

Cardiovascular Systems Inc  
Form SC 13G/A  
February 10, 2010

SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G\*

(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO  
RULES 13d-1(b), (c), AND (d) AND AMENDMENTS THERETO  
FILED PURSUANT TO RULE 13D-2

(Amendment No. 2 )\*

Cardiovascular Systems, Inc.  
(Name of Issuer)

Common Stock, \$.001 par value per share  
(Title of Class of Securities)

141619106  
(CUSIP Number)

December 31, 2009  
(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

Rule 13d-1(b)

Rule 13d-1(c)

Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 141619106

13G

Page of 2 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

HealthCare Ventures VI, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 361,235

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 361,235

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

361,235

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

2.5%

12 TYPE OF REPORTING PERSON\*

PN

CUSIP No. 141619106

13G

Page of 3 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

HealthCare Partnres VI, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 361,235

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 361,235

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

361,235

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

2.5%

12 TYPE OF REPORTING PERSON\*

PN

CUSIP No. 141619106

13G

Page of 4 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

HealthCare Ventures VIII, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 74,670

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 74,670

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

74,670

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

0.51%

12 TYPE OF REPORTING PERSON\*

PN

CUSIP No. 141619106

13G

Page of 5 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

HealthCare Partners VIII, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 74,670

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 74,670

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

74,670

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

0.51%

12 TYPE OF REPORTING PERSON\*

PN

CUSIP No. 141619106

13G

Page of 6 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

HealthCare Partners VIII, LLC

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 74,670

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 74,670

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

74,670

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

0.51%

12 TYPE OF REPORTING PERSON\*

OO

CUSIP No. 141619106

13G

Page of 7 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

James H. Cavanaugh, Ph.D.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
(b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
0

NUMBER OF  
SHARES  
BENEFICIALLY  
OWNED BY  
EACH  
REPORTING  
PERSON  
WITH

6 SHARED VOTING POWER  
435,905

7 SOLE DISPOSITIVE POWER  
0

8 SHARED DISPOSITIVE POWER  
435,905

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

435,905

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

3%

12 TYPE OF REPORTING PERSON\*

IN

CUSIP No. 141619106

13G

Page of 8 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Harold R. Werner

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
(b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
0

NUMBER OF  
SHARES  
BENEFICIALLY  
OWNED BY  
EACH  
REPORTING  
PERSON  
WITH

6 SHARED VOTING POWER  
435,905

7 SOLE DISPOSITIVE POWER  
0

8 SHARED DISPOSITIVE POWER  
435,905

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

435,905

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

3%

12 TYPE OF REPORTING PERSON\*

IN



CUSIP No. 141619106

13G

Page of 9 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

William Crouse

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 361,235

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 361,235

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

361,235

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

2.5%

12 TYPE OF REPORTING PERSON\*

IN

CUSIP No. 141619106

13G

Page of 10 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

John W. Littlechild

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
(b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
0

NUMBER OF  
SHARES  
BENEFICIALLY  
OWNED BY  
EACH  
REPORTING  
PERSON  
WITH

6 SHARED VOTING POWER  
435,905

7 SOLE DISPOSITIVE POWER  
0

8 SHARED DISPOSITIVE POWER  
435,905

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

435,905

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

3%

12 TYPE OF REPORTING PERSON\*

IN

CUSIP No. 141619106

13G

Page of 11 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Christopher Mirabelli, Ph.D.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
 (b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
 0

NUMBER OF  
 SHARES  
 BENEFICIALLY  
 OWNED BY  
 EACH  
 REPORTING  
 PERSON  
 WITH

6 SHARED VOTING POWER  
 435,905

7 SOLE DISPOSITIVE POWER  
 0

8 SHARED DISPOSITIVE POWER  
 435,905

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

435,905

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

3%

12 TYPE OF REPORTING PERSON\*

IN

CUSIP No. 141619106

13G

Page of 12 of 19 Pages

1 NAME OF REPORTING PERSONS

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Augustine Lawlor

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a) ..  
(b) o

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

USA

5 SOLE VOTING POWER  
9,791

NUMBER OF  
SHARES  
BENEFICIALLY  
OWNED BY  
EACH  
REPORTING  
PERSON  
WITH

6 SHARED VOTING POWER  
435,905

7 SOLE DISPOSITIVE POWER  
9,791

8 SHARED DISPOSITIVE POWER  
435,905

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

445,696

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

..

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

3%

12 TYPE OF REPORTING PERSON\*

IN

CUSIP No. 141619106

13G

Page of 13 of 19 Pages

Item 1.

- (a) The name of the Issuer is Cardiovascular Systems, Inc. (the "Issuer").  
(b) Address of Issuer's Principal Executive Offices is 651 Campus Drive, St. Paul, Minnesota 55112-3495.

Item 2.

- (a) This statement is being filed by:

HealthCare Ventures VI, L.P. ("HCV VI")  
HealthCare Partners VI, L.P. ("HCP VI")  
HealthCare Ventures VIII, L.P. ("HCV VIII")  
HealthCare Partners VIII, L.P. ("HCP VIII")  
HealthCare Partners VIII, LLC ("HCP VIII LLC")  
James H. Cavanaugh, Ph.D. ("Cavanaugh")  
Christopher Mirabelli, Ph.D. ("Mirabelli")  
Harold R. Werner ("Werner")  
John W. Littlechild ("Littlechild")  
William Crouse ("Crouse")  
Augustine Lawlor ("Lawlor")

(collectively, the "Reporting Persons")

See attached Exhibit A, which is a copy of their agreement in writing to file this statement on behalf of each of them.<sup>1</sup>

- (b) The business address for HCV VI, HCP VI, HCV VIII, HCP VIII, HCP VIII LLC, Dr. Cavanaugh and Messrs. Werner and Crouse is 44 Nassau Street, Princeton, New Jersey 08542. The business address for Dr. Mirabelli and Messrs. Littlechild and Lawlor is 55 Cambridge Parkway, Suite 301, Cambridge, Massachusetts 02142.
- (c) HCV VI, HCP VI, HCV VIII and HCP VIII are limited partnerships organized under the laws of the State of Delaware. HCP VIII LLC is a limited liability company organized under the laws of the State of Delaware. Drs. Cavanaugh and Mirabelli and, Messrs. Werner, Littlechild, Crouse and Lawlor are each United States citizens.
- (d) This Schedule 13G relates to the common stock, par value \$0.001 per share (the "Common Stock") of the Issuer.
- (e) The CUSIP Number of the Issuer is 141619106

---

<sup>1</sup>Drs. Cavanaugh and Mirabelli and, Messrs. Werner, Littlechild, Crouse and Lawlor are General Partners of HCP VI. HCP VI is the General Partner of HCV VI, the record holder of the securities. Drs. Cavanaugh and Mirabelli, and Messrs. Werner, Littlechild and Lawlor are the Managing Directors of HCP VIII LLC. HCP VIII LLC is the General Partner of HCP VIII, which is the General Partner of HCV VIII, the record holder of the securities.

---

CUSIP No. 141619106

13G

Page of 14 of 19 Pages

Item 3. If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is  
a: Not applicable.

- (a)  Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o);
- (b)  Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c);
- (c)  Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c);
- (d)  Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);
- (e)  An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E);
- (f)  An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F);
- (g)  A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);
- (h)  A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i)  A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j)  A non-U.S. institution, in accordance with §240.13d-1(b)(1)(ii)(J);
- (k)  Group, in accordance with §240.13d-1(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J), please specify the type of institution:

\_\_\_\_\_.

---

CUSIP No. 141619106

13G

Page of 15 of 19 Pages

Item 4.

Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

(a) Amount beneficially owned:

As of December 31, 2009: HCV VI, HCP VI and Mr. Crouse beneficially owned 361,235 shares of the Issuer's Common Stock; HCV VIII, HCP VIII, and HCP VIII LLC beneficially owned 74,670 shares of the Issuer's Common Stock; Each of Drs. Cavanaugh and Mirabelli and Messrs. Werner and Littlechild beneficially owned the 435,905 shares of the Issuer's Common Stock owned by each of HCV VI and HCV VIII; and Mr. Lawlor beneficially owned 445,696 shares of the Issuer's Common Stock which includes (i) an aggregate of 435,905 shares beneficially owned by HCV VI and HCV VIII; and (ii) immediately exercisable Restricted Stock Units to purchase 9,791 shares of the Issuer's Common Stock. 2

(b) Percent of class: (Taking into consideration that 14,691,397 shares are issued and outstanding as of November 9, 2009 as reported in the Issuer's Form 10-Q filed with the Securities and Exchange Commission on November 16, 2009 for the period ended September 30, 2009)

As of December 31, 2009: The 361,235 shares of Common Stock beneficially owned by HCV VI, HCP VI and Mr. Crouse constituted 2.5% of the shares outstanding; the 74,670 shares of Common Stock beneficially owned by HCV VIII, HCP VIII and HCP VIII LLC constituted 0.51% of the shares outstanding; the 435,905 shares of Common Stock beneficially owned by Drs. Cavanaugh and Mirabelli and Messrs. Werner and Littlechild constituted approximately 3% of the shares outstanding; and the 445,696 shares of Common Stock beneficially owned by Mr. Lawlor constituted 3% of the shares outstanding.

---

2 Does not include an aggregate of 5,814 Restricted Stock Units which vest as to 2,907 shares on each of March 31, 2010 and June 30, 2010. Mr. Lawlor is not deemed to beneficially own the 5,814 shares of Common Stock as of the date of event requiring the filing of this statement.

---

CUSIP No. 141619106

13G

Page of 16 of 19 Pages

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote – Mr. Lawlor has the sole power to vote or direct the vote as to the 9,791 shares beneficially owned by him.

(ii) Shared power to vote or to direct the vote –

HCV VI, HCP VI, Drs. Cavanaugh and Mirabelli and Messrs. Werner, Littlechild, Crouse and Lawlor share the power to vote or direct the vote of those shares owned by HCV VI.

HCV VIII, HCP VIII, HCP VIII LLC, Drs. Cavanaugh and Mirabelli and Messrs. Werner, Littlechild and Lawlor share the power to vote or direct the vote of those shares owned by HCV VIII.

(iii) Sole power to dispose or to direct the disposition of – Mr. Lawlor has the sole power to dispose of or direct the disposition of the 9,791 shares beneficially owned by him.

(iv) Shared power to dispose or to direct the disposition of –

HCV VI, HCP VI, Drs. Cavanaugh and Mirabelli and Messrs. Werner, Littlechild, Crouse and Lawlor share the power to dispose of or direct the disposition of those shares owned by HCV VI.

HCV VIII, HCP VIII, HCP VIII LLC, Drs. Cavanaugh and Mirabelli and Messrs. Werner, Littlechild and Lawlor share the power to dispose of or direct the disposition of those shares owned by HCV VIII.

Instruction. For computations regarding securities which represent a right to acquire an underlying security see §240.13d-3(d)(1).

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following .

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not Applicable

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

Not Applicable

---



CUSIP No. 141619106

13G

Page of 17 of 19 Pages

Item 8. Identification and Classification of Members of the Group.

Not Applicable

Item 9. Notice of Dissolution of Group.

Not Applicable

Item 10. Certification

Not Applicable.

---

CUSIP No. 141619106

13G

Page of 18 of 19 Pages

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: February 9, 2010

HealthCare Ventures VI, L.P.

By: HealthCare Partners VI, L.P., its General Partner

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Partner

Dated: February 9, 2010

HealthCare Partners VI, L.P.

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Partner

Dated: February 9, 2010

HealthCare Ventures VIII, L.P.

By: HealthCare Partners VIII, L.P., its General Partner

By: HealthCare Partners VIII, LLC, its General Partner

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Officer

Dated: February 9, 2010

HealthCare Partners VIII, L.P.

By: HealthCare Partners VIII, LLC, its General Partner

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Officer

Dated: February 9, 2010

HealthCare Partners VIII, LLC

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Officer

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
James H. Cavanaugh, Ph.D.

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
Harold Werner

CUSIP No. 141619106

13G

Page of 19 of 19 Pages

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
William Crouse

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
John W. Littlechild

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
Christopher Mirabelli, Ph.D.

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
Augustine Lawlor

---

CUSIP No. 141619106

13G

EXHIBIT A

AGREEMENT

JOINT FILING OF SCHEDULE 13G

The undersigned hereby agree to jointly prepare and file with regulatory authorities a Schedule 13G and any future amendments thereto reporting each of the undersigned's ownership of securities of Cardiovascular Systems, Inc. and hereby affirm that such Schedule 13G is being filed on behalf of each of the undersigned.

Dated: February 9, 2010

HealthCare Ventures VI, L.P.

By: HealthCare Partners VI, L.P., its General Partner

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Partner

Dated: February 9, 2010

HealthCare Partners VI, L.P.

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Partner

Dated: February 9, 2010

HealthCare Ventures VIII, L.P.

By: HealthCare Partners VIII, L.P., its General Partner

By: HealthCare Partners VIII, LLC, its General Partner

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Officer

Dated: February 9, 2010

HealthCare Partners VIII, L.P.

By: HealthCare Partners VIII, LLC, its General Partner

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Officer

Dated: February 9, 2010

HealthCare Partners VIII, LLC

By: /s/Jeffrey Steinberg  
Jeffrey Steinberg, Administrative Officer

CUSIP No. 141619106

13G

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
James H. Cavanaugh, Ph.D.

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
Harold Werner

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
William Crouse

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
John W. Littlechild

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
Christopher Mirabelli, Ph.D.

Dated: February 9, 2010

/s/Jeffrey Steinberg, Attorney-in-Fact  
Augustine Lawlor

---