



**MRI Interventions, Inc.**

**19,045,808 Shares of Common Stock**

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This prospectus supplement relates to the prospectus dated September 24, 2012, as supplemented by prospectus supplement no. 1 dated November 14, 2012, which permits the resale of up to 13,490,434 outstanding shares of our common stock, and 5,555,374 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, 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. You should read this prospectus supplement together with the prospectus and prospectus supplement no. 1, which are to be delivered with this prospectus supplement.

Our common stock is traded in the over-the-counter market and is quoted on the OTC Bulletin Board under the symbol MRIC. On January 24, 2013, the last reported sale price of our common stock was \$1.58 per share.

*We are an "emerging growth company" under the federal securities laws and will be subject to reduced public company reporting requirements. Investing in our common stock involves risk. See "Risk Factors" beginning on page 7 of the prospectus, as amended and supplemented by the "Risk Factors" beginning on page 34 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2012 which is included in prospectus supplement no. 1, to read about factors you should consider before buying shares of our common stock.*

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Neither the Securities and Exchange Commission 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 January 25, 2013.

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On January 25, 2013, we completed our previously announced private placement of common stock and warrants, or the “financing transaction”, pursuant to the terms of a Securities Purchase Agreement dated as of January 18, 2013, or the “purchase agreement”, by and among us and certain investors. At the closing, we sold an aggregate of 9,201,684 shares of common stock, together with warrants to purchase up to 4,600,842 shares of common stock, or the “warrants”, to the investors in accordance with the terms and conditions of the purchase agreement.

In connection with the sale of securities, we received aggregate gross proceeds of approximately \$11.0 million, before deducting placement agents’ fees of approximately \$1.1 million and estimated offering expenses. The securities were issued and sold to “accredited investors” (as defined by Rule 501 under the Securities Act of 1933, as amended, or the “Securities Act”) in reliance upon exemptions from registration under the Securities Act afforded by Section 4(a)(2) of the Securities Act and Rule 506 of Regulation D promulgated thereunder and corresponding provisions of state securities laws. The purchase agreement contains representations to support our reasonable belief that the investors had access to information concerning our operations and financial condition, that the investors did not acquire the securities with a view to the distribution thereof in the absence of an effective registration statement or an applicable exemption from registration, and that the investors are accredited investors. We relied upon the representations made by the investors pursuant to the purchase agreement in determining that such exemptions were available. We intend to file a Form D in accordance with the requirements of Regulation D under the Securities Act in connection with the sale of securities.

The warrants are exercisable, in full or in part, at any time prior to January 25, 2018, at an exercise price of \$1.75 per share. The warrants provide for certain adjustments that may be made to the exercise price and the number of shares issuable upon exercise due to future corporate events or otherwise. In the case of certain fundamental transactions affecting us, the holders of the warrants, upon exercise of the warrants after such fundamental transaction, have the right to receive, in lieu of shares of our common stock, the same amount and kind of securities, cash or property such investor would have been entitled to receive upon the occurrence of the fundamental transaction had the warrants been exercised immediately prior to such fundamental transaction. The warrants also contain a “cashless exercise” feature that allows the investors to exercise the warrants without a cash payment to us upon the terms set forth in the warrants.

At the closing of the financing transaction, we also entered into a Registration Rights Agreement with the investors, or the “registration rights agreement”. Pursuant to the registration rights agreement, we are required to prepare and file a registration statement with the Securities and Exchange Commission, or the “SEC”, under the Securities Act covering the resale of the shares of common stock to be issued to the investors under the purchase agreement and the shares of common stock underlying the warrants. We are required to file such registration statement within 30 calendar days following the closing date of the financing transaction, or the “filing deadline”. We are required to use our best efforts to have the registration statement declared effective as soon as practicable. Pursuant to the registration rights agreement, if (i) the registration statement is not filed with the SEC on or prior to the filing deadline, (ii) the registration statement is not declared effective by the SEC on or prior to the 75th day after the closing date of financing transaction (or the 105th day after the closing date of the financing transaction if the SEC determines to review the registration statement), or (iii) we fail to continuously maintain the effectiveness of the registration statement (with certain permitted exceptions), we will incur certain liquidated damages to the investors. The registration rights agreement also contains mutual indemnifications by us and each investor which we believe are customary for transactions of this type.

The foregoing description of the terms and conditions of the purchase agreement, registration rights agreement and warrants is only a summary

and is qualified in its entirety by the full text of those documents.