment or surrender of the Performance Award; (c) any securities (or other assets) acquired or earmarked as a result of holding shares (or other securities or assets) mentioned in (b); or (d) any amount due in respect of assets within (a) to (c) above and not made good by the Participant within the time limit specified in section 222 ITEPA.

"Tax Liability": the total of (a) any income tax and primary class 1 (employee) national insurance contributions that any employer (or former employer) of the Participant is liable to account for (or reasonably believes it is liable to account for) as a result of any Taxable Event; and (b) any Employer NICs that any employer (or former employer) of the Participant is liable to pay (or reasonably believes it is liable to pay) as a result of any Taxable Event and that can be recovered lawfully from the Participant.

Section 22 shall be replaced by the following provision:

Nothing contained in the Plan or this Performance Award shall form part of the Participant's contract of employment. The Participant hereby acknowledges that under no circumstances will s/he, on ceasing to be an employee or director of or otherwise engaged by the Company or any of its Subsidiaries for any reason (including as a result of a repudiatory breach of contract by the Company or any of its Subsidiaries), be entitled to any compensation for any loss of any right or benefit or prospective right or benefit under the Plan that s/he might otherwise

have enjoyed whether such compensation is claimed by way of damages for wrongful dismissal or other breach of contract or by way of compensation for loss of office or otherwise howsoever. By signing this Performance Award the Participant shall be deemed irrevocably to have waived any such entitlement.

IN WITNESS WHEREOF, the parties hereto have executed this Award Agreement as of the date set forth above.

ENDO INTERNATIONAL PLC

By: ____
Name: Paul V. Campanelli
Title: President & Chief Executive Officer

PARTICIPANT

Signature: __
Print Name: __

EXHIBIT A

(I) **TSR Performance Criteria.**

The Participant will be entitled to receive a number of shares of Company Stock as of the TSR Vesting Date, equal to a multiple of the TSR Target Performance Award achieved based on achievement of targets relating to Relative TSR (the "TSR Performance Criteria") as described below for the TSR Performance Period:

Relative TSR	**Multiple Applicable to TSR Target Performance Award**
Equal to or above 90th percentile	2
Equal to or above 80th percentile but below 90th percentile	1.61 - 1.80
Equal to or above 70th percentile but below 80th percentile	1.41 - 1.60
Equal to or above 60th percentile but below 70th percentile	1.21 - 1.40
Equal to or above 50th percentile but below 60th percentile	1.00 - 1.20
Equal to or above 40th percentile but below 50th percentile	0.5
Below 40th percentile	0

In the event that Relative TSR over the TSR Performance Period is negative, the multiple applicable to the TSR Target Performance Award shall not exceed 1.

If Relative TSR is equal to or above the 50th percentile but below the 90th percentile, the Participant will vest in a number of shares of Company Stock that is the mathematical linear interpolation between the number of shares of Company Stock that would vest at the defined ends of the applicable spectrum. No such interpolation shall occur in the event that Relative TSR is below the 50th percentile or equal to or above the 90th percentile.

The determination of Relative TSR will be made in the sole discretion of the Committee, after the end of the TSR Performance Period once the applicable year-end audit is available. The Committee has discretion to accelerate the vesting of all or a portion of the Participant's TSR Performance Award based upon the overall performance of the Company and/or the Participant or based upon any change in business conditions.

(II) **Definitions.**

For purposes of this Exhibit A, the following terms have the meanings set forth below:

"Comparator Group" shall mean the companies listed on Annex A, attached hereto. Each such company shall be included in the Comparator Group only if the company is publicly-traded at both the beginning and end of the TSR Performance Period.

"Per Share Price" shall mean the average of the closing prices of common shares for the applicable company during the thirty (30) consecutive trading days ending on the day immediately preceding the applicable measurement date.

“Relative TSR” shall mean the percentile ranking of the Company’s Total Shareholder Return as compared to the Total Shareholder Return of each company in the Comparator Group.

“Total Shareholder Return” shall mean the appreciation of the Per Share Price during the TSR Performance Period, plus any dividends paid on the applicable company’s common stock during such TSR Performance Period.

Comparator Group

1. AbbVie Inc. (ABBV)
2. Abbott Laboratories (ABT)
3. Akorn, Inc. (AKRX)
4. Alexion Pharmaceuticals Inc. (ALXN)
5. Alkermes plc (ALKS)
6. Allergan plc (AGN)
7. AMAG Pharmaceuticals Inc. (AMAG)
8. Amgen Inc. (AMGN)
9. Amneal Pharmaceuticals Inc. (AMRX)
10. AstraZeneca plc (AZN)
11. Biogen Inc. (BIIB)
12. BioMarin Pharmaceutical Inc. (BMRN)
13. Bristol-Myers Squibb Company (BMY)
14. Celgene Corporation (CELG)
15. Dr. Reddy's Laboratories Ltd. (RDY)
16. Eli Lilly and Company (LLY)
17. Gilead Sciences Inc. (GILD)
18. GlaxoSmithKline plc (GSK)
19. Horizon Pharma Public Limited Company (HZNP)
20. Incyte Corporation (INCY)
21. Jazz Pharmaceuticals Public Limited Company (JAZZ)
22. Johnson & Johnson (JNJ)
23. Lannett Company (LCI)
24. Mallinckrodt Public Limited Company (MNK)
25. Merck & Co. Inc. (MRK)
26. Mylan N.V. (MYL)
27. Novartis AG (NVS)
28. Novo Nordisk A/S (NVO)
29. Perrigo Company Public Limited Company (PRGO)
30. Pfizer Inc. (PFE)
31. Qiagen NV (QGEN)
32. Regeneron Pharmaceuticals Inc. (REGN)
33. Roche Holding AG (RHHBY)
34. Sanofi (SNY)
35. Taro Pharmaceutical Industries Ltd. (TARO)
36. Teva Pharmaceutical Industries Limited (TEVA)

37. United Therapeutics Corporation (UTHR)
38. Valeant Pharmaceuticals International, Inc. (VRX)
39. Vertex Pharmaceuticals Inc. (VRTX)
40. Zoetis Inc. (ZTS)

EXHIBIT B

The following exhibit contains the FCF Performance Criteria in respect of 2019 through 2021, which is the FCF Performance Period for the 2019 FCF Performance Award.

(I) **FCF Performance Criteria.**

The Participant will be eligible to earn a number of shares of Company Stock equal to the number of restricted stock units underlying the target FCF Performance Award multiplied by the multiple applicable to the FCF Performance Award for the FCF Performance Period, which will be based on achievement of a Target relating to Adjusted Free Cash Flow (the "FCF Performance Criteria") and determined in accordance with the below:

Adjusted Free Cash Flow*	**Multiple Applicable to FCF Performance Award for the FCF Performance Period**
Equal to or greater than 110% of Target	2
Equal to or greater than 107.5% of Target but less than 110% of Target	1.75
Equal to or greater than 105% of Target but less than 107.5% of Target	1.5
Equal to or greater than 102.5% of Target but less than 105% of Target	1.25
Equal to or greater than 100% of Target but less than 102.5% of Target	1
Equal to or greater than 95% of Target but less than 100% of Target	0.75
Equal to or greater than 90% of Target but less than 95% of Target	0.5
Less than 90% of Target	0

If Adjusted Free Cash Flow is equal to or greater than 90% of Target but below 110% of Target, the Participant will earn a number of shares of Company Stock that is the mathematical linear interpolation between the number of shares of Company Stock that would be earned at the defined ends of the applicable spectrum. No such interpolation shall occur in the event that Adjusted Free Cash Flow is less than 90% of Target or equal to or greater than 110% of Target.

The determination of Adjusted Free Cash Flow will be made in the sole discretion of the Committee, after the end of the FCF Performance Period once the 2021 year-end audit is available. The Committee may adjust the FCF Performance Award in a manner approved by the Committee at the time of the grant of the FCF Performance Award. The Committee has discretion to increase the portion of the Participant's FCF Performance Award earned based upon the overall performance of the Company and/or the Participant or based upon any change in business conditions.

(II) **Definitions.**

For purposes of this Exhibit B, the following terms have the meanings set forth below:

"Adjusted EBITDA" shall mean net income (or loss) before net interest expense, income tax, depreciation and amortization, each prepared in accordance with generally accepted accounting

principles ("GAAP") and further adjusted for one-time and/or non-recurring items as defined in the Company's GAAP to Adjusted Policy.

"Capital Expenditures" shall mean the Company's purchases of property, plant and equipment (including capitalized software costs).

"Changes in Net Working Capital" shall mean changes in accounts receivable adjusted for non-cash items, plus changes in inventory adjusted for long-term and non-cash items, less changes in accounts payable adjusted for royalties and rebates.

"Adjusted Free Cash Flow" shall mean Adjusted EBITDA plus/less Changes in Net Working Capital, less Capital Expenditures.

"Target" shall mean [ ]. Target shall be further adjusted (1) in the case of an acquisition that closes after the formal Committee approval of the Target, to include the projected free cash flow for the remainder of the FCF Performance Period and (2) in the case of a divestiture that is announced after the formal Committee approval of the Target, to exclude the projected free cash flow from the divested asset and/or segment for the remainder of the FCF Performance Period.

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002

I, Paul V. Campanelli, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Endo International plc;

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 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 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 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.

/S/ PAUL V. CAMPANELLI

Paul V. Campanelli

President and Chief Executive Officer
(Principal Executive Officer)

Date: May 9, 2019

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002

I, Blaise Coleman, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Endo International plc;

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 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 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 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.

/S/ BLAISE COLEMAN

Blaise Coleman

Executive Vice President, Chief Financial Officer
(Principal Financial Officer)

Date: May 9, 2019

Exhibit 32.1

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

I, Paul V. Campanelli, as President and Chief Executive Officer of Endo International plc (the Company), hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Quarterly Report on Form 10-Q of the Company for the quarterly period ended March 31, 2019 (the Report) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m); 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/ PAUL V. CAMPANELLI

Name: Paul V. Campanelli

Title: President and Chief Executive Officer
(Principal Executive Officer)

Date: May 9, 2019

A signed original of this written statement required by Section 906 has been provided to, and will be retained by, Endo International plc and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

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

I, Blaise Coleman, as Chief Financial Officer of Endo International plc (the Company), hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Quarterly Report on Form 10-Q of the Company for the quarterly period ended March 31, 2019 (the Report) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m); 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/ BLAISE COLEMAN

Name: Blaise Coleman

Title: Executive Vice President, Chief Financial Officer
(Principal Financial Officer)

Date: May 9, 2019

A signed original of this written statement required by Section 906 has been provided to, and will be retained by, Endo International plc and furnished to the Securities and Exchange Commission or its staff upon request.