

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G/A

Under the Securities Exchange Act of 1934
(Amendment No. 2)*

EnteroMedics Inc.
(Name of Issuer)

Common Stock, par value \$0.01 per share
(Title of Class of Securities)

29365M208
(CUSIP Number)

December 31, 2012
(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)

(Page 1 of 14 Pages)

*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).

1	NAME OF REPORTING PERSON Ardsley Partners Fund II, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,111,200 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,111,200 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,111,200 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 2.7%	
12	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSON Ardsley Partners Institutional Fund, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,313,800 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,313,800 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,313,800 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 3.2%	
12	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSON Ardsley Healthcare Fund, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 60,000 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 60,000 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 60,000 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.1%	
12	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSON Ardsley Offshore Fund, Ltd.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION British Virgin Islands	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 25,000 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 25,000 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 25,000 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.1%	
12	TYPE OF REPORTING PERSON CO	

1	NAME OF REPORTING PERSON Ardley Advisory Partners	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION New York	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 2,510,000 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 2,510,000 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,510,000 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.0%	
12	TYPE OF REPORTING PERSON PN; IA	

1	NAME OF REPORTING PERSON Ardsley Partners I	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION New York	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 2,425,000 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 2,425,000 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,425,000 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.8%	
12	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSON Philip J. Hempleman	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 3,125,000 shares of Common Stock
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 3,125,000 shares of Common Stock
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,125,000 shares of Common Stock	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 7.5%	
12	TYPE OF REPORTING PERSON IN	

Item 1(a). NAME OF ISSUER

The name of the issuer is EnteroMedics Inc. (the "Company").

Item 1(b). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES

The Company's principal executive offices are located at 2800 Patton Road, St. Paul, Minnesota 55113.

Item 2(a). NAME OF PERSON FILING

This statement is filed by:

- (i) Ardsley Partners Fund II, L.P., a Delaware limited partnership ("AP II"), with respect to the shares of Common Stock, par value \$0.01 per share ("Common Stock") directly owned by it;
- (ii) Ardsley Partners Institutional Fund, L.P., a Delaware limited partnership ("Ardsley Institutional"), with respect to the shares of Common Stock directly owned by it;
- (iii) Ardsley Healthcare Fund, L.P., a Delaware limited partnership ("Ardsley Healthcare"), with respect to the shares of Common Stock directly owned by it;
- (iv) Ardsley Offshore Fund, Ltd., a British Virgin Islands corporation ("Ardsley Offshore"), with respect to the shares of Common Stock directly owned by it;
- (v) Ardsley Advisory Partners, a New York general partnership ("Ardsley") which serves as Investment Manager of Ardsley Offshore and as Investment Adviser of AP II, Ardsley Institutional and Ardsley Healthcare, with respect to the shares of Common Stock directly owned by Ardsley Offshore, AP II, Ardsley Institutional and Ardsley Healthcare;
- (vi) Ardsley Partners I, a New York general partnership ("Ardsley Partners") which serves as General Partner of AP II and Ardsley Institutional, with respect to the shares of Common Stock owned by AP II and Ardsley Institutional; and
- (vii) Philip J. Hempleman ("Mr. Hempleman"), the Managing Partner of Ardsley and Ardsley Partners and the General Partner of Ardsley Healthcare, with respect to the shares of Common Stock owned by AP II, Ardsley Institutional, Ardsley Healthcare and Ardsley Offshore and with respect to the shares of Common Stock owned by certain accounts managed by him directly.

The foregoing persons are hereinafter sometimes collectively referred to as the "Reporting Persons." Any disclosures herein with respect to persons other than the Reporting Persons are made on information and belief after making inquiry to the appropriate party. The filing of this statement should not be construed as an admission that any of the Reporting Persons is, for the purposes of Section 13G of the Act, the beneficial owner of the shares of Common Stock reported herein.

Item 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE, RESIDENCE

The address of the business office of each of the Reporting Persons, with the exception of Ardsley Offshore, is 262 Harbor Drive, Stamford, Connecticut 06902.

The address of the registered office of Ardsley Offshore is Romasco Place, Wickhams Cay 1, Road Town Tortola, British Virgin Islands.

Item 2(c). CITIZENSHIP

AP II, Ardsley Institutional and Ardsley Healthcare are Delaware limited partnerships. Ardsley Offshore is a British Virgin Islands corporation. Ardsley and Ardsley Partners are New York general partnerships. Mr. Hempleman is a United States citizen.

Item 2(d). TITLE OF CLASS OF SECURITIES

Common Stock, par value \$0.01 per share.

Item 2(e). CUSIP NUMBER

29365M208

Item 3. IF THIS STATEMENT IS FILED PURSUANT TO Rules 13d-1(b), OR 13d-2(b) OR (c), CHECK WHETHER THE PERSON FILING IS A:

- (a) Broker or dealer registered under Section 15 of the Act;
- (b) Bank as defined in Section 3(a)(6) of the Act;
- (c) Insurance company as defined in Section 3(a)(19) of the Act;
- (d) Investment company registered under Section 8 of the Investment Company Act of 1940;
- (e) An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
- (f) An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
- (g) A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);
- (h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act;
- (i) A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act;
- (j) A non-U.S. institution in accordance with Rule 13d-1(b)(1)(ii)(J);
- (k) Group, in accordance with Rule 13d-1(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with Rule 13d-1(b)(1)(ii)(J), please specify the type of institution: _____

Item 4. OWNERSHIP

The information required by Items 4(a) - (c) is set forth in Rows 5 - 11 of the cover page for each Reporting Person hereto and is incorporated herein by reference for each Reporting Person.

The Company's Form 10-Q, filed on November 8, 2012, indicates that the total number of outstanding shares of Common Stock as of October 31, 2012 was 41,701,594. The percentages used herein and in the rest of the Schedule 13G/A are based upon such number of shares of Common Stock outstanding.

Item 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

Not applicable.

Item 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON

Ardsley, the Investment Manager of Ardsley Offshore and the Investment Adviser of AP II, Ardsley Institutional and Ardsley Healthcare has the power to vote and direct the disposition of the proceeds from the sale of the shares of Common Stock owned by Ardsley Offshore, AP II, Ardsley Institutional and Ardsley Healthcare, and accordingly may be considered to be the direct "beneficial owner" of such shares of Common Stock.

Ardsley Partners, the General Partner of AP II and Ardsley Institutional, shares the power to vote and direct the disposition of the shares of Common Stock owned by AP II and Ardsley Institutional, and, accordingly may be considered to be the direct "beneficial owner" of such shares of Common Stock.

Mr. Hempleman is the Managing Partner of Ardsley and Ardsley Partners and the General Partner of Ardsley Healthcare and in that capacity directs their operations and therefore may be considered to be the indirect "beneficial owner" of the shares of Common Stock owned by AP II, Ardsley Offshore, Ardsley Institutional, Ardsley Healthcare and certain accounts managed by him directly. Mr. Hempleman disclaims beneficial ownership of all of the shares of Common Stock reported in this 13G/A.

Item 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY OR CONTROL PERSON

Not applicable.

Item 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

See Item 2.

Item 9. NOTICE OF DISSOLUTION OF GROUP

Not applicable.

Item 10. CERTIFICATION

Each of the Reporting Persons hereby makes the following certification:

By signing below each Reporting Person certifies that, to the best of his or its knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURES

After reasonable inquiry and to the best of his or its knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

DATE: February 13, 2013

ARDSLEY PARTNERS FUND II, L.P.

BY: ARDSLEY PARTNERS I,
GENERAL PARTNER

BY: /s/ Steve Napoli

Steve Napoli
General Partner

ARDSLEY PARTNERS INSTITUTIONAL FUND, L.P.

BY: ARDSLEY PARTNERS I,
GENERAL PARTNER

BY: /s/ Steve Napoli

Steve Napoli
General Partner

ARDSLEY HEALTHCARE FUND, L.P.

BY: PHILIP J. HEMPLEMAN,
GENERAL PARTNER

BY: /s/ Steve Napoli*

As attorney in fact for
Philip J. Hempleman

ARDSLEY OFFSHORE FUND, LTD.

BY: /s/ Steve Napoli

Steve Napoli
Director

ARDSLEY ADVISORY PARTNERS

BY: /s/ Steve Napoli

Steve Napoli
Partner

ARDSLEY PARTNERS I

BY: /s/ Steve Napoli
Steve Napoli
General Partner

PHILIP J. HEMPLEMAN, INDIVIDUALLY

BY: /s/ Steve Napoli*
Steve Napoli
As attorney in fact for
Philip J. Hempleman

* Evidence of Power of Attorney was filed with the Schedule 13G/A filed on February 15, 2006 (Acc-no: 0000902664-06-000895) and is incorporated by reference into this filing.