

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

(Rule 13d-101)

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT
TO RULE 13d-1(a) AND AMENDMENTS THERETO FILED
PURSUANT TO RULE 13d-2(a)**

(Amendment No. 2)¹

PHARMATHENE, INC.

(Name of Issuer)

Common Stock, par value \$0.0001 per share
(Title of Class of Securities)

71714G102
(CUSIP Number)

Bear Stearns Health Innoventures, L.P.
245 Park Avenue, 8th Floor
New York, New York 10167
(212) 272-2253
Attention: Todd Hesse

Edwards Angell Palmer & Dodge LLP
111 Huntington Avenue
Boston, MA 02199
(617) 951-3331
Attention: Heather Stone, Esq.

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

May 18, 2009

(Dates of Events Which Require Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box o.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7(b) for other parties to whom copies are to be sent.

¹ 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 disclosures provided in a prior cover page.

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

1	NAME OF REPORTING PERSON Bear Stearns Health Innoventures, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 43,254 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 43,254 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 43,254 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.15% (2)	
14	TYPE OF REPORTING PERSON PN	

(1) Represents (i) 41,727 shares of common stock of the issuer that may be acquired upon conversion of outstanding principal and accrued interest on 8% Convertible Notes held by Bear Stearns Health Innoventures, L.P. and (ii) 1,527 shares of common stock of the issuer underlying vested options to purchase common stock held by Bear Stearns Health Innoventures, L.P.

(2) See Item 5(a).

1	NAME OF REPORTING PERSON Bear Stearns Health Innoventures Offshore, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 35,583 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 35,583 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 35,583 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.13% (2)	
14	TYPE OF REPORTING PERSON PN	

(1) Represents (i) 34,327 shares of common stock of the issuer that may be acquired upon conversion of outstanding principal and accrued interest on 8% Convertible Notes held by Bear Stearns Health Innoventures Offshore, L.P. and (ii) 1,256 shares of common stock of the issuer underlying vested options to purchase common stock held by Bear Stearns Health Innoventures Offshore, L.P.

(2) See Item 5(a).

1	NAME OF REPORTING PERSON BX, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 171,881 (1)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 171,881 (1)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 171,881 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.60% (2)	
14	TYPE OF REPORTING PERSON PN	

(1) Represents (i) 165,812 shares of common stock of the issuer that may be acquired upon conversion of outstanding principal and accrued interest on 8% Convertible Notes held by BX, L.P. and (ii) 6,069 shares of common stock of the issuer underlying vested options to purchase common stock held by BX, L.P.

(2) See Item 5(a).

1	NAME OF REPORTING PERSON Bear Stearns Health Innoventures Employee Fund, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 151,987 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 151,987 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 151,987 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.53% (2)	
14	TYPE OF REPORTING PERSON PN	

(1) Represents (i) 123,929 shares of common stock of the issuer held by Bear Stearns Health Innoventures Employee Fund, L.P., (ii) 27,067 shares of common stock of the issuer that may be acquired upon conversion of outstanding principal and accrued interest on 8% Convertible Notes held by Bear Stearns Health Innoventures Employee Fund, L.P. and (iii) 991 shares of common stock of the issuer underlying vested options to purchase common stock held by Bear Stearns Health Innoventures Employee Fund, L.P.

(2) See Item 5(a).

1	NAME OF REPORTING PERSON BSHI Members, L.L.C.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 108,891 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 108,891 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 108,891 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0.38% (2)	
14	TYPE OF REPORTING PERSON PN	

(1) Represents (i) 88,789 shares of common stock of the issuer held by BSHI Members, L.L.C., (ii) 19,393 shares of common stock of the issuer that may be acquired upon conversion of outstanding principal and accrued interest on 8% Convertible Notes held by BSHI Members, L.L.C. and (iii) 709 shares of common stock of the issuer underlying vested options to purchase common stock held by BSHI Members, L.L.C.

(2) See Item 5(a).

1	NAME OF REPORTING PERSON Bear Stearns Health Innoventures Management, L.L.C.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS Not Applicable	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 11,072 (1)
	8	SHARED VOTING POWER 511,596 (2)
	9	SOLE DISPOSITIVE POWER 11,072 (1)
	10	SHARED DISPOSITIVE POWER 511,596 (2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 522,668 (1)(2)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 1.82% (3)	
14	TYPE OF REPORTING PERSON PN	

(1) Represents shares received by Bear Stearns Health Innoventures Management, L.L.C. in the Distribution (as defined in Item 4 below).

(2) Bear Stearns Asset Management, Inc. ("BSAM") is the sole manager of Bear Stearns Health Innoventures Management, L.L.C. ("Management") and the sole manager of BSHI Members, LLC ("Members"). Management is the sole general partner of Bear Stearns Health Innoventures, L.P. ("BSHI"), the sole general partner of Bear Stearns Health Innoventures Offshore, L.P. ("Offshore"), the sole general partner of BX, L.P. ("BX"), and the sole general partner of Bear Stearns Health Innoventures Employee Fund, L.P. ("Employee Fund"), and Members co-invests with these funds. Management and BSAM share investment and voting control over the shares of common stock beneficially owned by BSHI, Offshore, BX, Employee Fund and Members.

(3) See Item 5(a).

1	NAME OF REPORTING PERSON Bear Stearns Asset Management Inc.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF THE GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS Not Applicable	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION New York	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 11,072 (1)
	8	SHARED VOTING POWER 511,596 (2)
	9	SOLE DISPOSITIVE POWER 11,072 (1)
	10	SHARED DISPOSITIVE POWER 511,596 (2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 522,668 (1)(2)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW(11) 1.82% (3)	
14	TYPE OF REPORTING PERSON CO	

(1) Represents shares received by Bear Stearns Health Innoventures Management, L.L.C. in the Distribution (as defined in Item 4 below).

(2) Bear Stearns Asset Management, Inc. ("BSAM") is the sole manager of Bear Stearns Health Innoventures Management, L.L.C. ("Management") and the sole manager of BSHI Members, LLC ("Members"). Management is the sole general partner of Bear Stearns Health Innoventures, L.P. ("BSHI"), the sole general partner of Bear Stearns Health Innoventures Offshore, L.P. ("Offshore"), the sole general partner of BX, L.P. ("BX"), and the sole general partner of Bear Stearns Health Innoventures Employee Fund, L.P. ("Employee Fund"), and Members co-invests with these funds. Management and BSAM share investment and voting control over the shares of common stock beneficially owned by BSHI, Offshore, BX, Employee Fund and Members.

(3) See Item 5(a).

Schedule 13D

The Reporting Persons (as defined below) hereby amend the statement on Schedule 13D filed with the Securities and Exchange Commission (the "Commission") on August 13, 2007, as amended and restated on September 28, 2007 (as previously amended and restated, the "Schedule 13D," and as amended hereby, the "Statement") to reflect the distribution of 1,107,369 shares of the common stock, \$0.0001 par value (the "Common Stock"), of PharmAthene, Inc., a Delaware corporation (the "Issuer") to the limited partners of BSHI, Offshore and BX (each as defined below).

Pursuant to Rule 13d-1(k)(1)-(2) of Regulation 13D-G of the General Rules and Regulations under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the undersigned hereby file this Statement on behalf of each of the following entities:

- (i) Bear Stearns Health Innoventures, L.P., a Delaware limited partnership ("BSHI"), with respect to Common Stock beneficially owned by it;
- (ii) Bear Stearns Health Innoventures Offshore, L.P., a Cayman Islands limited partnership ("Offshore"), with respect to Common Stock beneficially owned by it;
- (iii) BX, L.P., a Cayman Islands limited partnership ("BX"), with respect to Common Stock beneficially owned by it;
- (iv) Bear Stearns Health Innoventures Employee Fund, L.P., a Delaware limited partnership ("Employee Fund"), with respect to Common Stock beneficially owned by it;
- (v) BSHI Members, L.L.C., a Delaware limited liability corporation ("Members"), with respect to Common Stock beneficially owned by it;
- (vi) Bear Stearns Health Innoventures Management, L.L.C., a Delaware limited liability corporation ("Management"), with respect to Common Stock beneficially owned by BSHI, Offshore, BX, Employee Fund and Members, and with respect to Common Stock received in the Distribution; and
- (vii) Bear Stearns Asset Management Inc., a New York corporation ("BSAM"), with respect to Common Stock beneficially owned by BSHI, Offshore, BX, Employee Fund, Members and Management.

BSHI, Offshore, BX, Employee Fund and Members are herein referred to collectively as the "BSHI Funds." The BSHI Funds, TBSCI, Management and BSAM are herein referred to collectively as the "Reporting Persons."

The Reporting Persons are making this single, joint filing because they may be deemed to constitute a "group" within the meaning of Section 13(d)(3) of the Exchange Act.

The following items of the Schedule 13D are amended to read as follows:

Item 2. Identity and Background.

Item 2 is hereby amended and supplemented as follows:

Elizabeth Czerepak and Stefan Ryser, each of whom was originally listed as a Reporting Person on the Schedule 13D, are no longer employed by BSAM and no longer have investment or voting discretion over the shares of Common Stock owned by the BSHI Funds.

The principal office address of each Reporting Person is 245 Park Avenue, 8th floor, New York, New York 10167.

Item 4. Purpose of Transaction.

Item 4 is hereby amended and supplemented as follows:

On May 18, 2009, BSHI, Offshore and BX effected the distribution of 1,107,369 shares of Common Stock in kind on a pro rata basis to their respective partners (the "Distribution"). Management acquired 11,072 shares in the Distribution in connection with its general partner ownership interest.

The BSHI Funds hold their remaining securities of the Issuer for investment purposes. The BSHI Funds intend to review from time to time their investment in the Issuer and depending on such review may consider from time to time various alternative courses of action. Depending on prevailing conditions from time to time, including, without limitation, price and availability of shares, future evaluations by the BSHI Funds of the business and prospects of the Issuer, and general stock market and economic conditions, the BSHI Funds may determine to sell all or part of their investment in the Issuer through open-market purchases, privately negotiated transactions, or otherwise.

Ms. Czerepak resigned from the Board of Directors of the Issuer effective July 16, 2008.

Item 5. Interest in Securities of the Issuer.

Item 5 is hereby amended and restated in its entirety to read as follows:

(a)

Collectively, the Reporting Persons beneficially own an aggregate of 522,668 shares of Common Stock, or approximately 1.82% of the Common Stock issued and outstanding. Individually, each Reporting Person beneficially owns the aggregate number of shares of Common Stock, and approximately the percentage of the Common Stock issued and outstanding, specified in Items 11 and 13 to the cover page corresponding to such Reporting Person. The information in Items 11 and 13 of each cover page is incorporated by reference into this Item 5(a).

The Reporting Persons expressly disclaim beneficial ownership of securities beneficially owned by any other person or entity, and the securities reported herein as being beneficially owned by the Reporting Persons do not include any securities beneficially owned by any other person or entity.

The information in this Item 5(a) and in Item 13 of each cover page to this Statement (i) is based on 28,433,503 shares of Common Stock outstanding as of May 13, 2009, and (ii) gives effect to the conversion into Common Stock of all of the principal amount of 8% Convertible Notes held by the Reporting Persons and accrued interest thereon through March 31, 2009, and to the exercise of all options held by the Reporting Persons that are currently exercisable or will become exercisable in the next 60 days.

(b)

The information in Items 7 through 10 of each cover page is incorporated by reference into this Item 5(b).

(c)

Except for the Distribution described in this Statement, the Reporting Persons have effected no transactions relating to the Common Stock during the past 60 days.

(d)

Inapplicable.

(e)

As a consequence of the Distribution, the Reporting Persons ceased to be a beneficial owner of more than five percent of the Common Stock as of May 18, 2009.

SIGNATURE

The undersigned hereby agree that this Schedule 13D with respect to the Common Stock of PharmAthene, Inc. is, and any amendment thereto signed by each of the undersigned shall be, filed on behalf of each of the undersigned in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended.

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

Date: May 28, 2009

BEAR STEARNS ASSET MANAGEMENT INC.

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory

BEAR STEARNS HEALTH INNOVATURES
MANAGEMENT, LLC

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory

BSHI MEMBERS, L.L.C.

By: Bear Stearns Asset Management Inc., its Manager

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory

BEAR STEARNS HEALTH INNOVENTURES, L.P.

By: Bear Stearns Health Innoventures Management, LLC,
its General Partner

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory

CUSIP No. 71714G102

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BEAR STEARNS HEALTH INNOVENTURES OFFSHORE,
L.P.

By: Bear Stearns Health Innoventures Management, LLC,
its General Partner

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory

BEAR STEARNS HEALTH INNOVENTURES EMPLOYEE
FUND, L.P.

By: Bear Stearns Health Innoventures Management, LLC,
its General Partner

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory

BX, L.P.

By: Bear Stearns Health Innoventures Management, LLC,
its General Partner

By: /s/ Todd Hesse
Name: Todd Hesse
Title: Authorized Signatory