

AtriCure, Inc.  
Form SC 13G/A  
February 16, 2016  
SECURITIES  
AND  
EXCHANGE  
COMMISSION  
Washington,  
D.C. 20549

SCHEDULE  
13G/A

Under the  
Securities  
Exchange Act of  
1934  
(Amendment  
No. 3)\*

ATRICURE,  
INC.  
(Name of  
Issuer)

Common Stock,  
par value \$0.001  
per share  
(Title of Class  
of Securities)

04963C209  
(CUSIP  
Number)

December 31,  
2015  
(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 11  
Pages)

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\*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).

<b>1</b>	NAME OF REPORTING PERSON
	Adage Capital Partners, L.P.
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER (b) " OF A GROUP
<b>3</b>	SEC USE ONLY CITIZENSHIP OR PLACE OF ORGANIZATION
	Delaware
<b>5</b>	SOLE VOTING POWER
<b>6</b>	0 SHARED VOTING POWER
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	1,306,488
<b>7</b>	SOLE DISPOSITIVE POWER
<b>8</b>	0 SHARED DISPOSITIVE POWER
<b>9</b>	1,306,488 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,306,488

CHECK BOX

IF THE

AGGREGATE

AMOUNT IN ..

**10**

ROW (9)

EXCLUDES

CERTAIN

SHARES

PERCENT OF

CLASS

REPRESENTED BY

**11**

AMOUNT IN ROW

(9)

4.06%

TYPE OF

REPORTING

**12**

PERSON

PN

<b>1</b>	NAME OF REPORTING PERSON
	Adage Capital Partners GP, L.L.C.
	CHECK THE APPROPRIATE BOX IF A MEMBER (b) " OF A GROUP
<b>2</b>	
<b>3</b>	SEC USE ONLY CITIZENSHIP OR PLACE OF ORGANIZATION
<b>4</b>	
	Delaware
	SOLE VOTING POWER
<b>5</b>	
	0 SHARED VOTING POWER
<b>6</b>	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	1,306,488
<b>7</b>	SOLE DISPOSITIVE POWER
	0 SHARED DISPOSITIVE POWER
<b>8</b>	
<b>9</b>	1,306,488 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,306,488

CHECK BOX

10

IF THE  
AGGREGATE  
AMOUNT IN ..  
ROW (9)

EXCLUDES  
CERTAIN  
SHARES

PERCENT OF  
CLASS

11

REPRESENTED BY  
AMOUNT IN ROW  
(9)

4.06%

TYPE OF  
REPORTING  
PERSON

12

OO

<b>1</b>	NAME OF REPORTING PERSON
	Adage Capital Advisors, L.L.C.
	CHECK THE APPROPRIATE BOX IF A MEMBER (b) " OF A GROUP
<b>2</b>	
<b>3</b>	SEC USE ONLY CITIZENSHIP OR PLACE OF ORGANIZATION
<b>4</b>	Delaware
	SOLE VOTING POWER
<b>5</b>	
	0 SHARED VOTING POWER
<b>6</b>	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	1,306,488 SOLE DISPOSITIVE POWER
<b>7</b>	
	0 SHARED DISPOSITIVE POWER
<b>8</b>	
	1,306,488
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
<b>10</b>	1,306,488 ..

CHECK BOX  
IF THE  
AGGREGATE  
AMOUNT IN  
ROW (9)  
EXCLUDES  
CERTAIN  
SHARES  
PERCENT OF  
CLASS  
REPRESENTED BY  
AMOUNT IN ROW  
(9)

**11**

4.06%  
TYPE OF  
REPORTING  
PERSON

**12**

OO



<b>1</b>	NAME OF REPORTING PERSON
	Robert Atchinson
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER (b) " OF A GROUP
<b>3</b>	SEC USE ONLY CITIZENSHIP OR PLACE OF ORGANIZATION
	United States
<b>5</b>	SOLE VOTING POWER
	0
<b>6</b>	SHARED VOTING POWER
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	1,306,488
<b>7</b>	SOLE DISPOSITIVE POWER
	0
<b>8</b>	SHARED DISPOSITIVE POWER
	1,306,488
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
<b>10</b>	1,306,488 CHECK BOX " IF THE

**11** AGGREGATE  
AMOUNT IN  
ROW (9)  
EXCLUDES  
CERTAIN  
SHARES  
PERCENT OF  
CLASS  
REPRESENTED BY  
AMOUNT IN ROW  
(9)

**12** 4.06%  
TYPE OF  
REPORTING  
PERSON

IN

<b>1</b>	NAME OF REPORTING PERSON
	Phillip Gross
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER (b) " OF A GROUP
<b>3</b>	SEC USE ONLY CITIZENSHIP OR PLACE OF ORGANIZATION
	United States
<b>5</b>	SOLE VOTING POWER
	0
<b>6</b>	SHARED VOTING POWER
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	1,306,488
<b>7</b>	SOLE DISPOSITIVE POWER
	0
<b>8</b>	SHARED DISPOSITIVE POWER
	1,306,488
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
<b>10</b>	1,306,488 CHECK BOX " IF THE

**11** AGGREGATE  
AMOUNT IN  
ROW (9)  
EXCLUDES  
CERTAIN  
SHARES  
PERCENT OF  
CLASS  
REPRESENTED BY  
AMOUNT IN ROW  
(9)

**12** 4.06%  
TYPE OF  
REPORTING  
PERSON

IN

**Item 1(a). NAME OF ISSUER**

The name of the issuer is ATRICURE, INC. (the "Company").

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

The Company's principal executive offices are located at 6217 Centre Park Drive, West Chester, Ohio 45069.

**Item 2(a). NAME OF PERSON FILING**

This statement is filed by:

- (i) Adage Capital Partners, L.P., a Delaware limited partnership ("ACP") with respect to the shares of Common Stock directly owned by it;
- (ii) Adage Capital Partners GP, L.L.C., a limited liability company organized under the laws of the State of Delaware ("ACPGP"), as general partner of ACP with respect to the shares of Common Stock directly owned by ACP;  
  
Adage Capital Advisors, L.L.C., a limited liability company organized under the laws of the State of Delaware (iii) ("ACA"), as managing member of ACPGP, general partner of ACP, with respect to the shares of Common Stock directly owned by ACP;
- (iv) Robert Atchinson ("Mr. Atchinson"), as managing member of ACA, managing member of ACPGP, general partner of ACP with respect to the shares of Common Stock directly owned by ACP; and
- (v) Phillip Gross ("Mr. Gross"), as managing member of ACA, managing member of ACPGP, general partner of ACP with respect to the shares of Common Stock directly owned by ACP.

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 in and of itself as an admission by any Reporting Person as to beneficial ownership of the securities 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 is 200 Clarendon Street, 52nd floor, Boston, Massachusetts 02116.

**Item 2(c). CITIZENSHIP**

ACP is a limited partnership organized under the laws of the State of Delaware. ACPGP and ACA are limited liability companies organized under the laws of the State of Delaware. Messrs. Gross and Atchinson are citizens of the United States.

**Item 2(d). TITLE OF CLASS OF SECURITIES**

Common Stock, par value \$0.001 per share (the "Common Stock").

**Item 2(e). CUSIP NUMBER**

04963C209

**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: Not applicable.

**Item 4. OWNERSHIP**

- A. Adage Capital Partners, L.P., Adage Capital Partners GP, L.L.C. and Adage Capital Advisors, L.L.C.
- (a) Amount beneficially owned: 1,306,488  
Percent of class: 4.06%. The percentages used herein and in the rest of this Schedule 13G/A are calculated based upon 32,216,424 shares of Common Stock outstanding as of October 28, 2015 as reported in the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 3, 2015 filed with the Securities and Exchange Commission on October 30, 2015.
  - (b) the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 3, 2015 filed with the Securities and Exchange Commission on October 30, 2015.
  - (c) (i) Sole power to vote or direct the vote: 0  
(ii) Shared power to vote or direct the vote: 1,306,488  
(iii) Sole power to dispose or direct the disposition: 0  
(iv) Shared power to dispose or direct the disposition of: 1,306,488

ACP has the power to dispose of and the power to vote the shares of Common Stock beneficially owned by it, which power may be exercised by its general partner, ACPGP. ACA, as managing member of ACPGP, directs ACPGP's operations. Neither ACPGP nor ACA directly own any shares of Common Stock. By reason of the provisions of Rule 13d-3 of the Securities Exchange Act of 1934 (the "Act"), ACPGP and ACA may be deemed to beneficially own the shares owned by ACP.

B. Robert Atchinson and Phillip Gross

- (a) Amount beneficially owned: 1,306,488
- (b) Percent of class: 4.06%
- (c) (i) Sole power to vote or direct the vote: 0  
(ii) Shared power to vote or direct the vote: 1,306,488  
(iii) Sole power to dispose or direct the disposition: 0  
(iv) Shared power to dispose or direct the disposition: 1,306,488

Messrs. Atchinson and Gross, as managing members of ACA, have shared power to vote the Common Stock beneficially owned by ACP. Neither Mr. Atchinson nor Mr. Gross directly own any shares of Common Stock. By reason of the provisions of Rule 13d-3 of the Act, each may be deemed to beneficially own the shares beneficially owned by ACP.

**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 5 percent of the class of securities, check the following [X]

**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 OR CONTROL PERSON**

Not applicable.

**Item 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP**

Not applicable.

**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 16, 2016

ADAGE CAPITAL PARTNERS, L.P.

By: Adage Capital Partners GP, L.L.C.,  
its general partner

By: Adage Capital Advisors, L.L.C.,  
its managing member

/s/ Robert Atchinson

Name: Robert Atchinson

Title: Managing Member

ADAGE CAPITAL PARTNERS GP, L.L.C.

By: Adage Capital Advisors, L.L.C.,  
its managing member

/s/ Robert Atchinson

Name: Robert Atchinson

Title: Managing Member

ADAGE CAPITAL ADVISORS, L.L.C.

/s/ Robert Atchinson

Name: Robert Atchinson

Title: Managing Member

/s/ Robert Atchinson

ROBERT ATCHINSON, individually

/s/ Phillip Gross

PHILLIP GROSS, individually