

AMAG PHARMACEUTICALS INC.

Form SC 13D/A

January 26, 2011

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 4)*

AMAG Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock, par value \$0.01 per share

(Title of Class of Securities)

00163U106

(CUSIP Number)

Paul S. Scrivano, Esq.
O'Melveny & Myers LLP
Times Square Tower
7 Times Square
New York, New York 10036
(212) 326-2000

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

January 24, 2011

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of sections 240.13d-1(e), 240.13d-1(f) or 140.13d-1(g), check the following box. [X]

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See section 240.13d-7 for other parties to whom copies are to be sent.

* 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).

Page 1 of 7

1. Names of Reporting Persons

Palo Alto Investors, Inc.

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)
(b) X

3. SEC Use Only

4. Source of Funds (See Instructions)

AF

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) _____

6. Citizenship or Place of Organization

California

Number of	7.	Sole Voting Power	0
Shares	8.	Shared Voting Power	3,372,077
Beneficially	9.	Sole Dispositive Power	0
Owned by	10.	Shared Dispositive Power	3,372,077
Each Reporting			
Person With			

ount Beneficially Owned by Each Reporting

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Repr

16.0%

14. Type of Reporting Person (See Instructions)

CO, HC

1. Names of Reporting Persons

Palo Alto Investors, LLC

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)
(b) X

3. SEC Use Only

4. Source of Funds (See Instructions)

AF

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) _____

6. Citizenship or Place of Organization

California

Number of	7.	Sole Voting Power	0
Shares	8.	Shared Voting Power	3,372,077
Beneficially	9.	Sole Dispositive Power	0
Owned by	10.	Shared Dispositive Power	3,372,077
Each Reporting			
Person With			

11. Aggregate Amount Beneficially Owned by Each Reporting Person 3,372,077

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Represented by Amount in Row (11)

16.0%

14. Type of Reporting Person (See Instructions)

IA, OO

1. Names of Reporting Persons

William Leland Edwards

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)
(b) X

3. SEC Use Only

4. Source of Funds (See Instructions) AF

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) _____

6. Citizenship or Place of Organization U.S.A.

Number of	7.	Sole Voting Power	4,700
Shares	8.	Shared Voting Power	3,372,077
Beneficially	9.	Sole Dispositive Power	4,700
Owned by	10.	Shared Dispositive Power	3,372,077
Each Reporting Person With			

11. Aggregate Amount Beneficially Owned by Each Reporting Person 3,376,777

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) _____

13. Percent of Class Represented by Amount in Row (11) 16.0%

14. Type of Reporting Person (See Instructions) IN, HC

1. Names of Reporting Persons

Anthony Joonkyoo Yun, MD

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)
(b) X

3. SEC Use Only

4. Source of Funds (See Instructions)

AF

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) _____

6. Citizenship or Place of Organization

U.S.A.

Number of	7.	Sole Voting Power	0
Shares	8.	Shared Voting Power	3,372,077
Beneficially	9.	Sole Dispositive Power	0
Owned by	10.	Shared Dispositive Power	3,372,077
Each Reporting Person With			

11. Aggregate Amount Beneficially Owned by Each Reporting Person 3,372,077

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Represented by Amount in Row (11)

16.0%

14. Type of Reporting Person (See Instructions)

IN, HC

This Amendment No. 4 (this “Amendment No. 4”) amends and supplements the Schedule 13D originally filed with the Securities and Exchange Commission (the “SEC”) on November 22, 2010 (the “Original Statement”), as amended by Amendment No. 1 filed with the SEC on December 9, 2010 and Amendment No. 2 filed with the SEC on December 23, 2010 and Amendment No. 3 filed with the SEC on January 3, 2011 (the Original Statement and such amendments, together with this Amendment No. 4, are collectively referred to herein as the “Statement”), by William Leland Edwards, Palo Alto Investors, LLC (“PAI LLC”), Palo Alto Investors, Inc. (“PAI Corp”), and Anthony Joonkyoo Yun, MD (collectively, the “Filers”). Except as set forth in this Amendment No. 4, all information set forth in the Statement remains unchanged and capitalized terms used but not defined in this Amendment No. 4 shall have the meanings ascribed to such terms in the Original Statement.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 is amended and restated in its entirety to read as follows:

The source and amount of funds used in purchasing the Stock were as follows:

Purchaser	Source of Funds	Amount
PAI LLC	Funds Under Management	\$90,225,990

Item 5. Interest in Securities of the Issuer

Item 5(c) is amended and supplemented to add the following at the end thereof:

Person Effecting the Transaction	Date	Purchase or Sale	Quantity	Price per Share
PAI, LLC	1/3/2011	purchase	11,600	\$ 18.12
PAI, LLC	1/4/2011	purchase	18,100	\$ 17.87
PAI, LLC	1/5/2011	purchase	19,500	\$ 17.88
PAI, LLC	1/7/2011	purchase	75,400	\$ 17.91
PAI, LLC	1/10/2011	purchase	42,000	\$ 17.02
PAI, LLC	1/13/2011	purchase	13,800	\$ 17.85
PAI, LLC	1/14/2011	purchase	15,500	\$ 18.07
PAI, LLC	1/24/2011	purchase	12,700	\$ 17.62
PAI, LLC	1/25/2011	purchase	16,600	\$ 17.39

SIGNATURES

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

Dated: January 26, 2011

PALO ALTO INVESTORS, INC.

PALO ALTO INVESTORS, LLC

By: /s/ Mark
Shamia _____
Mark Shamia, Chief Operating Officer

By: /s/ Mark
Shamia _____
Mark Shamia, Chief Operating Officer

/s/ Anthony Joonkyoo Yun _____
Anthony Joonkyoo Yun, MD

/s/ William Leland Edwards _____
William Leland Edwards

