AMAG PHARMACEUTICALS INC.
Form 10-Q
May 04, 2018

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

FORM 10-Q
(Mark
One)

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

For the quarterly period ended March 31, 2018
or

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 001-10865
AMAG Pharmaceuticals, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	04-2742593
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
1100 Winter Street Waltham, Massachusetts (Address of Principal Executive Offices)	02451 (Zip Code)

(617) 498-3300
(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

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

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 definition of "accelerated filer," "large accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

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

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

As of May 1, 2018, there were 34,326,636 shares of the registrant's Common Stock, par value $0.01 per share, outstanding.

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PART I. FINANCIAL INFORMATION
Item 1. Financial Statements:
AMAG PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)
(Unaudited)

	March 31, 2018	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$231,737	$192,114
Marketable securities	138,820	136,593
Accounts receivable, net	99,945	103,501
Inventories	31,598	37,356
Prepaid and other current assets	16,345	12,304
Total current assets	518,445	481,868
Property, plant and equipment, net	25,921	25,996
Goodwill	639,484	639,484
Intangible assets, net	648,206	704,470
Restricted cash	656	656
Other long-term assets	2,238	762
Total assets	$1,834,950	$1,853,236
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$17,371	$10,335
Accrued expenses	199,071	175,490
Current portion of convertible notes, net	20,460	—
Current portion of acquisition-related contingent consideration	50,007	49,399
Deferred revenues	42,510	42,494
Total current liabilities	329,419	277,718
Long-term liabilities:		
Long-term debt, net	466,595	466,291
Convertible notes, net	251,508	268,392
Acquisition-related contingent consideration	660	686
Deferred tax liabilities	17,497	23,927
Deferred revenues	27,398	24,387
Other long-term liabilities	1,878	1,591
Total liabilities	1,094,955	1,062,992
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, par value $0.01 per share, 2,000,000 shares authorized; none issued	—	—
Common stock, par value $0.01 per share, 117,500,000 shares authorized; 34,322,193 and 34,083,112 shares issued and outstanding at March 31, 2018 and December 31, 2017, respectively	343	341
Additional paid-in capital	1,274,935	1,271,628
Accumulated other comprehensive loss	(4,362)	(3,908)
Accumulated deficit	(530,921)	(477,817)
Total stockholders' equity	739,995	790,244
Total liabilities and stockholders' equity	$1,834,950	$1,853,236

The accompanying notes are an integral part of these condensed consolidated financial statements.

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AMAG PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(IN THOUSANDS, EXCEPT PER SHARE DATA)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Revenues:		
Product sales, net	$117,348	$112,517
Service revenues, net	28,969	26,931
Other revenues	39	24
Total revenues	146,356	139,472
Costs and expenses:		
Cost of product sales	63,912	27,573
Cost of services	5,473	5,010
Research and development expenses	10,809	16,489
Acquired in-process research and development	20,000	60,000
Selling, general and administrative expenses	91,050	70,424
Total costs and expenses	191,244	179,496
Operating loss	(44,888)	(40,024)
Other (expense) income:		
Interest expense	(15,977)	(18,300)
Interest and dividend income	644	1,031
Gains on investments, net	—	27
Total other expense, net	(15,333)	(17,242)
Loss before income taxes	(60,221)	(57,266)
Income tax benefit	(5,979)	(20,706)
Net loss	$(54,242)	$(36,560)
Net loss per share:		
Basic and diluted	$(1.59)	$(1.06)
Weighted average shares outstanding used to compute net loss per share:		
Basic and diluted	34,162	34,378

The accompanying notes are an integral part of these condensed consolidated financial statements.

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AMAG PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(IN THOUSANDS)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Net loss	$(54,242)	$(36,560)
Other comprehensive (loss) income:		
Holding (losses) gains arising during period, net of tax	(454)	92
Total comprehensive loss	$(54,696)	$(36,468)

The accompanying notes are an integral part of these condensed consolidated financial statements.

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AMAG PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Cash flows from operating activities:		
Net loss	$(54,242)	$(36,560)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	59,485	27,994
Provision for bad debt expense	463	590
Amortization of premium/discount on purchased securities	67	113
Non-cash equity-based compensation expense	5,533	5,778
Amortization of debt discount and debt issuance costs	3,880	3,209
Gains on marketable securities, net	—	(143)
Change in fair value of contingent consideration	626	1,043
Deferred income taxes	(6,643)	(21,192)
Changes in operating assets and liabilities:		
Accounts receivable, net	3,093	6,553
Inventories	3,534	(403)
Prepaid and other current assets	(3,720)	1,523
Accounts payable and accrued expenses	30,374	(4,622)
Deferred revenues	3,027	2,067
Other assets and liabilities	215	(486)
Net cash provided by (used in) operating activities	45,692	(14,536)
Cash flows from investing activities:		
Proceeds from sales or maturities of marketable securities	18,225	128,512
Purchase of marketable securities	(21,102)	(129,241)
Capital expenditures	(923)	(658)
Net cash used in investing activities	(3,800)	(1,387)
Cash flows from financing activities:		
Long-term debt principal payments	—	(4,375)
Payments of contingent consideration	(44)	(83)
Proceeds from the exercise of common stock options	123	152
Payments of employee tax withholding related to equity-based compensation	(2,348)	(1,322)
Net cash used in financing activities	(2,269)	(5,628)
Net increase (decrease) in cash, cash equivalents, and restricted cash	39,623	(21,551)
Cash, cash equivalents, and restricted cash at beginning of the period	192,770	276,898
Cash, cash equivalents, and restricted cash at end of the period	$232,393	$255,347
Supplemental data for cash flow information:		
Cash paid for taxes	$136	$208
Cash paid for interest	$18,971	$26,195

The accompanying notes are an integral part of these condensed consolidated financial statements.

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AMAG PHARMACEUTICALS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

A. DESCRIPTION OF BUSINESS

AMAG Pharmaceuticals, Inc., a Delaware corporation, was founded in 1981. We are a biopharmaceutical company focused on developing and delivering important therapeutics, conducting clinical research in areas of unmet need and creating education and support programs for the patients and families we serve. Our currently marketed products support the health of patients in the areas of maternal and women's health, anemia management and cancer supportive care, including Makena® (hydroxyprogesterone caproate injection), Intrarosa® (prasterone) vaginal inserts, Feraheme® (ferumoxytol injection) for intravenous ("IV") use, and MuGard® Mucoadhesive Oral Wound Rinse. In addition, we have the rights to research, develop and commercialize bremelanotide in North America. Through services related to the preservation of umbilical cord blood stem cell and cord tissue units (the "CBR Services") operated through Cord Blood Registry® ("CBR"), we also help families to preserve newborn stem cells, which are used today in transplant medicine for certain cancers and blood, immune and metabolic disorders, and which we believe have the potential to play a valuable role in the ongoing development of regenerative medicine.

Throughout this Quarterly Report on Form 10-Q, AMAG Pharmaceuticals, Inc. and our consolidated subsidiaries are collectively referred to as "the Company," "AMAG," "we," "us," or "our."

B. BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

These condensed consolidated financial statements are unaudited and, in the opinion of management, include all adjustments necessary for a fair statement of the financial position and results of operations of the Company for the interim periods presented. Such adjustments consisted only of normal recurring items. The year-end condensed consolidated balance sheet data was derived from audited financial statements, but does not include all disclosures required by accounting principles generally accepted in the United States of America ("GAAP").

In accordance with GAAP for interim financial reports and the instructions for Form 10-Q and the rules of the Securities and Exchange Commission, certain information and footnote disclosures normally included in annual financial statements have been condensed or omitted. Our accounting policies are described in the Notes to the Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended December 31, 2017 (our "Annual Report"). Interim results are not necessarily indicative of the results of operations for the full year. These interim financial statements should be read in conjunction with our Annual Report.

Principles of Consolidation

The accompanying condensed consolidated financial statements include our accounts and the accounts of our wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates and Assumptions

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosure of contingent assets and liabilities. The most significant estimates and assumptions are used to determine amounts and values of, but are not limited to: revenue recognition related to product sales and services revenue; product sales allowances and accruals; allowance for doubtful accounts; marketable securities; inventory; acquisition date fair value and subsequent fair value estimates used to assess impairment of long-lived assets, including goodwill, in-process research and development ("IPR&D") and other intangible assets; contingent consideration; debt obligations; certain accrued liabilities, including clinical trial accruals; income taxes, inclusive of valuation allowances; and equity-based compensation expense. Actual results could differ materially from those estimates.

Restricted Cash

As of March 31, 2018 and December 31, 2017, we classified $0.7 million of our cash as restricted cash, a non-current asset on the balance sheet. This amount represented the security deposit delivered to the landlord of our Waltham, Massachusetts headquarters in the form of an irrevocable letter of credit.

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Concentrations and Significant Customer Information

Financial instruments which potentially subject us to concentrations of credit risk consist principally of cash and cash equivalents, marketable securities, and accounts receivable. We currently hold our excess cash primarily in institutional money market funds, corporate debt securities, U.S. treasury and government agency securities, commercial paper and certificates of deposit. As of March 31, 2018, we did not have a material concentration in any single investment.

Our operations are located entirely within the U.S. We focus primarily on developing, manufacturing, and commercializing our products and product candidates and marketing and selling the CBR Services. We perform ongoing credit evaluations of our product sales customers and generally do not require collateral. The following table sets forth customers who represented 10% or more of our total revenues for the three months ended March 31, 2018 and 2017:

	Three Months Ended March 31,	
	2018	2017
AmerisourceBergen Drug Corporation	22%	22%
McKesson Corporation	22%	14%

Our net accounts receivable primarily represent amounts due for products sold directly to wholesalers, distributors, and specialty pharmacies and amounts due for CBR Services sold to consumers who pay for the services directly. Accounts receivable for our products and services are recorded net of reserves for estimated chargeback obligations, prompt payment discounts and any allowance for doubtful accounts.

Customers which represented greater than 10% of our accounts receivable balances as of March 31, 2018 and December 31, 2017 were as follows:

	March 31, 2018	December 31, 2017
McKesson Corporation	26 %	22 %
AmerisourceBergen Drug Corporation	24 %	27 %

We are currently dependent on a single supplier for Feraheme drug substance (produced in two separate facilities) and finished drug product as well as for drug substance and final packaging services for Intrarosa. In addition, we rely on single sources for certain materials required to support the CBR Services. We would be exposed to a significant loss of revenue from the sale of our products and services if our suppliers and/or manufacturers could not fulfill demand for any reason.

Revenue Recognition

Effective January 1, 2018, we adopted Accounting Standards Codification (“ASC”) Topic 606, Revenue from Contracts with Customers (“ASC 606”), using the modified retrospective transition method. We recognized the cumulative effect of applying the new revenue standard to all contracts with customers that were not completed as of January 1, 2018 as an adjustment to the opening balance of stockholders' equity at the beginning of 2018. The comparative information has not been restated and continues to be reported under the accounting standards in effect for the period presented. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. ASC 606 also impacts certain other areas, such as the accounting for costs to obtain or fulfill a contract. The standard also requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

The adoption of ASC 606 did not have an impact on the amount of reported revenues with respect to our product or service revenue. In connection with the adoption of ASC 606, we are required to capitalize certain contract acquisition

costs consisting primarily of commissions paid when contracts are signed and amortize these costs over the expected contractual relationship with the customer. As of January 1, 2018, we capitalized $1.5 million in incremental contract acquisition costs (specifically sales commissions related to the CBR Services) related to contracts that were not completed.

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The Impact of ASC 606 Adoption

As a result of applying the modified retrospective transition method to adopt ASC 606, the following financial statement line items for the three months ended March 31, 2018 were affected (in thousands):

	March 31, 2018		
Condensed Consolidated Balance Sheet	Impact of changes in accounting policies		
	As Reported	Balances without adoption of ASC 606	Impact of Adoption
Assets:			
Prepaid and other current assets	$16,345	$16,248	$ 97
Other long-term assets	$2,238	$538	$ 1,700
Total assets	$1,834,950	$1,833,153	$ 1,797
Liabilities and stockholders' equity:			
Deferred tax liabilities	$17,497	$17,156	$ 341
Accumulated deficit	$(530,921)	$(532,377)	$ 1,456
Total liabilities and stockholders' equity	$1,834,950	$1,833,153	$ 1,797

	March 31, 2018		
Condensed Consolidated Statement of Operations	Impact of changes in accounting policies		
	As Reported	Balances without adoption of ASC 606	Impact of Adoption
Costs and expenses:			
Selling, general and administrative expenses	$91,050	$91,368	$ (318)
Net loss	$(54,242)	$(54,560)	$ 318

	March 31, 2018		
Condensed Consolidated Statement of Cash Flows	Impact of changes in accounting policies		
	As Reported	Balances without adoption of ASC 606	Impact of Adoption
Operating activities:			
Net loss	$(54,242)	$(54,560)	$ 318
Changes in operating assets and liabilities:			
Prepaid and other current assets	$(3,720)	$(3,702)	$ (18)
Other assets and liabilities	$215	$515	$ (300)

Reclassifications

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

C. REVENUE RECOGNITION

On January 1, 2018, we adopted ASC 606 applying the modified retrospective transition method to all contracts that were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported under the accounting standards in effect for prior periods. We recorded a net increase to opening stockholders' equity of $1.1 million as of January 1, 2018, reflecting the cumulative impact of adopting ASC 606 primarily related to the capitalization of incremental direct costs of obtaining a contract, which consisted of sales commissions related to the CBR Services. There was no impact to revenue for the three months ended March 31, 2018.

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Under ASC 606, we recognize revenue when our customer obtains control of promised goods or services in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. To determine revenue recognition for arrangements that we determine are within the scope of ASC 606, we perform the following five steps:

a.Identify the contract(s) with a customer;
b.Identify the performance obligations in the contract;
c.Determine the transaction price;
d.Allocate the transaction price to the performance obligations in the contract; and
e.Recognize revenue when (or as) the performance obligations are satisfied.

We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, if the contract is determined to be within the scope of ASC 606, we assess the goods or services promised within each contract, determine those that are performance obligations, and assess whether each promised good or service is distinct. We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Our major sources of revenue during the reporting periods were: (a) product revenues from Makena and Feraheme; and (b) service revenues associated with the CBR Services. The adoption of ASC 606 did not have an impact on our product or service revenue.

Revenue and Allowances

The following table provides information about disaggregated revenue by products and services (in thousands):

	Three Months Ended March 31,	
	2018	2017
Product sales, net		
Makena	$89,983	$86,455
Feraheme	25,135	25,922
Intrarosa	2,165	—
MuGard	65	140
Total	$117,348	$112,517
Service revenues, net	$28,969	$26,931

Total gross product sales were offset by product sales allowances and accruals for the three months ended March 31, 2018 and 2017 as follows (in thousands, except for percentages):

	Three Months Ended March 31,					
	2018	Percent of gross product sales		2017	Percent of gross product sales	
Gross product sales	$239,870			$206,724		
Provision for product sales allowances and accruals:						
Contractual adjustments	86,144	36	%	69,829	34	%
Governmental rebates	36,378	15	%	24,378	12	%
Total	122,522	51	%	94,207	46	%
Product sales, net	$117,348			$112,517		

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The following table summarizes the product revenue allowance and accrual activity for the three months ended March 31, 2018 (in thousands):

	Contractual Adjustments	Governmental Rebates	Total
Balance at December 31, 2017	$ 62,164	$ 50,598	$112,762
Provisions related to current period sales	85,308	31,028	116,336
Adjustments related to prior period sales	836	5,350	6,186
Payments/returns relating to current period sales	(44,633)	—	(44,633)
Payments/returns relating to prior period sales	(39,441)	(25,149)	(64,590)
Balance at March 31, 2018	$ 64,234	$ 61,827	$126,061

The following table provides information about assets and liabilities from contracts with customers (in thousands):

	March 31, 2018	At Adoption
Short-term contract assets (sales commissions)	$97	$ 79
Long-term contract assets (sales commissions)	$1,700	$ 1,400
Short-term contract liabilities (deferred revenue)	$42,510	$ 42,494
Long-term contract liabilities (deferred revenue)	$27,398	$ 24,387

We receive payments from customers based upon contractual billing schedules; accounts receivable are recorded when the right to consideration becomes unconditional. Contract assets include deferred contract acquisition costs, which will be amortized along with the associated revenue. Contract liabilities include payments received in advance of performance under the contract, and are realized with the associated revenue recognized under the contract. We had no asset impairment charges related to contract assets in the three months ended March 31, 2018.

The following table presents changes in the Company’s contract assets and liabilities during the three months ended March 31, 2018 (in thousands):

	Balance at January 1, 2018	Additions	Deductions	Balance at March 31, 2018
Contract assets (sales commissions)	$1,479	$ 340	$(22)	$1,797
Contract liabilities (deferred revenue)	$66,881	$ 21,727	$(18,700)	$69,908

Performance Obligations

At contract inception, we assess the goods and services promised in our contracts with customers and identify a performance obligation for each promise to transfer to the customer a good or service (or bundle of goods or services) that is distinct. To identify the performance obligations, we consider all of the goods or services promised in the contract regardless of whether they are explicitly stated or are implied by customary business practices. We determined that the following distinct goods and services represent separate performance obligations:

•Supply of Makena product
•Supply of Feraheme product
•Supply of Intrarosa product
•CBR collection and processing services
•CBR storage services

Product Revenue

For performance obligations related to products (i.e. Makena, Feraheme and Intrarosa), we principally sell our products to wholesalers, specialty distributors, specialty pharmacies and other customers (collectively, “Customers”), who purchase products directly from us. Our Customers subsequently resell the products to healthcare providers and patients. In addition to distribution agreements with Customers, we enter into arrangements with healthcare providers and payers that provide for

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government-mandated and/or privately-negotiated rebates, chargebacks and discounts with respect to the purchase of our products.

For the majority of our Customers, we transfer control at the point in time when the goods are delivered. In instances when we perform shipping and handling activities, these are considered fulfillment activities, and accordingly, the costs are accrued when the related revenue is recognized. Taxes collected from Customers and remitted to governmental authorities are excluded from revenues.

Variable Consideration

Under ASC 606, we are required to make estimates of the net sales price, including estimates of variable consideration (such as rebates, chargebacks, discounts, co-pay assistance and other deductions), and recognize the estimated amount as revenue, when we transfer control of the product to our customers. Variable consideration must be determined using either an “expected value” or a “most likely amount” method.

We record product revenues net of certain allowances and accruals in our condensed consolidated statements of operations. Product sales allowances and accruals are primarily comprised of both direct and indirect fees, discounts and rebates and provisions for estimated product returns. Direct fees, discounts and rebates are contractual fees and price adjustments payable to Customers that purchase products directly from us. Indirect fees, discounts and rebates are contractual price adjustments payable to healthcare providers and organizations, such as certain physicians, clinics, hospitals, group purchasing organizations (“GPOs”), and dialysis organizations that typically do not purchase products directly from us but rather from wholesalers and specialty distributors. Consideration payable to a Customer, or other parties that purchase goods from the Customer, are considered to be a reduction of the transaction price, and therefore, of revenue.

Product sales allowances and accruals are based on definitive contractual agreements or legal requirements (such as Medicaid laws and regulations) related to the purchase and/or utilization of the product by these entities and are recorded in the same period that the related revenue is recognized. We use the expected value method for estimating variable consideration. We estimate product sales allowances and accruals using either historical, actual and/or other data, including estimated patient usage, applicable contractual rebate rates, contract performance by the benefit providers, other current contractual and statutory requirements, historical market data based upon experience of our products and other products similar to them, specific known market events and trends such as competitive pricing and new product introductions, current and forecasted Customer buying patterns and inventory levels, and the shelf life of our products. As part of this evaluation, we also review changes to federal and other legislation, changes to rebate contracts, changes in the level of discounts, and changes in product sales trends. Although allowances and accruals are recorded at the time of product sale, rebates are typically paid out in arrears, one to three months after the sale.

The estimate of variable consideration, which is included in the transaction price, may be constrained and is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved in a future period. Estimating variable consideration and the related constraint requires the use of significant management judgment and actual amounts of consideration ultimately received may differ from our estimates. If actual results in the future vary from our estimates, we will adjust these estimates, which would affect net product revenue and earnings in the period such variances become known. No amounts were constrained as of March 31, 2018.

Discounts

We typically offer a 2% prompt payment discount to certain customers as an incentive to remit payment in accordance with the stated terms of the invoice, generally 30 days. Because we anticipate that those customers who are offered

this discount will take advantage of the discount, 100% of the prompt payment discount at the time of sale are accrued, based on the gross amount of each invoice. We adjust the accrual quarterly to reflect actual experience.

Chargebacks

Chargeback reserves represent the estimated obligations resulting from the difference between the prices at which we sell our products to wholesalers and the sales price ultimately paid to wholesalers under fixed price contracts by third-party payers, including governmental agencies. The chargeback estimates are determined based on actual product sales data and forecasted customer buying patterns. Actual chargeback amounts are determined at the time of resale to the qualified healthcare provider, and we generally issue credits for such amounts within several weeks of receiving notification from the wholesaler. Estimated chargeback amounts are recorded at the time of sale and adjusted quarterly to reflect actual experience.

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Distributor/Wholesaler and Group Purchasing Organization Fees

Fees under the arrangements with distributors and wholesalers are usually based upon units of product purchased during the prior month or quarter and are usually paid by us within several weeks of the receipt of an invoice from the wholesaler or distributor, as the case may be. Fees under the arrangements with GPOs are usually based upon member purchases during the prior quarter and are generally billed by the GPO within 30 days after period end. In accordance with ASC 606, since the consideration given to the Customer is not for a distinct good or service, the consideration is a reduction of the transaction price of the vendor's products or services. We have included these fees in contractual adjustments in the table above. We generally pay such amounts within several weeks of the receipt of an invoice from the distributor, wholesaler or GPO. Accordingly, we accrue the estimated fee due at the time of sale, based on the contracted price invoiced to the Customer. We adjust the accrual quarterly to reflect actual experience.

Product Returns

Consistent with industry practice, we generally offer wholesalers, specialty distributors and other customers a limited right to return our products based on the product's expiration date. Currently the expiration dates for Feraheme, Makena and Intrarosa have a range of three to five years. Product returns are estimated based on the historical return patterns and known or expected changes in the marketplace. We track actual returns by individual production lots. Returns on lots eligible for credits under our returned goods policy are monitored and compared with historical return trends and rates. We expect that wholesalers and healthcare providers will not stock significant inventory due to the cost of the product, the expense to store our products, and/or that our products are readily available for distribution. We record an estimate of returns at the time of sale. If necessary, our estimated rate of returns may be adjusted for actual return experience as it becomes available and for known or expected changes in the marketplace. We did not significantly adjust our reserve for product returns during the three months ended March 31, 2018. To date, our product returns have been relatively limited; however, returns experience may change over time. We may be required to make future adjustments to our product returns estimate, which would result in a corresponding change to our net product sales in the period of adjustment and could be significant.

Sales Rebates

We contract with various private payer organizations, primarily pharmacy benefit managers, for the payment of rebates with respect to utilization of our products. We determine our estimates for rebates, if applicable, based on actual product sales data and our historical product claims experience. Rebate amounts generally are invoiced quarterly and are paid in arrears, and we expect to pay such amounts within several weeks of notification by the provider. We regularly assess our reserve balance and the rate at which we accrue for claims against product sales. If we determine in future periods that our actual rebate experience is not indicative of expected claims, if actual claims experience changes, or if other factors affect estimated claims rates, we may be required to adjust our current accumulated reserve estimate, which would affect net product sales in the period of the adjustment and could be significant.

Governmental Rebates

Governmental rebate reserves relate to our reimbursement arrangements with state Medicaid programs. We determine our estimates for Medicaid rebates, if applicable, based on actual product sales data and our historical product claims experience. In estimating these reserves, we provide for a Medicaid rebate associated with both those expected instances where Medicaid will act as the primary insurer as well as in those instances where we expect Medicaid will act as the secondary insurer. Rebate amounts generally are invoiced quarterly and are paid in arrears, and we expect to pay such amounts within several weeks of notification by the Medicaid or provider entity. We regularly assess our

Medicaid reserve balance and the rate at which we accrue for claims against product sales. If we determine in future periods that our actual rebate experience is not indicative of expected claims, if actual claims experience changes, or if other factors affect estimated claims rates, we may be required to adjust our current Medicaid accumulated reserve estimate, which would affect net product sales in the period of the adjustment and could be significant.

Other Incentives

Other incentives which we offer include voluntary patient assistance programs, such as co-pay assistance programs, which are intended to provide financial assistance to qualified commercially insured patients with prescription drug co-payments required by payers. The calculation of the accrual for co-pay assistance is based on an estimate of claims and the cost per claim that we expect to receive associated with product that has been recognized as revenue.

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Service Revenue

The CBR Services include the collection, processing, and storage of both umbilical cord blood and cord tissue. We market and sell the CBR Services directly to consumers at the prices that are known at contract inception. The discounts offered to the customer are known at the time of enrollment and thereby do not result in variable consideration. CBR Services include the following two performance obligations: collection and processing and storage services, further described below.

Collection and Processing Services

Enrollment services, including the provision of a collection kit and cord blood and cord tissue unit processing, are delivered at the beginning of the relationship. The revenue for this performance obligation is recognized at the point in time after the collection and successful processing of the cord blood and cord tissue.

When purchasing collection and processing services, the customer can (a) pay for the service upfront, when the service is provided; (b) finance the processing fee with us over six or twelve months; or (c) finance the processing fee through a third-party provider, and therefore not finance the arrangement with us. We elected to apply the practical expedient and therefore we have not adjusted the promised consideration for the effects of financing for either the six or twelve month payment plans.

Storage Services

Payment options for storage services of newborn cord blood and cord tissue units include either (a) an annual fee or (b) a prepayment of 18 years or for the lifetime of the newborn donor (the “lifetime option”). The revenue for this performance obligation is recognized ratably over the storage period on a straight-line basis, which is consistent with how the services are provided. For the lifetime option, storage fees are not charged during the lifetime of the newborn donor. However, revenue is recognized based on the average of male and female life expectancies using lifetime actuarial tables published by the Social Security Administration in effect at the time of the newborn’s birth. We determined that the 18 year and lifetime prepayment options do not include a significant financing component as the payment terms were structured primarily for reasons other than for the provision of financing and to maximize profitability.

As of March 31, 2018, the total aggregate transaction price allocated to the unsatisfied performance obligations was recorded as deferred revenue, which will be recognized ratably on a straight-line basis over the contractual period, as described above, of which $42.5 million will be recognized over the next twelve months.

Allocation of Transaction Price

We have selected an adjusted market assessment approach to estimate the stand-alone selling prices of the collection and processing services and storage services and concluded that the published list price is the price that a customer in that market would be willing to pay for those goods or services. We also considered the fact that all customers are charged the list prices current at the time of their enrollment where we have separately stated list prices for processing and storage. The discounts provided to the customers at the time of entering into the contract are allocated proportionally to both performance obligations (i.e. processing and storage).

Cost to Obtain a Contract

We pay commissions to internal sales representatives as compensation for obtaining contract enrollments for the CBR Services. We capitalize commissions that are incremental as a result of obtaining customer contracts and costs

incurred to fulfill a customer contract if those costs are not within the scope of another topic within the accounting literature and meet the specified criteria. These costs are deferred in other current or long-term assets and are expensed to selling, general and administrative expenses as we satisfy the performance obligations by transferring the service to the customer. These assets will be periodically assessed for impairment.

As of January 1, 2018, the date we adopted ASC 606, we capitalized $1.5 million in incremental contract acquisition costs related to contracts that were not completed. In the three months ended March 31, 2018 we amortized an immaterial amount of these acquisition costs, and did not record any impairment losses in relation to costs capitalized.

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D. MARKETABLE SECURITIES

As of March 31, 2018 and December 31, 2017, our marketable securities were classified as available-for-sale in accordance with accounting standards which provide guidance related to accounting and classification of certain investments in marketable securities. Available-for-sale marketable securities are those securities which we view as available for use in current operations, if needed. We generally classify our available-for-sale marketable securities as short-term investments even though the stated maturity date may be one year or more beyond the current balance sheet date.

The following is a summary of our marketable securities as of March 31, 2018 and December 31, 2017 (in thousands):

	March 31, 2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Short-term marketable securities:*				
Corporate debt securities	$58,981	$ —	$ (215)	$58,766
Certificates of deposit	10,150	—	—	10,150
U.S. treasury and government agency securities	5,996	—	(57)	5,939
Commercial paper	5,962	—	—	5,962
Total short-term marketable securities	$81,089	$ —	$ (272)	$80,817
Long-term marketable securities:**				
Corporate debt securities	$52,408	$ 1	$ (725)	$51,684
U.S. treasury and government agency securities	6,381	—	(62)	6,319
Total long-term marketable securities	58,789	1	(787)	58,003
Total marketable securities	$139,878	$ 1	$ (1,059)	$138,820

* Represents marketable securities with a remaining maturity of less than one year.
** Represents marketable securities with a remaining maturity of one to three years.

	December 31, 2017			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Short-term marketable securities:*				
Corporate debt securities	$57,257	$ —	$ (68)	57,189
Certificates of deposit	9,151	—	—	9,151
U.S. treasury and government agency securities	1,999	—	(13)	1,986
Commercial paper	1,999	—	—	1,999
Total short-term marketable securities	$70,406	$ —	$ (81)	$70,325
Long-term marketable securities:**				
Corporate debt securities	$59,282	$ 1	$ (320)	$58,963
U.S. treasury and government agency securities	7,381	—	(76)	7,305
Total long-term marketable securities	66,663	1	(396)	66,268
Total marketable securities	$137,069	$ 1	$ (477)	$136,593

* Represents marketable securities with a remaining maturity of less than one year.
** Represents marketable securities with a remaining maturity of one to three years.

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Impairments and Unrealized Gains and Losses on Marketable Securities

We did not recognize any other-than-temporary impairment losses in our condensed consolidated statements of operations related to our marketable securities during the three months ended March 31, 2018 and 2017. We considered various factors, including the length of time that each security was in an unrealized loss position and our ability and intent to hold these securities until the recovery of their amortized cost basis occurs. As of March 31, 2018, we had no material losses in an unrealized loss position for more than one year. Future events may occur, or additional information may become available, which may cause us to identify credit losses where we do not expect to receive cash flows sufficient to recover the entire amortized cost basis of a security and may necessitate the recording of future realized losses on securities in our portfolio. Significant losses in the estimated fair values of our marketable securities could have a material adverse effect on our earnings in future periods

E. FAIR VALUE MEASUREMENTS

The following tables represent the fair value hierarchy as of March 31, 2018 and December 31, 2017, for those assets and liabilities that we measure at fair value on a recurring basis (in thousands):

	Fair Value Measurements at March 31, 2018 Using:			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$2,255	$ 2,255	$ —	$ —
Corporate debt securities	110,450	—	110,450	—
U.S. treasury and government agency securities	12,258	—	12,258	—
Certificates of deposit	10,150		10,150	—
Commercial paper	$5,962	$ —	$ 5,962	$ —
Total Assets	$141,075	$ 2,255	$ 138,820	$ —
Liabilities:				
Contingent consideration - Lumara Health	$49,797	$ —	$ —	$ 49,797
Contingent consideration - MuGard	870	—	—	870
Total Liabilities	$50,667	$ —	$ —	$ 50,667

	Fair Value Measurements at December 31, 2017 Using:			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$4,591	$ 4,591	$ —	$ —
Corporate debt securities	116,152	—	116,152	—
U.S. treasury and government agency securities	9,291	—	9,291	—
Certificates of deposit	9,151	—	9,151	—
Commercial paper	1,999	—	1,999	—
Total Assets	$141,184	$ 4,591	$ 136,593	$ —
Liabilities:				
Contingent consideration - Lumara Health	$49,187	$ —	$ —	$ 49,187
Contingent consideration - MuGard	898	—	—	898
Total Liabilities	$50,085	$ —	$ —	$ 50,085

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Marketable Securities

Our cash equivalents, are classified as Level 1 assets under the fair value hierarchy as these assets have been valued using quoted market prices in active markets and do not have any restrictions on redemption. Our marketable securities are classified as Level 2 assets under the fair value hierarchy as these assets were primarily determined from independent pricing services, which normally derive security prices from recently reported trades for identical or similar securities, making adjustments based upon other significant observable market transactions. At the end of each reporting period, we perform quantitative and qualitative analysis of prices received from third parties to determine whether prices are reasonable estimates of fair value. After completing our analysis, we did not adjust or override any fair value measurements provided by our pricing services as of March 31, 2018. In addition, there were no transfers or reclassifications of any securities between Level 1 and Level 2 during the three months ended March 31, 2018.

Contingent Consideration

For asset acquisitions, such as Intrarosa, we record contingent consideration for obligations we consider to be probable and estimable and these liabilities are not adjusted to fair value. As of March 31, 2018, $10.0 million of contingent consideration was recorded in accrued expenses and is required to be paid to Endoceutics, Inc. (“Endoceutics”) in connection with the first anniversary of the closing pursuant to the agreement entered into with Endoceutics (the “Endoceutics License Agreement”). In addition, as of March 31, 2018, we recorded an accrual for acquired in-process research and development (“IPR&D”) expense of $20.0 million in anticipation of the regulatory milestone payment to Palatin Technologies, Inc. (“Palatin”) due upon the FDA acceptance of the bremelanotide NDA, pursuant to the terms of a license agreement we entered into with Palatin in January 2017 (the “Palatin License Agreement”). We also recorded contingent consideration related to the November 2014 acquisition of Lumara Health, Inc. (“Lumara Health”) and related to our June 2013 license agreement for MuGard® Mucoadhesive Oral Wound Rinse (the “MuGard License Agreement”) with Abeona Therapeutics, Inc. (“Abeona”), under which we acquired the U.S. commercial rights for the management of oral mucositis and stomatitis (the “MuGard Rights”).

The fair value measurements of contingent consideration obligations and the related intangible assets arising from business combinations are classified as Level 3 assets under the fair value hierarchy as these assets have been valued using unobservable inputs. These inputs include: (a) the estimated amount and timing of projected cash flows; (b) the probability of the achievement of the factors on which the contingency is based; and (c) the risk-adjusted discount rate used to present value the probability-weighted cash flows. Significant increases or decreases in any of those inputs in isolation could result in a significantly lower or higher fair value measurement.

The following table presents a reconciliation of contingent consideration obligations related to the acquisition of Lumara Health (related to our Makena product) and the MuGard Rights (in thousands):

Balance as of December 31, 2017	$50,085
Payments made	(44)
Adjustments to fair value of contingent consideration	626
Balance as of March 31, 2018	$50,667

During the three months ended March 31, 2018, we adjusted the fair value of our contingent consideration liability by approximately $0.6 million, due to an increase of approximately $0.6 million to the Makena contingent consideration. We have classified $49.8 million of the Makena contingent consideration and $0.2 million of the MuGard contingent consideration as short-term liabilities in our consolidated balance sheet as of March 31, 2018.

The fair value of the contingent milestone payments payable by us to the former stockholders of Lumara Health was determined based on our probability-adjusted discounted cash flows estimated to be realized from the net sales of Makena from December 1, 2014 through December 31, 2019. As of March 31, 2018, the total potential undiscounted milestone payment amount we could pay in connection with the Lumara Health acquisition was $200.0 million through December 31, 2019.

The fair value of the contingent royalty payments payable by us to Abeona under the MuGard License Agreement was determined based on various market factors, including an analysis of estimated sales using a discount rate of approximately 14%. As of March 31, 2018, we estimated that the undiscounted royalty amounts we could pay under the MuGard License Agreement, based on current projections, may range from approximately $2.0 million to $6.0

million over the remainder of the ten year period, which commenced on June 6, 2013, the acquisition date, which is our best estimate of the period over which we expect the majority of the asset's cash flows to be derived.

We believe the estimated fair values of Lumara Health and the MuGard Rights are based on reasonable assumptions; however; our actual results may vary significantly from the estimated results.

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Debt

We estimate the fair value of our debt obligations by using quoted market prices obtained from third-party pricing services, which is classified as a Level 2 input. As of March 31, 2018, the estimated fair value of our 2023 Senior Notes, 2022 Convertible Notes and 2019 Convertible Notes (each as defined below) was $470.3 million, $323.3 million and $20.7 million, respectively, which differed from their carrying values. See Note Q, “Debt” for additional information on our debt obligations.

F. INVENTORIES

Our major classes of inventories were as follows as of March 31, 2018 and December 31, 2017 (in thousands):

	March 31, 2018	December 31, 2017
Raw materials	$12,578	$ 12,418
Work in process	5,417	4,146
Finished goods	13,603	20,792
Total inventories	$31,598	$ 37,356

Total inventories decreased by $5.8 million from December 31, 2017 primarily due to sales of the Makena intramuscular product and Feraheme finished goods.

G. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment, net consisted of the following as of March 31, 2018 and December 31, 2017 (in thousands):

	March 31, 2018	December 31, 2017
Land	$700	$ 700
Land improvements	300	300
Building and improvements	9,552	9,552
Computer equipment and software	14,072	14,073
Furniture and fixtures	2,513	2,512
Leasehold improvements	4,959	4,959
Laboratory and production equipment	13,286	8,030
Construction in progress	1,025	5,360
	46,407	45,486
Less: accumulated depreciation	(20,486)	(19,490)
Property, plant and equipment, net	$25,921	$ 25,996

H. GOODWILL AND INTANGIBLE ASSETS, NET

Goodwill

Our $639.5 million goodwill balance consisted of $198.1 million of goodwill acquired through the November 2014 Lumara Health acquisition and $441.4 million acquired through the August 2015 CBR acquisition. As of March 31, 2018, we had no accumulated impairment losses related to goodwill.

We test goodwill at the reporting unit level for impairment on an annual basis and between annual tests if events and circumstances indicate it is more likely than not that the fair value of a reporting unit is less than its carrying value. Events that could indicate impairment and trigger an interim impairment assessment include, but are not limited to, an adverse change in current economic and market conditions, including a significant prolonged decline in market capitalization, a significant adverse change in legal factors, unexpected adverse business conditions, and an adverse action or assessment by a regulator. Our annual impairment test date is October 31. We have determined that we operate in a single operating segment and have a single reporting unit.

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Intangible Assets

As of March 31, 2018 and December 31, 2017, our identifiable intangible assets consisted of the following (in thousands):

	March 31, 2018				December 31, 2017			
	Cost	Accumulated Amortization	Cumulative Impairments	Net	Cost	Accumulated Amortization	Cumulative Impairments	Net
Amortizable intangible assets:								
Makena base technology	$797,100	$ 306,242	$ 319,246	$171,612	$797,100	$ 255,754	$ 319,246	$222,100
CBR customer relationships	297,000	33,209	—	263,791	297,000	29,309	—	267,691
Makena auto-injector developed technology	79,100	188	—	78,912	—	—	—	—
Intrarosa developed technology	77,655	5,064	—	72,591	77,655	3,376	—	74,279
	1,250,855	344,703	319,246	586,906	1,171,755	288,439	319,246	564,070
Indefinite-lived intangible assets:								
Makena IPR&D	—	—	—	—	79,100	—	—	79,100
CBR trade names and trademarks	65,000	—	3,700	61,300	65,000	—	3,700	61,300
Total intangible assets	$1,315,855	$ 344,703	$ 322,946	$648,206	$1,315,855	$ 288,439	$ 322,946	$704,470

During the first quarter of 2018, following the FDA approval of the Makena auto-injector, we reclassified the Makena IPR&D as the Makena auto-injector developed technology, and placed it into service. Amortization of the Makena auto-injector developed technology, is being recognized on a straight-line basis over 8.8 years.

As of March 31, 2018, the weighted average remaining amortization period for our finite-lived intangible assets was approximately 11.7 years. Total amortization expense for the three months ended March 31, 2018 and 2017 was $56.3 million and $24.8 million, respectively. Amortization expense for the Makena base technology, Makena auto-injector developed technology, and Intrarosa developed technology is recorded in cost of product sales in our condensed consolidated statements of operations. Amortization expense for the CBR related intangible assets is recorded in selling, general and administrative expenses in our condensed consolidated statements of operations. We expect amortization expense related to our finite-lived intangible assets to be as follows (in thousands):

Period	Estimated Amortization Expense
Remainder of Year Ending December 31, 2018	$ 139,239
Year Ending December 31, 2019	48,552
Year Ending December 31, 2020	40,930
Year Ending December 31, 2021	40,718
Year Ending December 31, 2022	40,663
Thereafter	276,804
Total	$ 586,906

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I. CURRENT AND LONG-TERM LIABILITIES

Accrued Expenses

Accrued expenses consisted of the following as of March 31, 2018 and December 31, 2017 (in thousands):

	March 31, 2018	December 31, 2017
Commercial rebates, fees and returns	$114,884	$102,357
Professional, license, and other fees and expenses	29,033	28,692
Salaries, bonuses, and other compensation	14,034	19,099
Interest expense	6,639	13,525
Bremelanotide milestone payment	20,000	—
Intrarosa-related license fees	10,000	10,000
Accrued research and development	4,481	1,817
Total accrued expenses	$199,071	$175,490

Deferred Revenues

Our deferred revenue balances as of March 31, 2018 and December 31, 2017 of $69.9 million and $66.9 million, respectively, were primarily related to our CBR Services revenues and included: (a) amounts collected in advance of unit processing and (b) amounts associated with unearned storage fees collected at the beginning of the storage contract term, net of allocated discounts.

J. INCOME TAXES

The following table summarizes our effective tax rate and income tax benefit for the three months ended March 31, 2018 and 2017 (in thousands except for percentages):

	Three Months Ended March 31,	
	2018	2017
Effective tax rate	10 %	36 %
Income tax benefit	$(5,979)	$(20,706)

For the three months ended March 31, 2018, we recognized an income tax benefit of $6.0 million, representing an effective tax rate of 10%. The difference between the expected 2018 statutory federal tax rate of 21% and the 10% effective tax rate for the three months ended March 31, 2018 was primarily attributable to the impact of the establishment of a valuation allowance related to certain deferred tax assets, the impact of non-deductible stock compensation, and other non-deductible expenses, partially offset by state income taxes and orphan drug tax credits. We have established a valuation allowance on certain deferred tax assets to the extent that our existing taxable temporary differences would not be available as a source of income to realize the benefits of those deferred tax assets.

On December 22, 2017, the Tax Cuts and Jobs Act (the “2017 Tax Act”) was enacted. The 2017 Tax Act included significant changes to the U.S. corporate income tax system, including a reduction of the federal corporate income tax rate from 35% to 21%, effective January 1, 2018. Deferred tax assets and liabilities are measured using enacted rates in effect for the year in which those temporary differences are expected to be recovered or settled. As a result of the reduction in the federal tax rate from 35% to 21%, we revalued our ending net deferred tax liabilities at December 31, 2017 and recognized a provisional $17.6 million tax benefit. We are still assessing the implications of the 2017 Tax Act on both a federal and state level. Any additional impacts will be recorded as they are identified during the measurement period as provided for in accordance with Staff Accounting Bulletin No. 118, which addresses the application of GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the 2017 Tax Act.

For the three months ended March 31, 2017, we recognized an income tax benefit of $20.7 million representing an effective tax rate of 36%. The difference between the expected 2017 statutory federal tax rate of 35% and the effective tax rate for the three months ended March 31, 2017 was primarily attributable to the impact of state income taxes and the federal research and development tax credit, partially offset by non-deductible stock compensation and other non-deductible expenses.

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The primary drivers of the decrease in tax benefit for the three months ended March 31, 2018 as compared to the three months ended March 31, 2017 include a decrease in the federal tax benefit primarily attributable to the decrease in the statutory federal tax rate from 35% to 21%, and an increase in valuation allowance, primarily on tax credits, partially offset by an increase in orphan drug tax credits.

K. ACCUMULATED OTHER COMPREHENSIVE LOSS

The table below presents information about the effects of net income (loss) of significant amounts reclassified out of accumulated other comprehensive income (loss), net of tax, associated with unrealized gains (losses) on securities during the three months ended March 31, 2018 and 2017 (in thousands):

	Three Months Ended March 31,	
	2018	2017
Beginning balance	$(3,908)	$(3,838)
Holding (losses) gains arising during period, net of tax	(454)	92
Ending balance	$(4,362)	$(3,746)

L. BASIC AND DILUTED NET INCOME (LOSS) PER SHARE

We compute basic net income (loss) per share by dividing net income (loss) by the weighted average number of common shares outstanding during the relevant period. Diluted net income (loss) per common share has been computed by dividing net income (loss) by the diluted number of common shares outstanding during the period. Except where the result would be antidilutive to net income, diluted net income per common share is computed assuming the impact of the conversion of the 2.5% convertible senior notes due 2019 (the “2019 Convertible Notes”) and the 3.25% convertible senior notes due 2022 (the “2022 Convertible Notes”), the exercise of outstanding stock options, the vesting of restricted stock units (“RSUs”), and the exercise of warrants.

We have a choice to settle the conversion obligation of our 2022 Convertible Notes and the 2019 Convertible Notes (together, the “Convertible Notes”) in cash, shares, or any combination of the two. Our current policy is to settle the principal balance of the Convertible Notes in cash. As such, we apply the treasury stock method to these securities and the dilution related to the conversion premium, if any, of the Convertible Notes is included in the calculation of diluted weighted-average shares outstanding to the extent each issuance is dilutive based on the average stock price during each reporting period being greater than the conversion price of the respective Convertible Notes. The dilutive effect of the warrants, stock options and RSUs has been calculated using the treasury stock method.

The components of basic and diluted net income (loss) per share for the three months ended March 31, 2018 and 2017 were as follows (in thousands, except per share data):

	Three Months Ended March 31,	
	2018	2017
Net loss	$(54,242)	$(36,560)
Weighted average common shares outstanding	34,162	34,378
Shares used in calculating dilutive net loss per share	34,162	34,378
Net loss per share:		
Basic and diluted	$(1.59)	$(1.06)

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The following table sets forth the potential common shares issuable upon the exercise of outstanding options, the vesting of RSUs, the exercise of warrants (prior to consideration of the treasury stock method), and the conversion of the Convertible Notes, which were excluded from our computation of diluted net (loss) income per share because their inclusion would have been anti-dilutive (in thousands):

	Three Months Ended March 31,	
	2018	2017
Options to purchase shares of common stock	3,771	2,406
Shares of common stock issuable upon the vesting of RSUs	1,401	775
Warrants	1,008	7,382
2022 Convertible Notes	11,695	—
2019 Convertible Notes	790	7,382
Total	18,665	17,945

In connection with the issuance of the 2019 Convertible Notes, in February 2014, we entered into convertible bond hedges. The convertible bond hedges are not included for purposes of calculating the number of diluted shares outstanding, as their effect would be anti-dilutive. The convertible bond hedges are generally expected, but not guaranteed, to reduce the potential dilution and/or offset the cash payments we are required to make upon conversion of the remaining 2019 Convertible Notes. During the three months ended March 31, 2018 and 2017, our average common stock price was below the exercise price of the warrants.

M. EQUITY BASED COMPENSATION

We currently maintain three equity compensation plans; our Fourth Amended and Restated 2007 Equity Incentive Plan, as amended (the “2007 Plan”), the Lumara Health Inc. Amended and Restated 2013 Incentive Compensation Plan (the “Lumara Health 2013 Plan”) and our 2015 Employee Stock Purchase Plan (“2015 ESPP”). All outstanding stock options granted under each of our equity compensation plans other than our 2015 ESPP have an exercise price equal to the closing price of a share of our common stock on the grant date.

Stock Options

The following table summarizes stock option activity for the three months ended March 31, 2018:

	2007 Equity Plan	2013 Lumara Equity Plan	Inducement Grants	Total
Outstanding at December 31, 2017	2,590,373	125,536	815,450	3,531,359
Granted	451,411	—	—	451,411
Exercised	(7,782)	—	—	(7,782)
Expired or terminated	(160,797)	(15,436)	(27,875)	(204,108)
Outstanding at March 31, 2018	2,873,205	110,100	787,575	3,770,880

Restricted Stock Units

The following table summarizes RSU activity for the three months ended March 31, 2018:

	2007 Equity Plan	2013 Lumara Equity Plan	Inducement Grants	Total
Outstanding at December 31, 2017	966,623	11,611	91,541	1,069,775
Granted	712,781	—	—	712,781
Vested	(317,638)	(10,150)	(15,666)	(343,454)
Expired or terminated	(38,078)	(460)	—	(38,538)
Outstanding at March 31, 2018	1,323,688	1,001	75,875	1,400,564

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In March 2018, we granted RSUs under our 2007 Plan to certain members of our senior management covering a maximum of 206,250 shares of common stock. These performance-based RSUs will vest, if at all, on March 1, 2021, based on our total shareholder return performance measured against the median total shareholder return of a defined group of companies over a three-year period. The maximum aggregate total fair value of these RSUs is $3.8 million, which is being recognized as expense over a period of three years from the date of grant, net of any estimated and actual forfeitures.

Equity-Based Compensation Expense

Equity-based compensation expense for the three months ended March 31, 2018 and 2017 consisted of the following (in thousands):

	Three Months Ended March 31,	
	2018	2017
Cost of product sales and services	$347	$129
Research and development	720	756
Selling, general and administrative	4,466	4,893
Total equity-based compensation expense	5,533	5,778
Income tax effect	(942)	(1,605)
After-tax effect of equity-based compensation expense	$4,591	$4,173

We reduce the compensation expense being recognized to account for estimated forfeitures, which we estimate based primarily on historical experience, adjusted for unusual events such as corporate restructurings, which may result in higher than expected turnover and forfeitures. Under current accounting guidance, forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. We adopted ASU No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09") during the first quarter of 2017. We will continue to use the current method of estimated forfeitures each period rather than accounting for forfeitures as they occur.

N. STOCKHOLDERS' EQUITY

Change in Stockholders' Equity

Total stockholders' equity decreased by $50.2 million during the three months ended March 31, 2018. This decrease was primarily driven by the following:

- $54.2 million due to the net loss for the three months ended March 31, 2018;
- $5.5 million increase related to equity-based compensation expense;
- $1.1 million increase related to the cumulative effect adjustment to our accumulated deficit from the adoption of ASC 606, net of tax; and
- $2.3 million decrease due to the payment of employee tax withholdings related to equity-based compensation.

Share Repurchase Program

In January 2016, we announced that our Board authorized a program to repurchase up to $60.0 million in shares of our common stock. The repurchase program does not have an expiration date and may be suspended for periods or discontinued at any time. Under the program, we may purchase our stock from time to time at the discretion of management in the open market or in privately negotiated transactions. The number of shares repurchased and the

timing of the purchases will depend on a number of factors, including share price, trading volume and general market conditions, along with working capital requirements, general business conditions and other factors. We may also from time to time establish a trading plan under Rule 10b5-1 of the Securities and Exchange Act of 1934 to facilitate purchases of our shares under this program. As of March 31, 2018, we repurchased and retired a cumulative total of 2,198,010 shares of common stock under this repurchase program for $39.5 million at an average purchase price of $17.97 per share. As of March 31, 2018, $20.5 million remains available for the repurchase of shares under the program. We did not repurchase any of our common stock during the first quarter of 2018.

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O. COMMITMENTS AND CONTINGENCIES

Commitments

Our long-term contractual obligations include commitments and estimated purchase obligations entered into in the normal course of business. These include commitments related to our facility leases, purchases of inventory, debt obligations, and other purchase obligations.

Purchase Obligations

Purchase obligations primarily represent minimum purchase commitments for inventory. As of March 31, 2018, our minimum purchase commitments totaled $29.9 million.

Contingent Consideration Related to Business Combinations

In connection with our acquisition of Lumara Health in November 2014, we agreed to pay up to $350.0 million based on the achievement of certain sales milestones, of which $150.0 million has been paid. As of March 31, 2018, the total potential undiscounted milestone payment amount we could pay in connection with the Lumara Health acquisition was $200.0 million through December 31, 2019. As of March 31, 2018, $50.0 million has been accrued based on our estimates, which are reliant on a number of external factors as well as the exercise of judgment. As we update our analysis in future periods, we may determine that the payment of this milestone is no longer probable, resulting in the reversal of the $50.0 million liability at that time, which could occur in the near-term.

Contingent Regulatory and Commercial Milestone Payments

In connection with the Endoceutics License Agreement, we are required to pay Endoceutics $10.0 million in connection with the first anniversary of the closing. In addition, we are required to pay Endoceutics certain sales milestone payments, including a first sales milestone payment of $15.0 million, which would be triggered when Intrarosa annual net U.S. sales exceed $150.0 million, and a second milestone payment of $30.0 million, which would be triggered when annual net U.S. sales of Intrarosa exceed $300.0 million. If annual net U.S. sales of Intrarosa exceed $500.0 million, there are additional sales milestone payments totaling up to $850.0 million, which would be triggered at various sales thresholds. We are also obligated to pay tiered royalties to Endoceutics equal to a percentage of net sales of Intrarosa in the U.S. ranging from mid-teens for calendar year net sales up to $150.0 million to mid twenty percent for any calendar year net sales that exceed $1.0 billion for the commercial life of Intrarosa, with deductions (a) after the later of (i) the expiration date of the last to expire of a licensed patent containing a valid patent claim or (ii) ten years after the first commercial sale of Intrarosa for the treatment of vulvar and vaginal atrophy ("VVA") or female sexual dysfunction (“FSD”) in the U.S. (as applicable), (b) for generic competition and (c) for third party payments, subject to an aggregate cap on such deductions of royalties otherwise payable to Endoceutics.

In connection with the license agreement we entered into with Palatin in January 2017, we are required to pay Palatin up to $380.0 million in regulatory and commercial milestone payments including up to $80.0 million upon achievement of certain regulatory milestones, including $20.0 million upon the acceptance by the FDA of our New Drug Application (“NDA”) for bremelanotide and $60.0 million upon FDA approval, and up to $300.0 million of aggregate sales milestone payments upon the achievement of certain annual net sales milestones over the course of the license. We are also obligated to pay Palatin tiered royalties on annual net sales of the Bremelanotide Products (as defined below), on a product-by-product basis, in the Palatin Territory ranging from the high-single digits to the low double-digits.

In July 2015, we entered into an option agreement with Velo Bio, LLC, a privately-held life-sciences company (“Velo”) that granted us an option to acquire the global rights (the “DIF Rights”) to an orphan drug candidate, digoxin immune fab (“DIF”), a poly clonal antibody in clinical development for the treatment of severe preeclampsia in pregnant woman. If we exercise the option to acquire the DIF Rights, we will be responsible for payments totaling up to $65.0 million (including the payment of the option exercise price and the regulatory milestone payments) and up to an additional $250.0 million in sales milestone payments based on the achievement of annual sales milestones at targets ranging from $100.0 million to $900.0 million. See Note P, “Collaboration, License and Other Strategic Agreements,” for more information on the Velo option. Velo began its Phase 2b/3a clinical study in the second quarter of 2017, and until we exercise our option, no contingent amounts related to this agreement have been recorded in our consolidated financial statements as of March 31, 2018.

In connection with a development and license agreement (the "Antares Agreement") with Antares Pharma, Inc. ("Antares"), we are required to pay royalties to Antares on net sales of the auto-injection system for use with hydroxyprogesterone caproate (the "Makena auto-injector") commencing on the launch of the Makena auto-injector in a particular country until the Makena auto-injector is no longer sold or offered for sale in such country (the "Antares Royalty Term"). The royalty rates range from high single digit to low double digits and are tiered based on levels of net sales of the

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Makena auto-injector and decrease after the expiration of licensed patents or where there are generic equivalents to the Makena auto-injector being sold in a particular country. Antares is also entitled to sales-based milestone payments.

Contingencies

Legal Proceedings

We accrue a liability for legal contingencies when we believe that it is both probable that a liability has been incurred and that we can reasonably estimate the amount of the loss. We review these accruals and adjust them to reflect ongoing negotiations, settlements, rulings, advice of legal counsel and other relevant information. To the extent new information is obtained and our views on the probable outcomes of claims, suits, assessments, investigations or legal proceedings change, changes in our accrued liabilities would be recorded in the period in which such determination is made. For certain matters referenced below, the liability is not probable or the amount cannot be reasonably estimated and, therefore, accruals have not been made. In addition, in accordance with the relevant authoritative guidance, for any matters in which the likelihood of material loss is at least reasonably possible, we will provide disclosure of the possible loss or range of loss. If a reasonable estimate cannot be made, however, we will provide disclosure to that effect. We expense legal costs as they are incurred.

Sandoz Patent Infringement Lawsuit

In March 2016, we initiated a patent infringement suit regarding an Abbreviated New Drug Application (“ANDA”) submitted to the FDA by Sandoz Inc. (“Sandoz”) requesting approval to engage in commercial manufacture, use and sale of a generic version of ferumoxytol. On March 23, 2018, we and Sandoz entered a stipulation of dismissal in the United States District Court for the District of New Jersey pursuant to a settlement agreement that dismissed and resolved this action. According to the terms of the settlement, if Sandoz receives FDA approval by a certain date, Sandoz may launch its generic version of Feraheme on July 15, 2021, or earlier under certain circumstances customary for settlement agreements of this nature. Sandoz will pay a royalty on the sales of its generic version of Feraheme to us until the expiration of the last Feraheme patent listed in the Orange Book. If Sandoz is unable to secure approval by such date, Sandoz will launch an authorized generic version of Feraheme on July 15, 2022 for up to twelve months. Sandoz’s right to distribute, and our obligation to supply, the authorized generic product shall be in accordance with standard commercial terms and profit splits.

Other

On July 20, 2015, the Federal Trade Commission (the “FTC”) notified us that it was conducting an investigation into whether Lumara Health or its predecessor engaged in unfair methods of competition with respect to Makena or any hydroxyprogesterone caproate product. The FTC noted in its letter that the existence of the investigation does not indicate that the FTC has concluded that Lumara Health or its predecessor has violated the law and we believe that our contracts and practices comply with relevant law and policy, including the federal Drug Quality and Security Act (the “DQSA”), which was enacted in November 2013, and public statements from and enforcement actions by the FDA regarding its implementation of the DQSA. We have provided the FTC with a response providing a brief overview of the DQSA for context, which we believe was helpful, including: (a) how the statute outlined that large-scale compounding of products that are copies or near-copies of FDA-approved drugs (like Makena) is not in the interests of public safety; (b) our belief that the DQSA has had a significant impact on the compounding of hydroxyprogesterone caproate; and (c) how our contracts with former compounders allow those compounders to continue to serve physicians and patients with respect to supplying medically necessary alternative/altered forms of hydroxyprogesterone caproate. We believe we have fully cooperated with the FTC and we have had no further interactions with the FTC on this matter since we provided our response to the FTC in August 2015.

On or about April 6, 2016, we received Notice of a Lawsuit and Request to Waive Service of a Summons in a case entitled Plumbers’ Local Union No. 690 Health Plan v. Actavis Group et. al. (“Plumbers’ Union”), which was filed in the Court of Common Pleas of Philadelphia County, First Judicial District of Pennsylvania and, after removal to federal court, is now pending in the United States District Court for the Eastern District of Pennsylvania (Civ. Action No. 16-65-AB). Thereafter, we were also made aware of a related complaint entitled Delaware Valley Health Care

Coalition v. Actavis Group et. al. (“Delaware Valley”), which was filed with the Court of Common Pleas of Philadelphia County, First Judicial District of Pennsylvania District Court of Pennsylvania (Case ID: 160200806). The complaints name K-V Pharmaceutical Company (“KV”) (Lumara Health’s predecessor company), certain of its successor entities, subsidiaries and affiliate entities (the “Subsidiaries”), along with a number of other pharmaceutical companies. We acquired Lumara Health in November 2014, a year after KV emerged from bankruptcy protection, at which time it, along with its then existing subsidiaries, became our wholly-owned subsidiary. We have not been served with process or waived service of summons in either case. The actions are being brought alleging unfair and deceptive trade practices with regard to certain pricing practices that allegedly resulted in certain payers overpaying for certain of KV’s generic products. On July 21, 2016, the Plaintiff in the Plumbers’ Union case dismissed KV with prejudice to refiling and on October 6, 2016, all claims against the Subsidiaries were dismissed without

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prejudice. We are in discussions with Plaintiff's counsel to similarly dismiss all claims in the Delaware Valley case. Because the Delaware Valley case is in the earliest stages and we have not been served with process in this case, we are currently unable to predict the outcome or reasonably estimate the range of potential loss associated with this matter, if any.

We may periodically become subject to other legal proceedings and claims arising in connection with ongoing business activities, including claims or disputes related to patents that have been issued or that are pending in the field of research on which we are focused. Other than the above actions, we are not aware of any material claims against us as of March 31, 2018.

P. COLLABORATION, LICENSE AND OTHER STRATEGIC AGREEMENTS

Our commercial strategy includes expanding our portfolio through the in-license or acquisition of additional pharmaceutical products or companies, including revenue-generating commercial products and late-state development assets. As of March 31, 2018, we were a party to the following collaborations and license agreements:

Endoceutics

In February 2017, we entered into the Endoceutics License Agreement with Endoceutics. Pursuant to the Endoceutics License Agreement, Endoceutics granted us the right to develop and commercialize pharmaceutical products containing dehydroepiandrosterone ("DHEA"), including Intrarosa, at dosage strengths of 13 mg or less per dose and formulated for intravaginal delivery, excluding any combinations with other active pharmaceutical ingredients, in the U.S. for the treatment of VVA and FSD. The transactions contemplated by the Endoceutics License Agreement closed on April 3, 2017. We accounted for the Endoceutics License Agreement as an asset acquisition under ASU No. 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business.

Upon the closing of the Endoceutics License Agreement, we made an upfront payment of $50.0 million and issued 600,000 shares of unregistered common stock to Endoceutics, which had a value of $13.5 million, as measured on April 3, 2017, the date of closing. Of these 600,000 shares, 300,000 were subject to a 180-day lock-up provision, and the other 300,000 were subject to a one-year lock-up provision. In addition, we paid Endoceutics $10.0 million in the third quarter of 2017 upon the delivery by Endoceutics of Intrarosa launch quantities and have agreed to make a payment of $10.0 million in connection with the first anniversary of the closing. The anniversary payment is reflected in accrued expenses at March 31, 2018. In the second quarter of 2017, we recorded a total of $83.5 million of consideration, of which $77.7 million was allocated to the Intrarosa developed technology intangible asset and $5.8 million was recorded as IPR&D expense based on their relative fair values.

In addition, we have also agreed to pay tiered royalties to Endoceutics equal to a percentage of net sales of Intrarosa in the U.S. ranging from mid-teens for calendar year net sales up to $150.0 million to mid twenty percent for any calendar year net sales that exceed $1.0 billion for the commercial life of Intrarosa, with deductions (a) after the later of (i) the expiration date of the last to expire of a licensed patent containing a valid patent claim or (ii) ten years after the first commercial sale of Intrarosa for the treatment of VVA or FSD in the U.S. (as applicable), (b) for generic competition and (c) for third party payments, subject to an aggregate cap on such deductions of royalties otherwise payable to Endoceutics. Endoceutics is also eligible to receive certain sales milestone payments, including a first sales milestone payment of $15.0 million, which would be triggered when Intrarosa annual net U.S. sales exceed $150.0 million, and a second milestone payment of $30.0 million, which would be triggered when annual net U.S. sales of Intrarosa exceed $300.0 million. If annual net U.S. sales of Intrarosa exceed $500.0 million, there are additional sales milestone payments totaling up to $850.0 million, which would be triggered at various sales thresholds.

In the third quarter of 2017, Endoceutics initiated a clinical study to support an application for U.S. regulatory approval for Intrarosa for the treatment of hypoactive sexual desire disorder ("HSDD") in post-menopausal women. We and Endoceutics have agreed to share the direct costs related to such studies based upon a negotiated allocation with us funding up to $20.0 million. We may, with Endoceutics' consent (not to be unreasonably withheld, conditioned or delayed), conduct any other studies of Intrarosa for the treatment of VVA and FSD anywhere in the world for the purpose of obtaining or maintaining regulatory approval of or commercializing Intrarosa for the treatment of VVA or FSD in the U.S. All data generated in connection with the above described studies would be owned by Endoceutics

and licensed to us pursuant to the Endoceutics License Agreement.

We have the exclusive right to commercialize Intrarosa for the treatment of VVA and FSD in the U.S., subject to the terms of the Endoceutics License Agreement, including having final decision making authority with respect to commercial strategy, pricing and reimbursement and other commercialization matters. We have agreed to use commercially reasonable efforts to market, promote and otherwise commercialize Intrarosa for the treatment of VVA and, if approved, FSD in the U.S. Endoceutics has the right to directly conduct additional commercialization activities for Intrarosa for the treatment of VVA and FSD in the U.S. and has the right to conduct activities related generally to the field of intracrinology, in each case, subject to

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our review and approval and our right to withhold approval in certain instances. Each party's commercialization activities and budget are described in a commercialization plan, which is updated annually.

In April 2017, we entered into an exclusive commercial supply agreement with Endoceutics pursuant to which Endoceutics, itself or through affiliates or contract manufacturers, agreed to manufacture and supply Intrarosa to us (the "Endoceutics Supply Agreement") and will be our exclusive supplier of Intrarosa in the U.S., subject to certain rights for us to manufacture and supply Intrarosa in the event of a cessation notice or supply failure (as such terms are defined in the Endoceutics Supply Agreement). Under the Endoceutics Supply Agreement, Endoceutics has agreed to maintain at all times a second source supplier for the manufacture of DHEA and the drug product and to identify, validate and transfer manufacturing intellectual property to the second source supplier by April 2019. The Endoceutics Supply Agreement will remain in effect until the termination of the Endoceutics License Agreement, unless terminated earlier by either party for an uncured material breach or insolvency of the other party, or by us if we exercise our rights to manufacture and supply Intrarosa following a cessation notice or supply failure.

The Endoceutics License Agreement expires on the date of expiration of all royalty obligations due thereunder unless earlier terminated in accordance with the Endoceutics License Agreement.

Palatin

In January 2017, we entered into the Palatin License Agreement with Palatin under which we acquired (a) an exclusive license in all countries of North America (the "Palatin Territory"), with the right to grant sub-licenses, to research, develop and commercialize bremelanotide and any other products containing bremelanotide (collectively, the "Bremelanotide Products"), an investigational product designed to be a treatment for HSDD in pre-menopausal women, (b) a worldwide non-exclusive license, with the right to grant sub-licenses, to manufacture the Bremelanotide Products, and (c) a non-exclusive license in all countries outside the Palatin Territory, with the right to grant sub-licenses, to research and develop (but not commercialize) the Bremelanotide Products. Following the satisfaction of the conditions to closing under the Palatin License Agreement, the transaction closed in February 2017. We accounted for the Palatin License Agreement as an asset acquisition under ASU No. 2017-01.

Under the terms of the Palatin License Agreement, in February 2017 we paid Palatin $60.0 million as a one-time upfront payment subject to agreed-upon deductions reimbursed Palatin approximately $25.0 million for reasonable, documented, out-of-pocket expenses incurred by Palatin in connection with the development and regulatory activities necessary to submit an NDA in the U.S. for bremelanotide for the treatment of HSDD in pre-menopausal women. During 2017, we fulfilled these payment obligations to Palatin. The $60.0 million upfront payment made in February 2017 to Palatin was recorded as IPR&D expense as the product candidate had not received regulatory approval. In March 2018, we submitted an NDA to the FDA for bremelanotide, the regulatory acceptance of which will trigger a milestone payment (discussed below), which we recorded within accrued liabilities and IPR&D expense at March 31, 2018.

In addition, the Palatin License Agreement requires us to make future contingent payments of (a) up to $80.0 million upon achievement of certain regulatory milestones, including $20.0 million upon the acceptance by the FDA of our NDA for bremelanotide and $60.0 million upon FDA approval, and (b) up to $300.0 million of aggregate sales milestone payments upon the achievement of certain annual net sales milestones over the course of the license. The first sales milestone payment of $25.0 million will be triggered when bremelanotide annual net sales exceed $250.0 million. We are also obligated to pay Palatin tiered royalties on annual net sales in North America of the Bremelanotide Products, on a product-by-product basis, in the Palatin Territory ranging from the high-single digits to the low double-digits. The royalties will expire on a product-by-product and country-by-country basis upon the latest to occur of (a) the earliest date on which there are no valid claims of Palatin patent rights covering such Bremelanotide Product in such country, (b) the expiration of the regulatory exclusivity period for such Bremelanotide Product in such country and (c) 10 years following the first commercial sale of such Bremelanotide Product in such country. These royalties are subject to reduction in the event that: (a) we must license additional third-party intellectual property in order to develop, manufacture or commercialize a Bremelanotide Product or (b) generic competition occurs with respect to a Bremelanotide Product in a given country, subject to an aggregate cap on such deductions of royalties otherwise payable to Palatin. After the expiration of the applicable royalties for any Bremelanotide Product in a given country, the license for such Bremelanotide Product in such country would become

a fully paid-up, royalty-free, perpetual and irrevocable license. The Palatin License Agreement expires on the date of expiration of all royalty obligations due thereunder, unless earlier terminated in accordance with the Palatin License Agreement.

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Velo

In July 2015, we entered into an option agreement with Velo, a privately held life-sciences company that granted us an option to acquire the rights to an orphan drug candidate, DIF, a polyclonal antibody in clinical development for the treatment of severe preeclampsia in pregnant women. We made an upfront payment of $10.0 million in 2015 for the option to acquire the DIF Rights. DIF has been granted both orphan drug and fast-track review designations by the FDA for use in treating severe preeclampsia. Under the option agreement, Velo will complete a Phase 2b/3a clinical study, which began in the second quarter of 2017. Following the conclusion of the DIF Phase 2b/3a study, we may terminate, or, for additional consideration, exercise or extend, our option to acquire the DIF Rights. If we exercise the option to acquire the DIF Rights, we would be responsible for additional costs in pursuing FDA approval, and would be obligated to pay to Velo certain milestone payments and single-digit royalties based on regulatory approval and commercial sales of the product. If we exercise the option, we will be responsible for payments totaling up to $65.0 million (including the payment of the option exercise price and the regulatory milestone payments) and up to an additional $250.0 million in sales milestone payments based on the achievement of annual sales milestones at targets ranging from $100.0 million to $900.0 million. In the event the royalty rate applicable to the quarter in which a milestone payment threshold is first achieved is zero, the applicable milestone payment amount will increase by 50%. We have determined that Velo is a variable interest entity (“VIE”) as it does not have enough equity to finance its activities without additional financial support. As we do not have the power to direct the activities of the VIE that most significantly affect its economic performance, which we have determined to be the Phase 2b/3a clinical study, we are not the primary beneficiary of and do not consolidate the VIE.

Antares

Through our acquisition of Lumara Health, we are party to a development and license agreement with Antares (the “Antares License Agreement”), which grants us an exclusive, worldwide, royalty-bearing license, with the right to sublicense, to certain intellectual property rights, including know-how, patents and trademarks, to develop, use, sell, offer for sale and import and export the Makena auto-injector. Under the Antares License Agreement, we are responsible for the clinical development and preparation, submission and maintenance of all regulatory applications in each country where we desire to market and sell the Makena auto-injector, including the U.S. We are required to pay royalties to Antares on net sales of the Makena auto-injector commencing on the launch of the Makena auto-injector in a particular country until the Makena auto-injector is no longer sold or offered for sale in such country or the Antares License Agreement is terminated (the “Antares Royalty Term”). The royalty rates range from high single digit to low double digits and are tiered based on levels of net sales of the Makena auto-injector and decrease after the expiration of licensed patents or where there are generic equivalents to the Makena auto-injector being sold in a particular country. In addition, we are required to pay Antares sales milestone payments upon the achievement of certain annual net sales. The Antares License Agreement terminates at the end of the Antares Royalty Term, but is subject to early termination by us for convenience and by either party upon an uncured breach by or bankruptcy of the other party. In March 2018, the Antares License Agreement was amended to, among other things, transfer the agreement to AMAG from our subsidiary, amend certain confidentiality provisions, and to provide for co-termination with the Antares Manufacturing Agreement (described below).

In March 2018, we also entered into a Manufacturing Agreement with Antares (the “Antares Manufacturing Agreement”) to set forth the terms and conditions pursuant to which Antares agreed to sell to us on an exclusive basis, and we agreed to purchase, the fully packaged Makena auto-injector for commercial distribution. Antares remains responsible for the manufacture and supply of the device components and assembly of the Makena auto-injector. We are responsible for the supply of the drug to be used in the assembly of the finished auto-injector product. The Antares Manufacturing Agreement terminates at the expiration or earlier termination of the Antares License Agreement, but is subject to early termination by us for certain supply failure situations, and by either party upon an uncured breach by or bankruptcy of the other party or our permanent cessation of commercialization of the Makena auto-injector for efficacy or safety reasons.

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Q. DEBT

Our outstanding debt obligations as of March 31, 2018 and December 31, 2017 consisted of the following (in thousands):

	March 31, 2018	December 31, 2017
2023 Senior Notes	$466,595	$466,291
2022 Convertible Notes	251,508	248,194
2019 Convertible Notes	20,460	20,198
Total long-term debt	738,563	734,683
Less: current maturities	20,460	—
Long-term debt, net of current maturities	$718,103	$734,683

2023 Senior Notes

In August 2015, in connection with the CBR acquisition, we completed a private placement of $500.0 million aggregate principal amount of 7.875% Senior Notes due 2023 (the "2023 Senior Notes"). The 2023 Senior Notes were issued pursuant to an Indenture, dated as of August 17, 2015 (the "Indenture"), by and among us, certain of our subsidiaries acting as guarantors of the 2023 Senior Notes and Wilmington Trust, National Association, as trustee. The Indenture contains certain customary negative covenants, which are subject to a number of limitations and exceptions. Certain of the covenants will be suspended during any period in which the 2023 Senior Notes receive investment grade ratings.

In October 2017, we repurchased $25.0 million of the 2023 Senior Notes in a privately negotiated transaction, resulting in a loss on extinguishment of debt of $1.1 million. At March 31, 2018, the principal amount of the outstanding borrowings was $475.0 million and the carrying value of the outstanding borrowings, net of issuance costs and other lender fees and expenses, was $466.6 million.

The 2023 Senior Notes, which are senior unsecured obligations of the Company, will mature on September 1, 2023 and bear interest at a rate of 7.875% per year, with interest payable semi-annually on September 1 and March 1 of each year beginning in March 2016. We may redeem some or all of the 2023 Senior Notes at any time, or from time to time, on or after September 1, 2018 at the redemption prices listed in the Indenture, plus accrued and unpaid interest to, but not including, the date of redemption. In addition, prior to September 1, 2018, we may redeem up to 35% of the aggregate principal amount of the 2023 Senior Notes utilizing the net cash proceeds from certain equity offerings, at a redemption price of 107.875% of the principal amount thereof, plus accrued and unpaid interest to, but not including, the date of redemption; provided that at least 65% of the aggregate amount of the 2023 Senior Notes originally issued under the Indenture remain outstanding after such redemption. We may also redeem all or some of the 2023 Senior Notes at any time, or from time to time, prior to September 1, 2018, at a price equal to 100% of the principal amount of the 2023 Senior Notes to be redeemed, plus a "make-whole" premium plus accrued and unpaid interest, if any, to the date of redemption. Upon the occurrence of a "change of control," as defined in the Indenture, we are required to offer to repurchase the 2023 Senior Notes at 101% of the aggregate principal amount thereof, plus any accrued and unpaid interest to, but not including, the repurchase date. The Indenture contains customary events of default, which allow either the trustee or the holders of not less than 25% in aggregate principal amount of the then-outstanding 2023 Senior Notes to accelerate, or in certain cases, which automatically cause the acceleration of, the amounts due under the 2023 Senior Notes.

Convertible Notes

The outstanding balances of our Convertible Notes as of March 31, 2018 consisted of the following (in thousands):

	Total

	2022 Convertible Notes	2019 Convertible Notes	
Liability component:			
Principal	$ 320,000	$ 21,417	$341,417
Less: debt discount and issuance costs, net	68,492	957	69,449
Net carrying amount	$ 251,508	$ 20,460	$271,968
Equity Component	$ 72,576	$ 9,905	$82,481

In accordance with accounting guidance for debt with conversion and other options, we separately account for the liability and equity components of our Convertible Notes by allocating the proceeds between the liability component and the embedded

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conversion option (the "Equity Component") due to our ability to settle the Convertible Notes in cash, common stock or a combination of cash and common stock, at our option. The carrying amount of the liability components was calculated by measuring the fair value of a similar liability that does not have an associated convertible feature. The allocation was performed in a manner that reflected our non-convertible debt borrowing rate for similar debt. The Equity Component of the Convertible Notes was recognized as a debt discount and represents the difference between the proceeds from the issuance of the Convertible Notes and the fair value of the liability of the Convertible Notes on their respective dates of issuance. The excess of the principal amount of the liability component over its carrying amount is amortized to interest expense using the effective interest method over five years. The Equity Component is not remeasured as long as it continues to meet the conditions for equity classification.

2022 Convertible Notes

In the second quarter of 2017, we issued $320.0 million aggregate principal amount of convertible senior notes due in 2022 (the "2022 Convertible Notes") and received net proceeds of $310.4 million from the sale of the 2022 Convertible Notes, after deducting fees and expenses of $9.6 million. The approximate $9.6 million of debt issuance costs primarily consisted of underwriting, legal and other professional fees, and we allocated these costs to the liability and equity components based on the allocation of the proceeds. Of the total $9.6 million of debt issuance costs, $2.2 million was allocated to the Equity Component and recorded as a reduction to additional paid-in capital and $7.4 million was allocated to the liability component and is now recorded as a reduction of the 2022 Convertible Notes in our consolidated balance sheet. The portion allocated to the liability component is amortized to interest expense using the effective interest method over five years.

The 2022 Convertible Notes are governed by the terms of an indenture between us, as issuer, and Wilmington Trust, National Association, as the trustee. The 2022 Convertible Notes are senior unsecured obligations and bear interest at a rate of 3.25% per year, payable semi-annually in arrears on June 1 and December 1 of each year, beginning on December 1, 2017. The 2022 Convertible Notes will mature on June 1, 2022, unless earlier repurchased or converted. Upon conversion of the 2022 Convertible Notes, such 2022 Convertible Notes will be convertible into, at our election, cash, shares of our common stock, or a combination thereof, at a conversion rate of 36.5464 shares of common stock per $1,000 principal amount of the 2022 Convertible Notes, which corresponds to an initial conversion price of approximately $27.36 per share of our common stock.

The conversion rate is subject to adjustment from time to time upon the occurrence of certain events, including, but not limited to, the issuance of stock dividends and payment of cash dividends. At any time prior to the close of business on the business day immediately preceding March 1, 2022, holders may convert their 2022 Convertible Notes at their option only under the following circumstances:

1) during any calendar quarter (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;

2) during the five business day period after any five consecutive trading day period (the "measurement period") in which the trading price per $1,000 principal amount of the 2022 Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day; or

3) upon the occurrence of specified corporate events.

On or after March 1, 2022, until the close of business on the business day immediately preceding the maturity date, holders may convert all or any portion of their 2022 Convertible Notes, in multiples of $1,000 principal amount, at the option of the holder regardless of the foregoing circumstances. The 2022 Convertible Notes were not convertible as of March 31, 2018.

We determined the expected life of the debt was equal to the five-year term on the 2022 Convertible Notes. The effective interest rate on the liability component was 9.49% for the period from the date of issuance through March 31, 2018. As of March 31, 2018, the "if-converted value" did not exceed the remaining principal amount of the 2022 Convertible Notes.

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2019 Convertible Notes

In February 2014, we issued $200.0 million aggregate principal amount of the 2019 Convertible Notes. We received net proceeds of $193.3 million from the sale of the 2019 Convertible Notes, after deducting fees and expenses of $6.7 million. We used $14.1 million of the net proceeds from the sale of the 2019 Convertible Notes to pay the cost of the convertible bond hedges, as described below (after such cost was partially offset by the proceeds to us from the sale of warrants in the warrant transactions described below). In May 2017 and September 2017, we entered into privately negotiated transactions with certain investors to repurchase approximately $158.9 million and $19.6 million, respectively, aggregate principal amount of the 2019 Convertible Notes for an aggregate repurchase price of approximately $171.3 million and $21.4 million, respectively, including accrued interest. Pursuant to ASC Topic 470, Debt ("ASC 470"), the accounting for the May 2017 repurchase of the 2019 Convertible Notes was evaluated on a creditor-by-creditor basis with regard to the 2022 Convertible Notes to determine modification versus extinguishment accounting. We concluded that the May 2017 repurchase of the 2019 Convertible Notes should be accounted for as an extinguishment and we recorded a debt extinguishment gain of $0.2 million related to the difference between the consideration paid, the fair value of the liability component and carrying values at the repurchase date. As a result of the September 2017 repurchase of the 2019 Convertible Notes, we recorded a debt extinguishment loss of $0.3 million related to the difference between the consideration paid, the fair value of the liability component and carrying value at the repurchase date.

The 2019 Convertible Notes are governed by the terms of an indenture between us, as issuer, and Wilmington Trust, National Association, as the trustee. The 2019 Convertible Notes are senior unsecured obligations and bear interest at a rate of 2.5% per year, payable semi-annually in arrears on February 15 and August 15 of each year. The 2019 Convertible Notes will mature on February 15, 2019 repurchased or converted. Upon conversion of the remaining 2019 Convertible Notes, such 2019 Convertible Notes will be convertible into, at our election, cash, shares of our common stock, or a combination thereof, at a conversion rate of 36.9079 shares of common stock per $1,000 principal amount of the 2019 Convertible Notes, which corresponds to an initial conversion price of approximately $27.09 per share of our common stock.

The conversion rate is subject to adjustment from time to time upon the occurrence of certain events, including, but not limited to, the issuance of stock dividends and payment of cash dividends. At any time prior to the close of business on the business day immediately preceding May 15, 2018, holders may convert their 2019 Convertible Notes, at their option, only under the following circumstances:

1) during any calendar quarter (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;

2) during the measurement period in which the trading price per $1,000 principal amount of the 2019 Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day; or

3) upon the occurrence of specified corporate events.

On or after May 15, 2018 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert all or any portion of their 2019 Convertible Notes, in multiples of $1,000 principal amount, at the option of the holder, regardless of the foregoing circumstances. The 2019 Convertible Notes were not convertible as of March 31, 2018.

We determined the expected life of the debt was equal to the five-year term of the 2019 Convertible Notes. The effective interest rate on the liability component was 7.79% for the period from the date of issuance through March 31, 2018. As of March 31, 2018, the "if-converted value" did not exceed the remaining principal amount of the 2019 Convertible Notes.

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Convertible Notes Interest Expense

The following table sets forth total interest expense recognized related to the Convertible Notes during the three months ended March 31, 2018 and 2017 (in thousands):

	Three Months Ended March 31,	
	2018	2017
Contractual interest expense	$2,734	$1,250
Amortization of debt issuance costs	339	274
Amortization of debt discount	3,237	1,929
Total interest expense	$6,310	$3,453

Convertible Bond Hedge and Warrant Transactions

In connection with the pricing of the 2019 Convertible Notes and in order to reduce the potential dilution to our common stock and/or offset cash payments due upon conversion of the 2019 Convertible Notes, in February 2014, we entered into convertible bond hedge transactions and separate warrant transactions of our common stock underlying the aggregate principal amount of the 2019 Convertible Notes with the call spread counterparties. In connection with the May 2017 and September 2017 repurchases of the 2019 Convertible Notes, as discussed above, we entered into agreements with the call spread counterparties to terminate a portion of the then existing convertible bond hedge transactions in an amount corresponding to the amount of such 2019 Convertible Notes repurchased and to terminate a portion of the then-existing warrant transactions.

As of March 31, 2018, the remaining bond hedge transactions covered approximately 0.8 million shares of our common stock underlying the remaining $21.4 million principal amount of the 2019 Convertible Notes. The convertible bond hedges have an exercise price of approximately $27.09 per share, subject to adjustment upon certain events, and are exercisable when and if the 2019 Convertible Notes are converted. If upon conversion of the 2019 Convertible Notes, the price of our common stock is above the exercise price of the convertible bond hedges, the call spread counterparties will deliver shares of our common stock and/or cash with an aggregate value equal to the approximate difference between the price of our common stock at the conversion date and the exercise price, multiplied by the number of shares of our common stock underlying the convertible bond hedges being exercised. The convertible bond hedges were separate transactions entered into by us and were not part of the terms of the 2019 Convertible Notes or the warrants, discussed below. Holders of the 2019 Convertible Notes will not have any rights with respect to the convertible bond hedges.

As of March 31, 2018, the remaining warrant transactions covered approximately 1.0 million shares of our common stock underlying the remaining $21.4 million principal amount of the 2019 Convertible Notes. The initial exercise price of the warrants is $34.12 per share, subject to adjustment upon certain events, which was 70% above the last reported sale price of our common stock of $20.07 on February 11, 2014. The warrants would separately have a dilutive effect to the extent that the market value per share of our common stock, as measured under the terms of the warrants, exceeds the applicable exercise price of the warrants. The warrants were issued to the call spread counterparties pursuant to the exemption from registration set forth in Section 4(a)(2) of the Securities Act of 1933, as amended.

Future Payments

Future annual principal payments on our long-term debt as of March 31, 2018 were as follows (in thousands):

Period	Future Annual Principal Payments
Remainder of Year Ending December 31, 2018	$—
Year Ending December 31, 2019	21,417
Year Ending December 31, 2020	—
Year Ending December 31, 2021	—

Year Ending December 31, 2022	320,000
Thereafter	475,000
Total	$816,417

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R. RECENTLY ISSUED AND PROPOSED ACCOUNTING PRONOUNCEMENTS

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB") or other standard setting bodies that are adopted by us as of the specified effective date.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"). This standard requires entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions and reasonable and supportable forecasts. ASU 2016-13 will be effective for us for fiscal years beginning on or after January 1, 2020, including interim periods within those annual reporting periods and early adoption is permitted. We are currently evaluating the impact of our adoption of ASU 2016-13 on our condensed consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842) ("ASU 2016-02"). This statement requires entities to recognize on its balance sheet assets and liabilities associated with the rights and obligations created by leases with terms greater than twelve months. This statement is effective for annual reporting periods beginning after December 15, 2018 and interim periods within those annual periods and early adoption is permitted. We have formed a project team to assess the impact of adopting ASU 2016-02 on our condensed consolidated financial statements. We currently expect that most of our operating lease commitments will be subject to the new standard and recognized as operating lease liabilities and right-of-use assets upon our adoption of ASU 2016-02.

S. RECENTLY ADOPTED ACCOUNTING PRONOUNCEMENTS

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash ("ASU 2016-18"), which requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling beginning-of-period and end-of-period total amounts shown on the statement of cash flows. We adopted the standard on January 1, 2018 using the retrospective approach and modified the presentation of our condensed condensed statements of cash flows in accordance with the standard. The adoption of ASU 2016-18 did not have a material impact on our condensed consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15"). This standard clarifies certain aspects of the statement of cash flows, including the classification of debt prepayment or debt extinguishment costs or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, proceeds from the settlement of corporate owned life insurance policies, distributions received from equity method investees and beneficial interests in securitization transactions. This new standard also clarifies that an entity should determine each separately identifiable source of use within the cash receipts and payments on the basis of the nature of the underlying cash flows. In situations in which cash receipts and payments have aspects of more than one class of cash flows and cannot be separated by source or use, the appropriate classification should depend on the activity that is likely to be the predominant source or use of cash flows for the item. We adopted the standard on January 1, 2018 using the retrospective approach. The adoption of ASU 2016-15 did not have a material impact on our condensed consolidated financial statements.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01").This new standard amends certain aspects of accounting and disclosure requirements of financial instruments, including the requirement that equity investments with readily determinable fair values be measured at fair value with changes in fair value recognized in our results of operations. This new standard does not apply to investments accounted for under the equity method of accounting or those that result in consolidation of the investee. Equity investments that do not have readily determinable fair values may be measured at fair value or at cost minus impairment adjusted for changes in observable prices. A financial liability that is measured at fair value in accordance with the fair value option is required to be presented separately in other comprehensive income for the portion of the total change in the fair value resulting from change in the instrument-specific credit risk. In addition, a valuation allowance should be evaluated on deferred tax assets related to available-for-sale debt securities in combination with other deferred tax assets. We adopted the standard on January 1, 2018 using the modified retrospective approach. The adoption of ASU 2016-01 did not have a material impact on our condensed consolidated financial statements.

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

The following information should be read in conjunction with the unaudited financial information and the notes thereto included in this Quarterly Report on Form 10-Q and the audited financial information and the notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2017 (our "Annual Report").

Except for the historical information contained herein, the matters discussed in this Quarterly Report on Form 10-Q may be deemed to be forward-looking statements that involve risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. In this Quarterly Report on Form 10-Q terminology such as "may," "will," "could," "should," "would," "expect," "anticipate," "continue," "believe," "plan," "estimate," "intend" or other similar words and expressions (as well as ot words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements.

Examples of forward-looking statements contained in this report include, without limitation, statements regarding the following: plans to continue to expand the impact of our current and future products and services for patients by delivering on our growth strategy, which includes the pursuit of additional products and companies; beliefs that healthcare professionals and patients will prefer the auto-injector over the IM administration; the timing of generic competition to the Makena IM product; our expected timing for filing an sNDA for the treatment of HSDD in post-menopausal women with Intrarosa; anticipated clinical, developmental, regulatory and other undertakings and cooperation efforts by our licensing parties; expectations regarding our intellectual property, including patent protection and related litigation, and the impact and timing generic and other competition could have on our business; beliefs regarding the intellectual property of our licensing and collaboration partners, and our rights to such property; the market opportunities for each of our products and services; plans regarding our sales and marketing initiatives; expectations regarding our future sales of Feraheme, Intrarosa and Makena; our expectations that we will have sufficient supply of the Makena IM product to meet demands; beliefs that our efforts to increase new enrollments for the CBR Services will increase services revenues for the remainder of 2018; the impact of our license and collaboration agreements on our results of operations; our expectation of costs to be incurred in connection with, and revenue sources to fund, our future operations; our expectations regarding the contribution of revenues from our products or services to the funding of our ongoing operations; expectations regarding the manufacture of all drug substance, drug products and key materials at our third-party manufacturers or suppliers; our expectations regarding customer returns and other revenue-related reserves and accruals; estimates regarding our effective tax rate and our ability to realize our net operating loss carryforwards and other tax attributes; the impact of accounting pronouncements; the impact on our business in connection with the expansion of our commercial team; expectations regarding our financial results, including revenues, product sales allowances and accruals, cost of product sales and services, research and development expenses, selling, general and administrative expenses, amortization and other income (expense); our investing activities and the impact of our operations on our cash, cash equivalents and marketable securities balances; our expectations that cash, cash equivalents and investments will be positively impacted by cash from operations for the remainder of 2018; our belief that we will fund our current and planned operating requirements through our cash flow from operations; our belief that our cash, cash equivalents and marketable securities as of March 31, 2018, and the cash we currently expect to receive, will be sufficient to satisfy our cash flow needs for the foreseeable future (including the remainder of 2018); the timing and amounts of milestone payments to former Lumara Health security holders, Palatin and Endoceutics; estimates and beliefs related to our debt, including our 2023 Senior Notes, the 2022 Convertible Notes and the 2019 Convertible Notes; the valuation of certain intangible assets, goodwill, contingent consideration, debt and other assets and liabilities, including our methodology and assumptions regarding fair value measurements; the manner in which we intend or are required to settle the conversion of our 2023 Senior Notes, 2022 Convertible Notes and 2019 Convertible Notes; the timing and amounts (if any) of share repurchases; and our expectations for our cash, revenue, cash equivalents, investments balances, capital needs and information with respect to any other plans and strategies for our business. Our actual results and the timing

of certain events may differ materially from the results discussed, projected, anticipated or indicated in any forward-looking statements.

Any forward-looking statement should be considered in light of the factors discussed in Part II, Item 1A below under "Risk Factors" in this Quarterly Report on Form 10-Q and in Part I, Item 1A in our Annual Report. We caution readers not to place undue reliance on any such forward-looking statements, which speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the U.S. Securities and Exchange Commission, to publicly update or revise any such statements to reflect any change in company expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

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Overview

AMAG Pharmaceuticals, Inc., a Delaware corporation, was founded in 1981. We are a biopharmaceutical company focused on developing and delivering important therapeutics, conducting clinical research in areas of unmet need and creating education and support programs for the patients and families we serve. Our currently marketed products support the health of patients in the areas of maternal and women's health, anemia management and cancer supportive care, including Makena® (hydroxyprogesterone caproate injection), Intrarosa® (prasterone) vaginal inserts, Feraheme® (ferumoxytol injection) for intravenous ("IV") use, and MuGard® Mucoadhesive Oral Wound Rinse. In addition, we have the rights to research, develop and commercialize bremelanotide in North America. Through services related to the preservation of umbilical cord blood stem cell and cord tissue units (the "CBR Services") operated through Cord Blood Registry® ("CBR"), we also help families to preserve newborn stem cells, which are used today in transplant medicine for certain cancers and blood, immune and metabolic disorders, and which we believe have the potential to play a valuable role in the ongoing development of regenerative medicine.

We intend to expand the impact of these and future products and services for patients by delivering on our growth strategy, which includes organic growth, as well as the pursuit of additional products and companies that align with our existing therapeutic areas or that could benefit from our proven core competencies. Currently, our primary sources of revenue are from product sales of Makena, Feraheme and service revenue from the CBR Services.

AMAG's Portfolio of Products, Product Candidates and Services

Makena

Makena is currently the only FDA-approved drug indicated to reduce the risk of preterm birth in women pregnant with a single baby who have a history of singleton spontaneous preterm birth. We acquired the rights to Makena in connection with our acquisition of Lumara Health Inc. ("Lumara Health") in November 2014.

Makena was approved by the U.S. Food and Drug Administration (the "FDA") in February 2011 as an intramuscular ("IM") injection (the "Makena IM product") packaged in a multi-dose vial and in February 2016 as a single-dose preservative-free vial. In February 2018, Makena was also approved by the FDA for administration via a pre-filled subcutaneous auto-injector (the "Makena auto-injector"), a drug-device combination product.

The Makena auto-injector was designed with features, such as a shorter, thinner, non-visible needle compared to the Makena IM product, to help address some of the known barriers to treatment of recurrent preterm birth, including the lack of patient acceptance and adherence. As such, based on market research we conducted, we believe that many healthcare professionals and patients will prefer the auto-injector over the IM administration. However, some healthcare professionals and/or patients may continue to employ the IM method of administration. The orphan drug exclusivity period that was granted to the Makena product in 2011 expired in February 2018 and, accordingly, we expect to face generic competition to the Makena IM product in mid-2018, however generics could enter the market at any time. In anticipation of generic competition, we have entered into an agreement with a generic partner and are prepared to launch our own authorized generic upon the first entry of a generic Makena injection in order to participate in the expected generic market for Makena.

CBR Services

CBR is the largest private newborn stem cell bank in the world and offers pregnant women and their families the ability to preserve their newborns' umbilical cord blood and cord tissue for potential future use (the "CBR Services"). We market and sell the CBR Services directly to consumers, who pay for the services directly, as third-party insurance and reimbursement are not available. The CBR Services include the collection, processing and storage of both umbilical cord blood and cord tissue. We acquired CBR in August 2015. As of December 31, 2017, CBR stored approximately 700,000 umbilical cord blood and cord tissue units, which we estimate to represent nearly 40% of all privately stored cord blood and cord tissue units in the U.S.

Feraheme

Feraheme was approved for marketing by the FDA in June 2009 for the treatment of iron deficiency anemia ("IDA") in adult patients with chronic kidney disease ("CKD") only and was commercially launched shortly thereafter. In February 2018, we received FDA approval to expand the Feraheme label to treat all eligible adult IDA patients who have intolerance to oral iron or have had unsatisfactory response to oral iron in addition to patients who have CKD. IDA is widely prevalent in many different patient populations, such as patients with gastrointestinal disease, cancer and

chemotherapy-induced anemia or abnormal uterine bleeding. For many of these patients, treatment with oral iron is unsatisfactory or is not tolerated. It is estimated that more than 4.5 million people in the U.S. have IDA (CKD and non-CKD) and we estimate that a small fraction of the patients who are diagnosed with IDA regardless of the underlying cause are currently being treated with IV iron.

The recently expanded Feraheme label is supported by two positive pivotal Phase 3 trials evaluating Feraheme versus iron

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sucrose or placebo in a broad population of patients with IDA. It was also supported by positive results from a third Phase 3 randomized, double-blind non-inferiority trial that evaluated the incidence of moderate-to-severe hypersensitivity reactions (including anaphylaxis) and moderate-to-severe hypotension with Feraheme compared to Injectafer® (ferric carboxymaltose injection) (the "Feraheme comparator trial"). This Feraheme comparator trial demonstrated non-inferiority to Injectafer® based on the primary endpoint of the incidence of moderate-to-severe hypersensitivity reactions (including anaphylaxis) and moderate-to-severe hypotension (Feraheme incidence 0.6%; Injectafer® incidence 0.7%). Adverse event rates were similar across both treatment groups; however, the incidence of severe hypophosphatemia (defined by blood phosphorous of <0.6 mmol/L at week 2) was less in the patients receiving Feraheme (0.4% of patients) compared to those receiving Injectafer® (38.7% of patients).

In March 2018, we entered a stipulation of dismissal with Sandoz, Inc. in the United States District Court for the District of New Jersey, pursuant to a settlement agreement, that dismissed and resolved the Feraheme patent litigation described in more detail in Note O, "Commitments and Contingencies" to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

Intrarosa

In February 2017, we entered into a license agreement (the "Endoceutics License Agreement") with Endoceutics, Inc. ("Endoceutics") pursuant to which Endoceutics granted us rights to Intrarosa, an FDA-approved product for the treatment of moderate to severe dyspareunia (pain during sexual intercourse), a symptom of vulvar and vaginal atrophy, due to menopause.

Intrarosa was approved by the FDA in November 2016 and was commercially launched in July 2017. Intrarosa is the only FDA-approved, vaginally administered, daily non-estrogen steroid, which is prescribed for the treatment of moderate to severe dyspareunia, a symptom of VVA, due to menopause. Intrarosa contains prasterone, a synthetic version of the inactive endogenous (i.e. occurring in the body) sex hormone precursor, dehydroepiandrosterone ("DHEA"). Prasterone is converted by enzymes in the body into androgens and estrogens to help restore the vaginal tissue as indicated by improvements in the percentage of superficial cells, parabasal cells, and pH. The mechanism of action of Intrarosa is not fully established. The effectiveness of Intrarosa on moderate to severe dyspareunia in post-menopausal women was examined in two primary 12-week placebo-controlled efficacy trials. All women in both studies were assessed for improvement from baseline to week 12 for four co-primary efficacy endpoints: (a) most bothersome symptom (moderate to severe dyspareunia), (b) the percentage of vaginal superficial cells, (c) the percentage of parabasal cells, and (d) vaginal pH. All primary endpoints were statistically significant. Women taking Intrarosa experienced a significant reduction in moderate to severe dyspareunia, as well as statistically significant improvements in the percentage of vaginal superficial cells, parabasal cells and vaginal pH.

Endoceutics initiated a clinical study in the third quarter of 2017 to support an application for U.S. regulatory approval of Intrarosa for the treatment of hypoactive sexual desire disorder ("HSDD") in post-menopausal women. We and Endoceutics have agreed to share the direct costs related to two clinical studies based upon a negotiated allocation with us funding up to $20.0 million, including the HSDD trial. If the studies are successful, we will file a supplemental New Drug Application ("sNDA") with the FDA for the treatment of HSDD in post-menopausal women. Furthermore, each party's commercialization activities and budget are described in a commercialization plan, which is updated annually. Additional details regarding the Endoceutics License Agreement can be found in Note P, "Collaboration, License and Other Strategic Agreements," to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

Bremelanotide

In January 2017, we entered into a license agreement with Palatin Technologies, Inc. ("Palatin") pursuant to which Palatin granted us the North American rights to research, develop and commercialize bremelanotide, which is being developed for the treatment of HSDD, the most common type of female sexual dysfunction, in pre-menopausal

women. In March 2018, we submitted an NDA to the FDA for the treatment of HSDD in pre-menopausal women. Additional details regarding the license with Palatin (the "Palatin License Agreement") can be found in Note P, "Collaboration, License and Other Strategic Agreements," to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

Critical Accounting Policies

Except as described in Note B, "Basis of Presentation and Summary of Significant Accounting Policies," and Note C, "Revenue Recognition," to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q, with respect to changes in our revenue recognition policy related to our adoption of the requirements of Accounting Standards Codification Topic 606, Revenue from Contracts with Customers, there have been no significant changes to our critical accounting policies and estimates during the three months ended March 31, 2018, compared to the critical accounting policies and estimates disclosed in Part II, Item 7, of our Annual Report.

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Results of Operations - Three Months Ended March 31, 2018 and 2017

Revenues

Total revenues for the three months ended March 31, 2018 and 2017 consisted of the following (in thousands except for percentages):

	Three Months Ended March 31,		2018 to 2017	
	2018	2017	$ Change	% Change
Product sales, net				
Makena	$89,983	$86,455	$3,528	4 %
Feraheme	25,135	25,922	(787)	(3)%
Intrarosa	2,165	—	2,165	N/A
MuGard	65	140	(75)	(54)%
Total	117,348	112,517	4,831	4 %
Service revenues, net	28,969	26,931	2,038	8 %
Other revenues	39	24	15	63 %
Total revenues	$146,356	$139,472	$6,884	5 %

Product Sales

Total gross product sales were offset by product sales allowances and accruals for the three months ended March 31, 2018 and 2017 as follows (in thousands, except for percentages):

	Three Months Ended March 31,					2018 to 2017		
	2018	Percent of gross product sales		2017	Percent of gross product sales	$ Change	% Change	
Gross product sales	$239,870			$206,724		$33,146	16	%
Provision for product sales allowances and accruals:								
Contractual adjustments	86,144	36	%	69,829	34 %	16,315	23	%
Governmental rebates	36,378	15	%	24,378	12 %	12,000	49	%
Total	122,522	51	%	94,207	46 %	28,315	30	%
Product sales, net	$117,348			$112,517		$4,831	4	%

Gross product sales increased by $33.1 million, or approximately 16%, during the three months ended March 31, 2018 as compared to the same period in 2017, primarily due to increases of Makena, Feraheme, and Intrarosa gross sales of $21.6 million, $6.2 million, and $5.4 million, respectively. Of the $21.6 million increase in gross Makena sales, $15.2 million was due to pricing and $6.4 million was due to increased quantities sold. Of the $6.2 million increase in gross Feraheme sales, $7.9 million was due to pricing, partially offset by $1.7 million decrease in volume sold. As anticipated, the decrease in volume for Feraheme was driven by the 2017 hurricane-related shortage of saline, which is used in the administration of Feraheme. The $5.4 million increase for Intrarosa was entirely due to volume given the launch of the product in July 2017. The total increase in gross product sales was partially offset by $28.3 million of additional allowances and accruals for the three months ended March 31, 2018, as compared to the same period in 2017, as discussed below.

Net product sales increased by $4.8 million, or approximately 4%, during the three months ended March 31, 2018 as compared to the same period in 2017 primarily due to a $3.5 million increase in net Makena sales and $2.2 million of net sales of Intrarosa, partially offset by a $0.8 million decrease in net Feraheme sales. We anticipate that sales of Feraheme and Intrarosa will increase for the remainder of 2018 driven by a combination of volume and price. We also anticipate that sales of the Makena subcutaneous auto-injector will make up a greater proportion of total Makena sales as we continue to commercialize the product. Over the longer term, dependent on the timing, number and behavior of potential generic competitors, we anticipate revenues from the Makena IM product to decline, potentially partially

offset by revenues from our authorized generic partner. In addition, although we currently believe we will have sufficient Makena IM product to meet demand, our primary drug product manufacturer has experienced production delays impacting products for multiple companies, including our single-dose vial of Makena. We are currently working with healthcare providers, distribution partners and our manufacturer to minimize the possibility of experiencing a supply limitation of the single-dose vial by encouraging new patient

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starts on either the Makena auto-injector or the intramuscular multi-dose vial, both of which we believe we have sufficient supply to meet demand.

Product Sales Allowances and Accruals

We record product revenue net of certain allowances and accruals in our condensed consolidated statements of operations. Our contractual adjustments include provisions for returns, pricing and prompt payment discounts, as well as wholesaler distribution fees, rebates to hospitals that qualify for 340B pricing, and volume-based and other commercial rebates. Governmental rebates relate to our reimbursement arrangements with state Medicaid programs. The increases in contractual adjustments and governmental rebates as a percentage of gross product sales primarily related to a higher mix of business through commercial and Medicaid rebates than historically realized. We expect these adjustments to decrease until the entry of generic competition for the Makena IM product. The impact to allowances and accruals related to the Makena IM product is dependent on the timing, number and behavior of potential generic entrants.

We did not materially adjust our product sales allowances and accruals during the three months ended March 31, 2018 or 2017. If we determine in future periods that our actual experience is not indicative of our expectations, if our actual experience changes, or if other factors affect our estimates, we may be required to adjust our allowances and accruals estimates, which would affect our net product sales in the period of the adjustment and could be significant.

Service Revenues

The $2.0 million increase in CBR service revenues recorded in the first quarter of 2018 as compared to the first quarter of 2017 was due to increased recurring revenue from new enrollments. We expect service revenues to increase for the remainder of 2018 due to increasing new enrollments of cord blood and cord tissue units in our storage facility, in particular new family enrollments, which is a leading indicator of long-term growth and recurring revenue from our growing base of stored units.

Costs and Expenses

Cost of Product Sales

Cost of product sales for the three months ended March 31, 2018 and 2017 were as follows (in thousands except for percentages):

	Three Months Ended March 31,		2018 to 2017	
	2018	2017	$ Change	% Change
Cost of product sales	$63,912	$27,573	$36,339	>100 %
Percentage of net product sales	54 %	25 %		

The $36.3 million increase in our cost of product sales for the three months ended March 31, 2018 as compared to the same period in 2017 was primarily attributable to a $31.5 million increase in amortization expense associated with intangible assets with the remaining increase primarily due to reallocation of headcount costs from research and development expenses to cost of product sales following the regulatory approvals related to Feraheme and Makena in February 2018.

We expect our cost of product sales, as a percentage of net product sales, to increase for the remainder of 2018 as compared to the first quarter of 2018 primarily due to increased amortization of our intangible assets, potential pricing pressure associated with generic competition of the Makena IM product and royalty obligations.

Cost of Services

Cost of services for the three months ended March 31, 2018 and 2017 were as follows (in thousands except for percentages):

	Three Months Ended March 31,		2018 to 2017	
	2018	2017	$ Change	% Change
Cost of services	$5,473	$5,010	$463	9 %
Percentage of service revenues	19 %	19 %		

We expect our cost of services as a percentage of service revenues to remain relatively constant for the remainder of 2018 as compared to the first quarter of 2018.

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Research and Development Expenses

Research and development expenses for the three months ended March 31, 2018 and 2017 consisted of the following (in thousands except for percentages):

	Three Months Ended March 31,		2018 to 2017	
	2018	2017	$ Change	% Change
External research and development expenses				
Feraheme-related costs	$592	$2,492	$(1,900)	(76)%
Makena-related costs	2,071	4,365	(2,294)	(53)%
Bremelanotide-related costs	2,522	4,369	(1,847)	(42)%
Intrarosa-related costs	1,458	—	1,458	N/A
Other external costs	111	972	(861)	(89)%
Total	6,754	12,198	(5,444)	(45)%
Internal research and development expenses	4,055	4,291	(236)	(5)%
Total research and development expenses	$10,809	$16,489	$(5,680)	(34)%

Total research and development expenses incurred in the three months ended March 31, 2018 decreased by $5.7 million, or 34%, as compared to the same period in 2017. Makena-related costs reflect a $2.3 million decline due to the completion of the auto-injector development program in 2017. Feraheme-related costs decreased $1.9 million due to the completion of the IDA study in 2017, partially offset by costs related to the ongoing pediatric study. Bremelanotide-related costs reflect the completion of the agreed-upon Palatin reimbursement costs associated with the recent regulatory submission, partially offset by costs associated with manufacturing process development and the manufacture of drug product for bremelanotide. The decreased spend for Feraheme, Makena, and bremelanotide was partially offset by $1.5 million of Intrarosa-related costs incurred in the first quarter of 2018 in connection with our reimbursement of costs to Endoceutics associated with certain clinical studies associated with Intrarosa.

We expect our research and development expenses to increase during the remainder of 2018, as we invest in studies that could potentially expand the label for Intrarosa as well as costs incurred to prepare for an Advisory Committee meeting for bremelanotide anticipated in late 2018 or early 2019. We cannot determine with certainty the duration and completion costs of our current or future clinical trials of our products or product candidates as the duration, costs and timing of clinical trials depends on a variety of factors including the uncertainties of future clinical and preclinical studies, uncertainties in clinical trial enrollment rates and significant and changing government regulation. Further, we expect to incur increased costs associated with manufacturing process development and the manufacture of drug product for bremelanotide to support its ultimate commercialization.

Acquired In-Process Research and Development

During the three months ended March 31, 2018, we recorded a $20.0 million accrual for acquired in-process research and development (“IPR&D”) to recognize the contingent liability associated with the FDA acceptance of the bremelanotide NDA milestone pursuant to the terms of the Palatin License Agreement.

During the three months ended March 31, 2017, we recorded IPR&D expense of $60.0 million related to the one-time upfront payment pursuant to the terms of the Palatin License Agreement, which closed on February 2, 2017.

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Selling, General and Administrative Expenses

Selling, general and administrative expenses for the three months ended March 31, 2018 and 2017 consisted of the following (in thousands except for percentages):

	Three Months Ended March 31,		2018 to 2017	
	2018	2017	$ Change	% Change
Compensation, payroll taxes and benefits	$35,201	$21,694	$13,507	62 %
Professional, consulting and other outside services	46,857	38,864	7,993	21 %
Fair value of contingent consideration liability	626	1,043	(417)	(40)%
Amortization expense related to customer relationship intangible	3,900	3,930	(30)	(1)%
Equity-based compensation expense	4,466	4,893	(427)	(9)%
Total selling, general and administrative expenses	$91,050	$70,424	$20,626	29 %

Total selling, general and administrative expenses, increased by $20.6 million, or approximately 29%, in the three months ended March 31, 2018 as compared to the same period in 2017 for the following reasons:

- $13.5 million increase in compensation, payroll taxes and benefits primarily due to increased costs in the first quarter of 2018 associated with the expansion of our women's health sales force in the second half of 2017 and related organizational growth; and
- $8.0 million increase in external spending related to the launches of the expanded Feraheme label, the Makena auto-injector and Intrarosa.

We expect that total selling, general and administrative expenses will increase for the remainder of 2018 due to expenses associated with the launches of the Feraheme expanded label, the Makena auto-injector and Intrarosa as well as pre-launch activities for bremelanotide.

Other Expense, Net

Other expense, net for the three months ended March 31, 2018 decreased by $1.9 million compared to the same period in 2017, primarily driven by a $2.3 million decrease in interest expense due to a reduction of our debt obligations during 2017.

Income Tax Benefit

The following table summarizes our effective tax rate and income tax benefit for the three months ended March 31, 2018 and 2017 (in thousands except for percentages):

	Three Months Ended March 31,	
	2018	2017
Effective tax rate	10 %	36 %
Income tax benefit	$(5,979)	$(20,706)

For the three months ended March 31, 2018, we recognized an income tax benefit of $6.0 million, representing an effective tax rate of 10%. The Tax Cuts and Jobs Act, which was enacted in December 2017, has resulted in significant changes to the U.S. corporate income tax system. These changes include a federal statutory rate reduction from 35% to 21%, effective January 1, 2018. The difference between the expected 2018 statutory federal tax rate of 21% and the 10% effective tax rate for the three months ended March 31, 2018, was primarily attributable to the impact of the establishment of a valuation allowance related to certain deferred tax assets, the impact of non-deductible stock compensation, and other non-deductible expenses, partially offset by state income taxes and orphan drug tax credits. We have established a valuation allowance on certain deferred tax assets to the extent that our existing taxable temporary differences would not be available as a source of income to realize the benefits of those deferred tax assets.

For the three months ended March 31, 2017, we recognized an income tax expense of $20.7 million, representing an effective tax rate of 36%. The difference between the expected 2017 statutory federal tax rate of 35% and the 36% effective tax rate for the three months ended March 31, 2017 was primarily attributable to the impact of state income taxes and the federal research and development tax credit, partially offset by non-deductible stock compensation and other non-deductible expenses.

The primary drivers of the decrease in tax benefit for the three months ended March 31, 2018 as compared to the three months ended March 31, 2017 include a decrease in the federal tax benefit primarily attributable to the decrease in the statutory

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federal tax rate from 35% to 21%, and an increase in valuation allowance primarily on tax credits, partially offset by an increase in orphan drug tax credits.

Liquidity and Capital Resources

General

We currently finance our operations primarily from cash generated from our operating activities, including sales of our products and services. We expect to continue to incur significant expenses as we continue to market, sell and contract for the manufacture of our products and sell the CBR Services, and as we seek U.S. regulatory approval for bremelanotide for the treatment of HSDD. For a detailed discussion regarding the risks and uncertainties related to our liquidity and capital resources, please refer to our Risk Factors in Part I, Item 1A of our Annual Report.

Cash, cash equivalents, marketable securities and certain financial obligations as of March 31, 2018 and December 31, 2017 consisted of the following (in thousands except for percentages):

	March 31, 2018	December 31, 2017	$ Change	% Change
Cash and cash equivalents	$231,737	$ 192,114	$39,623	21 %
Marketable securities	138,820	136,593	2,227	2 %
Total	$370,557	$ 328,707	$41,850	13 %
Outstanding principal on 2023 Senior Notes	$475,000	$ 475,000	$—	— %
Outstanding principal on 2022 Convertible Notes	320,000	320,000	—	— %
Outstanding principal on 2019 Convertible Notes	21,417	21,417	—	— %
Total	$816,417	$ 816,417	$—	— %

Cash Flows

The following table presents a summary of our primary sources and uses of cash for the three months ended March 31, 2018 and 2017 (in thousands):

	March 31, 2018	March 31, 2017	$ Change
Net cash provided by (used in) operating activities	$45,692	$(14,536)	$60,228
Net cash used in investing activities	(3,800)	(1,387)	(2,413)
Net cash used in financing activities	(2,269)	(5,628)	3,359
Net increase (decrease) in cash, cash equivalents, and restricted cash	$39,623	$(21,551)	$61,174

Operating Activities

Cash flows from operating activities represent the cash receipts and disbursements related to all of our activities other than investing and financing activities. We have historically financed our operating and capital expenditures primarily through cash flows earned through our operations. We expect cash provided from operating activities will continue to be our primary source of funds to finance operating needs and capital expenditures.

Operating cash flow is derived by adjusting our net income (loss) for:

- Non-cash operating items, such as depreciation and amortization, impairment charges, IPR&D and equity-based compensation;
- Changes in operating assets and liabilities, which reflect timing differences between the receipt and payment of cash associated with transactions and when they are recognized in results of operations;
- Changes in deferred incomes taxes; and
- Changes associated with the fair value of contingent payments associated with our acquisitions of businesses.

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For March 31, 2018 compared to March 31, 2017, net cash flows provided by operations increased by $60.2 million, driven primarily by an increase in net income as adjusted for non-cash charges and a $31.9 million increase due to changes in operating assets and liabilities.

Investing Activities

Cash flows used in investing activities was $3.8 million for the three months ended March 31, 2018 due to net purchase of marketable securities of $2.9 million and capital expenditures of $0.9 million. Cash used in investing activities for the three months ended March 31, 2017 was $1.4 million due to net purchase of marketable securities of $0.7 million and $0.7 million of capital expenditures.

Financing Activities

Cash used in financing activities was $2.3 million for the three months ended March 31, 2018 due to the payment of employee tax withholdings related to equity-based compensation of $2.3 million. Cash used in financing activities for the three months ended March 31, 2017 was $5.6 million driven by a principal payment on long term debt of $4.4 million and the payment of employee tax withholdings related to equity-based compensation of $1.3 million.

Future Liquidity Considerations

We expect that our cash, cash equivalents and marketable securities balances will be positively impacted by cash from operations for the remainder of 2018. We expect cash generated from operations could be partially offset by a $50.0 million milestone payment that we may pay in the first half of 2018 to the former Lumara Health security holders contingent on the achievement of a net sales milestone of Makena. In addition, we expect to pay a $20.0 million milestone payment to Palatin upon the acceptance by the FDA of our NDA for bremelanotide, a $10.0 million milestone payment to Endoceutics, and cash interest and taxes, primarily consisting of state taxes due during year. We believe that our cash, cash equivalents and marketable securities as of March 31, 2018, and the cash we currently expect to receive from sales of our products and services, and earnings on our investments, will be sufficient to satisfy our cash flow needs for the foreseeable future.

Borrowings and Other Liabilities

In the second quarter of 2017, we issued $320.0 million aggregate principal amount of convertible senior notes due 2022 (the “2022 Convertible Notes”), as discussed in more detail in Note Q, “Debt,” to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q. We received net proceeds of $310.4 million from the sale of the 2022 Convertible Notes, after deducting fees and expenses of $9.6 million. The 2022 Convertible Notes are senior unsecured obligations and bear interest at a rate of 3.25% per year, payable semi-annually in arrears on June 1 and December 1 of each year, beginning on December 1, 2017. The 2022 Convertible Notes will mature on June 1, 2022, unless earlier repurchased or converted. Upon conversion of the 2022 Convertible Notes, such 2022 Convertible Notes will be convertible into, at our election, cash, shares of our common stock, or a combination thereof, at a conversion rate of 36.5464 shares of common stock per $1,000 principal amount of the 2022 Convertible Notes, which corresponds to an initial conversion price of approximately $27.36 per share of our common stock. The conversion rate is subject to adjustment from time to time. The 2022 Convertible Notes were not convertible as of March 31, 2018.

In August 2015, in connection with the CBR acquisition, we completed a private placement of $500.0 million aggregate principal amount of 7.875% Senior Notes due 2023 (the “2023 Senior Notes”). The 2023 Senior Notes, which are senior unsecured obligations, will mature on September 1, 2023 and will bear interest at a rate of 7.875% per year, with interest payable semi-annually on September 1 and March 1 of each year beginning in March 2016. In October 2017, we repurchased $25.0 million principal of the 2023 Senior Notes in a privately negotiated transaction with cash on hand. For additional information, see Note Q, “Debt,” to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

In February 2014, we issued $200.0 million aggregate principal amount of 2.5% convertible senior notes due February 15, 2019 (the “2019 Convertible Notes”). In May 2017 and September 2017, we entered into privately negotiated transactions with certain investors to repurchase approximately $158.9 million and $19.6 million, respectively, aggregate principal amount of the 2019 Convertible Notes for an aggregate repurchase price of approximately $171.3

million and $21.4 million, respectively, including accrued interest, as discussed in more detail in Note Q, “Debt,” to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q. The remaining 2019 Convertible Notes are senior unsecured obligations and bear interest at a rate of 2.5% per year, payable semi-annually in arrears on February 15 and August 15 of each year. The 2019 Convertible Notes will mature on February 15, 2019, unless repurchased or converted earlier. The 2019 Convertible Notes will be convertible into cash, shares of our common stock, or a combination thereof, at our election, at a conversion rate of 36.9079 shares of common stock per $1,000 principal amount of the 2019 Convertible Notes, which corresponds to a conversion price

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of approximately $27.09 per share of our common stock. The conversion rate is subject to adjustment from time to time. The 2019 Convertible Notes were not convertible as of March 31, 2018.

Share Repurchase Program

In January 2016, we announced that our Board authorized a program to repurchase up to $60.0 million in shares of our common stock. The repurchase program does not have an expiration date and may be suspended for periods or discontinued at any time. Under the program, we may purchase our stock from time to time at the discretion of management in the open market or in privately negotiated transactions. The number of shares repurchased and the timing of the purchases will depend on a number of factors, including share price, trading volume and general market conditions, along with working capital requirements, general business conditions and other factors. We may also from time to time establish a trading plan under Rule 10b5-1 of the Securities and Exchange Act of 1934 to facilitate purchases of our shares under this program. As of March 31, 2018, we repurchased and retired a cumulative total of 2,198,010 shares of common stock under this repurchase program for $39.5 million at an average purchase price of $17.97 per share. As of March 31, 2018, $20.5 million remains available for the repurchase of shares under the program. We did not repurchase any of our common stock during the first quarter of 2018.

Off-Balance Sheet Arrangements

As of March 31, 2018, we did not have any off-balance sheet arrangements as defined in Regulation S-K, Item 303(a)(4)(ii).

Impact of Recently Issued and Proposed Accounting Pronouncements

See Note R, “Recently Issued and Proposed Accounting Pronouncements,” and Note S, “Recently Adopted Accounting Pronouncements,” to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for information regarding new accounting pronouncements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk:

There have been no material changes with respect to the information appearing in Part II, Item 7A, “Quantitative and Qualitative Disclosures About Market Risk,” in our Annual Report.

Item 4. Controls and Procedures:

Managements’ Evaluation of our Disclosure Controls and Procedures

Our principal executive officer and principal financial officer, after evaluating the effectiveness of our “disclosure controls and procedures” (as defined in the Exchange Act Rule 13a-15(e), or Rule 15d-15(e)), with the participation of our management, have each concluded that, as of the end of the period covered by this Quarterly Report on Form 10-Q, our disclosure controls and procedures were effective and were designed to ensure that information we are required to disclose in the reports that we file or submit under the Securities Exchange Act of 1934, as amended, is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure, and is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms. It should be noted that any system of controls is designed to provide reasonable, but not absolute, assurances that the system will achieve its stated goals under all reasonably foreseeable circumstances. Our principal executive officer and principal financial officer have each concluded that our disclosure controls and procedures as of the end of the period covered by this report are effective at a level that provides such reasonable assurances.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) that occurred during the three months ended March 31, 2018 that have materially affected, or that are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings:

See Note O, “Commitments and Contingencies,” to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for information regarding our legal proceedings, including how we accrue liabilities for legal contingencies.

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Item 1A. Risk Factors:
There have been no material changes from the Risk Factors disclosed in Part I, Item 1A, of our Annual Report.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds:
The following table provides certain information with respect to our purchases of shares of our stock during the three months ended March 31, 2018.

Period	Total Number of Shares Purchased [1]	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs [2]	Maximum Number of Shares (or approximate dollar value) That May Yet Be Purchased Under the Plans or Programs [2]
January 1, 2018 through January 31, 2018	—	$ —	—	1,429,021
February 1, 2018 through February 28, 2018	3,922	18.84	—	974,178
March 1, 2018 through March 31, 2018	108,233	20.99	—	1,017,690
Total	112,155	$ 20.91	—	

(1) Represents the surrender of shares of our common stock withheld by us to satisfy the minimum tax withholding obligations in connection with the vesting of restricted stock units held by our employees.

(2) We did not repurchase any of our common stock during the first quarter of 2018. We have repurchased and retired $39.5 million of our common stock under our share repurchase program through March 31, 2018. These shares were purchased pursuant to a repurchase program authorized by our Board that was announced in January 2016 to repurchase up to $60.0 million of our common stock, of which $20.5 million remains authorized for repurchase as of March 31, 2018. The repurchase program does not have an expiration date and may be suspended for periods or discontinued at any time.

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Item 6. Exhibits:

Exhibit Number	Description
10.1+	Fourth Amendment to Lease Agreement, dated as of June 10, 2013, by and between AMAG Pharmaceuticals, Inc. and BP BAY COLONY, LLC, dated January 1, 2018
10.2+	First Amendment to Development and License Agreement, dated March 20, 2018, by and between AMAG Pharma USA, Inc. (f/k/a Lumara Health, Inc.), AMAG Pharmaceuticals, Inc. and Antares Pharma, Inc. (Certain confidential information contained in this exhibit was omitted by means of redacting a portion of the text and replacing it with [***]. This exhibit has been filed separately with the SEC without any redactions pursuant to a Confidential Treatment Request under Rule 24b-2 of the Securities and Exchange Act of 1934, as amended)
10.3+	Manufacturing Agreement, dated March 20, 2018, by and between AMAG Pharmaceuticals, Inc. and Antares Pharma, Inc. (Certain confidential information contained in this exhibit was omitted by means of redacting a portion of the text and replacing it with [***]. This exhibit has been filed separately with the SEC without any redactions pursuant to a Confidential Treatment Request under Rule 24b-2 of the Securities and Exchange Act of 1934, as amended)
31.1+	Certification Pursuant to Rule 13a 14(a)/15d 14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2+	Certification Pursuant to Rule 13a 14(a)/15d 14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1++	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2++	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS+	XBRL Instance Document
101.SCH+	XBRL Taxonomy Extension Schema Document
101.CAL+	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF+	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB+	XBRL Taxonomy Extension Label Linkbase Document
101.PRE+	XBRL Taxonomy Extension Presentation Linkbase Document

+ Exhibits marked with a plus sign (“+”) are filed herewith.
++Exhibits marked with a double plus sign (“++”) are furnished herewith.

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SIGNATURES

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

AMAG PHARMACEUTICALS, INC.

By:	/s/ William K. Heiden William K. Heiden President and Chief Executive Officer (Principal Executive Officer)
Date:	May 4, 2018

AMAG PHARMACEUTICALS, INC.

By:	/s/ Edward Myles Edward Myles Executive Vice President of Finance, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)
Date:	May 4, 2018