



MRI Interventions, Inc.

13,807,533 Shares of Common Stock

This prospectus supplement relates to the prospectus dated July 7, 2017, as supplemented by prospectus supplement no. 1 dated August 11, 2017, prospectus supplement no. 2 dated August 18, 2017, prospectus supplement no. 3 dated September 5, 2017, prospectus supplement no. 4 dated October 3, 2017, prospectus supplement no. 5 dated October 10, 2017 and prospectus supplement no. 6 dated November 6, 2017, which permits the resale of up to 6,693,333 outstanding shares of our common stock and 7,114,200 shares of our common stock issuable upon the exercise of outstanding warrants, by the selling securityholders identified in the prospectus, as amended and supplemented from time to time. We will pay the expenses of registering the shares of our common stock, but we are not selling any shares of common stock in this offering and therefore will not receive any proceeds from this offering. We will, however, receive the exercise price of the warrants, if and when the warrants are exercised for cash by the securityholders.

This prospectus supplement is being filed to update, amend and supplement the information previously included in the prospectus with the information contained in our Current Report on Form 8-K filed with the Securities and Exchange Commission (the "SEC") on November 7, 2017 (the "8-K"). Accordingly, we have attached the 8-K to this prospectus supplement. You should read this prospectus supplement together with the prospectus, which is to be delivered with this prospectus supplement.

Our common stock is traded in the over-the-counter market and is quoted on the OTCQB Marketplace and the OTC Bulletin Board under the symbol MRIC. On November 3, 2017, the last reported sale price of our common stock was \$2.61 per share.

We are an "emerging growth company" under the federal securities laws and are subject to reduced public company reporting requirements. Investing in our common stock involves risk. See "Risk Factors" beginning on page 12 of the prospectus to read about factors you should consider before buying shares of our common stock.

Neither the SEC nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus or this prospectus supplement. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is November 7, 2017.

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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 OR 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): November 7, 2017

MRI INTERVENTIONS, INC.

(Exact name of registrant as specified in its charter)

DELAWARE
(State or other jurisdiction
of incorporation)

001-34822
(Commission
File Number)

58-2394628
(I.R.S. Employer
Identification Number)

5 Musick
Irvine, Ca. 92618
(Address of principal executive offices, zip code)

(949) 900-6833
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

(b) Departure of Executive Officer and Director.

As part of the previously announced management transition, which was disclosed in the Current Report on Form 8-K filed by MRI Interventions, Inc. (the “Company”) with the Securities and Exchange Commission (the “SEC”) on October 10, 2017 (the “Prior Current Report”), effective November 7, 2017, Francis (Frank) P. Grillo voluntarily resigned from his position as the Chief Executive Officer and President of the Company and as a member of the Board of Directors of the Company (the “Board”) and separated from the Company pursuant to the terms of the Separation, Transition and Consulting Agreement, dated as of October 6, 2017. Mr. Grillo’s resignation is not the result of any disagreement with management, the Company or its operations, policies or practices.

The principal terms of Mr. Grillo’s separation agreement with the Company are summarized in the Prior Current Report and incorporated herein. That summary is qualified in its entirety by the full text of the separation agreement, a copy of which was filed as Exhibit 10.1 to the Prior Current Report.

(c) Appointment of Executive Officer.

Further, as part of the previously announced management transition in the Prior Current Report, effective November 7, 2017, Joseph Michael Burnett became the Chief Executive Officer and President of the Company, replacing Mr. Grillo in such positions.

The principal terms of Mr. Burnett’s employment agreement with the Company are summarized in the Prior Current Report and incorporated herein. That summary is qualified in its entirety by the full text of the employment agreement, a copy of which was filed as Exhibit 10.2 to the Prior Current Report.

(d) Election of Director.

In conjunction with the management transition described above, the Board, with the recommendation of the Corporate Governance and Nominating Committee, elected Mr. Burnett to serve as a director of the Company, effective November 7, 2017, until the 2018 annual meeting of stockholders and until his successor is duly elected and qualified or until his earlier death, resignation, disqualification or removal.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

The following exhibits are filed and/or furnished herewith.

<u>Exhibit No.</u>	<u>Description</u>
<u>10.1</u>	<u>Separation, Transition and Consulting Agreement, dated as of October 6, 2017, by and between the Company and Francis P. Grillo (filed as Exhibit 10.1 to the Company’s Current Report on Form 8-K filed with the SEC on October 10, 2017 and incorporated herein by reference)</u>
<u>10.2</u>	<u>Employment Agreement, dated as of October 6, 2017, by and between the Company and Joseph Michael Burnett (filed as Exhibit 10.2 to the Company’s Current Report on Form 8-K filed with the SEC on October 10, 2017 and incorporated herein by reference)</u>

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: November 7, 2017

MRI INTERVENTIONS, INC.

By: /s/ Harold A. Hurwitz
Harold A. Hurwitz
Chief Financial Officer