
**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 **September 30, 2019**
OR

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

For the transition period from _____ to _____

Commission file number 001-35312

CHF SOLUTIONS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware
(State or Other Jurisdiction of Incorporation or Organization)

No. 68-0533453
(I.R.S. Employer Identification No.)

12988 Valley View Road, Eden Prairie, MN 55344
(Address of Principal Executive Offices) (Zip Code)

(952) 345-4200
(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, par value \$0.0001 per share	CHFS	Nasdaq Capital Market

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically 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 No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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
Non-accelerated filer
Emerging growth company

Accelerated filer
Smaller reporting company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

The number of outstanding shares of the registrant's common stock, \$0.0001 par value, as of November 4, 2019 was 3,454,992.

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PART I—FINANCIAL INFORMATION
ITEM 1. FINANCIAL STATEMENTS
CHF SOLUTIONS, INC. AND SUBSIDIARIES
Condensed Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	<u>September 30,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
	<u>(unaudited)</u>	
ASSETS		
Current assets		
Cash and cash equivalents	\$ 3,634	\$ 5,480
Accounts receivable	528	786
Inventory	1,612	1,658
Other current assets	277	203
Total current assets	6,051	8,127
Property, plant and equipment, net	1,025	536
Operating lease right-of-use asset, net	487	—
Other assets	21	113
TOTAL ASSETS	\$ 7,584	\$ 8,776
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 1,427	\$ 1,133
Accrued compensation	1,242	1,498
Current portion of operating lease liability	181	—
Other current liabilities	87	209
Total current liabilities	2,937	2,840
Operating lease liability	309	—
Total liabilities	3,246	2,840
Commitments and contingencies	—	—
Stockholders' equity		
Series A junior participating preferred stock as of September 30, 2019 and December 31, 2018, par value \$0.0001 per share; authorized 30,000 shares, none outstanding	—	—
Series F convertible preferred stock as of September 30, 2019 and December 31, 2018, par value \$0.0001 per share; authorized 535 and 535 shares, respectively, issued and outstanding 535 and 535, respectively	—	—
Series G convertible preferred stock as of September 30, 2019 and December 31, 2018, par value \$0.0001 per share; authorized 0 and 0 shares, respectively, issued and outstanding 0 and 0, respectively	—	—
Preferred stock as of September 30, 2019 and December 31, 2018, par value \$0.0001 per share; authorized 39,969,465 and 39,969,465 shares, respectively, none outstanding	—	—
Common stock as of September 30, 2019 and December 31, 2018, par value \$0.0001 per share; authorized 100,000,000 shares, issued and outstanding 2,879,162 and 513,445, respectively	—	—
Additional paid-in capital	216,173	204,101
Accumulated other comprehensive income:		
Foreign currency translation adjustment	1,219	1,223
Accumulated deficit	(213,054)	(199,388)
Total stockholders' equity	4,338	5,936
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 7,584	\$ 8,776

See notes to the condensed consolidated financial statements.

CHF SOLUTIONS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited)
(In thousands, except per share amounts)

	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Net sales	\$ 1,252	\$ 1,363	\$ 4,144	\$ 3,499
Costs and expenses:				
Cost of goods sold	540	915	1,987	2,686
Selling, general and administrative	4,107	3,713	12,098	11,489
Research and development	1,112	985	3,719	2,107
Total costs and expenses	<u>5,759</u>	<u>5,613</u>	<u>17,804</u>	<u>16,282</u>
Loss from operations	<u>(4,507)</u>	<u>(4,250)</u>	<u>(13,660)</u>	<u>(12,783)</u>
Other income (loss), net	<u>(1)</u>	<u>10</u>	<u>(1)</u>	<u>10</u>
Loss before income taxes	<u>(4,508)</u>	<u>(4,240)</u>	<u>(13,661)</u>	<u>(12,773)</u>
Income tax expense	<u>(1)</u>	<u>(1)</u>	<u>(5)</u>	<u>(3)</u>
Net loss	<u>\$ (4,509)</u>	<u>\$ (4,241)</u>	<u>\$ (13,666)</u>	<u>\$ (12,776)</u>
Basic and diluted loss per share	<u>\$ (1.70)</u>	<u>\$ (8.50)</u>	<u>\$ (9.49)</u>	<u>\$ (34.59)</u>
Weighted average shares outstanding – basic and diluted	2,646	499	1,915	369
Other comprehensive loss:				
Foreign currency translation adjustments	<u>\$ 1</u>	<u>\$ (1)</u>	<u>\$ (4)</u>	<u>\$ (2)</u>
Total comprehensive loss	<u>\$ (4,508)</u>	<u>\$ (4,242)</u>	<u>\$ (13,670)</u>	<u>\$ (12,778)</u>

See notes to the condensed consolidated financial statements.

CHF SOLUTIONS, INC. AND SUBSIDIARIES

Condensed Consolidated Statements of Stockholders' Equity
(In thousands, except share amounts)

	Outstanding Shares of Common Stock	Common Stock	Additional Paid in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Stockholders' Equity
Balance December 31, 2017	271,357	\$ —	\$ 197,367	\$ 1,227	\$ (182,356)	\$ 16,238
Net loss	—	—	—	—	(4,354)	(4,354)
Foreign currency translation adjustment	—	—	—	1	—	1
Stock-based compensation, net	3	—	501	—	—	501
Conversion of preferred stock into common stock	32,365	—	—	—	—	—
Balance March 31, 2018	303,725	\$ —	\$ 197,868	\$ 1,228	\$ (186,710)	\$ 12,386
Net loss	—	—	—	—	(4,181)	(4,181)
Foreign currency translation adjustment	—	—	—	(2)	—	(2)
Stock-based compensation and stock awards, net	3	—	606	—	—	606
Conversion of preferred stock into common stock	18,127	—	—	—	—	—
Balance June 30, 2018	321,855	\$ —	\$ 198,474	\$ 1,226	\$ (190,891)	\$ 8,809
Net loss	—	—	—	—	(4,241)	(4,241)
Foreign currency translation adjustment	—	—	—	(1)	—	(1)
Stock-based compensation and stock awards, net	3	—	437	—	—	437
Issuance of common stock, net	181,941	—	4,649	—	—	4,649
Conversion of preferred stock into common stock	1,516	—	—	—	—	—
Balance September 30, 2018	505,315	\$ —	\$ 203,560	\$ 1,225	\$ (195,132)	\$ 9,653
	Outstanding Shares of Common Stock	Common Stock	Additional Paid in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Stockholders' Equity
Balance December 31, 2018	513,445	\$ —	\$ 204,101	\$ 1,223	\$ (199,388)	\$ 5,936
Net loss	—	—	—	—	(4,727)	(4,727)
Foreign currency translation adjustment	—	—	—	(2)	—	(2)
Stock-based compensation, net	3	—	362	—	—	362
Issuance of common and preferred stock, net	455,178	—	10,959	—	—	10,959
Conversion of preferred stock into common stock	1,100,394	—	—	—	—	—
Balance March 31, 2019	2,069,020	\$ —	\$ 215,422	\$ 1,221	\$ (204,115)	\$ 12,528
Net loss	—	—	—	—	(4,430)	(4,430)
Foreign currency translation adjustment	—	—	—	(3)	—	(3)
Stock-based compensation, net	—	—	339	—	—	339
Conversion of preferred stock into common stock	259,300	—	—	—	—	—
Balance June 30, 2019	2,328,320	\$ —	\$ 215,761	\$ 1,218	\$ (208,545)	\$ 8,434
Net loss	—	—	—	—	(4,509)	(4,509)
Foreign currency translation adjustment	—	—	—	1	—	1
Stock-based compensation, net	—	—	412	—	—	412
Conversion of preferred stock into common stock	550,842	—	—	—	—	—
Balance September 30, 2019	2,879,162	\$ —	\$ 216,173	\$ 1,219	\$ (213,054)	\$ 4,338

See notes to the condensed consolidated financial statements.

CHF SOLUTIONS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(in thousands)

	Nine months ended September 30,	
	2019	2018
Operating Activities:		
Net loss	\$ (13,666)	\$ (12,776)
Adjustments to reconcile net loss to cash flows used in operating activities:		
Depreciation and amortization	179	174
Stock-based compensation expense, net	1,113	1,544
Changes in operating assets and liabilities:		
Accounts receivable	258	(242)
Inventory	(158)	(360)
Other current assets	(74)	(104)
Other assets and liabilities	(27)	—
Accounts payable and accrued expenses	38	(79)
Net cash used in operating activities	(12,337)	(11,843)
Investing Activities:		
Purchases of property, plant and equipment	(464)	(177)
Net cash used in investing activities	(464)	(177)
Financing Activities:		
Net proceeds from public stock offering, net	10,959	4,649
Net cash provided by financing activities	10,959	4,649
Effect of exchange rate changes on cash	(4)	(2)
Net decrease in cash and cash equivalents	(1,846)	(7,373)
Cash and cash equivalents - beginning of period	5,480	15,595
Cash and cash equivalents - end of period	\$ 3,634	\$ 8,222
Supplemental schedule of non-cash activities:		
Inventory transferred to property, plant and equipment	\$ 204	\$ —

See notes to the condensed consolidated financial statements.

CHF SOLUTIONS, INC. AND SUBSIDIARIES
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Note 1 – Nature of Business and Basis of Presentation

Nature of Business: CHF Solutions, Inc. (the “Company”) is a medical device company focused on developing, manufacturing and commercializing the Aquadex FlexFlow® system for aquapheresis therapy. The Aquadex FlexFlow system (“Aquadex FlexFlow”) is indicated for temporary (up to eight hours) ultrafiltration treatment of patients with fluid overload who have failed diuretic therapy and extended (longer than 8 hours) ultrafiltration treatment of patients with fluid overload who have failed diuretic therapy and require hospitalization. The Company has submitted an application to the FDA requesting for 510(k) clearance of the Aquadex FlexFlow system to include pediatric patients who weigh 20kg or more. CHF Solutions, Inc. is a Delaware corporation headquartered in Minneapolis with wholly owned subsidiaries in Australia, Ireland and Delaware. The Company has been listed on Nasdaq since February 2012.

Previously, the Company was focused on developing the C-Pulse® Heart Assist System for treatment of Class III and ambulatory Class IV heart failure. In August 2016, the Company acquired the business associated with the Aquadex FlexFlow system (herein referred to as the “Aquadex Business”) from a subsidiary of Baxter International, Inc. (“Baxter”), and refocused its strategy to fully devote its resources to the Aquadex Business.

In December 2018, the Company’s stockholders approved a reverse split of its outstanding common stock at a ratio in the range of 1-for-2 to 1-for 14 and, in January 2019, the board of directors approved a 1-for-14 reverse split of the Company’s outstanding common stock that became effective after trading on January 2, 2019. This reverse stock split did not change the par value of the Company’s common stock or the number of common or preferred shares authorized by the Company’s Fourth Amended and Restated Certificate of Incorporation. All share and per-share amounts have been retroactively adjusted to reflect the reverse stock split for all periods presented.

Principles of Consolidation: The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”) for interim financial information and with the instructions to Form 10-Q and Article 8 of Regulation S-X. Certain information and note disclosures normally included in the audited annual consolidated financial statements have been condensed or omitted pursuant to those rules and regulations. Accordingly, they do not include all of the information necessary for a fair presentation of results of operations, comprehensive loss, financial condition, and cash flows in conformity with U.S. GAAP. In the opinion of management, the condensed consolidated financial statements reflect all adjustments (consisting of normal recurring adjustments) considered necessary for a fair presentation of the results of the Company for the periods presented. Operating results for interim periods are not necessarily indicative of results that may be expected for the year as a whole. The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses, and the related disclosures at the date of the consolidated financial statements and during the reporting period. Actual results could materially differ from these estimates.

For further information, refer to the consolidated financial statements and notes thereto included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2018.

Going Concern: The Company’s consolidated financial statements have been prepared and presented on a basis assuming it continues as a going concern. During the years ended December 31, 2018 and 2017 and through September 30, 2019, the Company incurred losses from operations and net cash outflows from operating activities as disclosed in the consolidated statements of operations and cash flows, respectively. As of September 30, 2019, the Company had an accumulated deficit of \$213.1 million and it expects to incur losses for the immediate future. To date, the Company has been funded by debt and equity financings, and although the Company believes that it will be able to successfully fund its operations, there can be no assurance that it will be able to do so or that it will ever operate profitably. These factors raise substantial doubt about the Company’s ability to continue as a going concern through the next twelve months.

The Company became a revenue generating company after acquiring the Aquadex Business in August 2016. The Company expects to incur additional losses in the near-term as it grows the Aquadex Business, including investments in expanding its sales and marketing capabilities, purchasing inventory, manufacturing components, and complying with the requirements related to being a U.S. public company. To become and remain profitable, the Company must succeed in expanding the adoption and market acceptance of the Aquadex FlexFlow. This will require the Company to succeed in training personnel at hospitals and effectively and efficiently manufacturing, marketing and distributing the Aquadex FlexFlow and related components. There can be no assurance that the Company will succeed in these activities, and it may never generate revenues sufficient to achieve profitability.

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On April 24, 2017, November 27, 2017, July 3, 2018, March 12, 2019, October 25, 2019 and November 6, 2019, the Company closed on underwritten public equity offerings for aggregate net proceeds of approximately \$41.4 million after deducting the underwriting discounts and commissions and other costs associated with the offerings (see Note 4 –Equity and Note 10-Subsequent Events). The Company will require additional funding to grow its Aquadex Business, which may not be available on terms favorable to the Company, or at all. The Company may receive those funds from the proceeds from future warrant exercises, issuances of equity securities, or other financing transactions. Should warrant exercises not materialize or future capital raising be unsuccessful, the Company may not be able to continue as a going concern. No adjustments have been made relating to the recoverability and classification of recorded asset amounts and classification of liabilities that might be necessary should the Company not continue as a going concern.

Revenue Recognition: The Company recognizes revenue in accordance with Accounting Standards Codification (“ASC”), Topic 606, *Revenue from Contracts with Customers*, which the Company adopted effective January 1, 2018. Accordingly, the Company recognizes revenue when its customers obtain control of its products or services, in an amount that reflects the consideration that the Company expects to receive in exchange for those goods and services. See Note 2 – Revenue Recognition, for additional disclosures. For the three months ended September 30, 2019, three customers represented 11%, 12% and 12% of net sales. For the nine months ended September 30, 2019, one customer represented 10% of net sales. For the three months ended September 30, 2018, two customers represented 15% and 10% of net sales. For the nine months ended September 30, 2018, one customer represented 10% of net sales.

Accounts Receivable: Accounts receivable are unsecured, recorded at net realizable value, and do not bear interest. The Company makes judgments as to its ability to collect outstanding receivables based upon significant patterns of collectability, historical experience, and managements’ evaluation of specific accounts and will provide an allowance for credit losses when collection becomes doubtful. The Company performs credit evaluations of its customers’ financial condition on an as-needed basis. Payment is generally due 30 days from the invoice date and accounts past 30 days are individually analyzed for collectability. When all collection efforts have been exhausted, the account is written off against the related allowance. To date the Company has not experienced any write-offs or significant deterioration of the aging of its accounts receivable, and therefore, no allowance for doubtful accounts was considered necessary as of September 30, 2019 or December 31, 2018. As of September 30, 2019, two customers represented 14% and 12% of the accounts receivable balance. As of December 31, 2018, three customers represented 18%, 13% and 13% of the accounts receivable balance.

Inventories: Inventories are recorded as the lower of cost or net realizable value using the first-in, first out method. Overhead is allocated to manufactured finished goods inventory based on the normal capacity of the Company’s production facilities. Abnormal amounts of overhead, if any, are expensed as incurred. Inventories consisted of the following:

<i>(in thousands)</i>	September 30,	December 31,
	2019	2018
Finished Goods	\$ 468	\$ 517
Work in Process	185	34
Raw Materials	959	1,107
Total	<u>\$ 1,612</u>	<u>\$ 1,658</u>

Contingent consideration: In connection with the Company’s purchase of the Aquadex Business in August 2016, the Company had an obligation to pay additional consideration that was contingent upon the occurrence of certain future events (see Note 9 - Commitments and Contingencies). Contingent consideration was recognized at the acquisition date at \$126,000, the estimated fair value of the contingent milestone payments. The fair value of the contingent consideration was remeasured to its estimated fair value at the end of each reporting period, with changes recorded to earnings. As of September 30, 2019, this contingency had expired, therefore its fair value was \$0.

Loss per share: Basic loss per share is computed based on the net loss for each period divided by the weighted average number of common shares outstanding. The net loss allocable to common stockholders for the nine months ended September 30, 2019, reflects a \$4.5 million increase for the net deemed dividend to preferred stockholders provided in connection with the close of the public offering of Series G Convertible Preferred Stock on March 12, 2019 (see Note 4 - Equity), representing the intrinsic value of the shares at the time of issuance.

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Diluted earnings per share is computed based on the net loss allocable to common stockholders for each period divided by the weighted average number of common shares outstanding, increased by the number of additional shares that would have been outstanding had the potentially dilutive common shares been issued, and reduced by the number of shares the Company could have repurchased from the proceeds from issuance of the potentially dilutive shares. Potentially dilutive shares of common stock include shares underlying outstanding convertible preferred stock, warrants, stock options and other stock-based awards granted under stock-based compensation plans.

The following table sets forth the potential shares of common stock that are not included in the calculation of diluted net loss per share because to do so would be anti-dilutive as of the end of each period presented:

	September 30	
	2019	2018
Warrants to purchase common stock	5,430,721	608,787
Series F convertible preferred stock	102,185	19,210
Stock options	332,722	139,439
Restricted stock units	-	3
Total	<u>5,865,628</u>	<u>767,439</u>

The following table reconciles reported net loss with reported net loss per share for the periods ended September 30, 2019:

	Three months	Nine months
<i>(in thousands, except per share amounts)</i>		
Net loss	\$ (4,509)	\$ (13,666)
Deemed dividend to preferred shareholders (see Note 4)	—	(4,509)
Net loss after deemed dividend	(4,509)	(18,175)
Weighted average shares outstanding	2,646	1,915
Basic and diluted loss per share	<u>\$ (1.70)</u>	<u>\$ (9.49)</u>

New Accounting Pronouncements: In February 2016, the Financial Accounting Standards Board (“FASB”) issued updated guidance to improve financial reporting about leasing transactions. This guidance required organizations that lease assets to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases. The original guidance required application on a modified retrospective basis with the earliest period presented. In August 2018, the FASB issued new guidance which included an option to not restate comparative periods in transition. The Company adopted this new standard on January 1, 2019 with no retrospective adjustments to prior comparative periods. The adoption of this standard on January 1, 2019 resulted in an increase of approximately \$0.6 million in the Company’s other long-term assets and in short and long-term liabilities recorded on its consolidated balance sheet. In addition, the Company elected the package of practical expedients permitted under the transition guidance within the new standard which allowed it to carry forward the historical lease classification. See Note 7 – Operating Leases for additional qualitative and quantitative disclosures

In August 2018, the FASB issued updated guidance to improve and simplify the disclosure requirements on fair value measurements for level 3 assets and liabilities valued at fair value. The Company early-adopted the guidance effective in its second quarter and the effect on the consolidated financial statements was not material.

Note 2 – Revenue Recognition

Net Sales

The Company sells its products in the United States primarily through a direct sales force. Customers who purchase the Company’s products include hospitals and clinics throughout the United States. In countries outside the United States, the Company sells its products through a limited number of specialty healthcare distributors in the United Kingdom, Italy, Spain, Germany, Southeast Asia, Brazil, India and Greece. These distributors resell the Company’s products to hospitals and clinics in their respective geographies.

Revenue from product sales are recognized when the customer or distributor obtains control of the product, which occurs at a point in time, most frequently upon shipment of the product or receipt of the product, depending on shipment terms. The Company’s standard shipping terms are FOB shipping point, unless the customer requests that control and title to the inventory transfer upon delivery. Revenue includes shipment and handling fees charged to customers.

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Revenue is measured as the amount of consideration we expect to receive, adjusted for any applicable estimates of variable consideration and other factors affecting the transaction price, which is based on the invoiced price, in exchange for transferring products. All revenue is recognized when we satisfy our performance obligations under the contract. The majority of our contracts have a single performance obligation and are short term in nature. The Company has entered into extended service plans with customers which are recognized over time. This revenue represents less than 1% of net sales for the three and nine months ended September 30, 2019 and 2018. The unfulfilled performance obligations related to these extended service plans is included in deferred revenue, which is included in other current liabilities on the condensed consolidated balance sheet. The majority of the deferred revenue is expected to be recognized within one year.

Sales taxes and value added taxes in foreign jurisdictions that are collected from customers and remitted to governmental authorities are accounted for on a net basis and therefore are excluded from net sales. Revenue includes shipment and handling fees charged to customers. Shipping and handling costs associated with outbound freight after control over a product has transferred to a customer are accounted for as a fulfillment cost and are included in cost of goods sold.

Product Returns: The Company offers customers a limited right of return for its product in case of non-conformity or performance issues. The Company estimates the amount of its product sales that may be returned by its customers and records this estimate as a reduction of revenue in the period the related product revenue is recognized. The Company currently estimates product return liabilities using available industry data and its own historical sales and returns information. The Company has not received any returns to date and believes that future returns of its products will be minimal. Therefore, revenue recognized is not currently impacted by variable consideration related to product returns.

Note 3 - Debt

On August 5, 2016, the Company entered into a loan and security agreement with Silicon Valley Bank (the Bank). Under this agreement, the Bank agreed to provide the Company with up to \$5.0 million in debt financing, consisting of a term loan in an aggregate original principal amount not to exceed \$4.0 million (the "Term Loan") and a revolving line of credit in an aggregate principal amount not to exceed \$1.0 million outstanding at any time (the "Revolving Line"). Proceeds from the loans were to be used for general corporate and working capital purposes. Advances under the Term Loan were available to the Company until November 30, 2016 and were subject to the Company's compliance with liquidity covenants. The Term Loan expired unused on November 30, 2016 and the Term Loan is no longer available to be drawn. Advances under the Revolving Line are available to the Company until March 31, 2020 and accrue interest at a floating annual rate equal to 1.75% or 1.0% above the prime rate, depending on liquidity factors. Outstanding borrowings, if any, are collateralized by all of the Company's assets, excluding intellectual property which is subject to a negative pledge. There were no borrowings outstanding under this facility as of September 30, 2019 or December 31, 2018.

Note 4 - Equity

Series F Convertible Preferred Stock. On November 27, 2017, the Company closed on an underwritten public offering of Series F convertible preferred stock and warrants to purchase shares of common stock for gross proceeds of \$18.0 million. Net proceeds totaled approximately \$16.2 million after deducting the underwriting discounts and commissions and other costs associated with the offering.

The offering was comprised of Series F convertible preferred stock, convertible into shares of the Company's common stock at an initial conversion price of \$63.00 per share. Each share of Series F preferred stock was accompanied by a Series 1 warrant, which was to expire on the first anniversary of its issuance, to purchase 16 shares of the Company's common stock at an exercise price of \$63.00 per share, and a Series 2 warrant, which expires on the seventh anniversary of its issuance, to purchase 16 shares of the Company's common stock at an exercise price of \$63.00 per share. The Series F preferred stock and the warrants were immediately separable and were issued separately. The conversion price of the Series F preferred stock will be adjusted in the event of a stock split, combination, reclassification or stock dividend or if the Company consummates a fundamental transaction. The Series F preferred stock also has full ratchet price based anti-dilution protection, subject to customary carve outs, in the event of a down-round financing at a price per share below the conversion price of the Series F preferred stock (which protection will expire if, during any 20 of 30 consecutive trading days, the volume weighted average price of the Company's common stock exceeds 300% of the then-effective conversion price of the Series F preferred stock and the daily dollar trading volume for each trading day during such period exceeds \$200,000). The exercise price of the warrants is fixed and does not contain any variable pricing features, nor any price based anti-dilutive features, apart from customary adjustments for stock splits, combinations, reclassifications, stock dividends or fundamental transactions. A total of 18,000 shares of Series F Convertible Preferred Stock initially convertible into 286,714 shares of common stock and warrants to purchase 573,310 shares of common stock were issued in the offering.

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As noted below, effective July 3, 2018, the conversion price of the Series F convertible preferred stock was reduced from \$63.00 to \$29.68, the per share price in the July 2018 Offering described below. Effective March 12, 2019, the conversion price of the Series F convertible preferred stock was reduced again from \$29.68 to \$5.25, the per share price to the public of the Series G convertible preferred stock which closed in an underwritten public offering on March 12, 2019, and each share of the remaining Series F convertible preferred stock is convertible into 191 shares of the Company's common stock. As of both September 30, 2019, and December 31, 2018, 535 shares of the Series F convertible preferred stock remained outstanding.

July 2018 Offering: On July 3, 2018, the Company closed on an underwritten public offering of 181,941 shares of its common stock at a public offering price of \$29.68 per share, for gross proceeds of \$5.4 million, including the full exercise of the underwriters' over-allotment option to purchase additional shares of the Company's common stock (the "July 2018 Offering"). Net proceeds totaled approximately \$4.6 million after deducting underwriting discounts and commissions and offering expenses.

In connection with the July 2018 Offering, and to induce certain institutional investors who hold warrants issued by the Company in November 2017 ("November 2017 Warrants") to participate in the July 2018 Offering, the Company entered into letter agreements with such institutional investors. Pursuant to the terms of these agreements, the Company agreed, effective July 3, 2018, to reduce the per share exercise price of the November 2017 Warrants held by such institutional investors to \$29.68 and to extend the expiration date of the warrants that were to expire on November 27, 2018 to November 27, 2019. The number of common shares underlying the warrants that were repriced did not change. The repriced warrants are exercisable for 554,322 shares of common stock in the aggregate, of which, following such amendment, half expire on November 27, 2019 and half expire on November 27, 2024. The repricing of the warrants was accounted as an equity financing cost, with no impact to net proceeds from the offering.

As noted above, the Company's outstanding Series F preferred stock is subject to full-ratchet anti-dilution protection in the event the Company sells any common stock at a price lower than the then-conversion price of the Series F preferred stock. As a result of the July 2018 Offering, effective July 3, 2018, the conversion price of the Series F preferred stock was reduced from \$63.00 to \$29.68, the per share price in the July 2018 Offering.

Series G Convertible Preferred Stock and March 2019 Offering: On March 12, 2019, the Company closed on an underwritten public offering of common stock, Series G convertible preferred stock and warrants to purchase shares of common stock for gross proceeds of \$12.4 million, which included the full exercise of the underwriter's over-allotment option to purchase additional shares and warrants ("March 2019 Offering"). Net proceeds totaled approximately \$11.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering. The Series G convertible preferred stock included a beneficial conversion amount of \$4.5 million, representing the intrinsic value of the shares at the time of issuance. This amount is reflected as an increase to the loss per share allocable to common stockholders in the nine months ended September 30, 2019.

The March 2019 Offering was comprised of 455,178 shares of common stock priced at \$5.25 per share and 1,910,536 shares of Series G convertible preferred stock, convertible into common stock at \$5.25 per share. Each share of Series G convertible preferred stock and each share of common stock was accompanied by a Series 1 warrant and a Series 2 warrant. The Series 1 warrants are exercisable into 2,365,714 shares of common stock and the Series 2 warrants are exercisable into 2,365,714 shares of common stock. Series 1 warrants expire on the fifth anniversary of the date of issuance and are exercisable at \$5.25 to purchase one share of common stock. Series 2 warrants expire on the earlier of: (i) the eighteen-month anniversary of the date of issuance and (ii) the 30th trading day following the public announcement of the receipt from the U.S. Food and Drug Administration of clearance or approval of a modification to the product label for the Aquadex FlexFlow system to include pediatric patients. Series 2 warrants are exercisable at \$5.25 per share of common stock. The conversion price of the Series G convertible preferred stock as well as the exercise price of the warrants are fixed and do not contain any variable pricing features, nor any price based anti-dilutive features apart from customary adjustments for splits and reverse splits of common stock. The Series G convertible preferred stock included a beneficial ownership limitation of 4.99% but had no dividend preference (except to extent dividends are also paid on the common stock), liquidation preference or other preferences over common stock. The securities comprising the units were immediately separable and were issued separately.

As of September 30, 2019, all 1,910,536 shares of the Series G convertible preferred stock had been converted into common stock and none remained outstanding.

As noted above, the Company's outstanding Series F convertible preferred stock is subject to full-ratchet anti-dilution protection in the event the Company sells any common stock at a price lower than the then-conversion price of the Series F convertible preferred stock. As a result of the March 2019 Offering, the conversion price of the Series F convertible preferred stock was reduced from \$29.68, to \$5.25, the per share price of the Series G convertible preferred stock.

Placement Agent Fees: In connection with the issuance of the Series F convertible preferred stock, the July 2018 Offering, and the March 2019 Offering, the Company paid the placement agent an aggregate cash placement fee equal to 8% of the aggregate gross proceeds raised in the offering and issued no warrants to the placement agent.

Market-Based Warrants: On May 30, 2019, the Company granted a market-based warrant to a consultant in exchange for investor relations services. The warrant represents the right to acquire up to 100,000 shares of the Company’s common stock at an exercise price of \$3.18 per share, the closing stock price of the Company’s common shares on May 30, 2019. The warrant is subject to a vesting schedule based on the Company achieving certain market stock prices within a specified period of time. The warrant expires on May 30, 2024. The warrant was valued at \$1.93 per share using the Monte Carlo valuation methodology and is being expensed over the term of the consulting engagement which is twelve months. Significant inputs used for the Monte Carlo valuation were the expected stock price volatility of 136.21%, and management’s expectations regarding the timing of regulatory clearance for an expanded label in pediatrics.

Note 5 - Stock-Based Compensation

Under the fair value recognition provisions of U.S. GAAP for accounting for stock-based compensation, the Company measures stock-based compensation expense at the grant date based on the fair value of the award and recognizes the compensation expense over the requisite service period, which is generally the vesting period.

The following table presents the classification of stock-based compensation expense recognized for the periods below:

(in thousands)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Selling, general and administrative expense	\$ 383	\$ 440	\$ 1,018	\$ 1,446
Research and development expense	29	(3)	95	98
Total stock-based compensation expense	\$ 412	\$ 437	\$ 1,113	\$ 1,544

Note 6 - Fair Value of Financial Instruments

The Company’s financial instruments consist of cash and cash equivalents, warrants, and contingent consideration.

Pursuant to the requirements of ASC Topic 820 “Fair Value Measurement,” the Company’s financial assets and liabilities measured at fair value on a recurring basis are classified and disclosed in one of the following three categories:

- *Level 1* - Financial instruments with unadjusted quoted prices listed on active market exchanges.
- *Level 2* - Financial instruments lacking unadjusted, quoted prices from active market exchanges, including over the counter traded financial instruments. The prices for the financial instruments are determined using prices for recently traded financial instruments with similar underlying terms as well as directly or indirectly observable inputs, such as interest rates and yield curves that are observable at commonly quoted intervals.
- *Level 3* - Financial instruments that are not actively traded on a market exchange. This category includes situations where there is little, if any, market activity for the financial instrument. The prices are determined using significant unobservable inputs or valuation techniques.

The fair value of the Company’s contingent consideration, as described in Note 1, was initially measured based on the consideration expected to be transferred (probability-weighted), discounted back to present value, and it was considered a Level 3 instrument. The discount rate used was determined at the time of measurement in accordance with accepted valuation methods. The Company measured the liability on a recurring basis using Level 3 inputs including probabilities of payment and projected payment dates. As of September 30, 2019, this contingency had expired, therefore its fair value was recorded at \$0.

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The following is a rollforward of the fair value of Level 3 items:

<i>(in thousands)</i>	
Balance December 31, 2018	\$ 126
Change in fair value	(126)
Balance as of September 30, 2019	<u>\$ -</u>

The fair value of the market-based warrants described in Note 4 was calculated using a Monte Carlo valuation model and was classified as Level 3 in the fair value hierarchy. These warrants are classified as permanent equity and as a result, were measured at the grant date and are not required to be remeasured to fair value at each reporting period end.

All cash equivalents are considered Level 1 measurements for all periods presented. The Company does not have any financial instruments classified as Level 2 or any other classified as Level 3 and there were no movements between these categories during the periods ended September 30, 2019 and December 31, 2018. The Company believes that the carrying amounts of all remaining financial instruments approximate their fair value due to their relatively short maturities.

Note 7 – Operating Leases

The Company leases office and manufacturing space under a non-cancelable operating lease that expires in March 2022. In August 2018, the Company entered into a third amendment to the lease, extending the term of the lease from March 31, 2019 to March 31, 2022. Beginning on April 1, 2019, the annual base rent is \$9.00 per square foot, subject to annual increases of \$0.25 per square foot.

The cost components of the Company's operating lease were as follows for the three and nine months ended September 30, 2019:

<i>(in thousands)</i>	Three Months	Nine Months
Operating lease cost	\$ 53	\$ 158
Variable lease cost	26	85
Total	\$ 79	\$ 243

Variable lease costs consist primarily of taxes, insurance, and common area or other maintenance costs for our leased office and manufacturing space.

Maturities of our lease liability for the Company's operating lease are as follows as of September 30, 2019:

<i>(in thousands)</i>	
2019	\$ 52
2020	213
2021	219
2022	55
Total lease payments	<u>539</u>
Less: Interest	<u>(49)</u>
Present value of lease liability	<u>\$ 490</u>

As of September 30, 2019, the remaining lease term was 2.5 years and discount rate was 7.5%. For the nine months ended September 30, 2019, the operating cash outflows from the Company's operating lease for office and manufacturing space were \$154,000.

Rent expense related to operating leases for office and manufacturing space and office equipment was approximately \$54,000 and \$160,000 for the three and nine months ended September 30, 2018, respectively. Future minimum lease payments, under non-cancelable operating leases as of December 31, 2018, were approximately \$217,000, \$220,000, \$219,000, \$55,000, and \$0 for each of the years ended December 31, 2019, through 2023, respectively.

Note 8 – Income Taxes

The Company provides for a valuation allowance when it is more likely than not that it will not realize a portion of the deferred tax assets. The Company has established a full valuation allowance for U.S. and foreign deferred tax assets due to the uncertainty that enough taxable income will be generated in those taxing jurisdictions to utilize the assets. Therefore, the Company has not reflected any benefit of such deferred tax assets in the accompanying condensed consolidated financial statements.

As of September 30, 2019, there were no material changes to what the Company disclosed regarding tax uncertainties or penalties in its Annual Report on Form 10-K for the year ended December 31, 2018.

Note 9—Commitments and Contingencies

Employee Retirement Plan: The Company has a 401(k)-profit sharing plan that provides retirement benefit to substantially all full-time U.S. employees. Eligible employees may contribute a percentage of their annual compensation, subject to Internal Revenue Service (“IRS”) limitations, with the Company matching a portion of the employee’s contributions at the discretion of the Company.

Contingent Consideration: As part of the acquisition of the Aquadex Business from Baxter in August 2016, the Company agreed that if it disposed of any of the Aquadex assets for a price that exceeded \$4.0 million within three years of the closing, it would pay Baxter 40% of the amount of such excess. This commitment expired on August 6, 2019.

In addition, it also agreed that if shares of its common stock cease to be publicly traded on the Nasdaq Capital Market, Baxter has the option to require the Company to repurchase, in cash, all or any part of the common shares held by Baxter at a price equal to their fair market value, as determined by a third-party appraiser.

Note 10 – Subsequent Events

On October 25, 2019, the Company closed on a registered direct offering of 575,830 shares of its common stock at a price of \$1.15 per share, for gross proceeds of approximately \$660,000, prior to deducting commissions and expenses related to the transaction. In a concurrent private placement, the Company agreed to issue to the investors in the registered direct offering unregistered warrants to purchase up to 575,830 shares of the Company’s common stock at an exercise price of \$1.41 per share, which will be exercisable six months from the date of issuance, and will expire five years from the initial exercise date.

Additionally, the Company’s outstanding Series F preferred stock is subject to full-ratchet anti-dilution protection in the event the Company sells any common stock at a price lower than the then-conversion price of the Series F preferred stock. As a result of this offering, effective October 25, 2019, the conversion price of the Series F preferred stock was reduced from \$5.25 to \$1.15 per share, the per share price to the public in this transaction.

On November 6, 2019, the Company closed on a registered direct offering of 1,219,076 shares of its common stock, or common equivalents, at a price of \$1.12 per share, for gross proceeds of approximately \$1.36 million prior to deduction of commissions and offering expenses related to the transaction. In a concurrent private placement, the Company agreed to issue to the investors in the registered direct offering unregistered warrants to purchase up to 1,219,076 shares of the Company’s common stock at an exercise price of \$0.9942 per share, which will be exercisable upon the date of issuance, and will expire five years from the initial exercise date. Effective November 6, 2019, the conversion price of the Series F preferred stock was reduced from \$1.15 to \$0.9942, the exercise price of the warrants issued in connection with this financing.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our interim condensed consolidated financial statements and related notes included in Part I, Item 1 of this Quarterly Report and the audited consolidated financial statements and related notes and Management's Discussion and Analysis of Financial Condition and Results of Operations contained in our Annual Report on Form 10-K for the year ended December 31, 2018. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of a variety of factors, including those discussed in Part I, Item 1A "Risk Factors," in our Annual Report on Form 10-K for the year ended December 31, 2018 and in our subsequent filings with the Securities and Exchange Commission (SEC).

Unless otherwise specified or indicated by the context, CHF Solutions, Company, we, us and our, refer to CHF Solutions, Inc. and its subsidiaries.

OVERVIEW

About CHF Solutions

We are a medical device company focused on developing, manufacturing and commercializing the Aquadex FlexFlow® system for aquapheresis therapy. Aquadex FlexFlow system is indicated for temporary (up to eight hours) ultrafiltration treatment of patients with fluid overload who have failed diuretic therapy and extended (longer than 8 hours) ultrafiltration treatment of patients with fluid overload who have failed diuretic therapy and require hospitalization. In the United States, we hold 510(k) clearance from the FDA to market and sell the Aquadex FlexFlow system to adults. We have submitted an application to the FDA requesting for 510(k) clearance of the Aquadex FlexFlow system to include pediatric patients who weigh 20kg or more, which we expect to receive in Q1 2020. In the European Union ("EU"), we are required to hold a CE Mark to import our product into the EU. The CE Mark for the Aquadex FlexFlow system had previously expired. We received renewal for the Aquadex FlexFlow circuit in the second quarter of 2019 and expect to receive renewal for the Aquadex FlexFlow console in the fourth quarter of 2019, which would allow us to import additional console inventory into the EU. We believe that we currently have sufficient inventory of consoles already available for sale in the EU market and the timing of the receipt of the CE Mark for the console will not have a material impact on our revenue.

Previously, the Company was focused on developing the C-Pulse® Heart Assist System for treatment of Class III and ambulatory Class IV heart failure. In August 2016, the Company acquired the business associated with the Aquadex FlexFlow system (herein referred to as the "Aquadex Business") from a subsidiary of Baxter International, Inc. ("Baxter") and refocused its strategy to fully devote its resources on the Aquadex Business.

Recent Developments

Public Offerings

On October 25, 2019, we closed on a registered direct offering of 575,830 shares of common stock at a price of \$1.15 per share, for gross proceeds of approximately \$660,000, prior to deducting commissions and expenses related to the transaction. In a concurrent private placement, we agreed to issue to the investors in the registered direct offering unregistered warrants to purchase up to 575,830 shares of our common stock at an exercise price of \$1.41 per share, which will be exercisable six months from the date of issuance, and will expire five years from the initial exercise date.

Additionally, our outstanding Series F preferred stock is subject to full-ratchet anti-dilution protection in the event we sell any common stock at a price lower than the then-conversion price of the Series F preferred stock. As a result of this offering, effective October 25, 2019, the conversion price of the Series F preferred stock was reduced from \$5.25 to \$1.15 per share, the per share price to the public in this transaction.

On November 6, 2019, we closed on a registered direct offering of 1,219,076 shares of common stock, or common equivalents, at a price of \$1.12 per share, for gross proceeds of approximately \$1.36 million prior to deduction of commissions and offering expenses related to the transaction. In a concurrent private placement, we agreed to issue to the investors in the registered direct offering unregistered warrants to purchase up to 1,219,076 shares of our common stock at an exercise price of \$0.9942 per share, which will be exercisable upon the date of issuance, and will expire five years from the initial exercise date. Effective November 6, 2019, the conversion price of the Series F preferred stock was reduced from \$1.15 to \$0.9942, the exercise price of the warrants issued in connection with this financing.

On March 12, 2019, we closed on an underwritten public offering of 455,178 shares of common stock, approximately 1.9 million shares of Series G Convertible Preferred Stock, and warrants to purchase approximately 4.7 million shares of common stock, which includes the full exercise of the underwriter's over-allotment option, for gross proceeds of \$12.4 million. Net proceeds totaled approximately \$11.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering.

See Notes 4 and 10 to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q.

Reverse Stock Split

In December 2018, our stockholders approved a reverse split of our outstanding common stock at a ratio in the range of 1-for-2 to 1-for-14 and, in January 2019, our board of directors approved a 1-for-14 reverse split of our outstanding common stock that became effective after trading on January 2, 2019. This reverse stock split did not change the par value of our common stock or the number of common or preferred shares authorized by the Company's Fourth Amended and Restated Certificate of Incorporation. All share and per-share amounts have been retroactively adjusted to reflect the reverse stock split for all periods presented.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We have adopted various accounting policies to prepare the condensed consolidated financial statements in accordance with accounting principles generally accepted in the United States. (U.S. GAAP). Our most significant accounting policies are disclosed in Note 1 to the consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2018.

The preparation of the condensed consolidated financial statements, in conformity with U.S. GAAP, requires us to make estimates and assumptions that affect the amounts reported in the condensed consolidated financial statements and accompanying notes. Our estimates and assumptions, including those related to stock-based compensation, valuation of equity and debt securities, and income tax reserves are updated as appropriate, which in most cases is quarterly. We base our estimates on historical experience, valuations, or various assumptions that are believed to be reasonable under the circumstances. There have been no material changes to our critical accounting policies and estimates from the information provided in Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* included in our Annual Report on Form 10-K for the year ended December 31, 2018.

Revenue Recognition: We recognize revenue in accordance with Accounting Standards Codification ("ASC"), Topic 606, *Revenue from Contracts with Customers*, which we adopted effective January 1, 2018. Accordingly, we recognize revenue when our customers obtain control of its products or services, in an amount that reflects the consideration that we expect to receive in exchange for those goods and services. See Note 2 – Revenue Recognition, included in Part I, Item 1 of this Quarterly Report, for additional disclosures.

Accounts Receivable: Our accounts receivable have terms that require payment in 30 days. We did not establish an allowance for doubtful accounts as of September 30, 2019 as we have not experienced any write offs or a deterioration in the aging of our receivables to date and do not expect to experience in the future.

Inventories: Inventories consist of finished goods, raw materials and subassemblies and are recorded as the lower of cost or net realizable value using the first-in, first out method.

Contingent consideration: In connection with the purchase of the Aquadex Business, we had an obligation to pay additional consideration that was contingent upon the occurrence of certain future events (see Note 9 to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q). Contingent consideration was recognized at the acquisition date at \$126,000, the estimated fair value of the contingent milestone payments. The fair value of the contingent consideration was remeasured to its estimated fair value at the end of each reporting period, with changes recorded to earnings. As of September 30, 2019, this contingency had expired, therefore its fair value was \$0.

Stock-Based Compensation: We recognize all share-based payments to employees and directors, including grants of stock options, warrants and common stock awards in the consolidated statement of operations and comprehensive loss as an operating expense based on their fair values as established at the grant date. Equity instruments issued to non-employees include common stock awards or warrants to purchase shares of our common stock. These common stock awards or warrants are either fully-vested and exercisable at the date of grant or vest over a certain period during which services are provided. We expense the fair market value of fully vested awards at the time of grant, and of unvested awards over the period in which the related services are received. In accordance with Accounting Standards Update 2018-07, unvested awards are no longer remeasured to fair value until vesting and rather the fair value is established at the grant date consistent with the treatment of employee director awards.

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We compute the estimated fair values of stock options and warrants using the Black-Scholes option pricing model and market-based warrants using a Monte Carlo valuation model. Market price at the date of grant is used to calculate the fair value of restricted stock units and common stock awards.

Stock-based compensation expense is based on awards ultimately expected to vest and is reduced for estimated forfeitures except for market-based warrants which are expensed based on the grant date fair value regardless of whether the award vests. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Loss per share: We compute basic loss per share based on the net loss allocable to common stockholders for each period divided by the weighted average number of common shares outstanding. The net loss allocable to common stockholders for the nine months ended September 30, 2019, reflects a \$4.5 million increase for the net deemed dividend to preferred stockholders provided in connection with the close of the March 2019 public offering, representing the intrinsic value of the preferred shares at the time of issuance. Diluted earnings per share is computed based on the net loss allocable to common stockholders for each period divided by the weighted average number of common shares outstanding, increased by the number of additional shares that would have been outstanding had the potentially dilutive common shares been issued, and reduced by the number of shares the Company could have repurchased from the proceeds from issuance of the potentially dilutive shares. Potentially dilutive shares of common stock include warrants, stock options and other stock-based awards granted under stock-based compensation plans. These potentially dilutive shares were excluded from the computation of loss per share as their effect was antidilutive due to our net loss in each of those periods.

Going Concern: Our consolidated financial statements have been prepared and presented on a basis assuming we continue as a going concern. During the years ended December 31, 2018 and 2017, and through September 30, 2019, we incurred losses from operations and net cash outflows from operating activities as disclosed in the condensed consolidated statements of operations and cash flows, respectively. As of September 30, 2019, we had an accumulated deficit of \$213.1 million and we expect to incur losses for the immediate future. To date, we have been funded primarily by various debt and equity financings, and although we believe that we will be able to successfully fund our operations, there can be no assurance that we will be able to do so or that we will ever operate profitably. These factors raise substantial doubt about our ability to continue as a going concern through the next twelve months.

We became a revenue generating company only after acquiring the Aquadex Business in August 2016. We expect to incur additional losses in the near-term as we grow the Aquadex Business, including investments in expanding our sales and marketing capabilities, purchasing inventory, manufacturing components, and complying with the requirements related to being a U.S. public company. To become and remain profitable, we must succeed in expanding the adoption and market acceptance of the Aquadex FlexFlow system. This will require us to succeed in training personnel at hospitals and in effectively and efficiently manufacturing, marketing and distributing the Aquadex FlexFlow system and related components. There can be no assurance that we will succeed in these activities, and we may never generate revenues sufficient to achieve profitability.

During 2017, 2018 and through November 6, 2019, we closed on registered direct and underwritten public equity offerings for net proceeds of approximately \$41.4 million after deducting the underwriting discounts and commissions and other costs associated with the offering. We will be required to seek additional funding to grow our Aquadex Business, which may not be available on terms favorable to us, or at all. We may receive those funds from the proceeds from future warrant exercises, issuances of equity securities, or other financing transactions. Should warrant exercises not materialize or future capital raising be unsuccessful, we may not be able to continue as a going concern. We have made no adjustments relating to the recoverability and classification of recorded asset amounts and classification of liabilities that might be necessary should we not continue as a going concern.

NEW ACCOUNTING PRONOUNCEMENTS

Information regarding new accounting pronouncements is included in Note 1 to the condensed consolidated financial statements included in this Quarterly Report.

FINANCIAL OVERVIEW

We are a medical device company focused on developing, manufacturing and commercializing the Aquadex system for ultrafiltration treatment of patients with fluid overload who have failed diuretic therapy. Activities since inception have consisted principally of raising capital, performing research and development and conducting preclinical and clinical studies. During 2016, we acquired the Aquadex Business and announced that we were halting all clinical evaluations of our prior technology, the C-Pulse System. Since then, our activities have consisted mainly of expanding our sales and marketing capabilities and transferring manufacturing capabilities from Baxter to our facilities in Eden Prairie, Minnesota. As of September 30, 2019, we had an accumulated deficit of \$213.1 million and we expect to incur losses for the immediate future. To date, we have been funded by public and private equity financings and debt. Although we believe that we will be able to successfully fund our operations, there can be no assurance that we will be able to do so or that we will ever operate profitably.

Results of Operations**Comparison of Three Months Ended September 30, 2019 to Three Months Ended September 30, 2018****Net Sales***(in thousands)*

	Three Months Ended September 30, 2019		Three Months Ended September 30, 2018		Increase (Decrease)		% Change
\$	1,252	\$	1,363	\$	(111)		(8.1)%

Revenue is generated mainly from the sale of disposable blood filters and catheters used in conjunction with the Aquadex FlexFlow consoles. We sell primarily in the United States to hospitals and clinics through our direct salesforce. We sell outside of the United States to independent specialty distributors who in turn sell to hospitals and clinics in their geographic regions. The decrease in net sales compared to the same period of 2018 is driven by a reorganization of our salesforce to best align experiences and competencies with our go-to market strategy around cardiac surgery and eventually pediatrics.

Costs and Expenses

Our costs and expenses were as follows:

(in thousands)

	Three Months Ended September 30, 2019		Three Months Ended September 30, 2018		Increase (Decrease)		% Change
Cost of goods sold	\$ 540	\$	915	\$	(375)		(41.0)%
Selling, general and administrative	\$ 4,107	\$	3,713	\$	394		10.6%
Research and development	\$ 1,112	\$	985	\$	127		12.9%

Cost of Goods Sold

In connection with the acquisition of the Aquadex Business, we entered into a manufacturing and supply agreement with Baxter. In 2017, we provided notice to Baxter to cease the manufacturing of the Aquadex product line and we began transitioning activities in house. In August 2018, we announced that the transfer of all manufacturing activities was complete.

Cost of sales in 2018 reflects the agreed-upon price paid to Baxter for the manufacturing of the disposables and consoles, as well as startup costs associated with the transfer of manufacturing activities to our facilities in Eden Prairie, Minnesota. In the first quarter of 2019, we began selling our internally manufactured inventory, driving the improvement in our gross margins. In future quarters, we expect our gross margins will continue to improve as volumes increase and we achieve larger efficiencies of scale.

Selling, General and Administrative

The increase in selling, general and administrative expense reflect primarily on-going investment in our commercial organization as we continue to expand our outreach in the field with incremental clinical specialists and marketing support. Our general and administrative costs have remained consistent with the prior year.

As we realign and grow our distribution footprint, we expect that our selling expenses will increase modestly in future quarters, and that general and administrative expenses will remain consistent to the current quarter.

Research and Development

The increase in research and development expenses relate to investments we are making to support our 510(k) submission for pediatric label modification, and to improve the functionality of our Aquadex system, including console software updates and catheter improvements. We expect that our research and development expenditures will decrease modestly in future quarters.

Comparison of Nine Months Ended September 30, 2019 to Nine Months Ended September 30, 2018**Net Sales***(dollars in thousands)*

	Nine Months Ended September 30, 2019		Nine Months Ended September 30, 2018		Increase (Decrease)		% Change
\$	4,144	\$	3,499	\$	645		18.4%

Revenue is generated mainly from the sale of disposable blood filters and catheters used in conjunction with our Aquadex FlexFlow consoles. We sell primarily in the United States to hospitals and clinics through our direct salesforce. We sell outside of the United States to independent specialty distributors who in turn sell to hospitals and clinics in their geographic regions. The change in net sales compared to the same period of 2018 is driven by the execution of our commercialization strategy which includes continued expansion of our commercial footprint by the hiring of new sales representatives, clinical specialists, and marketing personnel. In the fourth quarter of 2019, we announced a reorganization of our sales force to best align experiences and competencies with our go-to market strategy around cardiac surgery and eventually pediatrics.

Costs and Expenses

Our costs and expenses were as follows:

(dollars in thousands)

	Nine Months Ended September 30, 2019		Nine Months Ended September 30, 2018		Increase (Decrease)		% Change
Cost of goods sold	\$ 1,987	\$	2,686	\$	(699)		(26.0)%
Selling, general and administrative	\$ 12,098	\$	11,489	\$	609		5.3%
Research and development	\$ 3,719	\$	2,107	\$	1,612		76.5%

Cost of Goods Sold

In connection with the acquisition of the Aquadex Business, we entered into a manufacturing and supply agreement with Baxter. We provided notice to Baxter to cease the manufacturing of the Aquadex product line in 2017, and we began transitioning activities in house. In August 2018, we announced that the transfer of all manufacturing activities was complete.

Cost of sales in 2018 reflects the agreed-upon price paid to Baxter for the manufacturing of the disposables and consoles, as well as startup costs associated with the transfer of manufacturing activities to our facilities in Eden Prairie, Minnesota. In the first quarter of 2019, we began selling our internally manufactured inventory, driving the improvement in our gross margins. In future quarters, we expect our gross margins will continue to improve as volumes increase and we achieve larger efficiencies of scale.

Selling, General and Administrative

The increase in selling, general and administrative expense reflect primarily on-going investment in our commercial organization as we continue to expand our outreach in the field with incremental sales specialists, clinical specialists and marketing support. Our general and administrative costs have remained consistent to the prior year.

As we continue to increase our distribution footprint, we expect that our selling expenses will continue to increase modestly in future quarters, and that general and administrative expenses will remain consistent to the current quarter.

Research and Development

The increase in research and development expenses relate to investments we are making to support our 510(k) submission for pediatric label modification, and to improve the functionality of our Aquadex system, including console software updates and catheter improvements. We expect that our research and development expenditures will decrease modestly in future quarters.

Liquidity and Capital Resources**Sources of Liquidity**

We have funded our operations primarily through cash on hand and a series of equity and debt issuances.

On July 3, 2018, we closed on an underwritten public offering of 181,941 shares of common stock, for gross proceeds of \$5.4 million. Net proceeds totaled approximately \$4.6 million after deducting the underwriting discounts and commissions and other costs associated with the offering. See Note 4 – Equity, to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q.

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On March 12, 2019, we closed on an underwritten public offering for net proceeds totaling approximately \$11.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering, which included the full exercise of the underwriter's over-allotment option to purchase additional shares and warrants. In connection with this offering, we issued a total of 455,178 shares of common stock, approximately 1.9 million shares of Series G convertible preferred stock and warrants to purchase approximately 4.7 million shares of common stock. See Note 4 – Equity, to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q.

On October 25, 2019, we closed on a registered direct offering of common stock, for gross proceeds of approximately \$660,000, prior to deducting commissions and expenses related to the transaction. In a concurrent private placement, we agreed to issue to the investors in the registered direct offering unregistered warrants to purchase up to 575,830 shares of our common stock. See Note 10 – Subsequent Events, to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q.

On August 5, 2016, we entered into a loan agreement with Silicon Valley Bank for proceeds of up to \$5.0 million, including a \$1.0 million revolving line of credit and a \$4.0 million term loan. The term loan expired unused on November 30, 2016 and the term loan is no longer available to be drawn. Under the revolving line, we may borrow the lesser of \$1 million or 80% of our eligible accounts (subject to customary exclusions), minus the outstanding principal balance of any advances under the revolving line. Advances under the revolving line, if any, will accrue interest at a floating per annum rate equal to 1.75% or 1.0% above the prime rate, depending on liquidity factors. The loan agreement contains customary representations, as well as customary affirmative and negative covenants. Our obligations under the new loan agreement are secured by a security interest in our assets, excluding intellectual property and certain other exceptions. We are subject to a negative pledge covenant with respect to our intellectual property. Advances under the revolving line are subject to various conditions precedent, including our compliance with financial covenants relating to net liquidity relative to monthly cash burn. The revolving line of credit expires on March 31, 2020. We had no borrowings outstanding under the Silicon Valley Bank facility as of September 30, 2019 or December 31, 2018.

As of September 30, 2019, and December 31, 2018, cash and cash equivalents were \$3.6 million and \$5.5 million, respectively. Prior to our acquisition of the Aquadex Business in August 2016, we did not have a product approved for commercial sale and focused our resources on developing, manufacturing, and commercializing our C-Pulse System. Our business strategy and ability to fund our operations in the future depends in part on our ability to grow our Aquadex Business by establishing a sales force, selling our products to hospitals and other healthcare facilities and controlling costs. We believe we will need to seek financing in the future.

Cash Flows from Operating Activities

Net cash used in operating activities was \$12.3 million and \$11.8 million for the nine months ended September 30, 2019 and 2018, respectively. The net cash used in each of these periods primarily reflects the net loss for those periods, offset in part by stock-based compensation, depreciation and amortization, and the effects of changes in operating assets and liabilities.

Cash Flows from Investing Activities

Net cash used in investing activities was \$464,000 and \$177,000 for the nine months ended September 30, 2019 and September 30, 2018, respectively. The majority of cash used in investing activities was for internally manufactured equipment, and the purchase of manufacturing, laboratory and office equipment.

Cash Flows from Financing Activities

As described above, net cash provided by financing activities was \$11.0 million and \$4.6 million for the nine months ended September 30, 2019 and September 30, 2018, respectively.

Capital Resource Requirements

As of September 30, 2019, we did not have any material commitments for capital expenditures.

Off-Balance Sheet Arrangements

On August 5, 2016, we entered into an asset purchase agreement for the Aquadex Business with Baxter, whereby we agreed that, if we dispose of any of the acquired assets for a price that exceeds \$4.0 million within three years of the closing, we would pay Baxter 40% of the amount of such excess. This commitment expired on August 6, 2019. In addition, we also agreed that, if shares of our common stock cease to be publicly traded on the Nasdaq Capital Market, Baxter has the option to require us to repurchase, in cash, all or any part of the common shares held by Baxter at a price equal to their fair market value, as determined by a third-party appraiser.

Except as disclosed above, we have no off-balance sheet transactions, arrangements, obligations (including contingent obligations), or other relationships with unconsolidated entities or other persons that have, or may have, a material effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Forward-Looking Statements and Risk Factors

Certain statements in this Quarterly Report on Form 10-Q are forward-looking statements within the meaning of the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (“Exchange Act”), that are based on management’s beliefs, assumptions and expectations and information currently available to management. All statements that address future operating performance, events or developments that we expect or anticipate will occur in the future are forward-looking statements, including without limitation, our ability to execute on our strategic realignments, our post-market clinical data collection activities, benefits of our products to patients, our expectations with respect to product development and commercialization efforts, our ability to increase market and physician acceptance of our products, potentially competitive product offerings, the possibility that we may be unable to raise sufficient funds necessary for our anticipated operations, intellectual property protection, our ability to integrate acquired businesses, our expectations regarding anticipated synergies with and benefits from acquired businesses and other risks and uncertainties described in our filings with the SEC. In some cases, you can identify forward-looking statements by the following words: “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “ongoing,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. Management believes that these forward-looking statements are reasonable as and when made. However, you should not place undue reliance on forward-looking statements because they speak only as of the date when made. We undertake no obligation to revise any forward-looking statements in order to reflect events or circumstances that might subsequently arise. Forward-looking statements are subject to a number of risks and uncertainties that could cause actual events to adversely differ from the expectations indicated in these forward-looking statements, including without limitation, the risks and uncertainties described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2019 and June 30, 2019, this Quarterly Report and in other reports filed thereafter with the SEC, which risk factors we may update from time to time. We operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for us to predict all risk factors and uncertainties. CHF Solutions may not actually achieve the plans, projections or expectations disclosed in forward-looking statements, and actual results, developments or events could differ materially from those disclosed in the forward-looking statements. Forward-looking statements are subject to a number of risks and uncertainties, including without limitation, the possibility that regulatory authorities do not accept our application or approve the marketing of our products, the possibility we may be unable to raise the funds necessary for the development and commercialization of our products, and those described in our filings with the SEC.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that 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 SEC rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer (together, the “*Certifying Officers*”), as appropriate, to allow for timely decisions regarding required disclosure.

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In designing and evaluating disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired objectives. Also, 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. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, 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. 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 its stated goals under all potential future conditions.

As of September 30, 2019, the end of the period covered by this report, we conducted an evaluation, under the supervision and with the participation of management, including the Certifying Officers, of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their stated objectives. Based on their evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of September 30, 2019.

Changes in Internal Controls over Financial Reporting

There was no change in our internal control over financial reporting during our most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not currently subject to any material legal proceedings.

ITEM 1A. RISK FACTORS

You should carefully consider the risks and uncertainties we describe in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, and in other reports filed thereafter with the SEC, before deciding to invest in or retain shares of our common stock. We do not believe there are any material changes to the risk factors discussed in Item 1A. "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

The exhibits filed as part of this Quarterly Report on Form 10-Q are listed in the Exhibit Index below.

Exhibit Index
CHF Solutions, Inc.
Form 10-Q for the Quarterly Period Ended September 30, 2019

Exhibit Number	Exhibit Description	Incorporated By Reference			Exhibit Number	Filed Herewith	Furnished Herewith
		Form	File Number	Date of First Filing			
3.1	Fourth Amended and Restated Certificate of Incorporation	10	001-35312	February 1, 2012	3.1		
3.2	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation	8-K	001-35312	January 13, 2017	3.1		
3.3	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation	8-K	001-35312	May 23, 2017	3.1		
3.4	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation	8-K	001-35312	October 12, 2017	3.1		
3.5	Form of Certificate of Designation of Series A Junior Participating Preferred Stock	8-K	001-35312	June 14, 2013	3.1		
3.6	Form of Certificate of Designation of Preferences, Rights and Limitations of Series F Convertible Preferred Stock	S-1/A	333-221010	November 17, 2017	3.7		
3.7	Certificate of Amendment to Fourth Amended and Restated Certificate of Incorporation, as amended, of CHF Solutions, Inc	8-K	001-35312	January 2, 2019	3.1		
3.8	Form of Certificate of Designation of Preferences, Rights and Limitations of Series G Convertible Preferred Stock	S-1/A	333-209102	February 25, 2019	3.9		
3.9	Second Amended and Restated Bylaws	8-K	001-35312	May 23, 2017	3.2		
10.1	Non - Employee Director Compensation Policy					X	
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X	
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X	
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X

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Exhibit Number	Exhibit Description	Incorporated By Reference			Exhibit Number	Filed Herewith	Furnished Herewith
		Form	File Number	Date of First Filing			
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
101.INS	XBRL Instance Document					X	
101.SCH	XBRL Taxonomy Extension Schema Document					X	
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					X	
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X	
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					X	
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					X	

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.

CHF Solutions, Inc.

Date: November 8, 2019

By: /s/ John L. Erb
John L. Erb
Chief Executive Officer and Chairman of the Board
(principal executive officer)

Date: November 8, 2019

By: /s/ Claudia Drayton
Claudia Drayton
Chief Financial Officer
(principal financial officer)

CHF SOLUTIONS, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY
(Effective April 1, 2019)

On May 23, 2019, upon the recommendation of the Compensation Committee (the "Compensation Committee") of the Board of Directors (the "Board") of CHF Solutions, Inc. a Delaware corporation (the "Company"), the Board approved the following compensation policy (this "Policy") for non-employee directors of the Company, effective as of April 1, 2019. For purposes of this Policy, a "Non-Employee Director" is a director who has not served as an employee or executive officer of the Company or its affiliates or otherwise provided services to the Company or its affiliates in a capacity other than as a director during the preceding year.

Annual Cash Compensation

The annual cash compensation amount set forth below is payable in equal quarterly installments, payable in arrears on the last day of each fiscal quarter in which the service occurred. If a Non-Employee Director joins the Board or a committee of the Board at a time other than effective as of the first day of a fiscal quarter, each annual retainer and fee set forth below will be pro-rated based on days served in the applicable fiscal year, with the pro-rated amount paid for the first fiscal quarter in which the Non-Employee Director provides the service, and regular full quarterly payments thereafter. All annual cash fees are vested upon payment.

- Base Annual Retainer for Non-Employee Directors: \$45,000
- Additional Base Annual Retainer for additional positions and committee membership:
 - Lead Independent Director: \$10,000
 - Chair Audit Committee: \$10,000
 - Chair Compensation Committee: \$5,000
 - Chair Nominating and Governance Committee: \$5,000
 - Member Audit Committee: \$5,000
 - Member Compensation Committee: \$2,000
 - Member Nominating and Governance Committee: \$2,000

Annual Equity Award

Each Non-Employee Director will be eligible to receive compensatory equity awards under the Company's 2013 Non-Employee Directors' Equity Incentive Plan (the "Plan") as consideration for service on the Board. All grants under this Policy will be made automatically in accordance with the terms of this Policy and the Plan, without the need for any additional corporate action by the Board or the Compensation Committee. Vesting of all equity awards granted under this Policy is subject to a Non-Employee Director's Continuous Service (as defined in the Plan) from the date of grant through each applicable vesting date. All equity awards granted under this Policy will be subject to the Company's standard forms of award agreements, as most recently adopted by the Board for use under this Policy.

Each year on the date of the first regular annual meeting of the Company's stockholders (the "Annual Meeting"), the Company will automatically grant each newly-elected and each continuing Non-Employee Director, an annual equity award with an aggregate value on the date of grant equal to 0.15% of the fully diluted shares of the Company as of December 31 of the prior year (the "Annual Equity Award"). Subject to a Non-Employee Director's Continuous Service, the Annual Equity Award will vest 1/12 of the shares each month, commencing on the one-month anniversary of the date of grant, so that all of the shares will be vested on the one-year anniversary of the date of grant.

Pro-Rata Annual Equity Award

If an individual first becomes a Non-Employee Director other than at the Annual Meeting, the Company will automatically grant such new Non-Employee Director, on the date that he or she is first elected or appointed to the Board, an annual equity award with an aggregate value on the date of grant equal to the pro rata portion of the Annual Equity Award, which pro rata portion reflects a reduction for each month prior to the date of grant that has elapsed since the preceding Annual Meeting (the "Pro-Rated Annual Equity Award"). Subject to a Non-Employee Director's Continuous Service, the Pro-Rated Annual Equity Award will vest 1/12 of the shares each month, commencing on the one-month anniversary of the date of grant, so that all of the shares will be vested on the one-year anniversary of the date of grant.

Expense Reimbursement

All Non-Employee Directors will be entitled to reimbursement from the Company for their reasonable travel (including airfare and ground transportation), lodging and meal expenses incident to meetings of the Board or committees thereof. The Company will also reimburse directors for attendance at director continuing education programs that are relevant to their service on the Board and which attendance is pre-approved by the Chairman of the Governance and Nominating Committee or the Chairman of the Board. The Company will make reimbursement to a Non-Employee Director within a reasonable amount of time following submission by such Non-Employee Director of reasonable written substantiation for the expenses.

CHIEF EXECUTIVE OFFICER'S 302 CERTIFICATION

I, John L. Erb, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of CHF Solutions, Inc. for the quarterly period ended September 30, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2019

/s/ John L. Erb

John L. Erb
Chief Executive Officer

CHIEF FINANCIAL OFFICER'S 302 CERTIFICATION

I, Claudia Drayton, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of CHF Solutions, Inc. for the quarterly period ended September 30, 2019.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2019

/s/ Claudia Drayton
Claudia Drayton
Chief Financial Officer

**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 CHF Solutions, Inc. (the "*Company*") on Form 10-Q for the quarterly period ended September 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "*Report*"), I, John L. Erb, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 8, 2019

/s/ John L. Erb
John L. Erb
Chief Executive Officer

**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 CHF Solutions, Inc. (the "*Company*") on Form 10-Q for the quarterly period ended September 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "*Report*"), I, Claudia Drayton, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 8, 2019

/s/ Claudia Drayton

Claudia Drayton
Chief Financial Officer
