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**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, 2017**  
**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**

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**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)

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

Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

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

Large accelerated filer

Non-accelerated filer  (Do not check if a smaller reporting company)

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 October 31, 2017 was 625,791

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Report of Independent Registered Public Accounting Firm

We have reviewed the accompanying condensed consolidated balance sheet of CHF Solutions, Inc. and subsidiaries as of September 30, 2017 and the condensed consolidated statements of operations and comprehensive loss for the three-month and nine-month periods ended September 30, 2017 and the condensed consolidated statement of cash flows for the nine-month period ended September 30, 2017. These interim condensed consolidated financial statements are the responsibility of the company's management.

We conducted our review in accordance with the standards of the Public Company Accounting Oversight Board (United States). A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the Public Company Accounting Oversight Board, the objective of which is the expression of an opinion regarding the consolidated financial statements taken as a whole. Accordingly, we do not express such an opinion.

Based on our review, we are not aware of any material modifications that should be made to the accompanying interim condensed consolidated financial statements for them to be in conformity with accounting principles generally accepted in the United States of America.

/s/ Baker Tilly Virchow Krause, LLP  
Minneapolis, Minnesota  
November 2, 2017

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)

	September 30, 2017 (unaudited)	December 31, 2016
<b>ASSETS</b>		
<b>Current assets</b>		
Cash and cash equivalents	\$ 2,513	\$ 1,323
Accounts receivable	780	282
Inventory	1,337	677
Other current assets	108	137
<b>Total current assets</b>	<b>4,738</b>	<b>2,419</b>
Property, plant and equipment, net	575	540
Intangible assets, net	3,817	4,302
Goodwill	189	189
Other assets	21	21
<b>TOTAL ASSETS</b>	<b>\$ 9,340</b>	<b>\$ 7,471</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>Current liabilities</b>		
Accounts payable and accrued expenses	\$ 1,412	\$ 2,351
Accrued compensation	815	909
<b>Total current liabilities</b>	<b>2,227</b>	<b>3,260</b>
Common stock warrant liability	6	1,843
Other liabilities	126	126
<b>Total liabilities</b>	<b>2,359</b>	<b>5,229</b>
Commitments and contingencies	—	—
<b>Temporary Stockholders' Equity</b>		
Series D convertible preferred stock as of September 30, 2017 and December 31, 2016, par value \$0.0001 per share; authorized 0 and 900 shares, respectively, issued and outstanding 0 and 700, respectively	—	485
<b>Stockholders' equity</b>		
Series A junior participating preferred stock as of September 30, 2017 and December 31, 2016, par value \$0.0001 per share; authorized 30,000 shares, none outstanding	—	—
Series B-1 convertible preferred stock as of September 30, 2017 and December 31, 2016, par value \$0.0001 per share; authorized 0 and 1,824.4 shares, respectively, issued and outstanding 0 and 1,824.4, respectively	—	—
Series C convertible preferred stock as of September 30, 2017 and December 31, 2016, par value \$0.0001 per share; authorized 0 and 2,900 shares, respectively, issued and outstanding 0 and 2,900, respectively	—	—
Preferred stock as of September 30, 2017 and December 31, 2016, par value \$0.0001 per share; authorized 39,970,000 and 39,964,375.6 shares, respectively, none outstanding	—	—
Common stock as of September 30, 2017 and December 31, 2016, par value \$0.0001 per share; authorized 100,000,000 shares, issued and outstanding 625,844 and 38,862, respectively	—	—
Additional paid-in capital	180,972	169,496
Accumulated other comprehensive income:		
Foreign currency translation adjustment	1,228	1,235
Accumulated deficit	(175,219)	(168,974)
<b>Total stockholders' equity</b>	<b>6,981</b>	<b>1,757</b>
<b>TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY</b>	<b>\$ 9,340</b>	<b>\$ 7,471</b>

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 September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
<b>Net sales</b>	\$ 957	\$ 543	\$ 2,722	\$ 543
Costs and expenses:				
Cost of goods sold	782	187	1,912	187
Selling, general and administrative	2,671	2,683	7,478	5,444
Research and development	367	1,735	1,002	7,511
Total costs and expenses	<u>3,820</u>	<u>4,605</u>	<u>10,392</u>	<u>13,142</u>
Loss from operations	<u>(2,863)</u>	<u>(4,062)</u>	<u>(7,670)</u>	<u>(12,599)</u>
Other income (expense):				
Interest expense	-	(68)	-	(504)
Loss on early retirement of long-term debt	-	(500)	-	(500)
Other income, net	17	2	28	2
Warrant valuation expense	-	-	(67)	-
Change in fair value of warrant liability	4	646	1,470	646
Total other income (expense)	<u>21</u>	<u>80</u>	<u>1,431</u>	<u>(356)</u>
Loss before income taxes	(2,842)	(3,982)	(6,239)	(12,955)
Income tax benefit (expense), net	(5)	65	(6)	64
<b>Net loss</b>	<u>\$ (2,847)</u>	<u>\$ (3,917)</u>	<u>\$ (6,245)</u>	<u>\$ (12,891)</u>
<b>Basic and diluted loss per share</b>	<u>\$ (4.55)</u>	<u>\$ (117.66)</u>	<u>\$ (25.36)</u>	<u>\$ (409.02)</u>
Weighted average shares outstanding – basic and diluted	626	33	359	32
<b>Other comprehensive loss:</b>				
Foreign currency translation adjustments	\$ (1)	\$ (6)	\$ (7)	\$ (12)
<b>Total comprehensive loss</b>	<u>\$ (2,848)</u>	<u>\$ (3,923)</u>	<u>\$ (6,252)</u>	<u>\$ (12,903)</u>

See notes to the condensed consolidated financial statements.

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

(in thousands)

	<b>Nine months ended</b>	
	<b>September 30,</b>	
	<b>2017</b>	<b>2016</b>
<b>Operating Activities:</b>		
Net loss	\$ (6,245)	\$ (12,891)
Adjustments to reconcile net loss to cash flows used in operating activities:		
Depreciation and amortization expense	656	457
Stock-based compensation expense, net	391	764
Amortization of debt discount and financing fees	-	187
Loss on early retirement of long-term debt	-	500
Change in fair value of warrant liability	(1,470)	(646)
Warrant valuation expense	67	-
Changes in operating assets and liabilities:		
Accounts receivable	(498)	(111)
Inventory	(660)	(202)
Other current assets	28	256
Other assets	-	(471)
Accounts payable and accrued expenses	(1,038)	(1,406)
<b>Net cash used in operations</b>	<b>(8,769)</b>	<b>(13,563)</b>
<b>Investing Activities:</b>		
Purchases of property and equipment	(206)	(110)
Acquisition of Aquadex product line	-	(4,000)
<b>Net cash used in investing activities</b>	<b>(206)</b>	<b>(4,110)</b>
<b>Financing Activities:</b>		
Net proceeds from public stock offering	8,002	-
Net proceeds from exercise of warrants	1,981	-
Net proceeds from the sale of common stock, preferred stock, and warrants	184	3,362
Repayments on borrowings on long-term debt	-	(8,000)
<b>Net cash provided by (used in) financing activities</b>	<b>10,167</b>	<b>(4,638)</b>
Effect of exchange rate changes on cash	(2)	(10)
Net increase (decrease) in cash and cash equivalents	1,190	(22,321)
Cash and cash equivalents - beginning of period	1,323	23,113
<b>Cash and cash equivalents - end of period</b>	<b>\$ 2,513</b>	<b>\$ 792</b>
<b>Supplement schedule of non-cash activities</b>		
Warrants issued as inducement to warrant exercise	\$ 509	\$ -
Conversion of temporary equity to permanent equity	\$ 485	\$ -
Common stock issued for business acquisition	\$ -	\$ 950
<b>Supplemental cash flow information</b>		
Cash paid for interest	\$ -	\$ 840
Cash paid for income taxes	\$ 8	\$ 47

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 commercializing the Aquadex FlexFlow® System for Aquapheresis® therapy. The Aquadex FlexFlow System (Aquadex) 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. 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 the NASDAQ Capital Market since February 2012.

Prior to July 2016, the Company was focused on developing the C-Pulse® Heart Assist System for treatment of Class III and ambulatory Class IV heart failure. The C-Pulse System utilized the known concept of counterpulsation applied to the aorta. In March 2016, the Company announced that it was no longer enrolling patients into its two clinical studies for the C-Pulse System and that it planned to pursue a new strategic direction. In July 2016, the Company announced that it was moving forward with a therapeutic strategy utilizing neuromodulation rather than counterpulsation. In August 2016, the Company acquired the Aquadex business from a subsidiary of Baxter International, Inc. (“Baxter”), a global leader in the hospital products and dialysis markets (herein referred to as the “Aquadex Business.”) On September 29, 2016, the Company announced a strategic refocus of its near-term strategy that included halting clinical evaluations of its neuromodulation technology to fully focus its resources on its recently acquired Aquadex Business, taking actions to reduce its cash burn, and reviewing potential strategic alliances and financing alternatives. On May 23, 2017, the Company announced it was changing its name from Sunshine Heart, Inc. to CHF Solutions, Inc. to more appropriately reflect the direction of its business.

During 2017, the Company’s board of directors and stockholders approved two reverse stock splits (together, the Reverse Stock Splits). Neither reverse stock split changed 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. The first reverse stock split was a 1-for-30 reverse split of the Company’s outstanding common stock that became effective after trading on January 12, 2017. The second reverse stock split was a 1-for-20 reverse split of the Company’s outstanding common stock that became effective after trading on October 12, 2017. All share and per-share amounts have been retroactively adjusted to reflect the Reverse Stock Splits 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.) (U.S. GAAP) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. 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 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 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, 2016.

*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, 2016 and 2015 and through September 30, 2017, the Company incurred losses from operations and net cash outflows from operating activities as disclosed in the consolidated statements of operations and comprehensive loss and cash flows, respectively. At September 30, 2017, the Company had an accumulated deficit of \$175 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.

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, clinical evaluations, 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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The Company may require additional funding in the future, which may not be available on terms favorable to the Company, or at all. The Company's ability to continue as a going concern may be dependent on the Company's ability to raise additional capital based on the achievement of commercial milestones. Should future capital raising be unsuccessful, the Company may not be able to continue as a going concern. On April 24, 2017, the Company closed on an underwritten public equity offering for net proceeds of approximately \$8.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering (see Note 4 - Equity). The Company believes it will need to raise additional funds to finance its operations in the fourth quarter of 2017 or first quarter of 2018. The Company may receive those funds from the proceeds from future warrant exercises, issuances of equity securities, or other financing transactions. 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 revenues from product sales when earned. Specifically, revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, and collectability is reasonably assured. Revenue is not recognized until title and risk of loss have transferred to the customer. The shipping terms for the Company's revenue arrangements are FOB shipping point. During the nine months ended September 30, 2017, two customers accounted for 13.9% and 10.8%, respectively, of the Company's total net sales.

*Accounts Receivable:* Accounts receivable are unsecured, are 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 uncollectability, 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, 2017 or December 31, 2016. At September 30, 2017, three customers accounted for 19.3%, 11.4%, and 10.4%, respectively, of the Company's total accounts receivable. As of December 31, 2016, two customers represented 21.2%, and 17.6%, respectively, of the Company's total accounts receivable.

*Inventories:* Inventories represent finished goods purchased from the Company's supplier and are recorded as the lower of cost or market using the first-in-first out method.

*Intangible assets:* The Company's intangible assets consist of customer relationships, developed technology, and trademarks and tradenames. All intangible assets recognized by the Company result from the acquisition of the Aquadex Business. All intangible assets are estimated to have a useful life of 7 years. The Company reviews its definite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable through the estimated undiscounted future cash flows derived from such assets. In cases where the carrying value exceeds the undiscounted cash flows, the carrying value is written down to its fair value, using a discounted cash flow analysis. No impairments have been identified or recorded in the periods presented.

*Goodwill:* Goodwill is the cost of an acquisition in excess of the fair value of acquired assets and liabilities and is recorded as an asset on the balance sheet. Goodwill is not subject to amortization but must be tested for impairment at least annually. This test requires the Company to determine if the implied fair value of the goodwill is less than its carrying amount.

The Company evaluates goodwill for impairment annually on November 1<sup>st</sup> of each calendar year, or to the extent events or conditions indicate a risk of possible impairment during the interim periods prior to its annual impairment test. Generally, the evaluation of goodwill for impairment involves a two-step test, although under certain circumstance an initial qualitative evaluation may be sufficient to conclude that goodwill is not impaired without conducting the quantitative test.

Step 1 involves comparing the estimated fair value of each respective reporting unit to its carrying value, including goodwill. If the estimated fair value exceeds the carrying value, the reporting unit's goodwill is not considered impaired. If the carrying value exceeds the estimated fair value, step 2 must be performed to determine whether goodwill is impaired and, if so, the amount of the impairment. Step 2 involves calculating an implied fair value of goodwill by performing a hypothetical allocation of the estimated fair value of the reporting unit determined in step 1 to the respective tangible and intangible net assets of the reporting unit. The remaining implied goodwill is then compared to the actual carrying amount of the goodwill for the reporting unit. To the extent the carrying amount of goodwill exceeds the implied goodwill, the difference is the amount of the goodwill impairment. No impairments have been identified or recorded in the periods presented.



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*Contingent consideration:* In connection with the Company's purchase of Aquadex, the Company has an obligation to pay additional consideration that is contingent upon the occurrence of certain future events. Contingent consideration was recognized at the acquisition date at the estimated fair value of the contingent milestone payments. The fair value of the contingent consideration is remeasured to its estimated fair value at the end of each reporting period, with changes recorded to earnings.

*Common stock warrant liability:* The Company recorded its common stock warrant liability at fair value at the date of issuance using primarily a Monte Carlo valuation model (see Note 6 - Fair Value of Financial Instruments). The fair value is remeasured to its estimated fair value at the end of each reporting period with changes recorded to earnings.

*Earnings per share:* Basic 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. The net loss allocable to common stockholders for the nine months ended September 30, 2017, reflects a \$1.0 million increase for the net deemed dividend to preferred stockholders provided in connection with the close of the public offering of Series E Convertible Preferred Stock in April of 2017 (see Note 4 - Equity), representing the intrinsic value of the shares at the time of issuance. In addition, the net loss allocable to common stockholders for the nine months ended September 30, 2017, reflects a \$1.8 million increase for the net deemed dividend to preferred stockholders provided in connection with the shareholder approval of the Series C and D Convertible Preferred Stock offering in January of 2017 (see Note 4 - Equity), representing the intrinsic value of the 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 the Company's net loss in each of those periods.

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	
	2017	2016
Stock options	36,874	4,816
Restricted stock units	324	731
Warrants to purchase common stock	496,629	6,885
Series B Convertible Preferred Stock	-	3,948
Total	533,827	16,380

*New Accounting Pronouncements:* In March 2016, the Financial Accounting Standards Board (FASB), issued amended stock compensation guidance to simplify various aspects of employee share-based payments accounting and presentation in the financial statements. The new guidance requires all income tax effects of awards to be recognized in the income statement when the awards vest or are settled, allows an employer to repurchase more of an employee's shares than previously allowed for tax withholding purposes without triggering liability accounting, allows a company to make a policy election to account for forfeitures as they occur, and eliminates the requirement that excess tax benefits be realized before companies can recognize them. The new guidance also requires excess tax benefits and tax shortfalls to be presented on the cash flow statement as an operating activity rather than as a financing activity, and clarifies that cash paid to a tax authority when shares are withheld to satisfy its statutory income tax withholding obligation are to be presented as a financing activity. The standard was effective for the Company's interim and annual periods beginning after January 1, 2017. The Company adopted the guidance in the current year. The adoption of this standard did not have a material impact to the Company's consolidated financial statements.

In May 2014, August 2015, March 2016, April 2016 and May 2016, the FASB issued amended revenue recognition guidance to clarify the principles for recognizing revenue from contracts with customers. The guidance requires an entity to recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which an entity expects to be entitled in exchange for those goods or services. The guidance also requires expanded disclosures relating to the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Additionally, qualitative and quantitative disclosures are required about customer contracts, significant judgments and changes in judgments, and assets recognized from the costs to obtain or fulfill a contract. The standard allows the Company to transition to the new model using either a full or modified retrospective approach. This guidance will be effective for the Company's interim and annual periods beginning January 1, 2018. Although the assessment is not complete, the Company believes that this standard will not have a material impact on its business practices, financial condition, results of operations and disclosures. The Company expects to complete the assessment in the fourth quarter of 2017.

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In November 2015, the FASB issued amended guidance concerning the classification of deferred taxes on the balance sheet to require that deferred tax assets and deferred tax liabilities be presented as noncurrent in a classified balance sheet. The amendment was effective for our annual and interim reporting periods beginning January 1, 2017, with early adoption permitted. The Company adopted this standard in the first quarter of 2017 with no impact on the Company's consolidated financial statements as all net deferred tax assets are fully reserved.

In February 2016, the FASB issued updated guidance to improve financial reporting about leasing transactions. This guidance will require organizations that lease assets to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases. This guidance is effective for the Company's annual and quarterly reporting periods beginning January 1, 2019. The Company is evaluating the impact that the adoption of this standard will have on its consolidated financial statements and disclosures.

In January 2017, the FASB issued amended guidance to simplify the accounting for goodwill impairment by removing Step 2 of the goodwill impairment test. A goodwill impairment will now be measured as the amount by which a reporting unit's carrying value exceeds its fair value, limited to the amount of goodwill allocated to that reporting unit. This guidance is to be applied on a prospective basis effective for the Company's interim and annual periods beginning after January 1, 2020, with early adoption permitted for any impairment tests performed after January 1, 2017. The Company is currently evaluating the effect of this update on its consolidated financial statements.

## Note 2 – Aquadex Acquisition

On August 5, 2016, the Company completed the acquisition of certain assets used in the production and sale of the Aquadex product line from Baxter. The acquisition of these assets meets the criteria for the purchase of a business, and has been accounted for in accordance with Accounting Standards Codification (ASC) 805, *Business Combinations*, with identifiable assets acquired and liabilities assumed recorded at their estimated fair values on the acquisition date. A valuation of the assets and liabilities from the business acquisition was performed utilizing cost, income and market approaches resulting in \$5.1 million allocated to identifiable net assets.

In connection with the acquisition of the Aquadex Business, the Company entered into a manufacturing and supply agreement with Baxter whereby Baxter agreed to manufacture and supply all of the Company's finished goods for a period of up to 18 months from the close of the transaction. The Company completed the acquisition in order to strengthen its presence in the heart failure market.

*Purchase Consideration:* Total purchase consideration for the Aquadex Business was as follows:

(in thousands)		
Cash consideration	\$	4,000
Common stock consideration		950
Fair value of contingent consideration		126
Total purchase consideration	\$	<u>5,076</u>

- *Common Stock Consideration:* The common stock consideration consisted of 1,666 shares of the Company's common stock, worth \$0.95 million based on the closing market value of \$570.00 per share on August 5, 2016.
- *Contingent Consideration:* In connection with the acquisition of the Aquadex product line, the Company agreed to pay Baxter 40% of any proceeds in excess of \$4.0 million related to the sale or disposal of the Aquadex assets within three years of the close of the transaction. The fair value of this contingent consideration was calculated based on the estimated likelihood of occurrence of this event in the timeframe provided by the agreement.

Purchase price consideration does not include expenses of \$0.9 million for accounting, audit, legal, and valuation services that were incurred as part of the transaction and were expensed as incurred.

The acquisition was recorded by recognizing the assets acquired at their estimated fair value at the acquisition date. The excess of the cost of the acquisition over the fair value of the assets acquired was recorded as goodwill. The fair values were based on management's analysis, including work performed by third-party valuation specialists. The following presents the amounts recognized for the assets acquired on August 5, 2016 (in thousands):

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Capital lease asset	\$ 307
Intangible assets	4,580
Total identifiable assets acquired	4,887
Goodwill	189
Total purchase consideration	\$ 5,076

The goodwill is primarily attributable to new and/or future customer relationships that were not acquired in the transaction. The fair value of the capital lease asset utilized a combination of the cost and market approaches, depending on the characteristics of the asset classification. Of the \$4.6 million of acquired intangible assets, \$3.1 million was assigned to customer relationships, \$1.1 million was assigned to developed technology, and \$0.4 million was assigned to trademarks and tradename. All intangible assets are estimated to have a useful life of 7 years.

*Pro Forma Condensed Combined Financial Information (Unaudited)*

The following unaudited pro forma combined financial information summarizes the results of operations for three months and nine months ended September 30, 2016 as if the acquisition of Aquadex had been completed on of January 1, 2016. Pro forma information reflects adjustments that are expected to have a continuing impact on our results of operations and are directly attributable to the acquisition. The unaudited pro forma results include adjustments to reflect, among other things, direct transaction costs relating to the acquisition, the difference in intangible asset amortization to be incurred based on the preliminary values of each identifiable intangible asset, and the difference in depreciation expense to be incurred based on preliminary value of the capital lease asset. The pro forma amounts do not purport to be indicative of the results that would have actually been obtained if the acquisition had occurred as of January 1, 2016 or that may be obtained in the future, and do not reflect future synergies, integration costs, or other such costs or savings.

(\$ in thousands, except per share amounts)

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2017	2016	2017	2016
Pro forma net sales	\$ 957	\$ 791	\$ 2,722	\$ 2,414
Pro forma net loss from operations	(2,863)	(3,146)	(7,670)	(12,519)
Pro forma basic and diluted net loss per share	\$ (4.55)	\$ (94.50)	\$ (25.36)	\$ (397.21)

**Note 3 - Debt**

*Prior Loan Agreement:* On February 18, 2015, the Company entered into a loan and security agreement with Silicon Valley Bank (the Bank) for proceeds of up to \$10.0 million at an annual interest rate of 7.0%. Under this agreement, a \$6.0 million term loan was funded at closing and an additional term loan in the amount of \$2.0 million was funded on June 26, 2015. The proceeds from the term loans were used for general corporate and working capital purposes. Commencing on January 1, 2016, the Company began repaying the advances made in twenty-four consecutive equal monthly installments. On August 4, 2016, the Company repaid all remaining amounts outstanding under the agreement, and incurred a \$0.5 million loss on early extinguishment of debt, including the accelerated write-off all unamortized warrants and debt issuance costs. There were no borrowings outstanding under this facility as of September 30, 2017 or December 31, 2016.

*Warrants:* In connection with the funding of these term loans, the Company issued 115 warrants at an exercise price of \$3,132 per share and 55 warrants at an exercise price of \$2,208 per share to the Bank and one of its affiliates. The Company valued these warrants at \$2,316 per share and \$1,626 per share, respectively, utilizing the Black Scholes valuation model and the following assumptions: an expected dividend yield of 0%, an expected stock price volatility of 88.07% and 87.04%, a risk-free interest rate of 1.86% and 2.20%, and an expected life of 6.25 years. The warrants have a life of ten years and were fully vested at the date of grant.

*New Loan Agreement:* On August 5, 2016, the Company entered into a new loan and security agreement with the Bank (the "New Loan Agreement"). Under the New Loan 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. Advances under the revolving line are subject to various conditions precedent, including compliance with financial covenants relating to net liquidity relative to monthly cash burn, which the Company does not currently meet. 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, 2017 or December 31, 2016.

#### **Note 4 - Equity**

*Series B/B-1 Convertible Preferred Stock:* On July 20, 2016, the Company entered into a securities purchase agreement with an institutional investor for an offering of shares of convertible preferred stock and warrants with gross proceeds of approximately \$3.5 million in a registered direct offering. The transaction closed on July 26, 2016, and the Company issued 3,468 shares of Series B Convertible Preferred Stock. The Series B Convertible Preferred Stock is non-voting and was convertible into a total of 6,149 shares of common stock at the holder's election at any time at a conversion price of \$564.0 per share. Approximately \$1.6 million of the proceeds were allocated to the preferred stock, representing the residual proceeds after the warrants (described below) were recorded at fair value.

On October 30, 2016, the Company entered into an exchange agreement with the holders of its Series B Convertible Preferred Stock and agreed to issue such holders 2,227.2 shares of the Company's Series B-1 Convertible Preferred Stock in exchange for the cancellation of all shares of Series B Convertible Preferred Stock held by such holders. The Series B-1 Convertible Preferred Stock had similar terms as the Series B Convertible Preferred Stock, except that the initial conversion price of the Series B-1 Convertible Preferred Stock was \$102.0 per share. As of December 31, 2016, 402.8 shares of the Series B-1 Convertible Preferred Stock had been converted into 3,948 shares of common stock, and 1,824.4 shares of Series B-1 Convertible Preferred Stock remained outstanding. As of September 30, 2017, all remaining Series B-1 Convertible Preferred Stock had been converted into an additional 17,866 shares of common stock and none remained outstanding.

*Series C and D Convertible Preferred Stock:* Also, on October 30, 2016, the Company entered into a securities purchase agreement with an institutional investor for shares of convertible preferred stock and warrants with an aggregate purchase price of \$3.8 million in a registered direct offering and simultaneous private placement. The first closing of the transaction occurred on November 3, 2016, whereby the Company received \$3.6 million in gross proceeds and issued and sold 2,900 shares of Series C Convertible Preferred Stock, and 700 shares of Series D Convertible Preferred Stock, both with conversion prices of \$102.0 per share. At the second closing, on January 10, 2017, the Company issued and sold 200 shares of Series D Convertible Preferred Stock with a conversion price of \$102.0 per share for gross proceeds of \$0.2 million. The Series C and D Convertible Preferred Stock included a contingent beneficial conversion amount of \$1.3 million and \$0.5 million, respectively, 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 first quarter of 2017 when the contingency for the conversion was resolved with the shareholder approval allowing for the conversion of the preferred stock into common stock. As of December 31, 2016, 2,900 shares of Series C Convertible Preferred Stock and 700 shares of Series D Convertible Preferred Stock were outstanding and none had been converted. As of September 30, 2017, all shares of the Series C and D Convertible Preferred Stock had been converted into an aggregate of 55,712 shares of common stock and none remained outstanding.

The Series D Convertible Preferred Stock with a carrying value of \$0.5 million was classified as temporary equity in the consolidated balance sheet as of December 31, 2016 because the Company could not control the settlement of its redemption in common stock. The temporary equity was not remeasured to fair value each period through earnings because the events that could trigger its redemption were not probable of occurrence. There were no shares of the Series D Convertible Preferred Stock outstanding as of September 30, 2017.

*Series E Convertible Preferred Stock:* On April 24, 2017, the Company closed on an underwritten public offering of common stock, Series E Convertible Preferred Stock and warrants to purchase shares of common stock for gross proceeds of \$9.2 million, which included the full exercise of the underwriter's over-allotment option to purchase additional shares and warrants. Net proceeds totaled approximately \$8.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering.

The offering comprised of Class A Units, priced at a public offering price of \$20.00 per unit, with each unit consisting of one share of common stock and one five-year warrant to purchase one share of common stock with an exercise price of \$22.0 per share, and Class B Units, priced at a public offering price of \$1,000 per unit, with each unit comprised of one share of preferred stock, which was convertible into 50 shares of common stock, and warrants to purchase 50 shares of common stock, also with an exercise price of \$22.0 per share. The conversion price of the Series E 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. A total of 140,000 shares of common stock, 6,400 shares of Series E Convertible Preferred Stock convertible into 320,000 shares of common stock, and warrants to purchase 640,000 shares of common stock were issued in the offering including the full exercise of the underwriter's over-allotment option to purchase additional shares and warrants. The Series E Convertible Preferred Stock included a beneficial conversion amount of \$1.0 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, 2017. As of September 30, 2017, all shares of the Series E Convertible Preferred Stock had been converted into an aggregate of 320,000 shares of common stock and none remained outstanding.

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In connection with the issuance of the Series B, C and D Convertible Preferred Shares, the Company paid the placement agent an aggregate cash placement fee equal to 6% of the aggregate gross proceeds raised in the offering and issued warrants as described below. In connection with the issuance of the Series E Convertible Preferred Shares, the Company paid the placement agent an aggregate cash placement fee equal to 9% of the aggregate gross proceeds raised in the offering. There were no warrants issued to the placement agent as part of this financing.

*Investor Warrants:* In connection with the issuance of the Series B Convertible Preferred Stock in July 2016, the Company issued the investor at no additional cost warrants to purchase 6,149 shares of common stock at an exercise price of \$564.0 per share. The warrants were exercisable for 36 months commencing six months from the closing date and were subject to a reduction of the exercise price if the Company subsequently issued common stock or equivalents at an effective price less than the current exercise price of such warrants. Concurrently with the closing of the Series C and D Convertible Preferred Stock and warrant financing on November 3, 2016, the exercise price for these warrants was adjusted to \$102.0 per share.

In connection with the issuance of the Series C and D Convertible Preferred Stock in November 2016, the Company issued the investor at no additional cost warrants to purchase 35,295 shares of common stock at an exercise price of \$108.0 per share. In connection with the issuance of the Series D Convertible Preferred Stock at the second closing in January 2017, the Company issued the investor at no additional cost warrants to purchase 1,961 shares of common stock at an exercise price of \$108.0 per share. The warrants were exercisable for 60 months commencing on the earlier of the day of the receipt of approval of the Company's stockholders of a proposal to approve the issuance of the shares of common stock underlying the warrants, or the six-month anniversary of the date of issuance. These warrants were subject to a reduction of the exercise price if the Company subsequently issued common stock or equivalents at an effective price less than the current exercise price of such warrants.

*Warrant Exercise Agreement:* On February 15, 2017, the Company entered into a letter agreement with the institutional investors that held the majority of its outstanding warrants (the "Original Warrants"), to incent the cash exercise of these warrants on or before March 31, 2017. In exchange for any such exercise, the Company agreed to provide the investors a replacement warrant (the "Replacement Warrants") to purchase the same number of shares of common stock as were issued upon exercise of the Original Warrants, with an exercise price equal to the consolidated closing bid price of its common stock on the date of issuance. The Replacement Warrants were issued in the same form as the Original Warrants except the exercise prices are not subject to reduction for subsequent equity issuances and the Replacement Warrants do not allow the investor to demand that the Company purchase the Replacement Warrants in the event of a fundamental transaction involving the Company. In connection with this agreement, between February and March 2017, the investors exercised all of the Original Warrants for gross cash proceeds to the Company of \$2.0 million, and the Company issued 43,396 Replacement Warrants with exercise prices ranging from \$34.6 per share to \$99.8 per share.

The Company entered into the letter agreement with the investors to incent the exercise of the Original Warrants in order to receive the cash proceeds from the exercise of the Original Warrants and because the exercise of the Original Warrants would allow the Company to remove the warrant liability from its balance sheet and avoid future fair value adjustments and associated volatility in its consolidated financial statements, as the Replacement Warrants are not accounted for as liabilities based on their terms. As of September 30, 2017, there were no Original Warrants outstanding and all Replacement Warrants under the letter agreement had been issued.

*Placement Agent Warrant:* In connection with the issuance of the Series B, C and D Convertible Preferred Stock, the Company issued warrants to the placement agent to purchase an aggregate of 2,602 shares of common at exercise prices ranging from \$127.6 per share to \$810.0 per share. These warrants were issued at no additional cost, were exercisable immediately and expire five years from the closing of the offerings. These warrants do not contain repricing provisions.

*Warrant Valuation:* Both the Original Warrants and placement agent warrants were accounted for as liabilities and were recorded at fair value on the date of issuance. These warrants must be measured and recorded at fair value for each subsequent reporting period that the warrants remain outstanding, and any changes in fair value must be recognized in the consolidated statement of operations and comprehensive loss. In connection with the warrant exchange agreement described above, the Company remeasured each Original Warrant as of the date of exercise and recorded \$1.4 million for the change in fair value of these warrants as an unrealized gain in the accompanying consolidated statement of operations and comprehensive loss for the nine months ended September 30, 2017. Warrant liability totaled \$1.8 million as of December 31, 2016, and \$6,000 as of September 30, 2017.

The Replacement Warrants were valued at \$0.5 million using the Black Scholes valuation model with the following assumptions: an expected dividend yield of 0%, expected stock price volatility of 49.65%-50.38%, risk-free interest rates of 1.95%-1.97% and an expected life of 5 years. The warrants have a five-year life and were fully vested at the date of grant. The terms of the Replacement Warrants do not require them to be accounted for as liabilities and are therefore recorded in equity. As an incentive to early exercise the Original Warrants, the fair value provided to investors through the Replacement Warrants exceeded the fair value of the Original Warrants that was relinquished by the warrant holders by approximately \$0.1 million, which has been reflected as an expense in the consolidated statement of operations and comprehensive loss for the nine months ended September 30, 2017.

## 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)	Nine months ended September 30,	
	2017	2016
Selling, general and administrative expense	\$ 351	\$ 506
Research and development expense	43	314
<b>Total stock-based compensation expense</b>	<b>\$ 394</b>	<b>\$ 820</b>

## Note 6 - Fair Value of Financial Instruments

The Company's financial instruments consist of 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 common stock warrant liability related to the Original Warrants was calculated using a Monte Carlo valuation model and was classified as Level 3 in the fair value hierarchy. The common stock warrants issued July 26, 2016 had a fair value of \$226,000 on December 31, 2016 and \$46,000 as of their dates of exercise. The common stock warrants issued November 3, 2016 had a fair value of \$1.5 million on December 31, 2016 and \$0.4 million as of their exercise dates. The common stock warrants issued January 12, 2017 had a fair value \$72,000 on the date of issuance and \$18,000 as of the date of exercise. All Original Warrants were classified as a warrant liability and were exercised during the nine months ended September 30, 2017.

The fair value of the Company's common stock warrant liability related to the placement agent warrants is calculated using a Black Scholes valuation model and is classified as Level 3 in the fair value hierarchy.

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Fair values were calculated using the following assumptions:

	<u>As of Dec. 31, 2016</u>	<u>As of date of exercise</u>
Risk-free interest rates, adjusted for continuous compounding	1.47/1.96%	1.45-1.99%
Term (years)	3.1/5.3	2.84-5.50
Expected volatility	55.3/49.8%	49.9-58.5%
Dates and probability of future equity raises	various	various

The fair value of the Company's contingent consideration, as described in Note 2, was initially measured based on the consideration expected to be transferred (probability-weighted), discounted back to present value, and it is considered a Level 3 instrument. The discount rate used was determined at the time of measurement in accordance with accepted valuation methods. The Company measures the liability on a recurring basis using Level 3 inputs including probabilities of payment and projected payment dates. Changes to any of the inputs may result in significantly higher or lower fair value measurements. There were no changes in the fair value of the contingent consideration subsequent to the initial measurement.

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, 2017 and December 31, 2016. The Company believes that the carrying amounts of all remaining financial instruments approximate their fair value due to their relatively short maturities.

#### **Note 7 – 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 net 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 net deferred tax assets in the accompanying consolidated financial statements.

During 2017, the Company experienced an ownership change as defined in Section 382 of the Internal Revenue Code which will limit the ability to utilize the Company's net operating losses (NOLs). The Company may have experienced additional ownership changes in earlier years further limiting the NOL carry-forwards that may be utilized. The Company has not yet completed a formal Section 382 analysis. The general limitation rules allow the Company to utilize its NOLs subject to an annual limitation that is determined by multiplying the federal long-term tax-exempt rate by the Company's value immediately before the ownership change.

As of September 30, 2017, 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, 2016.

#### **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, 2016. 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, 2016 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 commercializing the Aquadex FlexFlow System for Aquapheresis therapy. The 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.

Prior to July 2016, we were focused on developing the C-Pulse Heart Assist System for treatment of Class III and ambulatory Class IV heart failure. The C-Pulse System utilized the known concept of counterpulsation applied to the aorta. In March 2016, we announced that we were no longer enrolling patients into our two clinical studies for the C-Pulse System and that we planned to pursue a new strategic direction. In July 2016, we announced that we were moving forward with a therapeutic strategy utilizing neuromodulation rather than counterpulsation.

In August 2016, we acquired the Aquadex Business from a subsidiary of Baxter International, Inc. (“Baxter”), a global leader in the hospital products and dialysis markets.

On September 29, 2016, we announced a strategic refocus of our near-term strategy that includes halting clinical evaluations of our neuromodulation technology to fully focus our resources on our recently acquired Aquadex Business, taking actions to reduce our cash burn in connection with such strategic refocus, and reviewing potential strategic alliances and financing alternatives.

On May 23, 2017, we announced that we were changing our name from Sunshine Heart, Inc. to CHF Solutions, Inc. to more appropriately reflect the direction of our business.

### Reverse Stock Splits

During 2017, our board of directors and stockholders approved two reverse stock splits. Neither reverse stock split changed 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. The first reverse stock split was a 1-for-30 reverse split of our outstanding common stock that became effective after trading on January 12, 2017. The second reverse stock split was a 1-for-20 reverse split of our outstanding common stock that became effective after trading on October 12, 2017. All share and per share amounts in this Quarterly Report on Form 10-Q for the three and nine months ended September 30, 2017 and 2016, including the consolidated financial statements and notes thereto, have been retroactively adjusted to reflect the reverse stock splits for all periods presented.

### Warrant Exercise Agreement

On February 15, 2017, we entered into a letter agreement with the institutional investors that held the majority of our outstanding warrants, to incent the cash exercise of these warrants on or before March 31, 2017. In exchange for any such exercise, we agreed to provide the Investors a replacement warrant (the “Replacement Warrants”) to purchase the same number of shares of common stock as were issued upon exercise of the exercised warrants, with an exercise price equal to the consolidated closing bid price of our common stock on the date of issuance. The Replacement Warrants are in the same form as the exercised warrants except the exercise prices are not subject to reduction for subsequent equity issuances and the Replacement Warrants do not allow the investor to demand that we purchase the Replacement Warrants in the event of a fundamental transaction involving the Company. In connection with this agreement, the investors exercised all of the Original Warrants for gross cash proceeds to us of \$2.0 million, and we issued 43,396 Replacement Warrants with exercise prices ranging from \$34.6 per share to \$99.8 per share.

We entered into the letter agreement with the investors to incent the exercise of the Original Warrants in order to receive the cash proceeds from the exercise of the Original Warrants and because the exercise of the Original Warrants would allow us to remove the warrant liability from our balance sheet and avoid future fair value adjustments and associated volatility in our consolidated financial statements. As of September 30, 2017, we had no Original Warrants outstanding and we had issued all Replacement Warrants under the letter agreement.

### Public Offering

On April 24, 2017, we closed on an underwritten public offering of 140,000 shares of common stock, 6,400 shares of Series E Convertible Preferred Stock and warrants to purchase 460,000 shares of common stock, which includes the full exercise of the underwriter’s over-allotment option to purchase additional shares and warrants, for gross proceeds of \$9.2 million. Net proceeds totaled approximately \$8.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering. See Note 4 to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q.



## Nasdaq Compliance

On September 21, 2016, we received notice from the Listing Qualifications Staff (the “Staff”) of The Nasdaq Stock Market LLC (“Nasdaq”) indicating that the Staff had determined to delist our securities from The Nasdaq Capital Market due to our then continued non-compliance with the minimum bid price requirement. We timely requested a hearing before the Nasdaq Hearings Panel (the “Panel”), which occurred on November 10, 2016. On November 11, 2016, we received notice from the Staff that we no longer satisfied Nasdaq Listing Rule 5550(b) insofar as we did not expect to report stockholders’ equity of at least \$2.5 million upon the filing of our Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 and that the deficiency could serve as an additional basis for the delisting of the Company’s common stock from The Nasdaq Capital Market. On November 21, 2016, Nasdaq informed us that the Panel had granted us continued listing on The Nasdaq Capital Market while we implemented our plan to regain compliance with the minimum bid price and minimum stockholders’ equity requirements. The Panel granted us until January 30, 2017 to evidence a closing bid price of \$1.00 or more for a minimum of ten prior consecutive trading days. After implementing the reverse stock split described above, we received confirmation from Nasdaq on February 9, 2017 that we regained compliance with the minimum bid price rule. The Panel had granted us until March 20, 2017 to evidence compliance with the \$2.5 million stockholder’s equity requirement. On March 28, 2017, we announced that the Panel had granted us an extension through May 10, 2017 to evidence compliance with the minimum shareholder’s equity requirement. On May 4, 2017, we were formally notified by Nasdaq that we had regained compliance with the minimum stockholders’ equity requirement and we were in compliance with all other applicable requirements for listing on The Nasdaq Capital Market.

On June 1, 2017, we received a subsequent notification from Nasdaq informing us that we were no longer in compliance with the minimum bid price requirement, as the bid price of our shares of common stock (“Common Stock”) closed below the minimum \$1.00 per share for the 30 consecutive business days prior to the date of the notice. Nasdaq also notified us that we were provided 180 calendar days, or until November 28, 2017, to regain compliance with the minimum bid price requirement. We effected a 1-for-20 reverse split of our outstanding common stock that became effective after trading on October 12, 2017. After implementing the reverse stock split described above, we received confirmation from Nasdaq on October 27, 2017, that we had regained compliance with the minimum bid price rule and the listing matter was closed.

## 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, 2016.

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. Other than new estimates made in connection with the valuation of our warrant liability, 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, 2016.

*Revenue Recognition:* We recognize revenue from product sales when earned. Specifically, revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, and collectability is reasonably assured. Revenue is not recognized until title and risk of loss have transferred to the customer. The shipping terms for our revenue arrangements are FOB shipping point.

*Accounts Receivable:* Our accounts receivable have terms that require payment in 30 days. We did not establish an allowance for doubtful accounts at September 30, 2017 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 represent finished goods purchased from our supplier and are recorded as the lower of cost or market using the first-in-first out method.

*Intangible assets:* Our intangible assets consist of \$3.1 million for customer relationships, \$1.1 million for developed technology, and \$0.4 million for trademarks and tradenames. All intangible assets are estimated to have a useful life of 7 years. We review our definite-lived intangible assets for impairment when impairment indicators exist. When impairment indicators exist, we determine if the carrying value of the intangible assets exceeds the related undiscounted cash flows. In cases where the carrying value exceeds the undiscounted cash flows, the carrying value is written down to its fair value, generally using a discounted cash flow analysis. No impairments have been identified or recorded in the periods presented.

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*Goodwill:* Goodwill is the cost of an acquisition in excess of the fair value of acquired assets and liabilities and is recorded as an asset on our balance sheet. Goodwill is not subject to amortization but must be tested for impairment at least annually. This test requires us to assign goodwill to an appropriate reporting unit and to determine if the implied fair value of the reporting unit's goodwill is less than its carrying amount.

We evaluate goodwill for impairment annually on November 1<sup>st</sup> of each calendar year, or to the extent events or conditions indicate a risk of possible impairment during the interim periods prior to our annual impairment test. Generally, the evaluation of goodwill for impairment involves a two-step test, although under certain circumstance an initial qualitative evaluation may be sufficient to conclude that goodwill is not impaired without conducting the quantitative test.

Step 1 involves comparing the estimated fair value of each respective reporting unit to its carrying value, including goodwill. If the estimated fair value exceeds the carrying value, the reporting unit's goodwill is not considered impaired. If the carrying value exceeds the estimated fair value, step 2 must be performed to determine whether goodwill is impaired and, if so, the amount of the impairment. Step 2 involves calculating an implied fair value of goodwill by performing a hypothetical allocation of the estimated fair value of the reporting unit determined in step 1 to the respective tangible and intangible net assets of the reporting unit. The remaining implied goodwill is then compared to the actual carrying amount of the goodwill for the reporting unit. To the extent the carrying amount of goodwill exceeds the implied goodwill, the difference is the amount of the goodwill impairment. No impairments have been identified or recorded in the periods presented.

In January 2017, the FASB issued amended guidance to simplify the accounting for goodwill impairment by removing Step 2 of the goodwill impairment test. A goodwill impairment will now be measured as the amount by which a reporting unit's carrying value exceeds its fair value, limited to the amount of goodwill allocated to that reporting unit. This guidance is to be applied on a prospective basis effective for our interim and annual periods beginning after January 1, 2020, with early adoption permitted for any impairment tests performed after January 1, 2017. We are currently evaluating the timing of adoption and the effect, if any, of this guidance on our consolidated financial statements.

*Contingent consideration:* In connection with the purchase of Aquadex, we have an obligation to pay additional consideration that is contingent upon the occurrence of certain future events. Contingent consideration was recognized at the acquisition date at the estimated fair value of the contingent milestone payments. The fair value of the contingent consideration is remeasured to its estimated fair value at the end of each reporting period, with changes recorded to earnings.

*Common stock warrant liability:* We record the common stock warrant liability at fair value at the date of issuance using primarily a Monte Carlo valuation model (See Note 6 to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q). The fair value is remeasured to its estimated fair value at the end of each reporting period with changes recorded to earnings.

*Stock-Based Compensation:* We recognize all share-based payments to employees and directors, including grants of stock options, restricted stock units (RSUs), warrants and common stock awards in the consolidated statement of operations and comprehensive loss as an operating expense based on their fair values over the requisite service period.

We compute the estimated fair values of stock options and warrants using the Black-Scholes option pricing 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. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Equity instruments issued to non-employees include RSUs, warrants or options to purchase shares of our common stock. These RSUs, warrants or options 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. Unvested awards are remeasured to fair value until they vest.

*Earnings per share:* We compute basic earnings 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, 2017, reflects a \$1.0 million increase for the net deemed dividend to preferred stockholders provided in connection with the close of the public offering of Series E Convertible Preferred Stock in April of 2017, representing the intrinsic value of the shares at the time of issuance. In addition, the net loss allocable to common stockholders reflects an increase for net deemed dividends of \$1.8 million to preferred stockholders provided in connection with the shareholder approval of the Series C and D Convertible Preferred Stock transactions in January of 2017, representing the intrinsic value of the 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.

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*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, 2016 and 2015, and through September 30, 2017, we incurred losses from operations and net cash outflows from operating activities as disclosed in the consolidated statements of operations and comprehensive loss and cash flows, respectively.

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. This will require us 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 we will succeed in these activities, and we may never generate revenues sufficient to achieve profitability.

We may be required to seek additional funding to grow our Aquadex Business, which may not be available on terms favorable to us, or at all. In addition, the risk that we may not be able to continue as a going concern may make it more difficult to obtain necessary additional funding on terms favorable to us, or at all. Furthermore, our ability to continue as a going concern is subject to our ability to achieve commercial milestones. Should future capital raising be unsuccessful, we may not be able to continue as a going concern. On April 24, 2017, we closed on an underwritten public equity offering for net proceeds of approximately \$8.0 million after deducting the underwriting discounts and commissions and other costs associated with the offering (See Note 4 to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q). 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 current period's condensed consolidated financial statements.

## FINANCIAL OVERVIEW

We are a medical device company focused on commercializing the Aquadex FlexFlow 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. At September 30, 2017, we had an accumulated deficit of \$175 million and we expect to incur losses for the foreseeable 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 in the future, 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, 2017 to Three Months Ended September 30, 2016

#### *Net Sales*

*(dollars in thousands)*

<u>Three Months Ended</u> <u>September 30, 2017</u>	<u>Three Months Ended</u> <u>September 30, 2016</u>	<u>Increase</u>	<u>% Change</u>
\$ 957	\$ 543	\$ 414	76.2%

We generated revenues of \$1.0 million for the three months ended September 30, 2017, compared to \$0.5 million for the same period in 2016. Revenue is generated mainly from the sale of disposable blood filters and catheters used in conjunction with our Aquadex consoles. We had no commercial sales prior to the acquisition of the Aquadex Business, which we acquired from Baxter on August 5, 2016.

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On March 3, 2016, we announced that we were no longer enrolling patients in our two clinical studies for our now discontinued C-Pulse System. Prior to this announcement, all of our revenue was generated by sales of the C-Pulse System to hospitals and clinics in conjunction with our U.S. clinical study. The C-Pulse System was not approved for commercial sale, however, the FDA had assigned it to a Category B designation, making it eligible for reimbursement at certain U.S. sites when implanted in connection with our clinical studies. During the three months ended September 30, 2016, we received reimbursement and recognized \$59,000 in revenue for one implant that was performed before the announcement that we were no longer enrolling patients in the study. Since we terminated enrollment in our OPTIONS HF and COUNTER HF clinical trials, we do not expect to generate revenue from those clinical trials in the foreseeable future.

**Costs and Expenses**

Our costs and expenses were as follows:

(dollars in thousands)

	Three Months Ended September 30, 2017	Three Months Ended September 30, 2016	Increase (Decrease)	% Change
Cost of goods sold	\$ 782	\$ 187	\$ 595	318.2%
Selling, general and administrative	\$ 2,671	\$ 2,683	\$ (12)	(0.4)%
Research and development	\$ 367	\$ 1,735	\$ (1,368)	(78.8)%

**Cost of Goods Sold**

In connection with the acquisition of the Aquadex product line, we entered into a manufacturing and supply agreement with Baxter. Cost of sales reflects the agreed-upon price paid to Baxter for the manufacturing of the disposables and consoles. The acquisition closed on August 5, 2016. Prior to that date, we did not have commercial sales or related product costs.

In May 2017, we provided notice to Baxter to cease the manufacturing of the Aquadex product line as of June 30, 2017, and we began transitioning activities in house. We expect to begin manufacturing our products in house in the fourth quarter of 2017. We will continue to purchase materials and finished goods from Baxter into the first quarter of 2018.

Cost of sales for the three months ended September 30, 2017, include startup costs for the planning and preparation associated with the transfer of these manufacturing activities to our facilities in Eden Prairie, Minnesota. In 2018, we expect our gross margins to improve as volumes increase and we achieve larger efficiencies of scale.

**Selling, General and Administrative**

Our selling, general and administrative expenses for the three months ended September 30, 2017 have remained consistent with the same period a year ago. Expenditures during the three months ended September 30, 2017, reflect approximately \$0.9 million of incremental expenses related to the commercialization of the Aquadex FlexFlow, which we acquired from Baxter in August of 2016. Expenditures during the three months ended September 30, 2016, reflect approximately \$0.9 million in transaction fees (accounting, audit, valuation, and legal fees) incurred in connection with the acquisition of the Aquadex product line.

As we continue to ramp up our sales organization we expect that our selling expenses will continue to increase in future quarters, and that general and administrative expenses will either remain constant or decrease as we continue to streamline activities.

**Research and Development**

The decrease in research and development expense resulted primarily from our decision to stop enrollment in our two clinical studies for our now discontinued C-Pulse System, which was announced on March 3, 2016. In July 2016, we announced that we were moving forward with a therapeutic strategy utilizing neuromodulation rather than counterpulsation. Further, on September 29, 2016, we announced a strategic refocus of our near-term strategy that includes halting all clinical evaluations of the neuromodulation technology to fully focus the Company's resources on our recently acquired Aquadex system. We expect to make modest future investments in research and development related to our Aquadex system, and as a result, we expect that our research and development expenditures will increase modestly in future quarters, subject to future decisions on clinical studies.

**Other Income (Expense)**

The following is a summary of other income (expense)

(dollars in thousands)

	Three Months Ended September 30, 2017	Three Months Ended September 30, 2016	Decrease	% Change
Interest expense	\$ -	\$ (68)	\$ (68)	N/A
Loss on early retirement of long-term debt	\$ -	\$ (500)	\$ (500)	N/A
Change in fair value of warrant liability	\$ 4	\$ 646	\$ (642)	(99.4)%

**Interest Expense**

The decrease in interest expense is related to the repayment of borrowings outstanding under our prior term loan with Silicon Valley Bank. On August 4, 2016, we repaid all amounts outstanding under this loan facility, totaling \$5.5 million.

**Loss on Early Retirement of Long-Term Debt**

On August 4, 2016, we repaid all amounts outstanding under our prior term loan with Silicon Valley Bank, totaling \$5.5 million. In connection with the repayment of this debt, we incurred a \$0.5 million loss, including the accelerated write-off of unamortized warrants and debt issuance costs.

**Change in Fair Value of Warrant Liability**

The gain recognized for the change in fair value of warrant liability relates to the decrease in value of the warrants issued to the investors and placement agent in connection with financings completed on July 26, 2016, November 3, 2016 and January 10, 2017. These warrants were classified as liabilities on our balance sheet as of September 30, 2017 and December 31, 2016 and required to be marked to market at each reporting period, with the changes in fair value recorded on our consolidated statement of operations and comprehensive loss.

**Income Tax Benefit (Expense), net**

(dollars in thousands)

	Three Months Ended September 30, 2017	Three Months Ended September 30, 2016	Decrease	% Change
Income tax benefit (expense), net	\$ (5)	\$ 65	\$ (70)	(107.7)%

Our income tax benefit for the three months ended September 30, 2016 resulted primarily from a research and development tax credit in Australia. We have substantially reduced research and development expenditures in Australia, so future research and development tax credits refunds, if any, are expected to decrease.

We generate minimal amounts of income tax expense in connection with activities incurred by our Irish subsidiary.

**Comparison of Nine Months Ended September 30, 2017 to Nine Months Ended September 30, 2016**

**Net Sales**

(dollars in thousands)

	Nine Months Ended September 30, 2017	Nine Months Ended September 30, 2016	Increase	% Change
	\$ 2,722	\$ 543	\$ 2,179	401.3%

We generated revenues of \$2.7 million for the nine months ended September 30, 2017, compared to \$0.5 million in the same period in 2016. Revenue is generated mainly from the sale of disposable blood filters and catheters used in conjunction with our Aquadex consoles. We had no commercial sales prior to the acquisition of the Aquadex Business, which we acquired from Baxter on August 5, 2016.

On March 3, 2016, we announced that we were no longer enrolling patients in our two clinical studies for our now discontinued C-Pulse System. Prior to this announcement, all of our revenue was generated by sales of the C-Pulse System to hospitals and clinics in conjunction with our U.S. clinical study. The C-Pulse System was not approved for commercial sale, however, the FDA had assigned it to a Category B designation, making it eligible for reimbursement at certain U.S. sites when implanted in connection with our clinical studies. One C-Pulse System was implanted for which we recognized \$59,000 in revenue during the nine months ended September 30, 2016. Since we terminated enrollment in these clinical studies, we do not expect to generate revenue from these clinical studies in the foreseeable future.

**Costs and Expenses**

Our costs and expenses were as follows:

(dollars in thousands)

	Nine Months Ended September 30, 2017	Nine Months Ended September 30, 2016	Increase (Decrease)	% Change
Cost of goods sold	\$ 1,912	\$ 187	\$ 1,725	922.5%
Selling, general and administrative	\$ 7,478	\$ 5,444	\$ 2,034	37.4%
Research and development	\$ 1,002	\$ 7,511	\$ (6,509)	(86.7)%

**Cost of Goods Sold**

In connection with the acquisition of the Aquadex product line, we entered into a manufacturing and supply agreement with Baxter. Cost of sales reflects the agreed-upon price paid to Baxter for the manufacturing of the disposables and consoles. The acquisition closed on August 5, 2016. Prior to that date, we did not have commercial sales or related product costs.

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In May 2017, we provided notice to Baxter to cease the manufacturing of the Aquadex product line as of June 30, 2017, and we began transitioning activities in house. We expect to begin manufacturing our products in house in the fourth quarter of 2017. We will continue to purchase materials and finished goods from Baxter into the first quarter of 2018.

Cost of sales for the nine months ended September 30, 2017, include startup costs for the planning and preparation associated with the transfer of these manufacturing activities to our facilities in Eden Prairie, Minnesota. In 2018, we expect our gross margins 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 the impact of our transition from a research and development stage company to a commercially focused organization. As a result, during the nine months ended September 30, 2017, we incurred approximately \$2.6 million of incremental expenses related to the commercialization of the Aquadex FlexFlow, compared to the same period a year ago.

Expenditures for the nine months ended September 30, 2016, reflect approximately \$0.9 million in transaction fees (accounting, audit, valuation, and legal fees) incurred in connection with the acquisition of the Aquadex product line, which we acquired from Baxter in August of 2016.

As we continue to ramp up our sales organization we expect that our selling expenses will continue to increase in future quarters, and that general and administrative expenses will either remain constant or decrease as we continue to streamline activities.

**Research and Development**

The decrease in research and development expense resulted primarily from our decision to stop enrollment in our two clinical studies for our now discontinued C-Pulse System, which was announced on March 3, 2016. In July 2016, we announced that we were moving forward with a therapeutic strategy utilizing neuromodulation rather than counterpulsation. Further, on September 29, 2016, we announced a strategic refocus of our near-term strategy that includes halting clinical evaluations of the neuromodulation technology to fully focus the Company's resources on our recently acquired Aquadex system. We expect to make modest future investments in research and development related to our Aquadex system, and as a result, we expect that our research and development expenditures will increase modestly in future quarters, subject to future decisions on clinical studies.

**Other Income (Expense)**

The following is a summary of other income (expense)

(dollars in thousands)

	<b>Nine Months Ended September 30, 2017</b>	<b>Nine Months Ended September 30, 2016</b>	<b>Increase (Decrease)</b>	<b>% Change</b>
Interest expense	\$ -	\$ (504)	\$ (504)	N/A
Loss on early retirement of long-term debt	\$ -	\$ (500)	\$ (500)	N/A
Change in fair value of warrant liability	\$ 1,470	\$ 646	\$ 824	127.6%
Warrant valuation expense	\$ (67)	\$ -	\$ (67)	N/A

**Interest Expense**

The decrease in interest expense is related to the repayment of borrowings outstanding under our prior term loan with Silicon Valley Bank. Beginning January 1, 2016, we began repaying the principal due on this loan, and on August 4, 2016, we repaid all amounts outstanding under this loan facility, totaling \$5.5 million.

**Loss on Early Retirement of Long-Term Debt**

On August 4, 2016, we repaid all amounts outstanding under our prior term loan with Silicon Valley Bank, totaling \$5.5 million. In connection with the repayment of this debt, we incurred a \$0.5 million loss, including the accelerated write-off of unamortized warrants and debt issuance costs.

**Change in Fair Value of Warrant Liability**

The gain recognized for the change in fair value of warrant liability relates to the decrease in value of the warrants issued in connection with financings completed on July 26, 2016, November 3, 2016 and January 10, 2017. These warrants were classified as liabilities on our balance sheet as of December 31, 2016 and required to be marked to market at each reporting period, with the changes in fair value recorded on our consolidated statement of operations and comprehensive loss. All Original Warrants were exercised during the period ended September 30, 2017 pursuant to the warrant exercise agreement described above. Accordingly, we remeasured each of these warrants as of the date of exercise, and recorded \$1.5 million as an unrealized gain on our statement of operations and comprehensive loss. Although we issued Replacement Warrants under the warrant exercise agreement, the Replacement Warrants are not accounted for as liabilities based on their terms.

**Income Tax Benefit (expense), net***(dollars in thousands)*

	<b>Nine Months Ended</b>	<b>Nine Months Ended</b>		
	<b>September 30, 2017</b>	<b>September 30, 2016</b>	<b>Decrease</b>	<b>% Change</b>
Income tax benefit (expense), net	\$ (6)	\$ 64	\$ (70)	(109.4)%

Our income tax benefit for the nine months ended September 30, 2016 resulted primarily from a research and development tax credit in Australia. We have substantially reduced research and development expenditures in Australia, so future research and development tax credits refunds, if any, are expected to decrease.

We generate minimal amounts of income tax expense in connection with activities incurred by our Irish subsidiary.

**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 26, 2016, pursuant to a Securities Purchase Agreement dated July 20, 2016, we completed an equity financing with an institutional investor of shares of Series B Convertible Preferred Stock and warrants for gross cash proceeds of approximately \$3.5 million in a registered direct offering and simultaneous private placement. Also, on October 30, 2016, we entered into securities purchase agreement with an institutional investor pursuant to which we agreed to issue shares of Series C Convertible Preferred Stock, Series D Convertible Preferred Stock and warrants with an aggregate purchase price of \$3.8 million in a registered direct offering and simultaneous private placement. The first closing occurred on November 3, 2016, whereby we received \$3.6 million in gross proceeds and issued and sold shares of Series C Convertible Preferred Stock, shares of Series D Convertible Preferred Stock and warrants. At the second closing in January 2017, which was subject to receipt of shareholder approval of the transactions, we received \$0.2 million in gross proceeds and issued and sold shares of Series D Convertible Preferred Stock and warrants.

In February 2017, we entered into an agreement with the holder of the majority of our outstanding warrants to incent their exercise of warrants for cash on or before March 31, 2017. In exchange for any such exercise, we agreed to provide the investors a replacement warrant to purchase the same number of shares of common stock as were issued upon exercise of each exercised warrants with an exercise price equal to the consolidated closing bid price of our common stock on the date of issuance. In connection with this agreement, the investors exercised all of the original warrants for gross cash proceeds to us of \$2.0 million, and we issued 43,396 replacement warrants with exercise prices ranging from \$34.6 per share to \$99.8 per share.

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 whether we have maintained net liquidity in an amount equal to or greater than six times our monthly cash burn amount for the period specified. Interest on the principal amount outstanding under the revolving line, if any, is payable monthly on the last calendar day of the month until March 31, 2020, at which time all outstanding principal and unpaid interest with respect to any advances under the revolving line are due and payable in full. 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, which we do not currently meet. 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, 2017 or December 31, 2016.

The new loan agreement contains customary representations, as well as customary affirmative and negative covenants. Among other restrictions, the negative covenants, subject to exceptions, prohibit or limit our ability to declare dividends or redeem or purchase equity interests; incur additional liens; make loans and investments; incur additional indebtedness; engage in mergers, acquisitions, and asset sales; transact with affiliates; undergo a change in control; add or change business locations; and engage in businesses that are not related to its existing business. The new loan agreement also requires us to maintain at all times upon the funding date of the initial advance under the revolving line, tested on the last day of each month: (i) net liquidity in an amount equal to or greater than four times our monthly cash burn amount and (ii) unrestricted cash and cash equivalents in accounts with the Bank or its affiliates equal to or greater than 1.25 of the amount of all of our outstanding obligations to the Bank.

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.

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In 2014, we entered into a sales agreement with Cowen and Company, LLC (“*Cowen*”), allowing Cowen to sell from time to time, shares of our common stock having an aggregate offering price of up to \$40.0 million, through an “at the market” equity offering program (the “*Sales Agreement*”). We pay Cowen a commission of up to 3.0% of the gross proceeds from the sale of any shares pursuant to the Sales Agreement. There were no issuances of common stock under this facility during the nine months ended September 30, 2017 or 2016. As of September 30, 2017, we had a total of \$32.6 million remaining for future sales under the Sales Agreement.

On April 24, 2017, we closed on an underwritten public offering for net proceeds of approximately \$8.0 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 140,000 shares of common stock, 6,400 shares of Series E Convertible Preferred Stock (which were convertible into 320,000 shares of common stock), and warrants to purchase 460,000 shares of common stock. See Note 4 to the condensed consolidated financial statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q.

As of September 30, 2017, and December 31, 2016, cash and cash equivalents were \$2.5 million and \$1.3 million, respectively. Prior to our acquisition of the Aquadex FlexFlow 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. In September 2016, we announced a strategic refocus of our near-term strategy that includes halting all clinical evaluations to fully focus our resources on our recently acquired Aquadex Business, taking actions to reduce our cash burn in connection with such strategic refocus and reviewing potential strategic alliances and financing alternatives. 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 additional funds to finance our operations in the fourth quarter of 2017 or first quarter of 2018. We may receive those funds from the proceeds from future warrant exercises, issuances of equity securities, or other financing transactions.

### ***Cash Flows from Operating Activities***

Net cash used in operating activities was \$8.8 million and \$13.6 million for the nine months ended September 30, 2017 and 2016, respectively. The net cash used in each of these periods primarily reflects the net loss for those periods, as well as investments in working capital necessary to run our new commercial operations, offset in part by stock-based compensation, depreciation, and amortization of debt discount and financing fees.

### ***Cash Flows from Investing Activities***

Net cash used in investing activities was \$0.2 million and \$4.1 million for the nine months ended September 30, 2017 and 2016, respectively. The majority of cash used in investing activities in 2017 was for the purchase of laboratory and office equipment. In 2016, we paid \$4.0 million for the acquisition of the Aquadex Business.

### ***Cash Flows from Financing Activities***

Net cash provided by (used in) financing activities was \$10.2 million and \$(4.6) million for the nine months ended September 30, 2017 and 2016, respectively. Net cash provided by financing activities was attributable to proceeds from the public stock offering completed in April 2017, net proceeds from the exercise of warrants, and from the second closing of the Series D Convertible Preferred Stock. Net cash used in financing activities was attributable to repayments of the principal amounts outstanding on our debt facility with Silicon Valley Bank, offset by net proceeds from the issuance of preferred stock in July 2016.

### ***Capital Resource Requirements***

As of September 30, 2017, we did not have any material commitments for capital expenditures.

### ***Off-Balance Sheet Arrangements***

In April 2015, we amended our lease agreement for our office space leased in Eden Prairie, Minnesota, to extend it for an additional thirty-six months beyond its original expiration date. This amended lease agreement expires March 31, 2019.

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 will pay Baxter 40% of the amount of such excess; and 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.



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In connection with the acquisition of the Aquadex Business, we entered into a manufacturing and supply agreement with Baxter that will expire within a period not to exceed 18 months from the close of the transaction. In May 2017, we notified Baxter to cease the manufacturing of the Aquadex product line by Baxter as of June 30, 2017. In connection with this notification, we agreed to purchase the remaining Aquadex inventory, which consists mainly of raw materials priced at cost, through February 2018, for a total of \$2.4 million. As of September 30, 2017, we had purchased and paid \$0.8 million of this inventory and \$1.6 million remained to be purchased.

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

**Cautionary Statement Pursuant to the Private Securities Litigation Reform Act of 1995**

The Private Securities Litigation Reform Act of 1995 (the Act) provides a “safe harbor” for forward-looking statements to encourage companies to provide prospective information about their business, so long as those statements are identified as forward-looking and are accompanied by meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those discussed in the statement. We desire to take advantage of the safe harbor provisions with respect to any forward-looking statements we may make in this filing, other filings with the Securities and Exchange Commission and any public oral statements or written releases. The words or phrases “will,” “may,” “is expected,” “is anticipated,” “believe,” “estimate,” “projected,” “forecast,” or similar expressions are intended to identify forward-looking statements within the meaning of the Act. Forward-looking statements such as these are based on management’s current expectations as of the date of this report but involve risks, uncertainties and other factors which may cause actual results to differ materially from those contemplated by such forward-looking statements. We caution readers not to place undue reliance on any such forward-looking statements, which speak only as of the date made. In accordance with the Act, we identify the following important general factors which, if altered from the current status, could cause our actual results to differ from those described in any forward-looking statements: our ability to generate substantial revenue and become profitable, our ability to continue as a going concern, our ability to raise funds, variability in quarterly results, risk associated with executing on our strategic imperatives, including our post-market clinical data collection activities, our ability to demonstrate the benefits of our products to patients, our reliance on a single product family, our ability to develop and commercialize product improvements or new products, our ability to increase market and physician acceptance of our products, potentially competitive product offerings, our ability to protect our intellectual property protection, our reliance on third-party suppliers, the impact over significant government regulation on our business, our ability to integrate acquired businesses and our realization of anticipated synergies with and benefits from acquired businesses, risks related to international business, and those factors set forth under the heading “Risk Factors” in our Registration Statement on Form S-1 filed with the Securities and Exchange Commission on October 18, 2017. This list is not exhaustive, and we may supplement this list in any future filing with the Securities and Exchange Commission or in connection with the making of any specific forward-looking statement. We undertake no obligation to, and do not intend to, revise or update publicly any forward-looking statement for any reason.

**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.

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.

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As of September 30, 2017, 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, 2017.

**Changes in Internal Controls**

There were no changes in the Company’s internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the three months ended September 30, 2017, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. On August 5, 2016, the Company completed the acquisition of certain assets used in the production and sale of the Aquadex product line from an indirect subsidiary of Baxter International Inc. We are in the process of integrating Aquadex’s operations into the Company. We are in the process of implementing our internal control structure over the acquired operations, and we expect to complete this effort during fiscal 2017.

**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, 2016, and in other reports filed thereafter with the SEC, before deciding to invest in or retain shares of our common stock.

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

Not applicable

**ITEM 3. DEFAULTS UPON SENIOR SECURITIES**

Not applicable.

**ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.

**ITEM 5. OTHER INFORMATION**

None.

ITEM 6. EXHIBITS

**Exhibit Index**  
**CHF Solutions, Inc.**  
**Form 10-Q for the Quarterly Period Ended September 30, 2017**

Exhibit Number	Exhibit Description	Incorporated By Reference				Filed Herewith	Furnished Herewith
		Form	File Number	Date of First Filing	Exhibit Number		
<a href="#">3.1</a>	Fourth Amended and Restated Certificate of Incorporation	10	001-35312	February 1, 2012	3.1		
<a href="#">3.2</a>	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation	8-K	001-35312	January 13, 2017	3.1		
<a href="#">3.3</a>	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation	8-K	001-35312	May 23, 2017	3.1		
<a href="#">3.4</a>	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation	8-K	001-35312	October 12, 2017	3.1		
<a href="#">3.5</a>	Second Amended and Restated Bylaws	8-K	001-35312	May 23, 2017	3.2		
<a href="#">4.1</a>	Form of Common Stock Purchase Warrant issued pursuant to the Letter Agreement dated February 15, 2017	8-K	001-35312	February 16, 2017	4.1		
<a href="#">4.2</a>	Form of Warrant to purchase shares of common stock	S-1/A	333-216841	April 4, 2017	4.8		
<a href="#">15.1</a>	Letter regarding unaudited interim information					X	
<a href="#">31.1</a>	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X	
<a href="#">31.2</a>	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X	
<a href="#">32.1</a>	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
<a href="#">32.2</a>	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	

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<b>Exhibit Number</b>	<b>Exhibit Description</b>	<b>Incorporated By Reference</b>			<b>Exhibit Number</b>	<b>Filed Herewith</b>	<b>Furnished Herewith</b>
		<b>Form</b>	<b>File Number</b>	<b>Date of First Filing</b>			
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 2, 2017

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

Date: November 2, 2017

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

November 2, 2017

CHF Solutions, Inc. and Subsidiaries  
12988 Valley View Road  
Eden Prairie, MN 55344

We are aware that CHF Solutions, Inc. and Subsidiaries has incorporated by reference its Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, which includes our review report dated November 2, 2017 covering the unaudited interim financial information contained therein, in the following Registration Statements:

Form S-1

- No. 333-221010
- No. 333-216841
- No. 333-216053
- No. 333-215112
- No. 333-186259

Form S-8

- No. 333-218464
- No. 333-210215
- No. 333-202904
- No. 333-194642
- No. 333-190499
- No. 333-188935
- No. 333-183925
- No. 333-183924

Pursuant to Regulation C of the Securities Act of 1933, that report is not considered a part of the Registration Statement prepared or certified by our firm or a report prepared or certified by our firm within the meaning of Section 7 and 11 of the Act. It should be noted that we have not performed any procedures subsequent to November 2, 2017.

Very truly yours,  
/s/ Baker Tilly Virchow Krause, LLP  
Minneapolis, Minnesota

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**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, 2017;
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 2, 2017

/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, 2017;
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 2, 2017

/s/ Claudia Drayton  
Claudia Drayton  
Chief Financial Officer

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**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, 2017, 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 2, 2017

/s/ John L. Erb

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John L. Erb  
Chief Executive Officer

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**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, 2017, 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 2, 2017

/s/ Claudia Drayton

Claudia Drayton  
Chief Financial Officer

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