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

FORM 10-Q

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

For the quarterly period ended **March 31, 2021**

OR

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

For the transition period from _____ to _____

Commission file number: 1-13165

CRYOLIFE INC.

(Exact name of registrant as specified in its charter)

Florida	**59-2417093**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1655 Roberts Boulevard, NW, Kennesaw, Georgia	**30144**
(Address of principal executive offices)	(Zip Code)

(770) 419-3355
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value	CRY	New York Stock Exchange

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

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

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

Large Accelerated Filer	x	Accelerated Filer	o
Non-accelerated Filer	o	Smaller Reporting Company	o
		Emerging Growth Company	o

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

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

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

Class	Outstanding at April 23, 2021
Common Stock, $0.01 par value	39,098,012

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Part I – FINANCIAL INFORMATION

Item 1. Financial Statements.

CryoLife, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations and Comprehensive Loss
In Thousands, Except Per Share Data
(Unaudited)

	Three Months Ended March 31,	
	2021	**2020**
Revenues:		
Products	$ 53,345	$ 46,420
Preservation services	17,742	20,009
Total revenues	**71,087**	**66,429**
Cost of products and preservation services:		
Products	14,911	13,040
Preservation services	8,338	9,218
Total cost of products and preservation services	**23,249**	**22,258**
Gross margin	**47,838**	**44,171**
Operating expenses:		
General, administrative, and marketing	38,638	39,002
Research and development	7,754	6,356
Total operating expenses	**46,392**	**45,358**
Operating income (loss)	**1,446**	**(1,187)**
Interest expense	4,040	3,388
Interest income	(24)	(102)
Other expense, net	1,931	3,662
Loss before income taxes	**(4,501)**	**(8,135)**
Income tax benefit	(1,363)	(1,470)
Net loss	$ **(3,138)**	$ **(6,665)**
Loss per common share:		
Basic	$ **(0.08)**	$ **(0.18)**
Diluted	$ **(0.08)**	$ **(0.18)**
Weighted-average common shares outstanding:		
Basic	38,738	37,390
Diluted	38,738	37,390
Net loss	$ **(3,138)**	$ **(6,665)**
Other comprehensive loss:		
Foreign currency translation adjustments	(10,290)	(4,463)
Comprehensive loss	$ **(13,428)**	$ **(11,128)**

See accompanying Notes to Condensed Consolidated Financial Statements

CryoLife, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
In Thousands

	March 31, 2021	December 31, 2020
	(Unaudited)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 56,552	$ 61,412
Restricted securities	550	546
Trade receivables, net	48,320	45,964
Other receivables	2,416	2,788
Inventories	73,375	73,038
Deferred preservation costs	39,250	36,546
Prepaid expenses and other	15,220	14,295
Total current assets	**235,683**	**234,589**
Goodwill	253,950	260,061
Acquired technology, net	178,964	186,091
Other intangibles, net	39,274	40,966
Operating lease right-of-use assets, net	39,073	18,571
Property and equipment, net	31,497	33,077
Deferred income taxes	1,657	1,446
Other assets	14,734	14,603
Total assets	**$ 794,832**	**$ 789,404**
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current portion of contingent consideration	$ 16,800	$ 16,430
Accrued compensation	10,644	10,192
Accounts payable	8,952	9,623
Accrued expenses	8,564	7,472
Accrued procurement fees	3,402	3,619
Current maturities of operating leases	1,548	5,763
Current portion of long-term debt	1,174	1,195
Taxes payable	3,229	2,808
Other liabilities	3,705	3,366
Total current liabilities	**58,018**	**60,468**
Long-term debt	310,058	290,468
Contingent consideration	44,100	43,500
Non-current maturities of operating leases	38,441	14,034
Deferred income taxes	29,272	34,713
Deferred compensation liability	5,436	5,518
Other liabilities	12,176	11,990
Total liabilities	**$ 497,501**	**$ 460,691**
Commitments and contingencies		
Shareholders' equity:		
Preferred stock	--	--
Common stock (issued shares of 40,585 in 2021 and 40,394 in 2020)	406	404
Additional paid-in capital	301,449	316,192
Retained earnings	13,671	20,022
Accumulated other comprehensive (loss) income	(3,547)	6,743
Treasury stock, at cost, 1,487 shares as of March 31, 2021 and December 31, 2020, respectively	(14,648)	(14,648)
Total shareholders' equity	**297,331**	**328,713**
Total liabilities and shareholders' equity	**$ 794,832**	**$ 789,404**

See accompanying Notes to Condensed Consolidated Financial Statements.

CryoLife, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
In Thousands
(Unaudited)

	Three Months Ended March 31,	
	2021	**2020**
Net cash flows from operating activities:		
Net loss	$ (3,138)	$ (6,665)
Adjustments to reconcile net loss to net cash from operating activities:		
Depreciation and amortization	6,006	4,898
Non-cash compensation	2,480	2,564
Non-cash lease expense	1,758	1,746
Write-down of inventories and deferred preservation costs	1,274	720
Change in fair value of contingent consideration	970	--
Deferred income taxes	(4,241)	(265)
Other	787	461
Changes in operating assets and liabilities:		
Accounts payable, accrued expenses, and other liabilities	1,590	(2,489)
Prepaid expenses and other assets	(1,291)	982
Receivables	(3,301)	3,557
Inventories and deferred preservation costs	(5,933)	(2,874)
Net cash flows (used in) provided by operating activities	**(3,039)**	**2,635**
Net cash flows from investing activities:		
Capital expenditures	(1,502)	(2,539)
Other	692	(364)
Net cash flows used in investing activities	**(810)**	**(2,903)**
Net cash flows from financing activities:		
Proceeds from revolving line of credit	--	30,000
Proceeds from exercise of stock options and issuance of common stock	861	1,064
Redemption and repurchase of stock to cover tax withholdings	(1,813)	(1,712)
Repayment of debt	(701)	(691)
Other	(442)	(146)
Net cash flows (used in) provided by financing activities	**(2,095)**	**28,515**
Effect of exchange rate changes on cash, cash equivalents, and restricted securities	1,088	1,336
(Decrease) increase in cash, cash equivalents, and restricted securities	**(4,856)**	**29,583**
Cash, cash equivalents, and restricted securities beginning of period	61,958	34,294
Cash, cash equivalents, and restricted securities end of period	**$ 57,102**	**$ 63,877**

See accompanying Notes to Condensed Consolidated Financial Statements

CryoLife, Inc. and Subsidiaries
Condensed Consolidated Statements of Shareholders' Equity
In Thousands
(Unaudited)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock		Total Shareholders' Equity
	Shares	Amount				Shares	Amount	
Balance at December 31, 2019	**39,018**	**390**	**271,782**	**36,704**	**(8,589)**	**(1,484)**	**(14,591)**	**285,696**
Net loss	--	--	--	(6,665)	--	--	--	(6,665)
Other comprehensive loss	--	--	--	--	(4,463)	--	--	(4,463)
Equity compensation	208	2	2,687	--	--	--	--	2,689
Exercise of options	33	--	376	--	--	--	--	376
Employee stock purchase plan	30	--	688	--	--	--	--	688
Redemption and repurchase of stock to cover tax withholdings	(70)	--	(1,712)	--	--	--	--	(1,712)
Balance at March 31, 2020	**39,219**	**$ 392**	**$ 273,821**	**$ 30,039**	**$ (13,052)**	**(1,484)**	**$ (14,591)**	**$ 276,609**

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock		Total Shareholders' Equity
	Shares	Amount				Shares	Amount	
Balance at December 31, 2020	**40,394**	**404**	**316,192**	**20,022**	**6,743**	**(1,487)**	**(14,648)**	**328,713**
Net loss	--	--	--	(3,138)	--	--	--	(3,138)
Other comprehensive loss	--	--	--	--	(10,290)	--	--	(10,290)
Impact of adoption of ASU 2020-06	--	--	(16,426)	(3,213)	--	--	--	(19,639)
Equity compensation	207	2	2,635	--	--	--	--	2,637
Exercise of options	19	--	271	--	--	--	--	271
Employee stock purchase plan	37	1	589	--	--	--	--	590
Redemption and repurchase of stock to cover tax withholdings	(72)	(1)	(1,812)	--	--	--	--	(1,813)
Balance at March 31, 2021	**40,585**	**$ 406**	**$ 301,449**	**$ 13,671**	**$ (3,547)**	**(1,487)**	**$ (14,648)**	**$ 297,331**

See accompanying Notes to Condensed Consolidated Financial Statements

CryoLife, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Basis of Presentation

Overview

The accompanying Condensed Consolidated Financial Statements include the accounts of CryoLife, Inc. and its subsidiaries ("CryoLife," the "Company," "we," or "us"). All significant intercompany accounts and transactions have been eliminated in consolidation. The accompanying Condensed Consolidated Balance Sheet as of December 31, 2020 has been derived from audited financial statements. The accompanying unaudited Condensed Consolidated Financial Statements as of, and for the three months ended, March 31, 2021 and 2020 have been prepared in accordance with (i) accounting principles generally accepted in the U.S. for interim financial information and (ii) the instructions to Form 10-Q and Rule 10-01 of Regulation S-X of the U.S. Securities and Exchange Commission ("SEC"). Accordingly, such statements do not include all the information and disclosures that are required by accounting principles generally accepted in the U.S. for a complete presentation of financial statements. In the opinion of management, all adjustments (including those of a normal, recurring nature) considered necessary for a fair presentation have been included. Operating results for the three months ended March 31, 2021 are not necessarily indicative of the results that may be expected for the year ending December 31, 2021. These Condensed Consolidated Financial Statements should be read in conjunction with the Consolidated Financial Statements and Notes included in CryoLife's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the SEC on February 22, 2021.

New Accounting Standards

Recently Adopted

In August 2020 the FASB issued ASC Update No. 2020-06, *Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)* ("ASU 2020-06"). The update simplifies the accounting for convertible instruments by eliminating two accounting models (i.e., the cash conversion model and beneficial conversion feature mode) and reducing the number of embedded conversion features that could be recognized separately from the host contract. ASU 2020-06 also enhances transparency and improves disclosures for convertible instruments and earnings per share guidance. On January 1, 2021, we adopted ASU 2020-06 using the modified retrospective approach and recorded $20.4 million to increase long-term debt, $3.2 million to reduce retained earnings, and $16.4 million to reduce additional paid-in capital included on the Condensed Consolidated Balance Sheets. See Note 10 for further discussion of convertible debt.

In December 2019 the FASB issued ASC Update No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"). The amendments in this ASU simplify the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The amendments also improve consistent application of and simplify GAAP for other areas of Topic 740 by clarifying and amending existing guidance. The amendments are effective for public entities in fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. We adopted ASU 2019-02 on January 1, 2021 and the adoption did not have an impact on our financial condition or results of operation.

2. Acquisition of Ascyrus

Overview

On September 2, 2020, we entered into a Securities Purchase Agreement (the "Ascyrus Agreement") to acquire 100% of the outstanding equity interests of Ascyrus Medical LLC, ("Ascyrus"). Ascyrus developed the Ascyrus Medical Dissection Stent ("AMDS") hybrid prosthesis, the world's first aortic arch remodeling device for use in the treatment of acute Type A aortic dissections.

Under the terms of the Ascyrus Agreement, we will pay an aggregate of up to $200.0 million in consideration, consisting of: (i) a cash payment of approximately $60.0 million and the issuance of $20.0 million in shares of CryoLife common stock, in each case, that were delivered at the closing of the acquisition, (ii) if the U.S. Food and Drug Administration (the "FDA") approves an Investigational Device Exemption ("IDE") application for the AMDS, a cash payment of $10.0 million and the issuance of $10.0 million in shares of CryoLife common stock, (iii) if the FDA approves a Premarket Approval ("PMA") application submitted for the AMDS, a cash payment of $25.0 million, (iv) if regulatory approval of the AMDS is obtained in Japan on or before June 30, 2027, a cash payment of $10.0 million, (v) if regulatory approval of the AMDS is obtained in China on or before June 30, 2027, a cash payment of $10.0 million and (vi) a potential additional consideration cash payment capped at $55.0 million (or up to $65.0 million to $75.0 million if the Japanese or Chinese approvals are not secured on or before June 30, 2027 and those approval milestone payments are added to the potential additional consideration cash payment cap) calculated as two times the incremental worldwide sales of the AMDS (or any other acquired technology or derivatives of such acquired technology) outside of the European Union during the three-year period following the date the FDA approves a Premarket Approval application submitted for the AMDS.

Accounting for the Transaction

Upon closing of the acquisition on September 2, 2020, we paid $82.4 million consisting of $62.4 million in cash consideration, and $20.0 million in shares of CryoLife common stock. The number of shares issued was based on a 10-day moving volume weighted average closing price of a share of CryoLife common stock as of the date immediately prior to closing, resulting in an issuance of 991,800 shares of CryoLife common stock.

As part of the acquisition, we may be required to pay additional consideration in cash and equity up to $120.0 million to the former shareholders of Ascyrus upon the achievement of certain milestones and the sales-based additional earnout described above. The fair value of the total potential purchase consideration of $200.0 million was calculated to be $137.8 million, which includes total purchase consideration, as well as the contingent consideration liability discussed below. Our preliminary allocation of the purchase consideration was allocated to Ascyrus's tangible and identifiable intangible assets acquired and liabilities assumed, based on their estimated fair values as of September 2, 2020.

We recorded the contingent consideration liability of $16.8 million and $16.4 million in Current liabilities and $44.1 million and $43.5 million in Other long-term liabilities as of March 31, 2021 and December 31, 2020, respectively, in the Condensed Consolidated Balance Sheets, representing the estimated fair value of future potential payments. The fair value of the contingent consideration liability was estimated by discounting to present value the contingent payments expected to be made based on a probability-weighted scenario approach. We applied a discount rate based on our unsecured credit spread and the term commensurate risk-free rate to the additional consideration to be paid, and then applied a risk-based estimate of the probability of achieving each scenario to calculate the fair value of the contingent consideration. This fair value measurement was based on unobservable inputs, including management estimates and assumptions about the future achievement of milestones and future estimate of revenues, and is, therefore, classified as Level 3 within the fair value hierarchy presented in Note 4. We will remeasure this liability at each reporting date and will record changes in the fair value of the contingent consideration in General, administrative, and marketing expenses on the Condensed Consolidated Statements of Operations and Comprehensive Loss. Increases or decreases in the fair value of the contingent consideration liability can result from changes in passage of time, discount rates, the timing and amount of our revenue estimates, and the timing and expectation of regulatory approvals.

We performed an assessment of the fair value of the contingent consideration as of March 31, 2021 and recorded a $970,000 fair value adjustment in General, administrative, and marketing expenses on the Condensed Consolidated Statements of Operations and Comprehensive Loss, as a result of this assessment.

We recorded $62.5 million of preliminary goodwill, of which $61.2 million was deductible for tax purposes, based on the amount by which the total purchase consideration price exceeded the fair value of the net assets acquired and liabilities assumed. Goodwill from this transaction primarily relates to synergies expected from the acquisition and has been allocated to our Medical Devices segment. The estimated allocation of assets acquired and liabilities assumed is based on the information available that would have been known as of the acquisition date. We are completing our procedures related to the purchase price allocation and if information regarding these values is received that would result in a material adjustment to the values recorded, we will recognize the adjustment, which may include the recognition of additional expenses or other allocation adjustments, in the period this determination is made. During the three months ended March 31, 2021 we received a $777,000 cash distribution from escrow related to the working capital adjustments which reduced the purchase price consideration. This adjustment was included in other cash flows used in investing activities on the Condensed Consolidated Statements of Cash Flows for the three months ended March 31, 2021.

The September 2, 2020 allocation of preliminary purchase consideration adjusted as of March 31, 2021 consisted of the following (in thousands):

Consideration		
Cash paid for acquisition	$	62,359
Common stock issued		20,000
Contingent consideration		55,407
Fair value of total consideration	**$**	**137,766**
Purchase Price Allocation		
Cash and cash equivalents	$	4,017
Intangible assets		72,600
Net other assets/liabilities acquired		(1,366)
Goodwill		62,515
Net assets acquired	**$**	**137,766**

Pro forma financial information related to the Ascyrus Agreement has not been provided as it is not material to our consolidated results of operations. The results of operations of Ascyrus acquisition are included in results of operations from the date of acquisition and were not significant for the three months ended March 31, 2021.

3. Agreements with Endospan

Exclusive Distribution Agreement and Securities Purchase Option Agreement

On September 11, 2019 CryoLife, Inc.'s wholly-owned subsidiary, JOTEC GmbH, ("JOTEC"), entered into an exclusive distribution agreement ("Endospan Distribution Agreement") with Endospan Ltd. ("Endospan"), an Israeli corporation, pursuant to which JOTEC obtained exclusive distribution rights for Endospan's NEXUS ™ stent graft system ("NEXUS") and accessories in certain countries in Europe in exchange for a fixed distribution fee of $9.0 million paid in September 2019.

CryoLife also entered into a securities purchase option agreement ("Endospan Option Agreement") with Endospan for $1.0 million paid in September 2019. The Endospan Option Agreement provides CryoLife the option to purchase all the outstanding securities of Endospan from Endospan's securityholders at the time of acquisition, or the option to acquire all of Endospan's assets, in each case, for a price between $350.0 and $450.0 million before, or within a certain period of time or after FDA approval of NEXUS, with such option expiring if not exercised within 90 days after receiving notice that Endospan has received approval from the FDA for NEXUS.

Loan Agreement

CryoLife and Endospan also entered into a loan agreement ("Endospan Loan"), dated September 11, 2019, in which CryoLife agreed to provide Endospan a secured loan of up to $15.0 million to be funded in three tranches of $5.0 million each.

The first tranche of the Endospan Loan was funded upon execution of the agreement in September 2019. During September 2020 we funded the second tranche payment of $5.0 million upon the certification of the NEXUS IDE from the FDA. The third tranche is required to be funded upon certification of enrollment of at least 50% of the required number of patients in the primary arm of the FDA approved clinical trial for NEXUS, in each case subject to Endospan's continued compliance with the Endospan Loan and certain other conditions. If a termination fee becomes payable by Endospan under the Endospan Distribution Agreement, it will be added to the amount payable to CryoLife under the Endospan Loan.

Variable Interest Entity

We consolidate the results of a variable interest entity ("VIE") when it is determined that we are the primary beneficiary. Based on our initial evaluation of Endospan and the related agreements with Endospan, we determined that Endospan is a VIE. Although the arrangement with Endospan resulted in our holding a variable interest, it did not empower us to direct those activities of Endospan that most significantly impact the VIE economic performance. Therefore, we are not the primary beneficiary, and we have not consolidated Endospan into our financial results. Our payments to Endospan in September 2019 totaled $15.0 million which included a $9.0 million distribution fee, a $1.0 million securities purchase option, and $5.0 million for the first tranche of the Endospan Loan. We paid an additional $5.0 million for the second tranche described above. We evaluated Endospan for VIE classification as of March 31, 2021 and December 31, 2020 and determined that Endospan meets the criteria of a non-consolidating VIE. Our payments to date, including any loans, guarantees, and other subordinated financial support related to this VIE, totaled $20.0 million as of March 31, 2021, representing our maximum exposure to loss, and were not individually significant to our consolidated financial statements.

Valuation

The agreements with Endospan were entered into concurrently and had certain terms that are interrelated. In our evaluation of the initial relative fair value of each of the Endospan agreements to determine the amount to record, we utilized discounted cash flows to estimate the fair market value for the Endospan Loan and for the Endospan Distribution Agreement. We estimated the fair value of the Endospan Option Agreement utilizing the Monte Carlo simulation. Inputs in our valuation of the Endospan agreements included cash payments and anticipated payments based on the executed agreements with Endospan, projected discounted cash flows in connection with the Endospan transaction, our expected internal rate of return and discount rates, and our assessed probability and timing of receipt of certification of certain approvals and milestones in obtaining FDA approval. Based on the initial fair value of the Endospan Loan and the relative fair values of the Endospan Distribution Agreement and Endospan Option Agreement, we recorded the Endospan Loan value of $358,000 in Other long-term assets in the Condensed Consolidated Balance Sheets as of December 31, 2019. The Endospan Option Agreement was valued at $4.8 million in Other long-term assets in the Condensed Consolidated Balance Sheets as of March 31, 2021 and December 31, 2020. The Endospan Distribution Agreement was recorded at $7.2 million and $8.0 million in Other Intangibles, net in the Condensed Consolidated Balance Sheets as of March 31, 2021 and December 31, 2020, respectively.

We elected the fair value option for recording the Endospan Loan. We assess the fair value of the Endospan Loan based on quantitative and qualitative characteristics, and adjust the amount recorded to its current fair market value at each reporting period. The fair value of the Endospan Loan was $409,000 as of March 31, 2021 and December 31, 2020.

4. Financial Instruments

The following is a summary of our financial instruments measured at fair value on a recurring basis (in thousands):

March 31, 2021	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash equivalents:				
Money market funds	$ 10,006	$ --	$ --	$ 10,006
Restricted securities:				
Money market funds	550	--	--	550
Endospan loan	--	--	409	409
Total assets	**$ 10,556**	**$ --**	**$ 409**	**$ 10,965**
Current liabilities:				
Contingent consideration	--	--	(16,800)	(16,800)
Long-term liabilities:				
Contingent consideration	--	--	(44,100)	(44,100)
Total liabilities	**$ --**	**$ --**	**$ (60,900)**	**$ (60,900)**

December 31, 2020	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash equivalents:				
Money market funds	$ 11,484	$ --	$ --	$ 11,484
Restricted securities:				
Money market funds	546	--	--	546
Endospan loan	--	--	409	409
Total assets	**$ 12,030**	**$ --**	**$ 409**	**$ 12,439**
Current liabilities:				
Contingent consideration	--	--	(16,430)	(16,430)
Long-term liabilities:				
Contingent consideration	--	--	(43,500)	(43,500)
Total liabilities	**$ --**	**$ --**	**$ (59,930)**	**$ (59,930)**

We used prices quoted from our investment advisors to determine the Level 1 valuation of our investments in money market funds. We recorded the Endospan Loan, classified as Level 3, as a result of an agreement with Endospan in September 2019. The contingent consideration component of the Ascyrus acquisition was classified as a Level 3 financial instrument. See Note 2 and Note 3 for further discussion of the Ascyrus acquisition, and the Endospan Loan, respectively. Changes in fair value of Level 3 assets and liabilities are listed in the tables below (in thousands):

	Endospan Loan		**Contingent Consideration**
Balance as of December 31, 2020	$ 409	Balance as of December 31, 2020	$ (59,930)
Change in valuation	--	Change in valuation	(970)
Balance as of March 31, 2021	$ **409**	Balance as of March 31, 2021	$ **(60,900)**

5. Cash Equivalents and Restricted Securities

The following is a summary of cash equivalents and restricted securities (in thousands):

March 31, 2021	Cost Basis	Unrealized Holding Gains	Estimated Market Value
Cash equivalents:			
Money market funds	$ 10,006	$ --	$ 10,006
Restricted securities:			
Money market funds	550	--	550
Total assets	$ 10,556	$ --	$ 10,556

December 31, 2020	Cost Basis	Unrealized Holding Gains	Estimated Market Value
Cash equivalents:			
Money market funds	$ 11,484	$ --	$ 11,484
Restricted securities:			
Money market funds	546	--	546
Total assets	$ 12,030	$ --	$ 12,030

As of March 31, 2021 and December 31, 2020 $550,000 and $546,000, respectively, of our money market funds were designated as short-term restricted securities due to a contractual commitment to hold the securities as pledged collateral relating to international tax obligations.

There were no gross realized gains or losses on cash equivalents and restricted securities in the three months ended March 31, 2021 and 2020. As of March 31, 2021 $550,000 of our restricted securities had a maturity date within three months. As of December 31, 2020 $546,000 of our restricted securities had a maturity date within three months.

6. Inventories and Deferred Preservation Costs

Inventories at March 31, 2021 and December 31, 2020 were comprised of the following (in thousands):

	March 31, 2021	December 31, 2020
Raw materials and supplies	$ 34,789	$ 33,625
Work-in-process	7,730	6,318
Finished goods	30,856	33,095
Total inventories	**$ 73,375**	**$ 73,038**

Total deferred preservation costs were $39.3 million and $36.5 million as of March 31, 2021 and December 31, 2020, respectively.

To facilitate product usage, we maintain consignment inventory of our On-X heart valves at domestic hospital locations and On-X heart valves, JOTEC and AMDS products at international hospital locations. We retain title and control over this consignment inventory until the device is implanted, at which time we invoice the hospital and recognize revenue. As of March 31, 2021 we had $13.4 million in consignment inventory, with approximately 43% in domestic locations and 57% in international locations. As of December 31, 2020 we had $11.9 million in consignment inventory, with approximately 47% in domestic locations and 53% in international locations.

7. Goodwill and Other Intangible Assets

Indefinite Lived Intangible Assets

As of March 31, 2021 and December 31, 2020 the carrying values of our indefinite lived intangible assets were as follows (in thousands):

	March 31, 2021	December 31, 2020
Goodwill	$ 253,950	260,061
In-process R&D	2,286	2,392
Procurement contracts and agreements	2,013	2,013
Trademarks	765	765

We monitor the phases of development of our acquired in-process research and development projects, including the risks associated with further development and the amount and timing of benefits expected to be derived from the completed projects. Incremental costs associated with development are charged to expense as incurred. Capitalized costs are amortized over the estimated useful life of the developed asset once completed. Our in-process research and development projects are reviewed for impairment annually, or more frequently, if events or changes in circumstances indicate that the asset might be impaired.

Based on our experience with similar agreements, we believe that our acquired procurement contracts and agreements have indefinite useful lives, as we expect to continue to renew these contracts for the foreseeable future. We believe that our trademarks have indefinite useful lives as we currently anticipate that our trademarks will contribute to our cash flows indefinitely.

We evaluate our goodwill and non-amortizing intangible assets for impairment on an annual basis during the fourth quarter of the year, and, if necessary, during interim periods if factors indicate that an impairment review is warranted. As of March 31, 2021 we concluded that our assessment of current factors did not indicate that goodwill or non-amortizing intangible assets are more likely than not to be impaired. We will continue to evaluate the recoverability of these non-amortizing intangible assets in future periods as necessary.

As of March 31, 2021 and December 31, 2020 our entire goodwill balance was related to our Medical Devices segment.

	Medical Devices Segment
Balance as of December 31, 2020	$ 260,061
Ascyrus acquisition	(843)
Revaluation of goodwill denominated in foreign currency	(5,268)
Balance as of March 31, 2021	**$ 253,950**

Definite Lived Intangible Assets

The definite lived intangible balance includes balances related to acquired technology, customer relationships, distribution and manufacturing rights and know-how, patents, and other definite lived intangible assets. As of March 31, 2021 and December 31, 2020 the gross carrying values, accumulated amortization, and approximate amortization period of our definite lived intangible assets were as follows (in thousands):

March 31, 2021	Gross Carrying Value	Accumulated Amortization	Amortization Period
Acquired technology	$ 217,238	$ 38,274	11 – 22 Years
Customer lists and relationships	31,218	8,494	13 – 22 Years
Distribution and manufacturing rights and know-how	14,254	5,780	5 – 15 Years
Patents	3,963	3,120	17 Years
Other	3,403	1,234	4 – 5 Years

December 31, 2020	Gross Carrying Value	Accumulated Amortization	Amortization Period
Acquired technology	$ 222,182	$ 36,091	11 – 22 Years
Customer lists and relationships	31,316	8,132	13 – 22 Years
Distribution and manufacturing rights and know-how	14,728	5,349	5 – 15 Years
Patents	3,966	3,113	17 Years
Other	3,453	1,073	4 – 5 Years

Amortization Expense

The following is a summary of amortization expense as recorded in general, administrative, and marketing expenses on our Condensed Consolidated Statement of Operations and Comprehensive Loss (in thousands):

	Three Months Ended March 31,	
	2021	2020
Amortization expense	$ 4,260	$ 3,033

As of March 31, 2021 scheduled amortization of intangible assets for the next five years is as follows (in thousands):

	Remainder of 2021	2022	2023	2024	2025	2026	Total
Amortization expense	$ 12,540	16,175	15,727	15,381	13,246	12,826	$ 85,895

8. Income Taxes

Income Tax Expense

Our effective income tax rate was a benefit of 30% and 18% for the three months ended March 31, 2021 and 2020, respectively. The change in the tax rate for the three months ended March 31, 2021 is primarily due to a change in pre-tax book loss, as well as a reduction in the excess tax benefit related to stock compensation for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020.

The income tax rate for the three months ended March 31, 2021 was favorably impacted by excess tax benefit deductions related to stock compensation, the research and development tax credit, and the reduction of a valuation allowance on prior year items. These factors were partially offset by the unfavorable impacts of non-deductible operating expenses, executive compensation expenses, and the recording of a tax reserve on prior year items.

The income tax rate for the three months ended March 31, 2020 was favorably impacted by excess tax benefit deductions related to stock compensation. These factors were partially offset by the unfavorable impacts of non-deductible operating expenses and executive compensation expenses.

Deferred Income Taxes

We generate deferred tax assets primarily as a result of the difference in fixed asset depreciation lives for book and tax purposes, accruals for which the timing of deductibility is different for book and tax purposes, the timing of tax deductions related to stock compensation, interest expense disallowances, and operating losses. We acquired significant deferred tax assets, primarily net operating loss carryforwards, from our acquisitions of JOTEC and its subsidiaries in 2017, On-X in 2016, Hemosphere, Inc. in 2012, and Cardiogenesis Corporation in 2011. We believe utilization of these net operating losses will not have a material impact on income taxes for the 2021 tax year.

As of March 31, 2021 we maintained a total of $9.4 million in valuation allowances against deferred tax assets, including state and federal net operating loss carryforwards and interest expense disallowance carryforwards, and a net deferred tax liability of $27.6 million. As of December 31, 2020 we maintained a total of $7.2 million in valuation allowances against deferred tax assets, including state and federal net operating loss carryforwards, and a net deferred tax liability of $33.3 million.

During the three months ended March 31, 2021, we released a valuation allowance and increased a tax reserve in the amount of a net $1.8 million related to immaterial prior period correction of errors in the calculation of the valuation allowance and an uncertain tax position. The valuation allowance adjustment, which comprises the majority of the adjustment primarily arises from the improper reversal in the prior period valuation allowance assessment of future temporary differences created from the accounting of its convertible debt. On correcting the errors, we recorded an income tax benefit of $1.8 million.

The Coronavirus Aid, Relief and Economic Security Act (“CARES Act”)

In response to the novel coronavirus disease (“COVID-19”) pandemic, the U.S. government enacted the CARES Act on March 27, 2020. The CARES Act provides various forms of relief and assistance to U.S. businesses. We recorded a reduction to income taxes payable and deferred tax assets of approximately $1.3 million for the change to the 2019 Section 163(j) interest expense deduction limitation for the three months ended March 2020.

9. Leases

We have operating and finance lease obligations resulting from the lease of land and buildings that comprise our corporate headquarters and various manufacturing facilities; leases related to additional manufacturing, office, and warehouse space; leases on Company vehicles; and leases on a variety of office and other equipment.

On January 6, 2021 we executed a modification to extend the lease of our headquarters location in Kennesaw, Georgia. This modification resulted in an increase in the present value of future lease obligations and corresponding right-of-use asset of $23.3 million, using a discount rate of 6.41%.

Consolidated balance sheet information related to leases is as follows (in thousands, except lease term and discount rate):

Operating leases:	**March 31, 2021**	**December 31, 2020**
Operating lease right-of-use assets	$ 48,859	$ 28,242
Accumulated amortization	(9,786)	(9,671)
Operating lease right-of-use assets, net	**$ 39,073**	**$ 18,571**
Current maturities of operating leases	$ 1,548	$ 5,763
Non-current maturities of operating lease	38,441	14,034
Total operating lease liabilities	**$ 39,989**	**$ 19,797**
Finance leases:		
Property and equipment, at cost	$ 7,208	$ 7,620
Accumulated amortization	(1,897)	(1,905)
Property and equipment, net	**$ 5,311**	**$ 5,715**
Current maturities of finance leases	$ 578	$ 614
Non-current maturities of finance leases	4,930	5,300
Total finance lease liabilities	**$ 5,508**	**$ 5,914**
Weighted average remaining lease term (in years):		
Operating leases	13.2	5.1
Finance leases	9.5	9.8
Weighted average discount rate:		
Operating leases	5.9%	5.2%
Finance leases	2.0%	2.0%

Current maturities of finance leases are included as a component of Other current liabilities and non-current maturities of finance leases are included as a component of Other long-term liabilities on our Condensed Consolidated Balance Sheets. A summary of lease expenses for our finance and operating leases included in General, Administrative, and Marketing Expenses on our Condensed Consolidated Statements of Operations and Comprehensive Loss are as follows (in thousands):

	Three Months Ended March 31,	
	2021	**2020**
Amortization of property and equipment	$ 154	$ 162
Interest expense on finance leases	29	29
Total finance lease expense	**183**	**191**
Operating lease expense	1,758	1,748
Sublease income	(124)	(226)
Total lease expense	**$ 1,817**	**$ 1,713**

A summary of our cash flow information related to leases is as follows (in thousands):

Cash paid for amounts included in the measurement of lease liabilities:	**Three Months Ended March 31, 2021**	**Three Months Ended March 31, 2020**
Operating cash flows for operating leases	$ 1,500	$ 29
Financing cash flows for finance leases	144	1,745
Operating cash flows for finance leases	28	147

Future minimum lease payments and sublease rental income are as follows (in thousands):

	Finance Leases	Operating Leases	Sublease Income
Remainder of 2021	$ 512	$ 2,650	$ 275
2022	642	4,653	305
2023	641	5,268	--
2024	637	4,973	--
2025	618	4,160	--
Thereafter	2,999	38,922	--
Total minimum lease payments	$ 6,049	$ 60,626	$ 580
Less amount representing interest	(541)	(20,637)	
Present value of net minimum lease payments	5,508	39,989	
Less current maturities	(578)	(1,548)	
Lease liabilities, less current maturities	**$ 4,930**	**$ 38,441**	

10. Debt

Credit Agreement

On December 1, 2017 we entered into a credit and guaranty agreement for a $255.0 million senior secured credit facility, consisting of a $225.0 million secured term loan facility (the "Term Loan Facility") and a $30.0 million secured revolving credit facility ("the Revolving Credit Facility" and, together with the Term Loan Facility, the "Credit Agreement"). We and each of our existing domestic subsidiaries (subject to certain exceptions and exclusions) guarantee the obligations under the Credit Agreement (the "Guarantors"). The Credit Agreement is secured by a security interest in substantially all existing and after-acquired real and personal property (subject to certain exceptions and exclusions) of us and the Guarantors.

On December 1, 2017 we borrowed the entire $225.0 million Term Loan Facility. The proceeds of the Term Loan Facility were used along with cash on hand and shares of CryoLife common stock to (i) fund the acquisition of JOTEC and its subsidiaries (the "JOTEC Acquisition"), (ii) pay certain fees and expenses related to the JOTEC Acquisition and the Credit Agreement, and (iii) pay the outstanding balance of our prior credit facility. The Revolving Credit Facility may be used for working capital, capital expenditures, acquisitions permitted under the Credit Agreement, and other general corporate purposes pursuant to the terms of the Credit Agreement.

The loan under the Term Loan Facility is repayable on a quarterly basis according to the amortization provisions set forth in the Credit Agreement. We have the right to repay the loan under the Credit Agreement in whole or in part at any time. Amounts repaid in respect of the loan under the Term Loan Facility may not be reborrowed. Amounts repaid in respect of the loan under the Revolving Credit Facility may be reborrowed. All outstanding principal and interest in respect of (i) the Term Loan Facility must be repaid on or before December 1, 2024 and (ii) the Revolving Credit Facility must be repaid on or before December 1, 2022.

In October 2018 we finalized an amendment to the Credit Agreement to reprice interest rates, resulting in a reduction in the interest rate margins over base rates on the Term Loan Facility. The loan under the Term Loan Facility bears interest, at our option, at a floating annual rate equal to either the base rate, plus a margin of 2.25%, or LIBOR, plus a margin of 3.25%. Prior to the repricing, the optional floating annual rate was equal to either the base rate plus a margin of 3.00%, or LIBOR, plus a margin of 4.00%. The loan under the Revolving Credit Facility bears interest, at our option, at a floating annual rate equal to either the base rate, plus a margin of between 3.00% and 3.25%, depending on our consolidated leverage ratio, or LIBOR, plus a margin of between 4.00% and 4.25%, depending on our consolidated leverage ratio. While a payment event of default or bankruptcy event of default exists, we are obligated to pay a per annum default rate of interest of 2.00% in excess of the interest rate otherwise payable with respect to the overdue principal amount of any loans outstanding and overdue interest payments and other overdue fees and amounts. As of March 31, 2021 the aggregate interest rate was 4.25% per annum. We are obligated to pay an unused commitment fee equal to 0.50% of the unutilized portion of the revolving loans. In addition, we are also obligated to pay other customary fees for a credit facility of this size and type.

The Credit Agreement contains certain customary affirmative and negative covenants, including covenants that limit our ability and the ability of our subsidiaries to, among other things, grant liens, incur debt, dispose of assets, make loans and investments, make acquisitions, make certain restricted payments (including cash dividends), merge or consolidate, change business or accounting or reporting practices, in each case subject to customary exceptions for a credit facility of this size and type. In addition, with respect to the Revolving Credit Facility, when the principal amount of loans outstanding thereunder is in excess of 25% of the Revolving Credit Facility, the Credit Agreement requires us to comply with a specified maximum first lien net leverage ratio.

The Credit Agreement includes certain customary events of default that include, among other things, non-payment of principal, interest, or fees; inaccuracy of representations and warranties; breach of covenants; cross-default to certain material indebtedness; bankruptcy and insolvency; and change of control. Upon the occurrence and during the continuance of an event of default, the lenders may declare all outstanding principal and accrued but unpaid interest under the Credit Agreement immediately due and payable and may exercise the other rights and remedies provided under the Credit Agreement and related loan documents.

In March 2020 as a precautionary measure to increase cash and maintain maximum financial flexibility during the current uncertainty in global markets resulting from the COVID-19 pandemic, we borrowed the entire amount available under our $30.0 million Revolving Credit Facility at an aggregate interest rate of 5.20%. On June 29, 2020 we used some of the net proceeds from the issuance of Convertible Senior Notes, as discussed below, to repay the $30.0 million outstanding under our Revolving Credit Facility.

On April 29, 2020 we entered into an amendment to our Credit Agreement. As part of the amendment we obtained a waiver of our maximum first lien net leverage ratio covenant through the end of 2020. In addition, the amendment to our Credit Agreement provides that EBITDA, for covenant testing purposes, in each quarter of 2020 was deemed equal to a fixed value equal to our bank covenant EBITDA in the fourth quarter of 2019, when our first lien net leverage was 3.4x. As a result of these changes, we became subject to a new minimum liquidity covenant. We are also subject to restrictions on certain payments, including cash dividends. The new minimum liquidity covenant required a minimum liquidity of at least $12.0 million as of the last day of any month in 2020, and as of the last day of any quarter through the third quarter of 2021 when our Revolving Credit Facility is drawn in excess of 25% (or $7.5 million) of the amount available as of the last day of any fiscal quarter during that period. Beginning in 2021, if we repay borrowings under our Revolving Credit Facility to 25% or less, no financial maintenance covenants, including the minimum liquidity covenant and the maximum first lien net leverage ratio covenant, are applicable.

Convertible Senior Notes

On June 18, 2020 we issued $100.0 million aggregate principal amount of 4.25% convertible senior notes with a maturity date of July 1, 2025 (the “Convertible Senior Notes”). The net proceeds from this offering, after deducting initial purchasers’ discounts and costs directly related to this offering, were approximately $96.5 million. On January 1, 2021 we adopted ASU 2020-06 and adjusted the carrying balance of the Convertible Senior Notes to notional. The Convertible Senior Notes balance was $100.0 million recorded in Long-term debt on the Condensed Consolidated Balance Sheets as of March 31, 2021. The Convertible Senior Notes may be settled in cash, stock, or a combination thereof, solely at our discretion. The initial conversion rate of the Convertible Senior Notes is 42.6203 shares per $1,000 principal amount, which is equivalent to a conversion price of approximately $23.46 per share, subject to adjustments. We use the if-converted method for assumed conversion of the Convertible Senior Notes for the diluted earnings per share calculation.

The interest expense recognized on the Convertible Senior Notes includes approximately $1.2 million for the aggregate of the contractual coupon interest, and the amortization of the debt issuance costs as of three months ended March 31, 2021. Interest on the Convertible Senior Notes began accruing upon issuance and is payable semi-annually.

Holders of the Convertible Senior Notes may convert their notes at their option at any time prior to January 1, 2025 but only under the following circumstances: (i) during any calendar quarter commencing after the calendar quarter ending on September 30, 2020 (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, and including, 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; (ii) during the five business day period after any five consecutive trading day period in which the trading price per $1,000 principal amount of 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; (iii) we give a notice of redemption with respect to any or all of the notes, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or (iv) upon the occurrence of specified corporate events. On or after January 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their notes at any time, regardless of the foregoing circumstances.

We cannot redeem the Convertible Senior Notes before July 5, 2023. We can redeem them on or after July 5, 2023, in whole or in part, at our option, if the last reported sale price per share of our common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption. We may redeem for cash all or part of the Convertible Senior Notes at a redemption price equal to 100% of the principal amount of the redeemable Convertible Senior Notes, plus accrued and unpaid interest to, but excluding, the redemption date. No principal payments are due on the Convertible Senior Notes prior to maturity. Other than restrictions relating to certain fundamental changes and consolidations, mergers or asset sales and customary anti-dilution adjustments, the Convertible Senior Notes do not contain any financial covenants and do not restrict us from conducting significant restructuring transactions or issuing or repurchasing any of its other securities. As of March 31, 2021 we are not aware of any current events or market conditions that would allow holders to convert the Convertible Senior Notes. We used a portion of the proceeds to pay off the $30.0 million outstanding under our Revolving Credit Facility and finance the Ascyrus transaction and anticipate using the remaining funds for general corporate purposes.

Government Supported Bank Debt

In June 2015 JOTEC obtained two loans from Sparkasse Zollernalb, which are government sponsored by the Kreditanstalt für Wiederaufbau Bank (“KFW”). Both KFW loans have a term of nine years and the interest rates are 2.45% and 1.40%, respectively.

Loan Balances

The short-term and long-term balances of our term loan and other long-term borrowings were as follows (in thousands):

	March 31, 2021	December 31, 2020
Term loan balance	$ 217,688	$ 218,250
Convertible senior notes	100,000	79,555
2.45% Sparkasse Zollernalb (KFW Loan 1)	782	886
1.40% Sparkasse Zollernalb (KFW Loan 2)	1,319	1,457
Total loan balance	319,789	300,148
Less unamortized loan origination costs	(8,557)	(8,485)
Net borrowings	311,232	291,663
Less short-term loan balance	(1,174)	(1,195)
Long-term loan balance	$ 310,058	$ 290,468

Interest Expense

Interest expense was $4.0 million for the three months ended March 31, 2021, as compared to $3.4 million for the three months ended March 31, 2020. Interest expense includes interest on debt and uncertain tax positions in both periods.

11. Commitments and Contingencies

Liability Claims

Our estimated unreported loss liability was $1.9 million as of March 31, 2021 and December 31, 2020, respectively. As of March 31, 2021 and December 31, 2020, the related recoverable insurance amounts were $1.0 million and $974,000, respectively. We accrue our estimate of unreported product and tissue processing liability claims as a component of other long-term liabilities and record the related recoverable insurance amount as a component of Other long-term assets, as appropriate. Further analysis indicated that the estimated liability as of March 31, 2021 could have been as high as $4.1 million, after including a reasonable margin for statistical fluctuations calculated based on actuarial simulation techniques.

Employment Agreements

The employment agreement of our Chairman, President, and Chief Executive Officer ("CEO"), Mr. J. Patrick Mackin, provides for a severance payment, which would become payable upon the occurrence of certain employment termination events, including termination by us without cause.

PerClot Technology

On September 28, 2010 we entered into a worldwide distribution agreement (the "Distribution Agreement") and a license and manufacturing agreement (the "License Agreement") with Starch Medical, Inc. ("SMI"), for PerClot®, a polysaccharide hemostatic agent used in surgery. The Distribution Agreement has a term of 15 years but can be terminated for any reason before the expiration date by us by providing 180 days' notice. The Distribution Agreement also contains minimum purchase requirements that expire upon the termination of the Distribution Agreement or following U.S. regulatory approval for PerClot. Separate and apart from the terms of the Distribution Agreement, pursuant to the License Agreement, as amended by a September 2, 2011 technology transfer agreement, we can manufacture and sell PerClot, assuming appropriate regulatory approvals, in the U.S. and certain other jurisdictions and may be required to pay royalties to SMI at certain rates on net revenues of products.

We may make contingent payments to SMI of up to $1.0 million if certain U.S. regulatory and certain commercial milestones are achieved.

We are conducting our pivotal clinical trial to gain approval to commercialize PerClot for surgical indications in the U.S. Enrollment was completed in January 2019. We anticipate being in a position to submit Premarket Approval ("PMA") to the FDA in the third quarter of 2021.

As of March 31, 2021 we had $1.5 million in prepaid royalties, $1.7 million in intangible assets, net, and $1.2 million in property and equipment, net, on our Condensed Consolidated Balance Sheets related to the PerClot product line. If we do not ultimately pursue or receive FDA approval to commercialize PerClot in the U.S., these assets could be materially impaired in future periods.

12. Revenue Recognition

Sources of Revenue

We have identified the following revenues disaggregated by revenue source:

- Domestic Hospitals – direct sales of products and preservation services.
- International Hospitals – direct sales of products and preservation services.
- International Distributors – generally these contracts specify a geographic area that the distributor will service, terms and conditions of the relationship, and purchase targets for the next calendar year.
- CardioGenesis Cardiac Laser Console Trials and Sales – CardioGenesis cardiac trialed laser consoles are delivered under separate agreements.

For the three months ended March 31, 2021 and 2020 the sources of revenue were as follows (in thousands):

	Three Months Ended March 31,	
	2021	2020
	(Unaudited)	
Domestic hospitals	$ 36,229	$ 36,336
International hospitals	26,128	19,737
International distributors	8,642	10,245
CardioGenesis cardiac laser therapy	88	111
Total sources of revenue	**$ 71,087**	**$ 66,429**

Also see segment disaggregation information in Note 15 below.

Contract Balances

We may generate contract assets during the pre-delivery design and manufacturing stage of E-xtra DESIGN ENGINEERING product order fulfillment. We assess the balance related to any arrangements in process and determine if the enforceable right to payment creates a material contract asset requiring disclosure. No material arrangements in process existed as of March 31, 2021 and 2020.

We also incur contract obligations on general customer purchase orders that have been accepted but unfulfilled. Due to the short duration of time between order acceptance and delivery of the related product or service, we have determined that the balance related to these contract obligations is generally immaterial at any point in time. We monitor the value of orders accepted but unfulfilled at the close of each reporting period to determine if disclosure is appropriate. The value of orders accepted but unfulfilled as of March 31, 2021 and 2020 was not material.

13. Stock Compensation

Overview

We have stock option and stock incentive plans for employees and non-employee Directors that provide for grants of restricted stock awards (“RSAs”), restricted stock units (“RSUs”), performance stock units (“PSUs”), and options to purchase shares of our common stock at exercise prices generally equal to the fair value of such stock at the dates of grant. We also maintain a shareholder-approved Employee Stock Purchase Plan (the “ESPP”) for the benefit of our employees. The ESPP allows eligible employees to purchase common stock on a regular basis at the lower of 85% of the market price at the beginning or end of each offering period.

Equity Grants

During the three months ended March 31, 2021 the Compensation Committee of our Board of Directors (the “Committee”) authorized awards from approved stock incentive plans of RSUs to certain employees, and RSAs and PSUs to certain Company officers, which, assuming that performance under the PSUs were to be achieved at target levels, together totaled 381,000 shares and had an aggregate grant date market value of $9.5 million.

During the three months ended March 31, 2020 the Committee authorized awards from approved stock incentive plans of RSUs to certain employees, and RSAs and PSUs to certain Company officers, which, assuming that performance under the PSUs were to be achieved at target levels, together totaled 255,000 shares and had an aggregate grant date market value of $6.6 million. The PSUs granted in 2020 represent the right to receive from 60% to 150% of the target number of shares of common stock. In February 2021 the Committee used structured discretion to determine that the 2020 PSUs were earned and should be paid out at 100% of target resulting in a modification of the award which resulted in $960,000 compensation expense during the three months ended March 31, 2021 related to these performance awards.

The Committee authorized, from approved stock incentive plans, grants of stock options to purchase a total of 226,000 and 212,000 shares to certain Company officers during the three months ended March 31, 2021 and 2020, respectively. The exercise prices of the options were equal to the closing stock prices on their respective grant dates.

Employees purchased common stock totaling 36,000 and 30,000 shares in the three months ended March 31, 2021 and 2020, respectively, through the ESPP.

Stock Compensation Expense

The following weighted-average assumptions were used to determine the fair value of options and shares purchased under the ESPP:

	Three Months Ended March 31, 2021	
	Stock Options	**ESPP**
Expected life	5.0 Years	0.5 Years
Expected stock price volatility	0.40	0.46
Risk-free interest rate	0.57%	0.09%

The following table summarizes total stock compensation expenses prior to the capitalization of amounts into deferred preservation and inventory costs (in thousands):

	Three Months Ended March 31,	
	2021	**2020**
RSA, RSU, and PSU expense	$ 2,050	$ 2,156
Stock option and ESPP expense	587	533
Total stock compensation expense	**$ 2,637**	**$ 2,689**

Included in the total stock compensation expense, as applicable in each period, were expenses related to RSAs, RSUs, PSUs, and stock options issued in each respective year, as well as those issued in prior periods that continue to vest during the period, and compensation related to the ESPP. These amounts were recorded as stock compensation expense and were subject to our normal allocation of expenses to inventory costs and deferred preservation costs. We capitalized $157,000 in the three months ended March 31, 2021, and $125,000 in the three months ended March 31, 2020, of the stock compensation expense into our inventory costs and deferred preservation costs.

As of March 31, 2021 we had total unrecognized compensation costs of $14.8 million related to RSAs, RSUs, and PSUs and $3.2 million related to unvested stock options. As of March 31, 2021 this expense is expected to be recognized over a weighted-average period of 1.7 years for PSUs, 2.3 years for stock options, 2.4 years for RSUs, and 1.7 years for RSAs.

14. Loss per Share

The following table sets forth the computation of basic and diluted loss per common share (in thousands, except per share data):

	Three Months Ended March 31,	
Basic loss per common share	**2021**	**2020**
Net loss	$ (3,138)	$ (6,665)
Net loss allocated to participating securities	23	43
Net loss allocated to common shareholders	**$ (3,115)**	**$ (6,622)**
Basic weighted-average common shares outstanding	**38,738**	**37,390**
Basic loss per common share	**$ (0.08)**	**$ (0.18)**

	Three Months Ended March 31,	
Diluted loss per common share	**2021**	**2020**
Net loss	$ (3,138)	$ (6,665)
Net loss allocated to participating securities	23	43
Net loss allocated to common shareholders	**$ (3,115)**	**$ (6,622)**
Basic weighted-average common shares outstanding	38,738	37,390
Effect of dilutive stock options and awards	--	--
Diluted weighted-average common shares outstanding	**38,738**	**37,390**
Diluted loss per common share	**$ (0.08)**	**$ (0.18)**

We excluded stock options from the calculation of diluted weighted-average common shares outstanding if the per share value, including the sum of (i) the exercise price of the options and (ii) the amount of the compensation cost attributed to future services and not yet recognized, was greater than the average market price of the shares because the inclusion of these stock options would be antidilutive to loss per common share. Accordingly, for the three months ended March 31, 2021 and 2020 all stock options and awards were excluded from the calculation of diluted weighted-average common shares outstanding as these would be antidilutive due to the net loss.

15. Segment Information

We have two reportable segments organized according to our products and services: Medical Devices and Preservation Services. The Medical Devices segment includes external revenues from product sales of aortic stents and stent grafts, surgical sealants, On-X, and other product revenues. Aortic stents and stent grafts include JOTEC, AMDS and NEXUS product revenues. Surgical sealants include BioGlue Surgical Adhesive product revenues. The Preservation Services segment includes external services revenues from the preservation of cardiac and vascular tissues. There are no intersegment revenues.

The primary measure of segment performance, as viewed by our management, is segment gross margin or net external revenues less cost of products and preservation services. We do not segregate assets by segment; therefore, asset information is excluded from the segment disclosures below.

The following table summarizes revenues, cost of products and preservation services, and gross margins for our operating segments (in thousands):

	Three Months Ended March 31,	
	2021	**2020**
Revenues:		
Medical devices	$ 53,345	$ 46,420
Preservation services	17,742	20,009
Total revenues	**71,087**	**66,429**
Cost of products and preservation services:		
Medical devices	14,911	13,040
Preservation services	8,338	9,218
Total cost of products and preservation services	**23,249**	**22,258**
Gross margin:		
Medical devices	38,434	33,380
Preservation services	9,404	10,791
Total gross margin	**$ 47,838**	**$ 44,171**

The following table summarizes net revenues by product and service (in thousands):

	Three Months Ended March 31,	
	2021	**2020**
Products:		
Aortic stents and stent grafts	$ 20,205	15,468
Surgical sealants	17,828	16,737
On-X	13,095	12,202
Other	2,217	2,013
Total products	**53,345**	**46,420**
Preservation services	17,742	20,009
Total revenues	**$ 71,087**	**$ 66,429**

Forward-Looking Statements

This Form 10-Q includes “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934 (the “Exchange Act”). Forward-looking statements give our expectations or forecasts of future events as of the date of this Form 10-Q. In some cases, words such as “could,” “may,” “might,” “will,” “would,” “shall,” “should,” “pro forma,” “potential,” “pending,” “intend,” “believe,” “expect,” “anticipate,” “estimate,” “plan,” “future,” “assume,” and variations of these types of words or other similar expressions identify forward-looking statements. These forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Readers are cautioned not to place undue reliance on these forward-looking statements, which are made as of the date of this Form 10-Q.

All statements included herein, other than statements of historical facts, that address activities, events, or developments that we expect or anticipate will or may occur in the future, or that reflect our beliefs about the future and/or expectations, are forward-looking statements, including statements about the following:

- Our belief that new products, new indications, global expansion, and business development are the four growth areas that will drive our business in the future;
- The potential impact of the COVID-19 pandemic on our business operations, cash flow, business development, employees, and research and development projects, including clinical research projects;
- Our belief that our distributors may delay or reduce purchases of products in U.S. Dollars depending on the relative price of goods in their local currencies;
- Our beliefs that the use of surgical adhesives and sealants, with or without sutures and staples, in certain areas can enhance the efficacy of certain procedures through more effective and rapid wound closure;
- Our beliefs and anticipation regarding the favorable attributes and benefits of our products, the basis on which our products compete, our physician education activities, the advantages of our relationships with OPOs, the FDA classification of our medical devices, our compliance with applicable laws and regulations, and the advantages of our intellectual property and its significance to our segments and our business as a whole, our relations with our employees, timelines regarding product launches and regulatory activities and approvals;
- Our beliefs about potential competition and competitive products, potential adverse regulatory consequences, potential security vulnerabilities, and the associated potential adverse effects on our business;
- Our beliefs about the impact of the contaminated saline solution and the tissue processed with contaminated saline solution we identified in the fourth quarter of 2020;
- Our beliefs regarding our global expansion efforts, including the international growth opportunity that would be provided by obtaining regulatory approval for BioGlue in China;
- The dependencies affecting our ability to realize the anticipated business opportunities, growth prospects, synergies, and other benefits of the agreements with Endospan and our acquisition of Ascyrus, and our beliefs about the costs and timelines for certain clinical trial milestones for the regulatory approvals of the NEXUS stent graft system in the U.S. and the AMDS globally;
- Our plans, costs, and anticipated timeline regarding regulatory approval for PerClot in the U.S. and additional international markets and the distribution of PerClot in those markets after the requisite regulatory approvals are obtained;
- Our beliefs regarding the impact alternative anticoagulation therapy may have on the number of patients choosing On-X mechanical heart valves;
- Our belief that revenues for preservation services, particularly revenues for certain high-demand cardiac tissues, can vary from quarter to quarter and year to year due to a variety of factors including: quantity and type of incoming tissues, yields of tissue through the preservation process, timing of receipt of donor information, timing of the release of tissues to an implantable status, demand for certain tissue types due to the number and type of procedures being performed, and pressures from competing products or services;
- Our beliefs regarding the seasonal nature of the demand for some of our products and services and the reasons for such seasonality, if any;
- Our belief that our cash from operations and existing cash and cash equivalents, will enable us to meet our current operational liquidity needs for at least the next twelve months, our expectations regarding future cash requirements, and the impact that our cash requirements might have on our cash flows for the next twelve months;
- Our expectation regarding the impact on cash flows of undertaking significant business development activities and the potential need to obtain additional debt financing or equity financing;

- Our belief that we will incur expenses for research and development projects, including for clinical research projects to gain regulatory approvals for products or indications, including On-X, PerClot, aortic stents and stent grafts, and BioGlue products, and for research and development for new products despite reduced planned spending due to COVID-19 and that our efforts to develop new products and technologies will likely require additional investment, research, and new clinical studies or data;
- Our beliefs about pending and potential legal or other governmental or regulatory proceedings;
- Our expectations regarding the timing of clinical research work and regulatory approvals for and expected distribution of products or indications, including On-X, PerClot, aortic stents and stent grafts, and BioGlue products, and CryoValve SGPV if the FDA reclassifies allograft heart valves as Class III medical devices;
- Our beliefs and expectations regarding the utilization of net operating loss carryforwards from our acquisitions of JOTEC, On-X, Hemosphere, Inc., and Cardiogenesis Corporation;
- Our beliefs about our operating results which may fluctuate significantly on a periodic basis as a result of internal and external factors, including reduced demand for our products, availability of products, materials, and supplies, strategic actions we take such as acquisitions or divestitures, unanticipated costs and expenses, market reception of our new or improved product offerings, and interest rate and currency fluctuations; and
- Other statements regarding projections of future financial and business performance; anticipated growth and trends in our business and the markets relevant to our business, including as our growth relates to our competitors; future production capacity and product supply; the availability and benefits of our products in the future; and the expected timing and impact of our strategic initiatives.

These and other forward-looking statements reflect the views of management at the time such statements are originally made based on certain assumptions and analyses made by us in light of our experience and our perception of historical trends, current conditions, and expected future developments as well as other factors we believe are appropriate in the circumstances and are subject to a number of risks, uncertainties, estimates, and assumptions. Whether actual results and developments will conform with our expectations and predictions is subject to a number of risks and uncertainties which could cause actual results to differ materially and adversely from our expectations, including, without limitation, in addition to those specified in the text surrounding such statements, the risks described in Part II, Item 1A, “Risks Factors” in this Form 10-Q and elsewhere throughout this report, the risks described in our other filings with the Securities and Exchange Commission including the risks described under in Part I, Item 1A, “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2020 and elsewhere throughout that report, and other risks which we may not be able to identify in advance, many of which are beyond our control. Consequently, all of the forward-looking statements made in this Form 10-Q are qualified by these cautionary statements, and there can be no assurance that the actual results or developments anticipated by us will be realized or, even if substantially realized, that they will have the expected consequences to, or effects on, us or our business or operations. We assume no obligation, and expressly disclaim any duty, to update publicly any such forward-looking statements, whether as a result of new information, future events, or otherwise.

PART I - FINANCIAL INFORMATION

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

Overview

CryoLife, Inc. (“CryoLife,” the “Company,” “we,” or “us”) is a leader in the manufacturing, processing, and distribution of medical devices and implantable human tissues used in cardiac and vascular surgical procedures for patients with aortic disease. We have four major product families: aortic stents and stent grafts, surgical sealants, On-X mechanical heart valves and related surgical products, and implantable human tissues. Aortic stents and stent grafts include JOTEC stent grafts and surgical products (“JOTEC”), the Ascyrus Medical Dissection Stent hybrid prosthesis (“AMDS”), and the NEXUS endovascular stent graft system (“NEXUS”). Surgical sealants include BioGlue Surgical Adhesive (“BioGlue”) products. In addition to these four major product families, we sell or distribute PhotoFix bovine surgical patch, PerClot hemostatic powder, CardioGenesis cardiac laser therapy, and NeoPatch chorioamniotic allograft.

We reported quarterly revenues of $71.1 million for the three months ended March 31, 2021, a 7% increase from the three months ended March 31, 2020. The increase in revenues for the three months ended March 31, 2021 was primarily due to increases in revenues from aortic stents and stent grafts, surgical sealants, and On-X, partially offset by decreases in tissue processing service revenues.

See the “Results of Operations” section below for additional analysis of the three months ended March 31, 2021.

Effects of COVID-19

In December 2019 an outbreak of a respiratory illness caused by a new coronavirus named “2019-nCoV” (“COVID-19”) was detected, and by March 11, 2020, the World Health Organization (“WHO”) declared the COVID-19 outbreak a “pandemic.”

Beginning in March 2020 we took steps to address the potential impact of COVID-19 on our employees and operations, and to preserve cash, including reducing expenditures and delaying investments. These steps included but were not limited to, implementing specific protocols to minimize workplace exposures to COVID-19 by our employees; implementing remote work arrangements for most employees we deemed able to do so; restricting business travel; issuing $100.0 million in aggregate principal amount convertible senior notes (“Convertible Senior Notes”); using portions of those proceeds to repay our Revolving Credit Facility and the remainder for general corporate purposes (see the “Liquidity and Capital Resources” identified in Part I, Item 2 of this form 10-Q for further detail of this transaction); implementing hiring restrictions; reducing planned expenditures on some pending clinical trials; imposing senior management cash salary reductions in exchange for cash payments in the second quarter of 2021; requiring our Board of Directors to accept CryoLife stock instead of cash compensation for a six month period through October 2020; and suspending for seven months 2020 management merit increases.

Our efforts to protect our supply chain and reduce the spread of COVID-19 among our employees, including our work-from-home arrangements, were largely successful in 2020 and the first quarter of 2021 as we continued to operate all manufacturing sites at near full production. These efforts have not materially affected our ability to maintain our business operations, including the operation of financial reporting systems, internal control over financial reporting, or disclosure controls and procedures, however, there is no guarantee that these efforts and arrangements will continue to be successful in the future. Further, our reductions or delays in expenditures slowed our progress on certain key R&D initiatives and could in the future continue to adversely impact our business operations or further delay our recovery from the pandemic.

We continue to monitor the impact of the COVID-19 pandemic on our business and recognize that it could continue to negatively impact our business and results of operations during the remainder of 2021 and beyond. The extent to which our operations and financial performance will be impacted by the pandemic during the remainder of 2021 will depend largely on future developments, including global availability and acceptance of the vaccine. If COVID-19 becomes more contagious, including through the spread of variants, if efforts to further contain the effects of COVID-19 are unsuccessful, if COVID-19 impacts our supply chain or employee productivity, or if we continue to experience periods of uncertainty due to COVID-19, it could materially adversely affect our revenues, financial condition, profitability and cash flows.

See the “Risk Factors” identified in Part II, Item 1A of this form 10-Q for risks related to COVID-19.

Critical Accounting Policies

A summary of our significant accounting policies is included in Note 1 of the “Notes to Consolidated Financial Statements” contained in our Form 10-K for the year ended December 31, 2020. Management believes that the consistent application of these policies enables us to provide users of the financial statements with useful and reliable information about our operating results and financial condition. The Condensed Consolidated Financial Statements are prepared in accordance with accounting principles generally accepted in the U.S., which require us to make estimates and assumptions. We did not experience any significant changes during the three months ended March 31, 2021 in any of our Critical Accounting Policies from those contained in our Form 10-K for the year ended December 31, 2020.

New Accounting Pronouncements

See Note 1 of “Notes to Condensed Consolidated Financial Statements” identified in Part I, Item I of this form 10-Q for further discussion of new accounting standards that have been adopted.

Results of Operations
(Tables in thousands)

Revenues

	Revenues for the Three Months Ended March 31,		Percent Change From Prior Year	Revenues as a Percentage of Total Revenues for the Three Months Ended March 31,	
	2021	**2020**		**2021**	**2020**
Products:					
Aortic stents and stent grafts	$ 20,205	$ 15,468	31%	28%	23%
Surgical sealants	17,828	16,737	7%	26%	26%
On-X	13,095	12,202	7%	18%	18%
Other	2,217	2,013	10%	3%	3%
Total products	**53,345**	**46,420**	**15%**	**75%**	**70%**
Preservation services	17,742	20,009	-11%	25%	30%
Total	**$ 71,087**	**$ 66,429**	**7%**	**100%**	**100%**

Revenues increased 7% for the three months ended March 31, 2021, respectively, as compared to the three months ended March 31, 2020. The increase in revenues for the three months ended March 31, 2021 was primarily due to increases in revenues from aortic stents and stent grafts, surgical sealants, and On-X, partially offset by decreases in tissue processing service revenues. Excluding the effects for foreign exchange, revenues increased 4% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. Revenues for the three months ended March 31, 2021 and March 31, 2020 were negatively impacted in certain regions by delays or cancellations of some surgical procedures as a result of reduced hospital capacity and hospital restrictions due to the COVID-19 pandemic, as well as patient reluctance to undergo procedures once the adverse impacts to capacity and restrictions decreased. A detailed discussion of the changes in product revenues and preservation services revenues for the three months ended March 31, 2021 is presented below.

Products

Revenues from products increased 15% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. The increase for the three months ended March 31, 2021 was due to increases in revenues from all product lines. A discussion of the changes in product revenues for aortic stents and stent grafts, surgical sealants, On-X, and other product revenues is presented below.

Sales of certain products through our direct sales force and distributors across Europe and various other countries are denominated in a variety of currencies including Euros, British Pounds, Polish Zlotys, Swiss Francs, Brazilian Reals, and Canadian Dollars, with a concentration denominated in Euros. Each currency is subject to exchange rate fluctuations. For the three months ended March 31, 2021 as compared to the three months ended March 31, 2020, the U.S. Dollar weakened in comparison to major currencies, resulting in revenue increase when these foreign currency denominated transactions were translated into U.S. Dollars. Future changes in these exchange rates could have a material, adverse effect on our revenues denominated in these currencies. Additionally, our sales to many distributors around the world are denominated in U.S. Dollars, and although these sales are not directly impacted by currency exchange rates, we believe that some of our distributors may delay or reduce purchases of products in U.S. Dollars depending on the relative price of these goods in their local currencies.

Aortic Stents and Stent Grafts

Aortic stents and stent grafts, including JOTEC, AMDS, and NEXUS products, are used in endovascular and open vascular and cardiac surgery, as well as for the treatment of complex aortic arch and thoracic aortic diseases.

On September 11, 2019 CryoLife and its wholly-owned subsidiary JOTEC entered into exclusive distribution and loan agreements with Endospan Ltd. (“Endospan”), an Israeli corporation, under which JOTEC obtained exclusive distribution rights for Endospan’s NEXUS and accessories in certain countries in Europe.

On September 2, 2020 CryoLife entered into an agreement to acquire all of the equity interests of Ascyrus Medical LLC ("Ascyrus"). Ascyrus has developed AMDS, an aortic arch remodeling device used for the treatment of acute Type A aortic dissections. AMDS is currently distributed in Europe, the Middle East, and Africa (collectively, "EMEA") and Canada and is included as a component of aortic stents and stent grafts revenues from the date of the acquisition.

Aortic stents and stent graft revenues increased 31% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020.

Aortic stents and stent grafts revenues, excluding original equipment manufacturing ("OEM"), increased 28% for the three months ended March 31, 2021 as compared to the three months ended March 31, 2020. This increase was primarily due to a change in mix of units sold, which increased revenues by 28%, and the effect of foreign exchange rates, which increased revenues by 6%, partially offset by a change in average sales prices, which decreased revenues by 6%.

On a constant currency basis, revenues for aortic stents and stent grafts, excluding OEM, increased 19% in the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. Revenues for the three months ended March 31, 2021 increased primarily in EMEA, partially offset by decreases primarily in Latin America. The revenue increase in EMEA is primarily due to an increase in sales of JOTEC new product launches, as well as sales of AMDS as a result of the Ascyrus acquisition in the third quarter of 2020, and an increase in NEXUS sales as these products continue to penetrate the EMEA market. The decrease in Latin America was primarily in direct markets due to the delay in surgical procedures due to the COVID-19 pandemic. Aortic stents and stent graft OEM sales accounted for less than 1% of product revenues for the three months ended March 31, 2021 and 2020.

Surgical Sealants

Surgical sealants include BioGlue products used as an adjunct to standard methods of achieving hemostasis (such as sutures and staples) in adult patients in open surgical repair of large vessels (such as aorta, femoral, and carotid arteries).

Revenues from the sales of surgical sealants increased 7% for the three months ended March 31, 2021 as compared to the three months ended March 31, 2020. This increase was primarily due to an increase in products sold in higher priced regions, which increased revenues by 6%, and the effect of foreign exchange rates, which increased revenues by 2%, partially offset by a change in average sales prices, which decreased revenues by 1%.

On a constant currency basis, revenues from sales of surgical sealants increased 5% in the three months ended March 31, 2021 compared to the three months ended March 31, 2020 primarily from revenue increases in North America and EMEA, partially offset by decreases primarily in Latin America. The revenue increase in North America market was primarily due to an increase of surgical procedures during the three months ended March 31, 2021 as compared to March 31, 2020. The decrease in Latin America was primarily due to continued delays and cancellations of surgical procedures due to the COVID-19 pandemic.

We are currently seeking regulatory approval for BioGlue in China, and if this effort is successful, management believes this will provide an additional international growth opportunity for BioGlue in future years.

Domestic revenues from surgical sealants accounted for 53% and 49% of total surgical sealant revenues for the three months ended March 31, 2021 and 2020 respectively.

On-X

The On-X catalogue of products includes the On-X prosthetic aortic and mitral heart valves and the On-X ascending aortic prosthesis ("AAP") for heart valve replacement. On-X product revenues also include revenues from the distribution of CarbonAid CO_2 diffusion catheters and from the sale of Chord-X ePTFE sutures for mitral chordal replacement. On-X also generates revenue from pyrolytic carbon coating products produced for OEM customers.

On-X product revenues increased 7% for the three months ended March 31, 2021 as compared to the three months ended Mach 31, 2020.

On-X product revenues, excluding OEM, increased 8% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. This increase was primarily due to an increase in products sold in certain regions which increased revenues by 9%, and the effect of foreign exchange rates, which increased revenues by 1%, partially offset by a change in average sales prices which decreased revenues by 2%.

On a constant currency basis, On-X revenues, excluding OEM, increased 7% in the three months ended March 31, 2021 as compared to the three months ended March 31, 2020 primarily from revenue increases in Asia Pacific and North America, partially offset by decreases primarily in EMEA. Increases in Asia Pacific and North America were due to increases in market share. Decrease in EMEA was due to delays and cancellations of surgical procedures due to the COVID-19 pandemic. On-X OEM sales accounted for less than 1% of product revenues for both the three months ended March 31, 2021 and 2020.

Other

Other revenues are comprised of PhotoFix, PerClot and CardioGenesis Cardiac Laser Therapy product revenues. The increase in other revenues of 10% for the three months ended March 31, 2021 as compared to March 31, 2020 was primarily due to a 17% increase in PhotoFix revenues primarily due to a 15% increase in units sold. The increase in PhotoFix units sold for the three months ended March 31, 2021 was primarily due to an increase in the number of physicians who implant the product compared to the three months ended March 31, 2020 as this product continues to increase penetration in domestic and European markets.

We are conducting our pivotal clinical trial to gain approval to commercialize PerClot for surgical indications in the U.S. Enrollment was completed in January 2019, and we anticipate being in a position to submit the PMA to the FDA in the third quarter of 2021. See also Part I, Item 1A, “Risk Factors—Operational Risks—Our investment in PerClot is subject to significant risks, including our ability to fully realize our investment by obtaining FDA approval and to successfully commercialize PerClot in the U.S. either directly or indirectly.”

Preservation Services

Preservation services includes service revenues from processing cardiac and vascular tissues. Our cardiac valves are primarily used in cardiac replacement and reconstruction surgeries, including the Ross procedure, for patients with endocarditis or congenital heart defects. Our cardiac tissues are primarily distributed in domestic markets. The majority of our vascular preservation services revenues are related to shipments of saphenous veins, which are mainly used in peripheral vascular reconstruction surgeries to avoid limb amputations. Competition with synthetic product alternatives and the availability of tissues for processing are key factors affecting revenue volume that can fluctuate from quarter to quarter. Our vascular tissues are primarily distributed in domestic markets.

We continue to evaluate modifications to our tissue processing procedures in an effort to improve tissue processing throughput, reduce costs, and maintain quality across our tissue processing business. Preservation services revenues, particularly revenues for certain high-demand cardiac tissues, can vary from quarter to quarter and year to year due to a variety of factors including: quantity and type of incoming tissues, yields of tissue through the preservation process, timing of receipt of donor information, timing of the release of tissues for implant, demand for certain tissue types due to the number and type of procedures being performed, and pressures from competing products or services.

In the fourth quarter of 2020, we became aware that a supplier shipped to us a saline solution lot that we use in our tissue processing that contained some contamination in a small number of bottles of the solution lot. The contamination was identified by our in-process quality controls. The contaminated solution is currently estimated to have impacted a small percentage of tissue processed with this solution lot, causing us to write-off approximately $826,000 of tissue in the fourth quarter of 2020. We currently believe that the remaining $5.0 million in quarantined tissue processed with this lot of saline should be available to release for distribution at a later date. We believe that the written-off and quarantined tissue impacted the availability of tissue for distribution and had a negative impact on revenue in the first quarter of 2021. If the tissues held in quarantine are not released, we may record an additional write-off of up to $5.0 million.

Revenues from tissue processing decreased 11% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020 resulting primarily from a decrease in cardiac preservation service revenues primarily due to a 15% decrease in unit shipments of cardiac tissues, which decreased revenues by 18%.

The decrease in unit shipments for the three months ended March 31, 2021 was primarily due to a decrease in pulmonary and aortic valve shipments due to tissues being held in quarantine as a result of the saline solution lot that contained some contamination as described above.

Cost of Products and Preservation Services

Cost of Products

	Three Months Ended March 31,	
	2021	**2020**
Cost of products	$ 14,911	$ 13,040

Cost of products increased 14% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. Cost of products for the three months ended March 31, 2021 and 2020 included costs related to aortic stents and stent grafts, surgical sealants, On-X, and other products.

The increase in cost of products for the three months ended March 31, 2021 was primarily due to an increase in costs related to write-downs of certain products and a change in the mix of products sold during the three months ended March 31, 2021.

Cost of Preservation Services

	Three Months Ended March 31,	
	2021	**2020**
Cost of preservation services	$ 8,338	$ 9,218

Cost of preservation services decreased 10% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. Cost of preservation services includes costs for cardiac and vascular tissue preservation services.

Cost of preservation services decreased in the three months ended March 31, 2021 primarily due to a reduction of unit shipments of cardiac tissue and to a lesser degree, the cost of unit shipments of cardiac and vascular tissue.

Gross Margin

	Three Months Ended March 31,	
	2021	**2020**
Gross margin	$ 47,838	$ 44,171
Gross margin as a percentage of total revenues	67%	66%

Gross margin increased 8% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020 primarily due to a mix of products sold during the three months ended March 31, 2021. Gross margin as a percentage of total revenues increased in the three months ended March 31, 2021 as compared to the three months ended March 31, 2020, primarily due to a mix of products sold, partially offset by write-downs and price reductions of certain products shipped during the three months ended March 31, 2021.

Operating Expenses

General, Administrative, and Marketing Expenses

	Three Months Ended March 31,	
	2021	2020
General, administrative, and marketing expenses	$ 38,638	$ 39,002
General, administrative, and marketing expenses as a percentage of total revenues	54%	59%

General, administrative, and marketing expenses decreased 1% for the three months ended March 31, 2021, as compared to the three months ended March 31, 2020. The decrease in general, administrative, and marketing expenses for the three months ended March 31, 2021 was primarily due to a decrease in marketing and travel expenses from reduced and cancelled travel and events, partially offset by an increase in personnel, commission, and amortization expenses. General, administrative, and marketing expenses included $1.5 million of business development, integration and severance expenses as of the three months ended March 31, 2021 as compared to $823,000 as of the three months ended March 31, 2020. Business development, integration and severance expenses during the three months ended March 31, 2021 were primarily comprised of charges related to the Ascyrus acquisition.

Research and Development Expenses

	Three Months Ended March 31,	
	2021	2020
Research and development expenses	$ 7,754	$ 6,356
Research and development expenses as a percentage of total revenues	11%	10%

Research and development expenses increased 22% for the three months ended March 31, 2021, as compared to March 31, 2020. Research and development spending in the three months ended March 31, 2021 was primarily focused on clinical work to gain regulatory approvals for On-X, PerClot, and JOTEC products. Research and development spending in the three months ended March 31, 2020 was primarily focused on clinical work to gain regulatory approval for On-X and JOTEC products.

Interest Expense

Interest expense was $4.0 million for the three months ended March 31, 2021, as compared to $3.4 million for the three months ended March 31, 2020. Interest expense for the three months ended March 31, 2021 and 2020 relates to interest on debt and uncertain tax positions.

Other Expense, Net

Other expense, net was $1.9 million for the three months ended March 31, 2021, as compared to $3.7 million for the three months ended March 31, 2020. Other expense, net primarily includes the realized and unrealized effects of foreign currency gains and losses.

Earnings

	Three Months Ended March 31,	
	2021	**2020**
Loss before income taxes	$ (4,501)	$ (8,135)
Income tax benefit	(1,363)	(1,470)
Net loss	**$ (3,138)**	**$ (6,665)**
Diluted loss per common share	**$ (0.08)**	**$ (0.18)**
Diluted weighted-average common shares outstanding	**38,738**	**37,390**

We experienced a loss before income taxes for the three months ended March 31, 2021 and 2020. The loss before income taxes for the three months ended March 31, 2021 and 2020 was primarily due to delays and cancellations of some surgical procedures as a result of reduced hospital capacity and hospital restrictions due to the COVID-19 pandemic as well as patient reluctance to undergo procedures once the adverse impacts to capacity and restrictions decreased. These events had an adverse impact on revenues in certain regions as well as the fixed nature of certain operating expenses and an increase in research, development, and clinical expenses.

Our effective income tax rate was a benefit of 30% and 18% for the three months ended March 31, 2021 and March 31, 2020, respectively. The change in the tax rate for the three months ended March 31, 2021 is primarily due to a change in pre-tax book loss, as well as a reduction in the excess tax benefit related to stock compensation for the three months ended March 31, 2021.

The income tax rate for the three months ended March 31, 2021 was favorably impacted by excess tax benefit deductions related to stock compensation, the research and development tax credit, and the reduction of a valuation allowance on prior year items. These factors were partially offset by the unfavorable impacts of non-deductible operating expenses, executive compensation expenses, and the recording of a tax reserve on prior year items.

The income tax rate for the three months ended March 31, 2020 was favorably impacted by excess tax benefit deductions related to stock compensation. These factors were partially offset by the unfavorable impacts of non-deductible operating expenses and executive compensation expenses.

In response to the COVID-19 pandemic, the U.S. government enacted the Coronavirus Aid, Relief and Economic Security Act (“CARES Act”) on March 27, 2020. The CARES Act provides various forms of relief and assistance to U.S. businesses. We recorded a reduction to income taxes payable and deferred tax assets of approximately $1.3 million for the change to the 2019 Section 163(j) interest expense deduction limitation for the three months ended March 2020.

We experienced a net loss and diluted loss per common share for three months ended March 31, 2021 and 2020. Net loss and diluted loss per common share for the three months ended March 31, 2021 was primarily due to a loss before income taxes, as discussed above.

Seasonality

We believe the demand for aortic stents and stent grafts is seasonal, with a decline in demand generally occurring in the third quarter due to the summer holiday season in Europe. However, the nature of any seasonal trends may have been obscured due to integration activities subsequent to the JOTEC Acquisition including the implementation of our distributor-to-direct strategy and our European sales force realignment as well as the recent market introduction of AMDS and NEXUS products.

We believe the demand for BioGlue and On-X products is seasonal, with a decline in demand generally occurring in the third quarter followed by stronger demand in the fourth quarter. We believe that this trend may be due to the summer holiday season in Europe and the U.S.

We are uncertain whether the demand for AMDS and NEXUS products is seasonal, as these products have not fully penetrated many markets and, therefore, the nature of any seasonal trends may not yet be obvious.

We do not believe the demand for our other products is seasonal.

Demand for our cardiac preservation services has traditionally been seasonal, with peak demand generally occurring in the third quarter. We believe this trend for cardiac preservation services is primarily due to the high number of surgeries scheduled during the summer months for school-aged patients. Based on experience in recent years, we believe that this trend is lessening as we are distributing a higher percentage of our tissues for use in adult populations.

Demand for our vascular preservation services is seasonal, with lowest demand generally occurring in the fourth quarter. We believe this trend for vascular preservation services is primarily due to fewer vascular surgeries being scheduled during the winter holiday months.

As a result of the uncertain impact of the COVID-19 pandemic and the resulting shifts of timing in some revenue, our historically observable seasonality of revenues has been obscured in 2021 and may be obscured for the remainder of 2021 and potentially beyond.

Liquidity and Capital Resources

Net Working Capital

As of March 31, 2021 net working capital (current assets of $235.7 million less current liabilities of $58.0 million) was $177.7 million, with a current ratio (current assets divided by current liabilities) of 4 to 1, compared to net working capital of $174.1 million and a ratio of 4 to 1 at December 31, 2020.

Overall Liquidity and Capital Resources

Our primary cash requirements for the three months ended March 31, 2021 were for general working capital needs, interest and principal payments under our Credit Agreement, defined below, capital expenditures for facilities and equipment, and repurchases of stock to cover tax withholdings. We funded our cash requirements through our existing cash reserves and proceeds from stock option exercises.

We believe our cash from operations and existing cash and cash equivalents will enable us to meet our current operational liquidity needs for at least the next twelve months. Our future cash requirements are expected to include interest and principal payments under our Credit Agreement and Convertible Senior Notes (described in “Significant Sources and Uses of Liquidity” section below), expenditures for clinical trials, research and development expenditures, general working capital needs, capital expenditures, and other corporate purposes and may include cash to fund business development activities including obligations in the Endospan and Ascyrus agreements. These items may have a significant effect on our future cash flows during the next twelve months. Subject to the terms of our Credit Agreement, we may seek additional borrowing capacity or financing, pursuant to our current or any future shelf registration statement, for general corporate purposes or to fund other future cash requirements. If we undertake any further significant business development activity, we may need to finance such activities by obtaining additional debt financing or using a registration statement to sell equities. There can be no assurance that we will be able to obtain any additional debt or equity financing at the time needed or that such financing will be available on terms that are favorable or acceptable to us.

Significant Sources and Uses of Liquidity

On December 1, 2017 we entered into a credit and guaranty agreement for a $255.0 million senior secured credit facility, consisting of a $225.0 million secured term loan facility (the “Term Loan Facility”) and a $30.0 million secured revolving credit facility (“the Revolving Credit Facility” and, together with the Term Loan Facility, the “Credit Agreement”). We and each of our existing domestic subsidiaries (subject to certain exceptions and exclusions) guarantee the obligations under the Credit Agreement (the “Guarantors”). The Credit Agreement is secured by a security interest in substantially all existing and after-acquired real and personal property (subject to certain exceptions and exclusions) of us and the Guarantors.

On December 1, 2017 we borrowed the entire $225.0 million Term Loan Facility. The proceeds of the Term Loan Facility were used along with cash on hand and shares of CryoLife common stock to (i) fund the acquisition of JOTEC and its subsidiaries (the “JOTEC Acquisition”), (ii) pay certain fees and expenses related to the JOTEC Acquisition and the Credit Agreement, and (iii) pay the outstanding balance of our prior credit facility. The Revolving Credit Facility may be used for working capital, capital expenditures, acquisitions permitted under the Credit Agreement, and other general corporate purposes pursuant to the terms of the Credit Agreement.

In October 2018 we finalized an amendment to the Credit Agreement to reprice interest rates, resulting in a reduction in the interest rate margins over base rates on the Term Loan Facility. The loan under the Term Loan Facility bears interest, at our option, at a floating annual rate equal to either the base rate, plus a margin of 2.25%, or LIBOR, plus a margin of 3.25%. Prior to the repricing, the optional floating annual rate was equal to either the base rate plus a margin of 3.00%, or LIBOR, plus a margin of 4.00%. The loan under the Revolving Credit Facility bears interest, at our option, at a floating annual rate equal to either the base rate, plus a margin of between 3.00% and 3.25%, depending on our consolidated leverage ratio, or LIBOR, plus a margin of between 4.00% and 4.25%, depending on our consolidated leverage ratio. While a payment event of default or bankruptcy event of default exists, we are obligated to pay a per annum default rate of interest of 2.00% in excess of the interest rate otherwise payable with respect to the overdue principal amount of any loans outstanding and overdue interest payments and other overdue fees and amounts. As of March 31, 2021 the aggregate interest rate was 4.25% per annum. We are obligated to pay an unused commitment fee equal to 0.50% of the unutilized portion of the revolving loans. In addition, we are also obligated to pay other customary fees for a credit facility of this size and type.

The Credit Agreement contains certain customary affirmative and negative covenants, including covenants that limit our ability and the ability of our subsidiaries to, among other things, grant liens, incur debt, dispose of assets, make loans and investments, make acquisitions, make certain restricted payments (including cash dividends), merge or consolidate, change business or accounting or reporting practices, in each case subject to customary exceptions for a credit facility of this size and type. In addition, with respect to the Revolving Credit Facility, when the principal amount of loans outstanding thereunder is in excess of 25% of the Revolving Credit Facility, the Credit Agreement requires us to comply with a specified maximum first lien net leverage ratio.

The Credit Agreement includes certain customary events of default that include, among other things, non-payment of principal, interest, or fees; inaccuracy of representations and warranties; breach of covenants; cross-default to certain material indebtedness; bankruptcy and insolvency; and change of control. Upon the occurrence and during the continuance of an event of default, the lenders may declare all outstanding principal and accrued but unpaid interest under the Credit Agreement immediately due and payable and may exercise the other rights and remedies provided under the Credit Agreement and related loan documents.

In March 2020 as a precautionary measure to increase cash and maintain maximum financial flexibility during the current uncertainty in global markets resulting from the COVID-19 pandemic, we borrowed the entire amount available under our $30.0 million Revolving Credit Facility at an aggregate interest rate of 5.20%. On June 29, 2020 we used some of the net proceeds from the issuance of Convertible Senior Notes to repay the $30.0 million outstanding under our Revolving Credit Facility.

On April 29, 2020 we entered into an amendment to our Credit Agreement. As part of the amendment we obtained a waiver of our maximum first lien net leverage ratio covenant through the end of 2020. In addition, the amendment to our Credit Agreement provides that EBITDA, for covenant testing purposes, in each quarter of 2020 was deemed equal to a fixed value equal to our bank covenant EBITDA in the fourth quarter of 2019, when our first lien net leverage was 3.4x. As a result of these changes, we became subject to a new minimum liquidity covenant. We are also subject to restrictions on certain payments, including cash dividends. The new minimum liquidity covenant required a minimum liquidity of at least $12.0 million as of the last day of any month in 2020, and as of the last day of any quarter through the third quarter of 2021 when our Revolving Credit Facility is drawn in excess of 25% (or $7.5 million) of the amount available as of the last day of any fiscal quarter during that period. Beginning in 2021, if we repay borrowings under our Revolving Credit Facility to 25% or less, no financial maintenance covenants, including the minimum liquidity covenant and the maximum first lien net leverage ratio covenant, are applicable.

On June 18, 2020 we issued $100.0 million aggregate principal amount of 4.25% convertible senior notes with a maturity date of July 1, 2025 (the “Convertible Senior Notes”). The net proceeds from this offering, after deducting initial purchasers’ discounts and costs directly related to this offering, were approximately $96.5 million. On January 1, 2021 we adopted ASU 2020-06 and adjusted the carrying balance of the Convertible Senior Notes to notional. The Convertible Senior Notes balance was $100.0 million recorded in Long-term debt on the Condensed Consolidated Balance Sheets as of March 31, 2021. The Convertible Senior Notes may be settled in cash, stock, or a combination thereof, solely at our discretion. The initial conversion rate of the Convertible Senior Notes is 42.6203 shares per $1,000 principal amount, which is equivalent to a conversion price of approximately $23.46 per share, subject to adjustments. We use the if-converted method for assumed conversion of the Convertible Senior Notes for the diluted earnings per share calculation.

The interest expense recognized on the Convertible Senior Notes includes approximately $1.2 million for the aggregate of the contractual coupon interest, and the amortization of the debt issuance costs as of three months ended March 31, 2021. Interest on the Convertible Senior Notes began accruing upon issuance and is payable semi-annually.

Holders of the Convertible Senior Notes may convert their notes at their option at any time prior to January 1, 2025 but only under the following circumstances: (i) during any calendar quarter commencing after the calendar quarter ending on September 30, 2020 (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, and including, 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; (ii) during the five business day period after any five consecutive trading day period in which the trading price per $1,000 principal amount of 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; (iii) we give a notice of redemption with respect to any or all of the notes, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or (iv) upon the occurrence of specified corporate events. On or after January 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their notes at any time, regardless of the foregoing circumstances.

We cannot redeem the Convertible Senior Notes before July 5, 2023. We can redeem them on or after July 5, 2023, in whole or in part, at our option, if the last reported sale price per share of our common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption. We may redeem for cash all or part of the Convertible Senior Notes at a redemption price equal to 100% of the principal amount of the redeemable Convertible Senior Notes, plus accrued and unpaid interest to, but excluding, the redemption date. No principal payments are due on the Convertible Senior Notes prior to maturity. Other than restrictions relating to certain fundamental changes and consolidations, mergers or asset sales and customary anti-dilution adjustments, the Convertible Senior Notes do not contain any financial covenants and do not restrict us from conducting significant restructuring transactions or issuing or repurchasing any of its other securities. As of March 31, 2021 we are not aware of any current events or market conditions that would allow holders to convert the Convertible Senior Notes. We used a portion of the proceeds to pay off the $30.0 million outstanding under our Revolving Credit Facility and finance the Ascyrus transaction and anticipate using the remaining funds for general corporate purposes.

On September 2, 2020 we entered into a Securities Purchase Agreement (the “Ascyrus Agreement”) to acquire 100% of the outstanding equity interests of Ascyrus. Ascyrus is the developer of AMDS, the world’s first aortic arch remodeling device for the use in the treatment of acute Type A aortic dissections.

Under the terms of the Ascyrus Agreement, we will pay an aggregate of up to $200.0 million in consideration, consisting of: (i) a cash payment of approximately $60.0 million and the issuance of $20.0 million in shares of CryoLife common stock, in each case, that were delivered at the closing of the acquisition, (ii) if the U.S. Food and Drug Administration (the “FDA”) approves an Investigational Device Exemption (“IDE”) application for the AMDS, a cash payment of $10.0 million and the issuance of $10.0 million in shares of CryoLife common stock, (iii) if the FDA approves a Premarket Approval (“PMA”) application submitted for the AMDS, a cash payment of $25.0 million, (iv) if regulatory approval of the AMDS is obtained in Japan on or before June 30, 2027, a cash payment of $10.0 million, (v) if regulatory approval of the AMDS is obtained in China on or before June 30, 2027, a cash payment of $10.0 million and (vi) a potential additional consideration cash payment capped at $55.0 million (or up to $65.0 million to $75.0 million if the Japanese or Chinese approvals are not secured on or before June 30, 2027 and those approval milestone payments are added to the potential additional consideration cash payment cap) calculated as two times the incremental worldwide sales of the AMDS (or any other acquired technology or derivatives of such acquired technology) outside of the European Union during the three-year period following the date the FDA approves a Premarket Approval application submitted for the AMDS. Upon closing of the acquisition on September 2, 2020, we paid $82.4 million consisting of $62.4 million in cash consideration, and $20.0 million in shares of CryoLife common stock. The number of shares issued was based on a 10-day moving volume weighted average closing price of a share of CryoLife common stock as of the date immediately prior to closing, resulting in an issuance of 991,800 shares of CryoLife common stock.

As of March 31, 2021 approximately 37% of our cash and cash equivalents were held in foreign jurisdictions.

Net Cash Flows from Operating Activities

Net cash used in operating activities was $3.0 million for the three months ended March 31, 2021, as compared to cash provided by operating activities of $2.6 million for the three months ended March 31, 2020.

We use the indirect method to prepare our cash flow statement and, accordingly, the operating cash flows are based on our net loss, which is then adjusted to remove non-cash items, items classified as investing and financing cash flows, and changes in operating assets and liabilities from the prior year end. For the three months ended March 31, 2021 these non-cash items included $6.0 million in depreciation and amortization expenses, $2.5 million in non-cash compensation, and $4.2 million of deferred income tax changes.

Our working capital needs, or changes in operating assets and liabilities, also affected cash from operations. For the three months ended March 31, 2021 these included the unfavorable effect of a $5.9 million increase in inventory balances and deferred preservation costs, the unfavorable effect of a $3.3 million increase in receivables, and the unfavorable effect of a $1.3 million increase in prepaid expenses and other assets, partially offset by the favorable effect of a $1.6 million increase in accounts payable, accrued expenses, and other liabilities.

Net Cash Flows from Investing Activities

Net cash used in investing activities was $810,000 for the three months ended March 31, 2021, as compared to $2.9 million for the three months ended March 31, 2020. During the three months ended March 31, 2021 cash flows used in investing activities included $1.5 million related to capital expenditures.

Net Cash Flows from Financing Activities

Net cash used in financing activities was $2.1 million for the three months ended March 31, 2021, as compared to cash provided by financing activities of $28.5 million for the three months ended March 31, 2020. The current year cash used in financing activities was primarily due to $1.8 million for repurchases of common stock to cover tax withholdings.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements.

Scheduled Contractual Obligations and Future Payments

Our long-term debt obligations and interest payments include $319.8 million of scheduled principal payments and anticipated interest payments related to our Credit Agreement, Convertible Senior Notes, and JOTEC governmental loans.

We have contingent payment obligations that include up to $120.0 million to be paid to the former shareholders of Ascyrus, of which $10.0 million is expected to be paid in CryoLife common stock, upon the achievement of certain milestones described in the “Significant Sources of and Uses of Liquidity” section above. We anticipate making a $5.0 million third tranche payment under the Endospan Loan upon receipt of certification that certain approvals and clinical trial milestones have been achieved. We have other contingent payment obligations if certain U.S. regulatory approvals and certain commercial milestones are achieved related to our transaction with Starch Medical, Inc. (“SMI”) for PerClot and other licensed technologies.

Our operating and finance lease obligations result from the lease of land and buildings that comprise our corporate headquarters and our various manufacturing facilities, leases related to additional manufacturing, office, and warehouse space, leases on Company vehicles, and leases on a variety of office equipment and other equipment.

We have purchase commitments that include obligations from agreements with suppliers, one of which is the minimum purchase requirements for PerClot under a distribution agreement with SMI. Pursuant to the terms of the distribution agreement, we may terminate that agreement, including the minimum purchase requirements set forth in the agreement for various reasons, one of which is if we obtain FDA approval for PerClot.

Capital Expenditures

Capital expenditures were $1.5 million and $2.5 million for the three months ended March 31, 2021 and 2020, respectively. Capital expenditures in the three months ended March 31, 2021 were primarily related to routine purchases of manufacturing and tissues processing equipment, leasehold improvements needed to support our business, computer equipment, and software.

Risks and Uncertainties

See the "Risk Factors" identified in Part II, Item 1A of this Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate Risk

Our interest income and interest expense are sensitive to changes in the general level of U.S. interest rates. In this regard, changes in U.S. interest rates affect the interest earned on our cash and cash equivalents of $56.6 million as of March 31, 2021 and interest paid on the outstanding balances, if any, of our variable rate Revolving Credit Facility, Term Loan Facility, and Convertible Senior Notes. A 10% adverse change in interest rates, as compared to the rates experienced by us in the three months ended March 31, 2021, affecting our cash and cash equivalents, restricted cash and securities, Term Loan Facility, Revolving Credit Facility, and Convertible Senior Notes would not have a material effect on our financial position, results of operations, or cash flows.

Foreign Currency Exchange Rate Risk

We have balances, such as cash, accounts receivable, accounts payable, and accruals that are denominated in foreign currencies. These foreign currency denominated balances are sensitive to changes in exchange rates. In this regard, changes in exchange rates could cause a change in the U.S. Dollar equivalent of cash or funds that we will receive in payment for assets or that we would have to pay to settle liabilities. As a result, we could be required to record these changes as gains or losses on foreign currency translation.

We have revenues and expenses that are denominated in foreign currencies. Specifically, a portion of our international BioGlue, On-X, PerClot, and JOTEC revenues are denominated in Euros, British Pounds, Swiss Francs, Polish Zlotys, Canadian Dollars, and Brazilian Reals, and a portion of our general, administrative, and marketing expenses are denominated in Euros, British Pounds, Swiss Francs, Polish Zlotys, Canadian Dollars, Brazilian Reals and Singapore Dollars. These foreign currency transactions are sensitive to changes in exchange rates. In this regard, changes in exchange rates could cause a change in the U.S. Dollar equivalent of net income from transactions conducted in other currencies. As a result, revenues and expenses could fluctuate related to a change in exchange rates.

An additional 10% adverse change in exchange rates from the exchange rates in effect on March 31, 2021 affecting our balances denominated in foreign currencies could impact our financial position or cash flows by approximately $10.0 million. An additional 10% adverse change in exchange rates from the weighted-average exchange rates experienced by us for the three months ended March 31, 2021 affecting our revenue and expense transactions denominated in foreign currencies, would not have had a material impact on our financial position, profitability, or cash flows.

Item 4. Controls and Procedures.

We maintain disclosure controls and procedures ("Disclosure Controls") as such term is defined under Rule 13a-15(e) promulgated under the Exchange Act. These Disclosure Controls are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to management, including to the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), as appropriate, to allow timely decisions regarding required disclosures.

Our management, including our President and CEO and our Executive Vice President of Finance, Chief Operating Officer, and CFO, does not expect that our Disclosure Controls will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. The design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving our stated goals under all potential future conditions. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Due to the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within CryoLife have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Our Disclosure Controls have been designed to provide reasonable assurance of achieving their objectives.

Our management utilizes the criteria set forth in "Internal Control-Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission to evaluate the effectiveness of our Disclosure Controls over financial reporting. Based upon the most recent Disclosure Controls evaluation conducted by management with the participation of the CEO and CFO, as of March 31, 2021, the CEO and CFO have concluded that our Disclosure Controls were effective at a reasonable assurance level to satisfy their objectives and to ensure that the information required to be disclosed by us in our periodic reports is accumulated and communicated to management, including the CEO and CFO, as appropriate to allow timely decisions regarding disclosure and is recorded, processed, summarized, and reported within the time periods specified in the U.S. Securities and Exchange Commission's rules and forms.

As disclosed above, on September 2, 2020 we entered into the Ascyrus Agreement to acquire 100% of the outstanding equity interests of Ascyrus. We are currently in the process of implementing CryoLife's internal control structure over these operations.

Part II – OTHER INFORMATION

Item 1. Legal Proceedings.

From time to time, we are involved in legal proceedings concerning matters arising from the conduct of our business activities. We regularly evaluate the status of legal proceedings in which we are involved in order to assess whether a loss is probable or whether there is a reasonable possibility that a loss or additional loss may have been incurred and to determine if accruals are appropriate. We further evaluate each legal proceeding to assess whether an estimate of possible loss or range of loss can be made.

Based on current knowledge, we do not believe that there are any pending matters that could potentially have a material adverse effect on our business, financial condition, results of operations, or cash flows. We are, however, engaged in various legal actions in the normal course of business. There can be no assurances in light of the inherent uncertainties involved in any potential legal proceedings, some of which are beyond our control, and an adverse outcome in any legal proceeding could be material to our results of operations or cash flows for any particular reporting period.

Item 1A. Risk Factors.

Risks Relating to Our Business

Our business involves a variety of risks and uncertainties, known and unknown, including, among others, the risks discussed below. These risks should be carefully considered together with the other information provided in our Annual Report and in our other filings with the SEC. Our failure to adequately anticipate or address these risks and uncertainties may have a material, adverse impact on our business, reputation, revenues, financial condition, profitability, and cash flows. Additional risks and uncertainty not presently known or knowable to us, or that we currently believe to be immaterial, may also adversely affect our business.

Business and Economic Risks

COVID-19, and similar outbreaks, could have a material, adverse impact on us.

During 2020 and 2021, businesses, communities, and governments worldwide have taken and continue to take a wide range of actions to mitigate the spread and impact of COVID-19, leading to an unprecedented impact on the global economy. Hospitals and other healthcare providers have adopted differing approaches to address the surge and resurgence of COVID-19 cases, including their impact on healthcare workers, such as postponing elective and non-emergent procedures, restricting access to their facilities, cancelling elective procedures, or re-allocating scarce resources to some critically ill patients. Although some areas have seen a decline in COVID-19 cases, the potential for additional impact from new variants of COVID-19 and longer than anticipated timelines for widespread therapeutic and vaccine availability remain. These conditions have impacted and could continue to impact our business activities, including the following activities:

- Our product sales. Certain regions have experienced an impact on revenues in the three months ended March 31, 2021, due to the COVID-19 pandemic. The extent to which our financial performance will be impacted by the pandemic in 2021 and beyond will depend largely on future developments, including global availability, and acceptance, of the vaccine.
- Our business operations. In 2020, we took several steps to address the impact of COVID-19 on our employees, cash consumption, and operations, including reducing expenditures and delaying investments. The reductions and delays we adopted could adversely impact our business operations or delay our recovery from the effects of the pandemic. The COVID-19 virus and its variants are contagious and our efforts to contain the spread of COVID-19 and its variants among our employees, including our key personnel, and to protect our supply chain may not succeed.
- Our management of our indebtedness. Partly as a precautionary measure to increase cash and maintain maximum financial flexibility during the COVID-19 pandemic, we issued $100.0 million aggregate principal amount of 4.25% convertible senior notes with a maturity date of July 1, 2025 (“Convertible Senior Notes”), using portions of those proceeds to repay our Revolving Credit Facility and retaining the remainder for general corporate purposes which may limit our operational flexibility and adversely affect our ability to raise additional capital.
- Our research and development projects. We reduced spending on research and development projects, including clinical research projects. These reductions could adversely impact future revenue, and additional reductions in spending might be implemented, further impacting future revenue. In addition, our ability to conduct our ongoing research and development projects in markets that are affected by COVID-19 has been, and could continue to be, adversely impacted. Enrollment and timelines for our clinical trials have been and might continue to be impacted as healthcare providers reprioritize resources and limit access to healthcare facilities or as patients decline to participate or are hesitant to voluntarily visit healthcare facilities. In addition, COVID-19-related impacts on government and regulatory agencies have slowed and might continue to slow timelines for regulatory actions, including approvals.

If COVID-19 or its variants continue to spread, if efforts to contain COVID-19 or its variants continue or are unsuccessful, if we experience new infections of COVID-19 in areas previously successful in containing its spread, or if COVID-19 or its variants spread among our employees or impacts our supply chain, it could materially, adversely affect our revenues, financial condition, profitability, and cash flows. These adverse developments or a prolonged period of uncertainty could adversely affect our financial performance.

We are subject to a variety of risks due to our global expansion.

Our international operations subject us to a number of risks, which may vary significantly from the risks we face in our U.S. operations, including:

- Difficulties and costs associated with staffing, establishing and maintaining internal controls, managing foreign operations and distributor relationships, and selling directly to customers;
- Broader exposure to corruption and expanded compliance obligations, including under the Foreign Corrupt Practices Act, the U.K. Bribery Law, local anti-corruption laws, Office of Foreign Asset Control administered sanction programs, and the European Union’s General Data Protection Regulation;
- Overlapping and potentially conflicting, or unexpected changes in, international legal and regulatory requirements or reimbursement policies and programs;

- Longer and more expensive collection cycles in certain countries, particularly those in which our primary customers are government-funded hospitals;
- Changes in currency exchange rates, particularly fluctuations in the Euro as compared to the U.S. Dollar;
- Potential adverse tax consequences of overlapping tax structures; and
- Potential adverse financial and regulatory consequences resulting from the exit of the U.K. from the European Union, or "Brexit."

We operate in highly competitive market segments, face competition from large, well-established medical device companies and tissue service providers with greater resources and may not be able to compete effectively.

The market for our products and services is competitive and affected by new product introductions and activities of other industry participants. We face intense competition in virtually all of our product lines. A significant percentage of market revenues from competitive products are generated by Baxter International, Inc.; Ethicon (a Johnson & Johnson Company); Medtronic, Inc.; Abbott Laboratories; Edwards Lifesciences Corp.; Bard, a subsidiary of Becton, Dickinson and Company; Integra Life Sciences Holdings; LifeNet; Anteris Technologies, Inc.; Aziyo Biologics; Cook Medical; Gore & Associates; Terumo Aortic Corp.; LeMaitre Vascular, Inc.; Maquet, Inc.; Pfizer, Inc.; and BioCer Entwicklungs-GmbH. Several of our competitors enjoy competitive advantages over us, including:

- Greater financial and other resources for research and development, commercialization, acquisitions, and litigation;
- Greater name recognition as well as more recognizable trademarks for products similar to products that we sell;
- More established record of obtaining and maintaining regulatory product clearances or approvals;
- More established relationships with healthcare providers and payors;
- Lower cost of goods sold or preservation costs; and
- Larger direct sales forces and more established distribution networks.

We are significantly dependent on our revenues from tissue preservation services and are subject to a variety of risks affecting them.

Tissue preservation services are a significant source of our revenues, accounting for 25% and 30% of revenues for the three months ended March 31, 2021 and 2020, respectively, and as such, we face risks if we are unable to:

- Source sufficient quantities of some human tissue or address potential excess supply of others. We rely primarily upon the efforts of third-parties to educate the public and foster a willingness to donate tissue. Factors beyond our control such as supply, regulatory changes, negative publicity concerning methods of tissue recovery or disease transmission from donated tissue, or public opinion of the donor process as well as our own reputation in the industry can negatively impact the supply of tissue;
- Compete effectively, as we may be unable to capitalize on our clinical advantages or our competitors may have advantages over us in terms of cost structure, pricing, back office automation, marketing, and sourcing; or
- Mitigate sufficiently the risk that tissue can become contaminated during processing; that processed tissue cannot be end-sterilized and hence carries an inherent risk of infection or disease transmission or that our quality controls can eliminate that risk.

In addition, U.S. and foreign governmental authorities have adopted laws and regulations that restrict tissue preservation services. Any of these laws or regulations could change, including becoming more restrictive or our interpretation of them could be challenged by governmental authorities.

We are significantly dependent on our revenues from BioGlue and are subject to a variety of related risks.

BioGlue Surgical Adhesive ("BioGlue") is a significant source of our revenues, accounting for 26% of revenues for the three months ended March 31, 2021 and 2020 and as such, any risk adversely affecting our BioGlue products or business would likely be material to our financial results. We face the following risks related to BioGlue:

- Competing effectively with our major competitors, as they may have advantages over us in terms of cost structure, supply chain, pricing, sales force footprint, and brand recognition;

- We may be unable to obtain approval to commercialize BioGlue in certain non U.S. countries as fast as our competitors do of their products or at all. We also may not be able to capitalize on new BioGlue approvals, including for new indications, in non U.S. countries;
- BioGlue contains a bovine blood protein. Animal-based products are subject to increased scrutiny from the public and regulators, who may seek to impose additional regulations or product bans in certain countries on such products; BioGlue is a mature product and other companies may use the inventions disclosed in expired BioGlue patents to develop and make competing products; and
- BioGlue faces potential adverse regulatory consequences resulting from the exit of the U.K. from the European Union, or "Brexit." See Part I, Item 1A, "Risk Factors—Industry Risks— Our products and tissues are highly regulated and subject to significant quality and regulatory risks."

We are significantly dependent on our revenues from aortic stents and stent grafts and are subject to a variety of related risks.

Aortic stents and stent grafts is a significant source of our revenues, accounting for 28% and 23% of revenues for the three months ended March 31, 2021 and 2020, respectively, and as such, any risk adversely affecting aortic stents and stent grafts would likely be material to our financial results. We face the following aortic stents and stent grafts related risks based on our ability to:

- Compete effectively with our major competitors, as they may have advantages over us in terms of cost structure, supply chain, pricing, sales force footprint, and brand recognition;
- Develop innovative and in-demand aortic repair products;
- Respond adequately to enhanced regulatory requirements and enforcement activities;
- Meet demand for aortic stents and stent grafts as we seek to expand our business globally; and
- Maintain a productive working relationship with our Works Council in Germany.

We are significantly dependent on our revenues from On-X and are subject to a variety of related risks.

On-X is a significant source of our revenues, accounting for 18% of revenues for the three months ended March 31, 2021 and 2020 and as such, any risk adversely affecting our On-X products or business would likely be material to our financial results. We face risks based on our ability to:

- Compete effectively with some of our major competitors, as they may have advantages over us in terms of cost structure, supply chain, pricing, sales force footprint, and brand recognition;
- Take market share in the mechanical heart valve market based on the FDA's approved lower International Normalized Ratio ("INR") indication or complete the associated FDA mandated post-approval studies;
- Address clinical trial data or changes in technology that may reduce the demand for mechanical heart valves, such as transcatheter aortic valve replacement, or "TAVR" devices;
- Manage risks associated with less favorable contract terms for On-X products on consignment at hospitals;
- Respond adequately to enhanced OUS regulatory requirements or enforcement activities; and
- Receive timely renewal certifications in certain markets.

Continued fluctuation of foreign currencies relative to the U.S. Dollar could materially, adversely affect our business.

The majority of our foreign product revenues are denominated in Euros and, as such, are sensitive to changes in exchange rates. In addition, a portion of our dollar-denominated and euro-denominated product sales are made to customers in other countries who must convert local currencies into U.S. Dollars or Euros in order to purchase these products. We also have balances, such as cash, accounts receivable, accounts payable, and accruals that are denominated in foreign currencies. These foreign currency transactions and balances are sensitive to changes in exchange rates. Fluctuations in exchange rates of Euros or other local currencies in relation to the U.S. Dollar could materially reduce our future revenues as compared to the comparable prior periods. Should this occur, it could have a material, adverse impact on our revenues, financial condition, profitability, and cash flows.

Our charges resulting from acquisitions, restructurings, and integrations may materially, adversely affect the market value of our common stock.

We account for the completion of acquisitions using the purchase method of accounting. Our financial results could be adversely affected by a number of financial adjustments required by purchase accounting such as:

- We may incur added amortization expense over the estimated useful lives of some acquired intangible assets;
- We may incur additional depreciation expense as a result of recording purchased tangible assets;
- We may be required to incur material charges relating to any impairment of goodwill and intangible assets;
- Cost of sales may increase temporarily if acquired inventory is recorded at fair market value;
- If acquisition consideration consists of earn-outs, our earnings may be affected by changes in estimates of future contingent consideration; or
- Earnings may be affected by transaction and integration costs, which are expensed immediately.

Our existing insurance coverage may be insufficient, and we may be unable to obtain insurance in the future.

We maintain claims-made insurance policies to mitigate our financial exposure to securities, as well as product and tissue processing liability, claims that are reported to the insurance carrier while the policy is in effect. These policies do not include coverage for punitive damages. Although we have insurance for product and tissue processing liabilities, securities, property, and general liabilities, if we are unsuccessful in arranging cost-effective acceptable resolutions of claims, it is possible that our insurance program may not be adequate to cover any or all possible claims or losses, including losses arising out of natural disasters or catastrophic circumstances. Any significant claim could result in an increase in our insurance rates or jeopardize our ability to secure coverage on reasonable terms, if at all.

Any securities or product liability/tissue processing claim, even a meritless or unsuccessful one, could be costly to defend, and result in diversion of our management's attention from our business, adverse publicity, withdrawal of clinical trial participants, injury to our reputation, or loss of revenue.

Operational Risks

We are heavily dependent on our suppliers and contract manufacturers to provide quality products.

The materials and supplies used in our product manufacturing and tissue processing are subject to regulatory requirements and oversight. If materials or supplies used in our processes fail to meet these requirements or are subject to regulatory enforcement action, they may have to be scrapped, or our products or tissues could be rejected during or after processing, recalled, or rejected by customers. In these cases, we may have to immediately scrap raw or in process materials or expense the costs of manufacturing or preservation.

As an example of this risk, in the fourth quarter of 2020 we became aware that a supplier shipped to us a lot of saline solution that we use in our tissue processing that contained some contamination. The contamination was identified by our routine quality controls. The contaminated solution is currently estimated to have impacted a small percentage of the tissue processed with this lot of solution, causing us to write-off those contaminated tissues. We are conducting further review to determine if the remaining tissue processed with this lot of solution can be released for distribution.

In addition, if these materials or supplies or changes to them do not receive regulatory approval or are recalled, if the related suppliers and/or their facilities are shut down temporarily or permanently, for any reason, or if the related suppliers are otherwise unable or unwilling to supply us, we may not have sufficient materials or supplies to manufacture our products or process tissues. In addition, we rely on contract manufacturers to manufacture some of our products or to provide additional manufacturing capacity for some products. If these contract manufacturers fail to meet our quality standards or other requirements or if they are unable or unwilling to supply the products, we may not be able to meet demand for these products. Our ability to fully recover all possible losses from these suppliers and contract manufacturers may have practical limitations imposed by factors like industry standard contractual terms or the financial resources of the adverse party.

We are dependent on single and sole-source suppliers and single facilities.

Some of the materials, supplies, and services in our product manufacturing or tissue processing, as well as some of our products, are sourced from single- or sole-source suppliers. As a result, our ability to negotiate favorable terms with those suppliers may be limited, and if those suppliers experience operational, financial, quality, or regulatory difficulties, or if those suppliers and/or their facilities refuse to supply us or cease operations temporarily or permanently, we could be forced to cease product manufacturing or tissue processing until the suppliers resume operations, until alternative suppliers could be identified and qualified, or permanently if the suppliers do not resume operations and no alternative suppliers could be identified and qualified. We could also be forced to purchase alternative materials, supplies, or services with unfavorable terms due to diminished bargaining power.

As an example of these risks, in 2019 we lost our supply of handpieces for cardiac laser therapy resulting from a manufacturing location change at our supplier that ultimately required a PMA supplement and FDA approval before handpiece manufacturing and distribution could resume. We anticipate resumption of a very limited supply during the first half of 2021.

We also conduct all of our own manufacturing operations at three facilities: Austin, Texas for On-X products, Hechingen, Germany for JOTEC products, and Kennesaw, Georgia for all other products. The NEXUS product is solely manufactured by Endospan in Herzelia, Israel, and the AMDS product is solely manufactured by a supplier in Charlotte, North Carolina. If one of these facilities ceases operations temporarily or permanently, for any reason, our business could be substantially disrupted.

We are dependent on our key personnel.

Our business and future operating results depend in significant part upon the continued contributions of our key personnel, including qualified personnel with medical device and tissue processing experience, and senior management with experience in the medical device or tissue processing space, some of whom would be difficult to replace. Our business and future operating results, including production at our manufacturing and tissue processing facilities, also depend in significant part on our ability to attract and retain qualified management, operations, processing, marketing, sales, and support personnel. Our facilities are in Kennesaw, Georgia; Austin, Texas; and Hechingen, Germany, where the supply of qualified medical device and tissue processing personnel is limited. Competition for such personnel is significant, and we cannot ensure that we will be successful in attracting or retaining them. We face risks if we lose any key employees to other employers or due to severe illness, death or retirement, if any of our key employees fail to perform adequately, or if we are unable to attract and retain skilled employees.

We continue to evaluate expansion through acquisitions of, or licenses with, investments in, and distribution arrangements with, other companies or technologies, which may carry significant risks.

One of our growth strategies is to pursue select acquisitions, licensing, or distribution rights with companies or technologies that complement our existing products, services, and infrastructure. In connection with one or more of these transactions, we may:

- Issue additional equity securities that would dilute our stockholders' ownership interest;
- Use cash we may need in the future to operate our business;
- Incur debt, including on terms that could be unfavorable to us or debt we might be unable to repay;
- Structure the transaction resulting in unfavorable tax consequences, such as a stock purchase that does not permit a step-up in basis for the assets acquired;
- Be unable to realize the anticipated benefits of the transaction; or
- Assume material unknown liabilities associated with the acquired business.

We may not realize all the anticipated benefits of our business development activities.

As part of our efforts to drive growth by pursuing select acquisition, license, and distribution opportunities that are aligned to our objectives and complement our existing products, services, and infrastructure, we have completed several transactions in recent years and may pursue similar additional transactions in the future. Examples of these activities include the following:

- On December 1, 2017 we acquired JOTEC AG, a Swiss entity that we converted to JOTEC GmbH and subsequently merged with our Swiss acquisition entity, Jolly Buyer Acquisition GmbH and its subsidiaries;
- On September 11, 2019 we entered into various agreements with Endospan, Ltd. ("Endospan"), an Israeli medical device manufacturer (the "Endospan Transaction"). The Endospan Transaction included an exclusive distribution agreement for the NEXUS stent graft system ("NEXUS") in Europe; an agreement ("Endospan Loan") for a secured loan from CryoLife to Endospan; and a security purchase option agreement for CryoLife to purchase all the then outstanding Endospan securities from Endospan's existing securityholders upon FDA approval of NEXUS; and
- On September 2, 2020 we acquired 100% of the outstanding shares of Ascyrus Medical LLC ("Ascyrus"), the developer of the Ascyrus Medical Dissection Stent ("AMDS").

Our ability to realize the anticipated business opportunities, growth prospects, cost savings, synergies, and other benefits of these transactions depends on a number of factors including our ability to:

- Leverage our global infrastructure to sell and cross-market the acquired products;
- Drive adoption of NEXUS and AMDS in the European and other markets, including our ability to manage the substantial requirements for NEXUS procedures for product training, implant support, and proctoring;
- Bring acquired products to the U.S. market, including AMDS, and the JOTEC products;
- Harness the JOTEC product pipeline and research and development capabilities;
- Obtain regulatory approvals in relevant markets, including our ability to obtain Conformité Européene Mark product certification ("CE Mark") for pipeline products and obtain or maintain certification for pipeline and current products at all;
- Execute on development and clinical trial timelines for acquired products;
- Carry, service, and manage significant debt and repayment obligations; and
- Manage the unforeseen risks and uncertainties related to these transactions, including any related to intellectual property rights.

Additionally, our ability to realize the anticipated business opportunities, growth prospects, synergies, and other benefits of the Endospan Transaction depends on a number of additional factors including Endospan's ability to (a) comply with the Endospan Loan and other debt obligations, and avoid an event of default; (b) successfully commercialize NEXUS in markets in and outside of Europe; (c) meet demand for NEXUS; (d) meet quality and regulatory requirements; (e) manage any intellectual property risks and uncertainties associated with NEXUS; and (f) obtain FDA approval of NEXUS.

Many of these factors are outside of our control and any one of them could result in increased costs, decreased revenues, and diversion of management's time and energy. The benefits of these transactions may not be achieved within the anticipated time frame or at all. Any of these factors could negatively impact our earnings per share, decrease or delay the expected accretive effect of the acquisition, and negatively impact the price of our common stock. In addition, if we fail to realize the anticipated benefits of an acquisition, we could experience an interruption or loss of momentum in our existing business activities.

Our investment in PerClot is subject to significant risks, including our ability to fully realize our investment by obtaining FDA approval and to successfully commercialize PerClot in the U.S. either directly or indirectly.

In 2010 and 2011, we entered into various agreements with SMI pursuant to which, among other things, we (i) may distribute PerClot in certain international markets.; (ii) acquired technology to assist in the production of a key component in PerClot; and (iii) obtained the exclusive right to pursue, obtain, and maintain FDA Pre-Market Approval ("PMA") for PerClot. We are currently conducting our pivotal trial to gain PMA for PerClot for surgical indications, and we completed enrollment in January 2019. We anticipate being in a position to submit to the FDA during the third quarter of 2021. There is no guarantee, however, that we will obtain FDA approval when anticipated or at all including based on factors such as, unforeseen scheduling difficulties and unfavorable results at stages in the PMA process. We may also decide to delay or terminate our pursuit of PMA at any time due to changing conditions at CryoLife, in the marketplace, or in the economy in general. Even if we receive PMA for PerClot, we may be unsuccessful in selling PerClot in the U.S. By the time we secure approvals, competitors may have substantial market share or significant market protections. We may also be unsuccessful in selling outside the U.S. due, in part, to a proliferation of generic competitors, any breach by SMI of its contractual obligations, or the lack of adequate intellectual property protection or enforcement.

Significant disruptions of information technology systems or breaches of information security systems could adversely affect our business.

We rely upon a combination of sophisticated information technology systems as well as traditional recordkeeping to operate our business. In the ordinary course of business, we collect, store, and transmit confidential information (including, but not limited to, information about our business, personal information, intellectual property, and, in some instances, patient data). Our information technology and information security systems and records are potentially vulnerable to security breaches, service interruptions, data loss, or malicious attacks from inadvertent or intentional actions by our employees, vendors or other third parties. In addition, due to the COVID-19 pandemic, we have implemented remote work arrangements for some employees, and those employees may use outside technology and systems that are vulnerable to security breaches, service interruptions, data loss or malicious attacks, including by third parties.

As an example of these risks, on November 1, 2019, we were notified that we had become a victim of a business e-mail compromise. During the fourth quarter of 2019, a company email account was compromised by a third-party impersonator and a payment intended for one of our U.S. vendors in the amount of $2.6 million was fraudulently re-directed into an individual bank account controlled by this third-party impersonator. Our cyber-insurance covered all but $25,000 of the unrecovered losses from this compromise.

While we have invested, and continue to invest, in our information technology and information security systems, there can be no assurance that our efforts will prevent security breaches, service interruptions, or data losses. We have limited cyber-insurance coverage that may not cover all possible events, and this insurance is subject to deductibles and coverage limitations. Any security breaches, service interruptions, or data losses could adversely affect our business operations or result in the loss of critical or sensitive confidential information or intellectual property, or in financial, legal, business, and reputational harm to us or allow third parties to gain material, inside information that they may use to trade in our securities.

Industry Risks

Our products and tissues are highly regulated and subject to significant quality and regulatory risks.

The commercialization of medical devices and processing and distribution of human tissues are highly complex and subject to significant global quality and regulatory risks and as such, we face the following risks:

- Our products and tissues allegedly have caused, and may in the future cause, patient injury, which has exposed, and could in the future expose, us to liability claims that could lead to additional regulatory scrutiny;
- Our manufacturing and tissue processing operations are subject to regulatory scrutiny, inspections and enforcement actions, and regulatory agencies could require us to change or modify our operations or take other action, such as issuing product recalls or holds;
- Regulatory agencies could reclassify, reevaluate, or suspend our clearances or approvals, or fail, or decline, to issue or reissue our clearances or approvals that are necessary to sell our products and distribute tissues;
- Regulatory and quality requirements are subject to change, which could adversely affect our ability to sell our products or distribute tissues; and

- Adverse publicity associated with our products, processed tissues or our industry could lead to a decreased use of our products or tissues, increased regulatory scrutiny, or product or tissue processing liability claims.

Further, on May 25, 2017, the European Union adopted a new Medical Device Regulation (MDR 2017/745) ("MDR"), which is currently scheduled to be fully implemented by May 26, 2021. Upon implementation, among other changes, MDR will place stricter requirements on manufacturers and European Notified Bodies regarding, among other things, product classifications and pre- and post-market clinical studies for product clearances and approvals which could result in product reclassifications or the imposition of other regulatory requirements that could delay, impede, or prevent our ability to commercialize existing, improved, or new products in the European Economic Area ("EEA"). COVID-19 has impacted the predictability and timelines associated with the MDR transition.

At the same time, European Notified Bodies have begun engaging in more rigorous regulatory enforcement and may continue to do so. For example, in anticipation of MDR, Notified Bodies have declined to review many routine submissions unless they are in accordance with MDR, and Notified Bodies may continue to do so despite the postponement of MDR implementation. Our inability to timely adapt to these new requirements of our Notified Bodies could adversely impact our clearances or approvals.

Finally, we anticipate additional regulatory impact as a result of the United Kingdom's exit from the European Union ("Brexit"). The U.K. Medicines and Healthcare Products Regulatory Agency ("MHRA") has announced that CE Marking will continue to be recognized in the U.K. and certificates issued by EU-recognized Notified bodies will continue to be valid in the U.K. market until June 30, 2023. Going forward, all devices marketed in the U.K. will require U.K. Conformity Assessed ("UKCA") Marks certified by a U.K. Approved Body (the re-designation of the U.K. Notified Body). In 2019 we were informed of the cancellation of notified body services by our former Notified Body for BioGlue and PhotoFix, Lloyd's Register Quality Assurance Limited. Presently, the MHRA and the German competent authority, Regierungspraesidium-Tubingen, have granted us extended grace periods to complete the transfers of our registrations to a new notified body, provided that we meet certain conditions, including the demonstration of adequate progress in the CE Mark certification process with our new Notified Body. If we are delayed or unsuccessful in transferring to a new Notified Body for BioGlue and PhotoFix in the EEA, or if we are otherwise unable to timely meet applicable regulatory requirements, we may be unable to place BioGlue or PhotoFix on the market in the EEA until we resolve the situation.

Reclassification by the FDA of CryoValve SG pulmonary heart valve ("CryoValve SGPV") may make it commercially infeasible to continue processing the CryoValve SGPV.

In December 2019, we learned that the FDA is preparing to issue a proposed rule for reclassification of more than minimally manipulated ("MMM") allograft heart valves to Class III medical devices, which could include our CryoValve SGPV. Following a comment period and subsequent publication of any final rule, should the CryoValve SGPV be determined to be MMM, we expect to have approximately thirty months to submit a PMA application, after which the FDA will determine if, and for how long, we may continue to provide these tissues to customers during review of the PMA application. To date, the FDA has not issued such a proposed final rule.

If the FDA ultimately classifies our CryoValve SGPV as a Class III medical device, and if there are delays in obtaining the PMA, if we are unsuccessful in obtaining the PMA, or if the costs associated with these activities are significant, we could decide that the requirements for continued processing of the CryoValve SGPV are too onerous, leading us to discontinue distribution of these tissues.

We may not be successful in obtaining necessary clinical results or regulatory clearances/approvals for new and existing products and services, and our approved products and services may not achieve market acceptance.

Our growth and profitability depends in part upon our ability to develop, and successfully introduce, new products and services, or expand upon existing indications, clearances, and approvals, requiring that we invest significant time and resources to obtain new regulatory clearances/approvals, including investment into pre and post-market clinical studies. Although we believe certain products and services in our portfolio or under development may be effective in a particular application, we cannot be certain until we successfully execute on a clinical trial, and the results we obtain from pre and post-market clinical studies may be insufficient for us to obtain or maintain any required regulatory approvals or clearances.

We are currently engaged in several pre and post-market clinical studies, including PROACT Xa which will determine if patients with an On-X mechanical aortic valve can be maintained safely and effectively on apixaban (Eliquis®) rather than on warfarin, and a U.S. IDE for PerClot. We also have begun to initiate U.S. clinical trials for certain JOTEC products, initiate U.S. and international clinical trials for the AMDS, and we support Endospan's U.S. clinical trial efforts for NEXUS. We are currently seeking regulatory approval for BioGlue in China, where the Chinese regulatory body has requested additional data and information which may require additional testing. Each of these trials, studies, and approvals is subject to the risks outlined herein.

We cannot give assurance that regulatory agencies will clear or approve these products and services or indications, or any new products and services or new indications, on a timely basis, if ever, or that the products and services or new indications will adequately meet the requirements of the market or achieve market acceptance. Pre- and post-market clinical studies may also be delayed or halted due to many factors beyond our control.

If we are unable to successfully complete the development of a product, service, or application, or if we determine for any reason not to complete development or obtain regulatory approval or clearance of any product, service, or application, particularly in instances when we have expended significant capital, this could materially, adversely affect our financial performance. Research and development efforts are time consuming and expensive, and we cannot be certain that these efforts will lead to commercially successful products or services. Even the successful commercialization of a new product or service in the medical industry can be characterized by slow growth and high costs associated with marketing, under-utilized production capacity, and continuing research and development and education costs, among other things. The introduction of new products or services may require significant physician training or years of clinical evidence in order to gain acceptance in the medical community.

Regulatory enforcement activities regarding Ethylene Oxide, which is used to sterilize some of our products and components, could have a material, adverse impact on us.

Some of our products, including our On-X products, are sterilized using Ethylene Oxide ("EtO"). Although we have a small-scale EtO facility in Austin, Texas, we rely primarily on large-scale EtO facilities to sterilize our products. In addition, some of our suppliers use, or rely upon third parties to use, EtO to sterilize some of our product components. Concerns about the release of EtO into the environment at unsafe levels have led to various regulatory enforcement activities against EtO facilities, including closures and temporary closures, as well as proposals increasing regulations related to EtO. The number of EtO facilities in the U.S. is limited, and any permanent or temporary closures or disruption to their operations could delay, impede, or prevent our ability to commercialize our products. In addition, any regulatory enforcement activities against us for our use of EtO could result in financial, legal, business, and reputational harm to us.

We may be subject to fines, penalties, and other sanctions if we are deemed to be promoting the use of our products for unapproved, or off-label, uses.

Our business and future growth depend on the continued use of our products for approved uses. Generally, regulators contend that, unless our products are approved or cleared by a regulatory body for alternative uses, we may not make claims about the safety or effectiveness of our products, or promote them, for such uses. Such limitations present a risk that law enforcement could allege that the nature and scope of our sales, marketing, or support activities, though designed to comply with all regulatory requirements, constitute unlawful promotion of our products for an unapproved use. We also face the risk that such authorities might pursue enforcement based on past activities that we discontinued or changed. Investigations concerning the promotion of unapproved uses and related issues are typically expensive, disruptive, and burdensome and generate negative publicity. If our promotional activities are found to be in violation of the law, we may face significant fines and penalties and may be required to substantially change our sales, promotion, grant, and educational activities. In addition, we or our officers could be excluded from participation in government healthcare programs such as Medicare and Medicaid.

Healthcare policy changes may have a material, adverse effect on us.

In response to perceived increases in healthcare costs in recent years, there have been, and continue to be, proposals by the governmental authorities, third-party payors, and elected office holders and candidates to control these costs and, more generally, to reform the healthcare systems. Additional uncertainty is anticipated particularly in light of the recent presidential election in the United States and the impact the results of the presidential and congressional elections may have on U.S. law relating to the healthcare industry. Many U.S. healthcare laws, such as the Affordable Care Act, are complex, subject to change, and dependent on interpretation and enforcement decisions from government agencies with broad discretion. The application of these laws to us, our customers or the specific services and relationships we have with our customers is not always clear. Our failure to anticipate accurately any changes to, or the repeal or invalidation of all or part of the Affordable Care Act and similar or future laws and regulations, or our failure to comply with them, could create liability for us, result in adverse publicity and negatively affect our business, results of operations and financial condition. Further, the growth of our business, results of operations and financial condition rely, in part, on customers in the healthcare industry that receive substantial revenues from governmental and other third-party payer programs. A reduction or less than expected increase in government funding for these programs or a change in reimbursement or allocation methodologies could negatively affect our customers' businesses and, in turn, negatively impact our business, results of operations and financial condition. Any changes that lower reimbursement for our products or reduce medical procedure volumes, however, could adversely affect our business and profitability.

Legal, Quality, and Regulatory Risks

We are subject to various U.S. and international bribery, anti-kickback, false claims, privacy, transparency, and similar laws, any breach of which could cause a material, adverse effect on our business, financial condition, and profitability.

Our relationships with physicians, hospitals, and other healthcare providers are subject to scrutiny under various U.S. and international bribery, anti-kickback, false claims, privacy, transparency, and similar laws, often referred to collectively as "healthcare compliance laws." Healthcare compliance laws are broad, sometimes ambiguous, complex, and subject to change and changing interpretations. Possible sanctions for violation of these healthcare compliance laws include fines, civil and criminal penalties, exclusion from government healthcare programs, and despite our compliance efforts, we face the risk of an enforcement activity or a finding of a violation of these laws.

We have entered into consulting and product development agreements with healthcare professionals or healthcare organizations, including some who may order our products or make decisions to use them. We have also adopted the AdvaMed Code of Conduct and the MedTech Europe Code of Ethical Business Practice, which govern our relationships with healthcare professionals to bolster our compliance with healthcare compliance law. While our relationships with healthcare professionals and organizations are structured to comply with such laws and we conduct training sessions on these laws and Codes, it is possible that enforcement authorities may view our relationships as prohibited arrangements that must be restructured or for which we would be subject to other significant civil or criminal penalties or debarment. In any event, any enforcement review of or action against us as a result of such review, regardless of outcome, could be costly and time consuming. Additionally, we cannot predict the impact of any changes in or interpretations of these laws, whether these changes will be retroactive or will have effect on a going-forward basis only.

The implementation of new data privacy laws, including the General Data Protection Regulation in the European Union in May 2018, could adversely affect our business.

An increasing number of federal, state, and foreign data privacy laws and regulations, which can be enforced by private parties or governmental entities, have been or are being promulgated and are constantly evolving. These laws and regulations may include new requirements for companies that receive or process an individual's personal data (including employees), which increases our operating costs and requires significant management time and energy. Many of these laws and regulations, including the European Union's General Data Protection Regulation ("GDPR") also include significant penalties for noncompliance. Although our personal data practices, policies, and procedures are intended to comply with GDPR and other data privacy laws and regulations, there can be no assurance that regulatory or enforcement authorities will view our arrangements as being in compliance with applicable laws, or that one or more of our employees or agents will not disregard the rules we have established. Any privacy related government enforcement activities may be costly, result in negative publicity, or subject us to significant penalties.

Our business could be negatively impacted as a result of shareholder activism.

In recent years, shareholder activists have become involved in numerous public companies. Shareholder activists from time to time propose to involve themselves in the governance, strategic direction, and operations of a company. Such involvement may disrupt our business and divert the attention of our management, and any perceived uncertainties as to our future direction resulting from such involvement could result in the loss of business opportunities, be exploited by our competitors, cause concern for our current or potential customers, cause significant fluctuations in stock price, or make it more difficult to attract and retain qualified personnel and business partners. We have had investors who we believe to be activist investors with respect to some of their positions recently invest in our stock.

Some of our products and technologies are subject to significant intellectual property risks and uncertainty.

We own trade secrets, patents, patent applications, and licenses relating to our technologies, which we believe provide us with important competitive advantages. We cannot be certain that we will be able to maintain our trade secrets, that our pending patent applications will issue as patents, or that no one will challenge the validity or enforceability of any patent that we own or license. Competitors may independently develop our proprietary technologies or design non-infringing alternatives to patented inventions. We do not control the maintenance, prosecution, enforcement, or strategy for in-licensed intellectual property and as such are dependent in part on the owners of these rights to maintain their viability. Their failure to do so could significantly impair our ability to exploit those technologies. Additionally, our technologies, products, or services could infringe intellectual property rights owned by others, or others could infringe our intellectual property rights. If we become involved in an intellectual property dispute, the costs could be expensive, and if we were to lose or decide to settle, the amounts or effects of the settlement or award by a tribunal could be costly.

Risks Relating to Our Indebtedness

The agreements governing our indebtedness contain restrictions that limit our flexibility in operating our business.

The agreements governing our indebtedness contain, and any instruments governing future indebtedness of ours may contain, covenants that impose significant operating and financial restrictions on us and certain of our subsidiaries, including (subject in each case to certain exceptions) restrictions or prohibitions on our and certain of our subsidiaries' ability to, among other things:

- Incur or guarantee additional debt or create liens on certain assets;
- Deviate from a minimum liquidity of at least $12.0 million as of the last day of any of the first three quarters of 2021 when our Revolving Credit Facility is drawn in excess of 25% of the amount available as of the last day of any fiscal quarter during that period (currently $7.5 million);
- Pay dividends on or make distributions of our share capital, including repurchasing or redeeming capital stock, or make other restricted payments, including restricted junior payments;
- Enter into agreements that restrict our subsidiaries' ability to pay dividends to us, repay debt owed to us or our subsidiaries, or make loans or advances to us or our other subsidiaries;
- Comply with certain financial ratios set forth in the agreement;
- Enter into certain transactions with our affiliates including any transaction or merger or consolidation, liquidation, winding-up, or dissolution; convey, sell, lease, exchange, transfer or otherwise dispose of all or any part of our business, assets or property; or sell, assign, or otherwise dispose of any capital stock of any subsidiary;
- Enter into certain rate swap transactions, basis swaps, credit derivative transactions, and other similar transactions, whether relating to interest rates, commodities, investments, securities, currencies, or any other relevant measure, or transactions of any kind subject to any form of master purchase agreement governed by the International Swaps and Derivatives Association, Inc., any International Foreign Exchange Master Agreement, or any other master agreement;
- Amend, supplement, waive, or otherwise modify our or our subsidiaries organizational documents in a manner that would be materially adverse to the interests of the lenders, or change or amend the terms of documentation regarding junior financing in a manner that would be materially adverse to the interests of the lenders;
- Make changes to our and our subsidiaries' fiscal year without notice to the administrative agent under the agreement;
- Enter into agreements which restrict our ability to incur liens;
- Engage in any line of business substantially different from that in which we are currently engaged; and

- Make certain investments, including strategic acquisitions or joint ventures.

Our indebtedness could adversely affect our ability to raise additional capital to fund operations and limit our ability to react to changes in the economy or our industry.

Our current and future levels of indebtedness could adversely affect our ability to raise additional capital, limit our operational flexibility, and hinder our ability to react to changes in the economy or our industry. It may also limit our ability to borrow money, require us to dedicate substantial portions of our cash flow to repayment, and expose us to increased interest rate fluctuation risk as most of our borrowings are at a variable rate of interest.

We have pledged substantially all of our U.S. assets as collateral under our existing Credit Agreement. If we default on the terms of such credit agreements and the holders of our indebtedness accelerate the repayment of such indebtedness, there can be no assurance that we will have sufficient assets to repay our indebtedness.

A failure to comply with the covenants in our existing Credit Agreement could result in an event of default, which, if not cured or waived, could have a material, adverse effect on our business, financial condition, and profitability. In the event of any such default, the holders of our indebtedness:

- Will not be required to lend any additional amounts to us;
- Could elect to declare all indebtedness outstanding, together with accrued and unpaid interest and fees, to be due and payable and terminate all commitments to extend further credit, if applicable; or
- Could require us to apply all of our available cash to repay such indebtedness.

If we are unable to repay those amounts, the holders of our secured indebtedness could proceed against their secured collateral. If our indebtedness were to be accelerated, there can be no assurance that our assets would be sufficient to repay such indebtedness in full.

Risks Related to Ownership of our Common Stock

We do not anticipate paying any dividends on our common stock for the foreseeable future.

In December 2015 our Board of Directors discontinued dividend payments on our common stock for the foreseeable future. If we do not pay cash dividends, our shareholders may receive a return on their investment in our common stock only through appreciation of shares of our common stock that they own. In addition, restrictions in our credit facility limit our ability to pay future dividends.

Provisions of Florida law and anti-takeover provisions in our organizational documents may discourage or prevent a change of control, even if an acquisition would be beneficial to shareholders, which could affect our share price adversely and prevent attempts by shareholders to remove current management.

We are subject to the Florida affiliated transactions statute, which generally requires approval by the disinterested directors or supermajority approval by shareholders for “affiliated transactions” between a corporation and an “interested stockholder.” Additionally, our organizational documents contain provisions that restrict persons who may call shareholder meetings, allow the issuance of blank-check preferred stock without the vote of shareholders, and allow the Board of Directors to fill vacancies and fix the number of directors. These provisions of Florida law and our articles of incorporation and bylaws could prevent attempts by shareholders to remove current management, prohibit or delay mergers or other changes of control transactions, and discourage attempts by other companies to acquire us, even if such a transaction would be beneficial to our shareholders.

General Risk Factors

Our key growth areas may not generate anticipated benefits.

Our strategic plan is focused on four areas – new products, new indications, global expansion and business development – to drive growth and/or increase the size of our total addressable markets, primarily in the cardiac and vascular surgery segment, but we cannot be certain that these strategies will ultimately drive business expansion and enhance shareholder value.

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

(c) The following table provides information about purchases by us during the three months ended March 31, 2021 of equity securities that are registered by us pursuant to Section 12 of the Securities Exchange Act of 1934:

Period	Total Number of Common Shares and Common Stock Units Purchased	Average Price Paid per Common Share	Total Number of Common Shares Purchased as Part of Publicly Announced Plans or Programs	Dollar Value of Common Shares That May Yet Be Purchased Under the Plans or Programs
01/01/21 - 01/31/21	--	$ --	--	$ --
02/01/21 - 02/28/21	23,008	25.33	--	--
03/01/21 - 03/31/21	49,408	24.88	--	--
Total	**72,416**	$ 25.03	--	$ --

The common shares purchased during the three months ended March 31, 2021 were tendered to us in payment of taxes on stock compensation and were not part of a publicly announced plan or program.

Under our Credit Agreement, we are prohibited from repurchasing our common stock, except for the repurchase of stock from our employees or directors when tendered in payment of taxes or the exercise price of stock options, upon the satisfaction of certain requirements.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

The exhibit index can be found below.

Exhibit Number	Description
2.1	Securities Purchase Agreement, dated September 2, 2020, by and among CryoLife, Inc., Ascyrus Medical LLC, the securityholders of Ascyrus Medical LLC and the Securityholder Representative (as defined therein) (Incorporated herein by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed September 2, 2020.)
3.1	Amended and Restated Articles of Incorporation of CryoLife, Inc. (Incorporated herein by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q filed July 31, 2020.)
3.2	Amended and Restated By-Laws of CryoLife, Inc. (Incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed February 22, 2018.)
10.15	Lease Agreement between CryoLife, Inc. and The H.N. and Frances C. Berger Foundation, successor in interest to Amli Land Development—I Limited Partnership, dated April 18, 1995. (Incorporated herein by reference to Exhibit 10.16 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2007.)
10.15 (a)	First Amendment to Lease Agreement between CryoLife, Inc. and The H.N. and Frances C. Berger Foundation, successor in interest to Amli Land Development—I Limited Partnership, dated August 6, 1999. (Incorporated herein by reference to Exhibit 10.16(a) to the Registrant's Annual Report on Form 10-K for the year ended December 31, 1999.)
10.15 (b)	Restatement and Amendment to Funding Agreement between CryoLife, Inc. and The H.N. and Frances C. Berger Foundation, successor in interest to Amli Land Development—I Limited Partnership, dated August 6, 1999. (Incorporated herein by reference to Exhibit 10.16(b) to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2000.)
10.15(c)	Second Amendment to Lease Agreement between CryoLife, Inc. and The H.N. and Frances C. Berger Foundation, successor in interest to P&L Barrett, L.P., dated May 10, 2010. (Incorporated herein by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed July 29, 2010.)
10.15 (d)*++	Third Amendment to Lease Agreement between CryoLife, Inc. and The H.N. and Frances C. Berger Foundation, successor in interest to P&L Barrett, L.P., dated January 6, 2021.
31.1*	Certification by J. Patrick Mackin pursuant to section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification by D. Ashley Lee pursuant to section 302 of the Sarbanes-Oxley Act of 2002.
32**	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
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File – formatted as Inline XBRL and contained in Exhibit 101

* Filed herewith.

** Furnished herewith.

† Portions of the exhibit have been omitted.

SIGNATURES

Pursuant to the requirements 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.

CRYOLIFE, INC.
(Registrant)

/s/ J. PATRICK MACKIN

J. PATRICK MACKIN
Chairman, President, and
Chief Executive Officer
(Principal Executive Officer)

April 30, 2021

DATE

/s/ D. ASHLEY LEE

D. ASHLEY LEE
Executive Vice President,
Chief Operating Officer, and
Chief Financial Officer
(Principal Financial and
Accounting Officer)

Exhibit 10.15(d)

CERTAIN INFORMATION HAS BEEN OMITTED OR REDACTED FROM VERSION OF THIS EXHIBIT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION BECAUSE IT BOTH (I) IS NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED

THIRD AMENDMENT TO LEASE

This Third Amendment to Lease ("Third Amendment") is entered into by and between THE H.N. AND FRANCES C. BERGER FOUNDATION, a Delaware non-stock corporation ("Landlord") and CRYOLIFE, INC., a Florida corporation ("Tenant"), as of the date hereinafter set forth.

W I T N E S S E T H:

WHEREAS, Amli Land Development-I Limited Partnership ("Amli") and Tenant entered into that certain Lease having an effective date of April 14, 1995, concerning certain buildings, improvements and appurtenances, located at 1655 Roberts Boulevard, Kennesaw, Georgia 30144, in Cobb County, Georgia, as amended, as more particularly described therein ("Lease");

WHEREAS, Amli and Tenant entered into that certain First Amendment to Lease Agreement having an effective date of August 6, 1999, concerning the construction and addition of Phase II and other improvements to the Premises, as more particularly described therein (the "First Amendment");

WHEREAS, P&L Barrett, LP (“P&L”) and Tenant entered into that certain Second Amendment to Lease having an effective date of May 10, 2010, extending the term of the Lease and modifying the rent and addressing other issues as more particularly described therein (the "Second Amendment");

WHEREAS, Landlord purchased the buildings from P&L and the Lease was assigned by P&L to Landlord and Landlord has succeeded to P&L’s position as landlord;

WHEREAS, the parties hereto desire to amend the Lease as hereinafter provided;

NOW THEREFORE, for and inconsideration of the premises, Ten Dollars ($10.00) in hand paid, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. The statements set forth in the preamble and recitals hereinabove are hereby incorporated herein by reference as if totally set forth herein.

2. Capitalized terms used herein shall have the meaning as defined in the Lease unless otherwise defined herein.

3. The Lease is hereby amended whereby the Term is extended for fifteen (15) additional years through March 31, 2037 ("Extended Term"). Notwithstanding anything to the contrary contained in the Lease, the defined term "Termination Date" shall be March 31, 2037.

4. The Lease is hereby amended whereby during the remaining Term and the Extended Term, on each anniversary date of the Lease Commencement Date, the annual Base Rental Rate shall be increased by an amount equal to one and 85/100 percent (1.85%) times the net rate to become the newly adjusted Base Rate. Accordingly, the Base Rent shall be as follows:

Term	Per/SF	Annual Base Rent	Monthly Base Rent
04/01/2020-03/31/2021	[redacted]		
04/01/2021-03/31/2022			
04/01/2022-03/31/2023			
04/01/2023 -03/31/2024			
04/01/2024-03/31/2025			
04/01/2025 - 03/31/2026			
04/01/2026 - 03/31/2027			
04/01/2027- 03/31/2028			
04/01/2028-03/31/2029			
04/01/2029 - 03/31/2030			
04/01/2030 - 03/31/2031			
04/01 /2031 - 03/31/2032			
04/01/2032 -03/31/2033			
04/01/2033-03/31/2034			
04/01/2034 - 03/31/2035			
04/01/2035 - 03/31/2036			
04/01/2036 – 03/31/2037			

5. The Lease is hereby amended as follows:

Concessions: The Base Rent shall be abated by 50% for a period of fifteen (15) months commencing February 1, 2021 and ending April 30, 2022.

Operating Expenses: The Tenant will directly pay all of its Operating Expenses as outlined in the Lease.

Tenant Improvements: Landlord shall provide Tenant with an allowance of $[redacted]/RSF ($[redacted]). This allowance may be used for the design, preparation, renovation, and construction of the Premises and parking lot. Tenant shall have access to this Tenant Improvement Allowance upon execution of this Third Amendment. The Tenant Improvement Allowance may not be applied to unpaid rent. All Tenant Improvements shall be subject to the provisions of section 14 of the Lease entitled “Alterations.”

Roof: Landlord shall replace the roof on both phases of the Building prior to June 1, 2021. Once the new roof has been installed, Tenant shall become responsible for all roof maintenance for the remainder of the Term and the Extended Term.

Renewal Options: Tenant shall have two consecutive options to renew for five (5) years each at the same extended terms and conditions (including a 1.85% annual escalation of Base Rent), and each with a Tenant Improvement Allowance of $[redacted]payable on the first day of the renewal term under these options. Tenant shall give Landlord no more than twelve (12) months and no less than six (6) months advance written notice of Tenant’s intention to exercise said options to renew before the expiration of the then-current term.

6. The Lease is hereby amended as follows:

Commission. For representing the Tenant, the Landlord will pay a 1% commission ($[redacted]) to Richard Bowers & Company (“Broker”) which shall be paid within sixty (60) days of execution of this Third Amendment. Landlord and Tenant represent and warrant that they have not engaged nor had any

dealings with any broker, agent, salesperson, or finder in connection with this Third Amendment, and no such other person is entitled to any fee or commission in connection herewith, other than Richard Bowers & Co. representing Tenant. Tenant agrees to indemnify and hold Landlord harmless from and against any and all damages, liabilities, costs, or expenses (including attorneys' fees) arising from any claims or demands of any broker, agent, salesperson, or finder, other than the Broker, arising by, through, or under Tenant.

7. Tenant at the execution of this Third Amendment shall execute and deliver a Tenant Estoppel Certificate concerning the Lease, as amended, including, but not limited to, that no disputes exist under the Lease, no disputes exist under the Lease, verification of term dates and conditions of the Lease in the form attached to the Lease.

8. Notwithstanding anything contained in the Lease, in the event of a conflict between the Lease and this Third Amendment, the terms of this Third Amendment shall control. The Lease, as previously amended, shall remain in full force and effect except as hereby amended, and the Landlord and Tenant hereby ratify, affirm, and confirm the terms of the Lease, as previously amended and as hereby amended.

IN WITNESS WHEREOF, Landlord and Tenant have set their hands and seals hereunto and have caused this Third Amendment to be executed by duly authorized officers thereof, as of this 29th day of December 2020.

LANDLORD:

The H.N. and Frances C. Berger Foundation,
a Delaware non-stock corporation

By: /s/ Christopher M. McGuire
Christopher M. McGuire, President

Date of Execution
by Landlord:

January 6, 2021

TENANT:

CRYOLIFE, INC.,
a Florida corporation

By: /s/ Pat Mackin
Name: James Patrick Mackin
Title: Chairman, President, and CEO
(CORPORATE SEAL)

Date of Execution
by Tenant:

December 29, 2020

Exhibit 31.1

CERTIFICATIONS

I, James Patrick Mackin, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CryoLife, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: April 30, 2021

s/ J. PATRICK MACKIN
Chairman, President, and
Chief Executive Officer

Exhibit 31.2

I, David Ashley Lee, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CryoLife, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: April 30, 2021

/s/ D. ASHLEY LEE
Executive Vice President,
Chief Operating Officer, and
Chief Financial Officer

Exhibit 32

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

In connection with the Quarterly Report of CryoLife, Inc. (the "Company") on Form 10-Q for the quarter ending March 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of James Patrick Mackin, the Chairman, President, and Chief Executive Officer of the Company, and David Ashley Lee, the Executive Vice President, Chief Operating Officer, and Chief Financial Officer of the Company, hereby certifies, pursuant to and for purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, in his capacity as an officer of the Company and to his knowledge:

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

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

/s/ J. PATRICK MACKIN
J. PATRICK MACKIN
Chairman, President, and
Chief Executive Officer
April 30, 2021

/s/ D. ASHLEY LEE
D. ASHLEY LEE
Executive Vice President,
Chief Operating Officer, and Chief Financial Officer
April 30, 2021