

Envision Healthcare Holdings, Inc.
 Form 424B3
 September 25, 2014

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CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered	Proposed maximum offering price per share(1)	Proposed maximum aggregate offering price(1)	Amount of registration fee(2)
Common Stock, \$0.01 par value per share	17,500,000	\$36.01	\$630,175,000	\$81,167

(1) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(a) under the Securities Act of 1933, as amended. In accordance with Rule 457(c) under the Securities Act of 1933, as amended, the price shown is the average of the high and low selling prices of the shares of common stock on September 23, 2014 as reported on the New York Stock Exchange.

(2) Includes a registration fee of \$2.04 previously paid in connection with registration statement No. 333-197027, initially filed by Envision Healthcare Holdings, Inc. on June 25, 2014, and an additional \$81,164.96 being paid herewith. The registration fee has been transmitted to the U.S. Securities and Exchange Commission in connection with the offering of common stock pursuant to the registration statement on Form S-3, filed on September 23, 2014 (File No. 333-198889), by means of this prospectus supplement in accordance with Rule 457(r) under the Securities Act of 1933, as amended.

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Filed Pursuant to Rule 424(b)(3)
Registration No. 333-198889

PROSPECTUS SUPPLEMENT
To Prospectus dated September 23, 2014

17,500,000 Shares

Envision Healthcare Holdings, Inc.

Common Stock

All of the shares of common stock of Envision Healthcare Holdings, Inc., which we refer to in this prospectus supplement as "EVHC," are being sold by the selling stockholders identified in this prospectus supplement. EVHC will not receive any of the proceeds from the sale of the shares being sold by the selling stockholders.

The common stock of EVHC is listed on the New York Stock Exchange ("NYSE") under the symbol "EVHC". The last reported sale price of our common stock on September 23, 2014 was \$35.79 per share.

Investing in our common stock involves risks. See "Risk Factors" on page S-7 to read about factors you should consider before buying shares of our common stock.

The underwriter has agreed to purchase the common stock from the selling stockholders at a price of \$34.97 per share, which will result in aggregate proceeds of \$611,975,000 to the selling stockholders. The underwriter may offer the shares of common stock from time to time for sale in one or more transactions on the NYSE, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale or at negotiated prices. See "Underwriting."

Neither the U.S. Securities and Exchange Commission (the "SEC") nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement. Any representation to the contrary is a criminal offense.

The underwriter expects to deliver the shares to purchasers on or about September 29, 2014.

Citigroup

The date of this prospectus supplement is September 23, 2014.

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Prospectus

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Neither we, the selling stockholders, nor the underwriter have authorized anyone to provide you with different information or to make any representations other than those contained or incorporated by reference into this prospectus supplement, the accompanying prospectus or in any free writing prospectuses we have prepared. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus supplement and the accompanying prospectus do not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus supplement and the accompanying prospectus in any jurisdiction in which it is unlawful to make such offer or solicitation.

You should not assume that the information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate as of any date other than the date on the front cover of those documents. Our business, financial condition, results of operations and prospectus may have changed since that date.

For investors outside the United States: Neither we, the selling stockholders nor the underwriter have done anything that would permit this offering or possession or distribution of this prospectus supplement and the accompanying prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus supplement and the accompanying prospectus outside of the United States.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document has two parts, a prospectus supplement and an accompanying prospectus dated September 23, 2014. This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 that we filed with the SEC utilizing a "shelf" registration process. Under this shelf registration process, the selling stockholders named in a prospectus supplement may, from time to time, offer and sell our common stock in one or more offerings or resales.

The accompanying prospectus provides you with a general description of our common stock, which the selling stockholders may offer pursuant to this prospectus supplement. This prospectus supplement, which describes certain matters relating to us and the specific terms of this offering of shares of our common stock, adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein. Any statement that we make in the accompanying prospectus will be deemed modified or superseded by any inconsistent statement made by us in this prospectus supplement.

The rules of the SEC allow us to incorporate by reference information into this prospectus supplement. This information incorporated by reference is considered to be a part of this prospectus supplement, and information that we file later with the SEC, to the extent incorporated by reference, will automatically update and supersede this information. See "Incorporation of Certain Information by Reference." You should read both this prospectus supplement and the accompanying prospectus together with the additional information incorporated by reference herein or therein, including all documents described under the headings "Incorporation of Certain Information by Reference" and "Where You Can Find More Information" in this prospectus supplement before investing in our common stock.

Unless the context otherwise requires, in this prospectus supplement: (i) references to the "Company", "EVHC", "we", "us" and "our" mean Envision Healthcare Holdings, Inc., (ii) references to "AMR" mean American Medical Response, Inc., an indirect wholly owned subsidiary of the Company, and (iii) references to "EmCare" mean EmCare Holdings Inc., an indirect wholly owned subsidiary of the Company.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INFORMATION

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein contain statements about future events and expectations that constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on our beliefs, assumptions and expectations of our future financial and operating performance and growth plans, taking into account the information currently available to us. These statements are not statements of historical fact. Forward-looking statements involve risks and uncertainties that may cause our actual results to differ materially from the expectations of future results we express or imply in any forward-looking statements and you should not place undue reliance on such statements. Factors that could contribute to these differences include, but are not limited to, the following:

Decreases in our revenue and profit margin under our fee-for-service contracts due to changes in volume, payor mix and third party reimbursement rates, including from political discord in the federal budgeting process;

The loss of existing contracts;

Failure to accurately assess costs under new contracts;

Difficulties in our ability to recruit and retain qualified physicians and other healthcare professionals, and enforce our non-compete agreements with our physicians;

Failure to implement some or all of our business strategies, including our efforts to grow our Evolution Health, LLC business and cross-sell our services;

Lawsuits for which we are not fully reserved;

The adequacy of our insurance coverage and insurance reserves;

Our ability to successfully integrate strategic acquisitions;

The high level of competition in the markets we serve;

The cost of capital expenditures to maintain and upgrade our vehicle fleet and medical equipment;

The loss of one or more members of our senior management team;

Our ability to maintain or implement complex information systems;

Disruptions in disaster recovery systems or management continuity planning;

Our ability to adequately protect our intellectual property and other proprietary rights or to defend against intellectual property infringement claims;

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Challenges by tax authorities on our treatment of certain physicians as independent contractors;

The impact of labor union representation;

The impact of fluctuations in results due to our national contract with the Federal Emergency Management Agency;

Potential penalties or changes to our operations, including our ability to collect accounts receivable, if we fail to comply with extensive and complex government regulation of our industry;

The impact of changes in the healthcare industry, including changes due to healthcare reform;

Our ability to timely enroll our providers in the Medicare program;

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Our ability to restructure our operations to comply with future changes in government regulation;

The outcome of government investigations of certain of our business practices;

Our ability to comply with the terms of our settlement agreements with the government;

Our ability to generate cash flow to service our substantial debt obligations; and

The significant influence of investment funds sponsored by, or affiliated with, Clayton, Dubilier & Rice, LLC (the "CD&R Affiliates") over us.

Words such as "anticipates", "believes", "continues", "estimates", "expects", "goal", "objectives", "intends", "may", "opportunity", "plans", "potential", "near term", "long term", "projections", "assumptions", "projects", "guidance", "forecasts", "outlook", "target", "trends", "should", "could", "would", "will" and similar expressions are intended to identify such forward-looking statements. We qualify any forward-looking statements entirely by these cautionary factors.

Other risks, uncertainties and factors, included or incorporated in this prospectus supplement and the accompanying prospectus, particularly under the heading "Risk Factors," among others, could cause our actual future results to differ materially from those projected in any forward-looking statements we make. Readers should read carefully the factors described in "Risk Factors" in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements.

These forward-looking statements are made only as of the date made and we do not undertake any obligation, other than as may be required by law, to update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights important features of this offering and the information included or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information that you should consider before making any investment decision. You should read carefully the entire prospectus supplement, the accompanying prospectus and the documents incorporated by reference, especially the risks of investing in our common stock discussed under "Risk Factors."

The Company

We are a leading provider of physician-led, outsourced medical services in the United States. We offer a broad range of clinically-based and coordinated care solutions across the patient continuum, by which we mean the patient treatment cycle, from medical transportation to hospital encounters to comprehensive care alternatives in various settings. We believe that our capabilities offer a powerful value proposition to healthcare facilities, communities and payors by helping to improve the quality of care and lower overall healthcare costs. We market our services on a stand-alone, multi-service and integrated basis, primarily under our EmCare and AMR brands. EmCare is a leading provider of integrated facility-based physician services, including emergency, anesthesiology, hospitalist/inpatient care, radiology, teleradiology and surgery. EmCare also offers physician-led care management solutions outside the hospital. AMR is a leading provider and manager of community-based medical transportation services, including emergency, non-emergency, managed transportation, fixed-wing air ambulance and disaster response. In 2012, we expanded EmCare's physician-led services outside the hospital through the formation of Evolution Health. Evolution Health provides comprehensive care management solutions through a suite of physician-led services, including transitional care teams, direct patient care and care coordination by clinicians outside the acute-care setting, as well as telemonitoring and telemedicine. Evolution Health serves patients who require comprehensive care across various settings, many of whom suffer from advanced illnesses and chronic diseases.

Envision Healthcare Holdings, Inc. is a Delaware corporation. Our principal executive offices are located at 6200 S. Syracuse Way, Suite 200, Greenwood Village, CO 80111, and our telephone number at that address is (303) 495-1200.

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The Offering

Common stock offered by the selling stockholders	17,500,000 shares
Common stock outstanding after the offering	183,375,792 shares
NYSE symbol	"EVHC"
Use of proceeds	We will not receive any proceeds from the sale of our common stock by the selling stockholders.
Risk factors	See "Risk Factors" and other information included in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein for a discussion of factors you should carefully consider before deciding whether to invest in shares of our common stock.
Dividend policy	We have never declared or paid dividends on our common stock and do not expect to pay dividends on our common stock for the foreseeable future. Any payment of dividends will be at the discretion of our board of directors (our "Board of Directors") and will depend on various factors. See "Dividend Policy."

As of September 18, 2014, we had 182,963,444 shares of common stock outstanding. Unless otherwise indicated, all information in this prospectus supplement:

includes 13,104,316 shares of common stock issuable upon exercise of options outstanding as of September 18, 2014 at a weighted average exercise price of \$4.07 per share, except for 412,348 shares of common stock that we assume will be issued upon exercise of outstanding options prior to the completion of this offering by the Company's executive officers and directors selling shares in this offering;

excludes 123,723 shares of our common stock subject to restricted stock units outstanding as of September 18, 2014.

excludes 16,539,419 shares of common stock reserved for future issuances under the Envision Healthcare Holdings, Inc. 2013 Omnibus Incentive Plan.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you make your investment decision, you should carefully consider all the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. In particular, we urge you to consider carefully the risks and uncertainties discussed in "Item 1A Risk Factors" of our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2014 incorporated by reference herein. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also materially and adversely affect our business operations. Any of the following risks could materially adversely affect our business, financial condition or results of operations.

Risks Related to Our Common Stock and this Offering

The Company is a holding company with no operations of its own, and it depends on its subsidiaries for cash to fund all of its operations and expenses, including to make future dividend payments, if any.

Our operations are conducted entirely through our subsidiaries and our ability to generate cash to fund all of our operations and expenses, to pay dividends or to meet any debt service obligations is highly dependent on the earnings and the receipt of funds from our subsidiaries via dividends or intercompany loans. We do not currently expect to declare or pay dividends on our common stock for the foreseeable future; however, to the extent that we determine in the future to pay dividends on our common stock, none of our subsidiaries will be obligated to make funds available to us for the payment of dividends. Further, the indentures governing our outstanding notes and the agreements governing our senior secured credit facilities significantly restrict the ability of our subsidiaries to pay dividends, make loans or otherwise transfer assets to us. In addition, Delaware law may impose requirements that may restrict our ability to pay dividends to holders of our common stock.

The market price of our common stock may fluctuate significantly.

Volatility in the market price of our common stock may prevent you from being able to sell your shares at or above the price you paid for your shares.

The market price of our common stock may fluctuate significantly. Among the factors that could affect our stock price are:

industry or general market conditions;

domestic and international economic factors unrelated to our performance;

changes in our customers' preferences;

new regulatory pronouncements and changes in regulatory guidelines;

lawsuits, enforcement actions and other claims by third parties or governmental authorities;

actual or anticipated fluctuations in our quarterly operating results;

changes in securities analysts' estimates of our financial performance or lack of research and reports by industry analysts;

action by institutional stockholders or other large stockholders (including the CD&R Affiliates), including future sales;

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speculation in the press or investment community;

investor perception of us and our industry;

changes in market valuations or earnings of similar companies;

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announcements by us or our competitors of significant contracts, acquisitions or strategic partnerships;

any future sales of our common stock or other securities; and

additions or departures of key personnel.

The stock markets have experienced extreme volatility in recent years that has been unrelated to the operating performance of particular companies. These broad market fluctuations may adversely affect the market price of our common stock. In the past, following periods of volatility in the market price of a company's securities, class action litigation has often been instituted against such company. Any litigation of this type brought against us could result in substantial costs and a diversion of our management's attention and resources, which would harm our business, operating results and financial condition.

Future sales of shares by existing stockholders could cause our stock price to decline.

Sales of substantial amounts of our common stock in the public market following this offering, or the perception that these sales could occur, could cause the market price of our common stock to decline. As of September 18, 2014, we had 182,963,444 shares of common stock outstanding. Upon completion of this offering, we will have an aggregate 183,375,792 shares of common stock outstanding. Of these shares, all of the 111,550,000 shares of common stock sold in our initial public offering, and the February 2014 and July 2014 offerings by certain of our stockholders, including the CD&R Affiliates, are, and the 17,500,000 shares of common stock to be sold in this offering will be, freely transferable without restriction or further registration under the Securities Act of 1933, as amended (the "Securities Act"), unless purchased by our "affiliates" as that term is defined in Rule 144 under the Securities Act. The remaining shares of our common stock outstanding will be restricted securities within the meaning of Rule 144 under the Securities Act, but will be eligible for resale subject to applicable volume, means of sale, holding period and other limitations of Rule 144 under the Securities Act, subject to the terms of the lock-up agreements entered into by us, the CD&R Affiliates, the other selling stockholders and our named executive officers. The underwriter may, at any time, release all or any portion of the securities subject to lock-up agreements entered into in connection with this offering. See "Underwriting".

In August 2013, we filed a registration statement under the Securities Act to register the shares of common stock to be issued under our equity compensation plans and, as a result, all shares of common stock acquired upon exercise of stock options granted under our plans will also be freely tradable under the Securities Act, subject to the terms of the lock-up agreements described in the immediately preceding paragraph, unless purchased by our affiliates. As of September 18, 2014, there were stock options outstanding to purchase a total of 13,104,316 shares of our common stock and there were 123,723 shares of our common stock subject to restricted stock units. In addition, 16,539,419 shares of our common stock are reserved for future issuances under our Omnibus Incentive Plan.

We, the CD&R Affiliates, the other selling stockholders and our named executive officers signed lock-up agreements with the underwriter under which, subject to certain exceptions, they agreed not to sell, transfer or dispose of or hedge, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock for a period of 45 days after the date of this prospectus, subject to possible extension under certain circumstances, except with the prior written consent of the underwriter. Following the expiration of this 45-day lock-up period, the shares of our common stock subject to the underwriter's lock-up agreements will be eligible for future sale, subject to the applicable volume, manner of sale, holding period and other limitations of Rule 144 under the Securities Act. In addition, our significant stockholders may distribute shares that they hold to their investors who themselves may then sell into the public market following the expiration of the lock-up period. Such sales may not be subject to the volume, manner of sale, holding

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period and other limitations of Rule 144 under the Securities Act. As resale restrictions end, the market price of our common stock could decline if the holders of those shares sell them or are perceived by the market as intending to sell them.

In the future, we may issue additional shares of common stock or other equity or debt securities convertible into common stock in connection with a financing, acquisition, litigation settlement or employee arrangement or otherwise. Any of these issuances could result in substantial dilution to our existing stockholders and could cause the trading price of our common stock to decline.

If securities or industry analysts do not publish research or publish misleading or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. If one or more analysts downgrade our stock or publishes misleading or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price or trading volume to decline.

The CD&R Affiliates will have significant influence over us and may not always exercise their influence in a way that benefits our public stockholders.

Following the completion of this offering, we anticipate that the CD&R Affiliates will own approximately 27.7% of the outstanding shares of our common stock. As a result, the CD&R Affiliates will continue to exercise significant influence over all matters requiring stockholder approval for the foreseeable future, including approval of significant corporate transactions, which may reduce the market price of our common stock.

Although after this offering the CD&R Affiliates will reduce their beneficial ownership to below 30% of our outstanding common stock, they will still be able to assert significant influence over our Board of Directors and certain corporate actions. The CD&R Affiliates have the right to designate a number of nominees for election to our Board of Directors (the "CD&R Designees") equal to: (i) at least 20% of the total number of directors comprising our Board of Directors as long as the CD&R Affiliates own at least 20% but less than 30% of the outstanding shares of our common stock; and (ii) at least 5% of the total number of directors comprising our Board of Directors as long as the CD&R Affiliates own at least 5% but less than 20% of the outstanding shares of our common stock.

Because the CD&R Affiliates' interests may differ from your interests, actions the CD&R Affiliates take as a significant stockholder may not be favorable to you. For example, the concentration of ownership held by the CD&R Affiliates could delay, defer or prevent a change of control of us or impede a merger, takeover or other business combination which another stockholder may otherwise view favorably. Other potential conflicts could arise, for example, over matters such as employee retention or recruiting, or our dividend policy.

Under our amended and restated certificate of incorporation, the CD&R Affiliates and their respective affiliates and, in some circumstances, any of our directors and officers who is also a director, officer, employee, member or partner of the CD&R Affiliates and their respective affiliates, have no obligation to offer us corporate opportunities.

The policies relating to corporate opportunities and transactions with the CD&R Affiliates set forth in our second amended and restated certificate of incorporation ("amended and restated certificate of incorporation") address potential conflicts of interest between the Company, on the one hand, and the CD&R Affiliates and their respective officers and directors who are directors or officers of our company, on the other hand. By becoming a stockholder in the Company, you will be deemed to

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have notice of and have consented to these provisions of our amended and restated certificate of incorporation. Although these provisions are designed to resolve conflicts between us and the CD&R Affiliates and their respective affiliates fairly, conflicts may not be so resolved.

Future offerings of debt or equity securities, which would rank senior to our common stock, may adversely affect the market price of our common stock.

If, in the future, we decide to issue debt or equity securities that rank senior to our common stock, it is likely that such securities will be governed by an indenture or other instrument containing covenants restricting our operating flexibility. Additionally, any convertible or exchangeable securities that we issue in the future may have rights, preferences and privileges more favorable than those of our common stock and may result in dilution to owners of our common stock. We and, indirectly, our stockholders, will bear the cost of issuing and servicing such securities. Because our decision to issue debt or equity securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings. Thus, holders of our common stock will bear the risk of our future offerings reducing the market price of our common stock and diluting the value of their stock holdings in us.

Fulfilling our obligations incident to being a public company, including with respect to the requirements of and related rules under the Sarbanes-Oxley Act of 2002, is expensive and time-consuming, and any delays or difficulties in satisfying these obligations could have a material adverse effect on our future results of operations and our stock price.

Our initial public offering was completed on August 19, 2013. As a new public company, we are subject to the reporting and corporate governance requirements, under the listing standards of the NYSE and the Sarbanes-Oxley Act of 2002, that apply to issuers of listed equity, which impose certain significant compliance costs and obligations upon us. The changes necessitated by being a publicly listed company require a significant commitment of additional resources and management oversight which will increase our operating costs. These changes will also place additional demands on our finance and accounting staff and on our financial accounting and information systems. Other expenses associated with being a public company include increases in auditing, accounting and legal fees and expenses, investor relations expenses, increased directors' fees and director and officer liability insurance costs, registrar and transfer agent fees and listing fees, as well as other expenses. As a public company, we are required, among other things, to define and expand the roles and the duties of our Board of Directors and its committees and institute more comprehensive compliance and investor relations functions.

In particular, beginning with the year ending December 31, 2014 our independent registered public accounting firm will be required to provide an attestation report on the effectiveness of our internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002. If our independent registered public accounting firm is unable to provide us with an unmodified report regarding the effectiveness of our internal control over financial reporting (at such time as it is required to do so), investors could lose confidence in the reliability of our consolidated financial statements. This could result in a decrease in the value of our common stock. Failure to comply with the Sarbanes-Oxley Act of 2002 could potentially subject us to sanctions or investigations by the SEC, the NYSE, or other regulatory authorities.

We could be the subject of securities class action litigation due to future stock price volatility, which could divert management's attention and adversely affect our results of operations.

The stock market in general, and market prices for the securities of companies like ours in particular, have from time to time experienced volatility that often has been unrelated to the operating performance of the underlying companies. A certain degree of stock price volatility can be attributed to

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being a newly public company. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our operating performance. In certain situations in which the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a similar lawsuit against us, the defense and disposition of the lawsuit could be costly and divert the time and attention of our management and harm our operating results.

Anti-takeover provisions in our amended and restated certificate of incorporation and amended and restated by-laws could discourage, delay or prevent a change of control of our company and may affect the trading price of our common stock.

Our amended and restated certificate of incorporation and amended and restated by-laws include a number of provisions that may discourage, delay or prevent a change in our management or control over us that stockholders may consider favorable. For example, our amended and restated certificate of incorporation and amended and restated by-laws collectively:

authorize the issuance of "blank check" preferred stock that could be issued by our Board of Directors to thwart a takeover attempt;

provide for our classified Board of Directors, which divides our Board of Directors into three classes, with members of each class serving staggered three-year terms, which prevents stockholders from electing an entirely new Board of Directors at an annual meeting;

limit the ability of stockholders to remove directors;

provide that vacancies on our Board of Directors, including vacancies resulting from an enlargement of our Board of Directors, may be filled only by a majority vote of directors then in office;

prohibit stockholders from calling special meetings of stockholders;

prohibit stockholder action by written consent, thereby requiring all actions to be taken at a meeting of the stockholders;

establish advance notice requirements for nominations of candidates for election as directors or to bring other business before an annual meeting of our stockholders; and

require the approval of holders of at least 66²/₃% of the outstanding shares of our common stock to amend our amended and restated by-laws and certain provisions of our amended and restated certificate of incorporation.

These provisions may prevent our stockholders from receiving the benefit from any premium to the market price of our common stock offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of these provisions may adversely affect the prevailing market price of our common stock if the provisions are viewed as discouraging takeover attempts in the future.

Our amended and restated certificate of incorporation and amended and restated by-laws may also make it difficult for stockholders to replace or remove our management. These provisions may facilitate management entrenchment that may delay, deter, render more difficult or prevent a change in our control, which may not be in the best interests of our stockholders.

We do not intend to pay dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We do not intend to declare and pay dividends on our common stock for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth, to develop our business, for working capital needs and for general corporate purposes. Therefore, you are not likely to receive

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any dividends on your common stock for the foreseeable future and the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which our stockholders have purchased their shares. In addition, our operations are conducted almost entirely through our subsidiaries. As such, to the extent that we determine in the future to pay dividends on our common stock, none of our subsidiaries will be obligated to make funds available to us for the payment of dividends. Further, the indenture governing the outstanding notes and the agreements governing our senior secured credit facilities significantly restrict the ability of our subsidiaries to pay dividends or otherwise transfer assets to us. In addition, Delaware law may impose requirements that may restrict our ability to pay dividends to holders of our common stock.

We are no longer a "controlled company" within the meaning of the NYSE rules and the rules of the SEC. However, we may continue to rely on exemptions from certain corporate governance requirements during a one year transition period.

As of July 16, 2014, the CD&R Affiliates no longer control a majority of the voting power of our outstanding common stock. As a result, we are no longer a "controlled company" within the meaning of the corporate governance rules of the NYSE. Consequently, under the NYSE corporate governance rules, we are required to (i) appoint a majority of independent directors to our Board of Directors within one year of the date we no longer qualified as a "controlled company", (ii) appoint a majority of independent directors to each of the compensation and nominating and corporate governance committees within 90 days of the date we no longer qualified as a "controlled company" and such committees must be composed entirely of independent directors within one year of such date, and (iii) have an annual performance evaluation of the nominating and corporate governance and compensation committees. During these transition periods, we may continue to utilize the available exemptions from certain corporate governance requirements as permitted by the NYSE rules. Accordingly, during the transition periods, you will not have the same protections afforded to stockholders of companies that are subject to all of the NYSE corporate governance standards.

Our amended and restated certificate of incorporation designates the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed to us or our stockholders by any of our directors, officers, employees or agents, (iii) any action asserting a claim against us arising under the General Corporation Law of the State of Delaware or (iv) any action asserting a claim against us that is governed by the internal affairs doctrine. By becoming a stockholder in our company, you will be deemed to have notice of and have consented to the provisions of our amended and restated certificate of incorporation related to choice of forum. The choice of forum provision in our amended and restated certificate of incorporation may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

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USE OF PROCEEDS

The selling stockholders will receive all of the net proceeds from the sale of shares of our common stock offered by them pursuant to this prospectus supplement and the accompanying prospectus. We will not receive any proceeds from the sale of these shares of our common stock. The selling stockholders will bear any underwriting commissions and discounts attributable to their sale of our common stock and the Company will bear the remaining expenses. See "Selling Stockholders".

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PRICE RANGE OF COMMON STOCK

Our common stock is listed on the NYSE under the symbol "EVHC". Our common stock began to trade on the NYSE on August 14, 2013.

On September 23, 2014, the last quoted price per share of our common stock on the NYSE was \$35.79. As of September 18, 2014, there were approximately 41 registered holders of our common stock.

The following table sets forth for the periods indicated the high and low sales prices per share of our common stock as reported on the NYSE:

	High Sale Price	Low Sale Price
2013:		
Third quarter (beginning August 14, 2013)	\$ 28.88	\$ 24.62
Fourth quarter	\$ 35.55	\$ 25.97
2014:		
First quarter	\$ 35.29	\$ 30.41
Second quarter	\$ 38.02	\$ 30.36
Third quarter (through September 23, 2014)	\$ 37.05	\$ 33.56

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DIVIDEND POLICY

We do not intend to declare or pay dividends on our common stock for the foreseeable future. We currently intend to retain earnings to finance the growth and development of our business and for working capital and general corporate purposes. Our ability to pay dividends to holders of our common stock is limited by our ability to obtain cash or other assets from our subsidiaries. Further, the covenants in the agreements governing our existing indebtedness, including our senior credit facilities, significantly restrict the ability of our subsidiaries to pay dividends or otherwise transfer assets to us. Any payment of dividends will be at the discretion of our Board of Directors and will depend upon various factors then existing, including earnings, financial condition, results of operations, capital requirements, level of indebtedness, contractual restrictions with respect to payment of dividends, restrictions imposed by applicable law, general business conditions and other factors that our Board of Directors may deem relevant.

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U.S. FEDERAL TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following is a discussion of certain U.S. federal income and estate tax considerations relating to the purchase, ownership and disposition of our common stock by Non-U.S. Holders (as defined below) that purchase our common stock pursuant to this offering and hold such common stock as a "capital asset" within the meaning of the U.S. Internal Revenue Code of 1986, as amended (the "Code"). This discussion is based on the Code, U.S. Treasury regulations promulgated or proposed thereunder, and administrative and judicial interpretations thereof, all as in effect on the date hereof and all of which are subject to change, possibly with retroactive effect, or to different interpretation. This discussion does not address all of the U.S. federal income tax considerations that may be relevant to specific Non-U.S. Holders in light of their particular circumstances or to Non-U.S. Holders subject to special treatment under U.S. federal income tax law (such as banks, insurance companies, dealers in securities or other Non-U.S. Holders that generally mark their securities to market for U.S. federal income tax purposes, foreign governments, international organizations, tax-exempt entities, certain former citizens or residents of the United States, or Non-U.S. Holders that hold our common stock as part of a straddle, hedge, conversion or other integrated transaction). This discussion does not address any U.S. state or local or non-U.S. tax considerations or any U.S. federal gift or alternative minimum tax considerations.

As used in this discussion, the term "Non-U.S. Holder" means a beneficial owner of our common stock that, for U.S. federal income tax purposes, is:

an individual who is neither a citizen nor a resident of the United States;

a corporation that is not created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;

an estate that is not subject to U.S. federal income tax on income from non-U.S. sources which is not effectively connected with the conduct of a trade or business within the United States; or

a trust unless (i) it is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all of its substantial decisions or (ii) it has in effect a valid election under applicable U.S. Treasury regulations to be treated as a U.S. person.

If an entity treated as a partnership for U.S. federal income tax purposes invests in our common stock, the U.S. federal income tax considerations relating to such investment will depend in part upon the status and activities of such entity and the particular partner. Any such entity should consult its own tax advisor regarding the U.S. federal tax considerations applicable to it and its partners relating to the purchase, ownership and disposition of our common stock.

PERSONS CONSIDERING AN INVESTMENT IN OUR COMMON STOCK SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. INCOME, ESTATE AND OTHER TAX CONSIDERATIONS RELATING TO THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK IN LIGHT OF THEIR PARTICULAR CIRCUMSTANCES.

Distributions on Common Stock

If we make a distribution of cash or other property (other than certain pro rata distributions of our common stock or rights to acquire our common stock) with respect to a share of our common stock, the distribution generally will be treated as a dividend to the extent it is paid from our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). If the amount of such distribution exceeds our current and accumulated earnings and profits, such excess generally will be treated first as a tax-free return of capital to the extent of the Non-U.S. Holder's

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adjusted tax basis in such share of our common stock, and then as capital gain (which will be treated in the manner described below under "Sale, Exchange or Other Disposition of Common Stock"). Distributions treated as dividends on our common stock that are paid to or for the account of a Non-U.S. Holder generally will be subject to U.S. federal withholding tax at a rate of 30%, or at a lower rate if provided by an applicable tax treaty and the Non-U.S. Holder provides the documentation (generally, IRS Form W-8BEN or W-8BEN-E) required to claim benefits under such tax treaty to the applicable withholding agent.

If, however, a dividend is effectively connected with the conduct of a trade or business in the United States by a Non-U.S. Holder, such dividend generally will not be subject to the 30% U.S. federal withholding tax if such Non-U.S. Holder provides the appropriate documentation (generally, IRS Form W-8ECI) to the applicable withholding agent. Instead, such Non-U.S. Holder generally will be subject to U.S. federal income tax on such dividend in substantially the same manner as a U.S. person (except as provided by an applicable tax treaty). In addition, a Non-U.S. Holder that is treated as a corporation for U.S. federal income tax purposes may be subject to a branch profits tax at a rate of 30% (or a lower rate if provided by an applicable tax treaty) on its effectively connected income for the taxable year, subject to certain adjustments.

The foregoing discussion is subject to the discussion below under " FATCA Withholding" and " Information Reporting and Backup Withholding."

Sale, Exchange or Other Disposition of Common Stock

A Non-U.S. Holder generally will not be subject to U.S. federal income tax on any gain recognized on the sale, exchange or other disposition of our common stock unless:

- (i) such gain is effectively connected with the conduct of a trade or business in the United States by such Non-U.S. Holder, in which event such Non-U.S. Holder generally will be subject to U.S. federal income tax on such gain in substantially the same manner as a U.S. person (except as provided by an applicable tax treaty) and, if it is treated as a corporation for U.S. federal income tax purposes, may also be subject to a branch profits tax at a rate of 30% (or a lower rate if provided by an applicable tax treaty);
- (ii) such Non-U.S. Holder is an individual who is present in the United States for 183 days or more during the taxable year of such sale, exchange or other disposition and certain other conditions are met, in which event such gain (net of certain U.S. source losses) generally will be subject to U.S. federal income tax at a rate of 30% (except as provided by an applicable tax treaty); or
- (iii) we are or have been a "United States real property holding corporation" for U.S. federal income tax purposes at any time during the shorter of (x) the five-year period ending on the date of such sale, exchange or other disposition and (y) such Non-U.S. Holder's holding period with respect to such common stock, and certain other conditions are met.

Generally, a corporation is a "United States real property holding corporation" if the fair market value of its United States real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests and its other assets used or held for use in a trade or business (all as determined for U.S. federal income tax purposes). We believe that we presently are not, and we do not presently anticipate that we will become, a United States real property holding corporation.

The foregoing discussion is subject to the discussion below under " FATCA Withholding" and " Information Reporting and Backup Withholding."

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FATCA Withholding

Under the Foreign Account Tax Compliance Act provisions of the Code and related U.S. Treasury guidance ("FATCA"), a withholding tax of 30% will be imposed in certain circumstances on payments of (a) dividends on our common stock and (b) on or after January 1, 2017, gross proceeds from the sale or other disposition of our common stock. In the case of payments made to a "foreign financial institution" (such as a bank, a broker, an investment fund or, in certain cases, a holding company), as a beneficial owner or as an intermediary, this tax generally will be imposed, subject to certain exceptions, unless such institution (i) has agreed to (and does) comply with the requirements of an agreement with the United States (an "FFI Agreement") or (ii) is required by (and does comply with) applicable foreign law enacted in connection with an intergovernmental agreement between the United States and a foreign jurisdiction (an "IGA") to, among other things, collect and provide to the U.S. tax authorities or other relevant tax authorities certain information regarding U.S. account holders of such institution and, in either case, such institution provides the withholding agent with a certification as to its FATCA status. In the case of payments made to a foreign entity that is not a financial institution (as a beneficial owner), the tax generally will be imposed, subject to certain exceptions, unless such entity provides the withholding agent with a certification as to its FATCA status and, in certain cases, identifies any "substantial" U.S. owner (generally, any specified U.S. person that directly or indirectly owns more than a specified percentage of such entity). If our common stock is held through a foreign financial institution that has agreed to comply with the requirements of an FFI Agreement or is subject to similar requirements under applicable foreign law enacted in connection with an IGA, such foreign financial institution (or, in certain cases, a person paying amounts to such foreign financial institution) generally will be required, subject to certain exceptions, to withhold tax on payments made to (x) a person (including an individual) that fails to provide any required information or documentation or (y) a foreign financial institution that has not agreed to comply with the requirements of an FFI Agreement and is not subject to similar requirements under applicable foreign law enacted in connection with an IGA. Each Non-U.S. Holder should consult its own tax advisor regarding the application of FATCA to the ownership and disposition of our common stock.

Information Reporting and Backup Withholding

Amounts treated as payments of dividends on our common stock paid to a Non-U.S. Holder and the amount of any U.S. federal tax withheld from such payments generally must be reported annually to the IRS and to such Non-U.S. Holder.

The information reporting and backup withholding rules that apply to payments of dividends to certain U.S. persons generally will not apply to payments of dividends on our common stock to a Non-U.S. Holder if such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN or W-8BEN-E) or otherwise establishes an exemption.

Proceeds from the sale, exchange or other disposition of our common stock by a Non-U.S. Holder effected through a non-U.S. office of a U.S. broker or of a non-U.S. broker with certain specified U.S. connections generally will be subject to information reporting (but not backup withholding) unless such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN or W-8BEN-E) or otherwise establishes an exemption. Proceeds from the sale, exchange or other disposition of our common stock by a Non-U.S. Holder effected through a U.S. office of a broker generally will be subject to information reporting and backup withholding unless such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN or W-8BEN-E) or otherwise establishes an exemption.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules generally will be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income

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tax liability if the required information is furnished by such Non-U.S. Holder on a timely basis to the IRS.

U.S. Federal Estate Tax

Shares of our common stock owned or treated as owned by an individual Non-U.S. Holder at the time of his or her death will be included in his or her gross estate for U.S. federal estate tax purposes and may be subject to U.S. federal estate tax unless an applicable estate tax treaty provides otherwise.

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The following tables set forth information as of September 18, 2014 with respect to the beneficial ownership of our common stock by each selling stockholder. The amounts and percentages of shares beneficially owned are reported on the basis of SEC regulations governing the determination of beneficial ownership of securities. Under SEC rules, a person is deemed to be a "beneficial owner" of a security if that person has or shares voting power or investment power, which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities of which that person has a right to acquire beneficial ownership within 60 days of the determination date, which in the case of the following table is September 18, 2014. Securities that can be so acquired are deemed to be outstanding for purposes of computing such person's ownership percentage, but not for purposes of computing any other person's percentage. Under these rules, more than one person may be deemed to be a beneficial owner of the same securities and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest.

The percentage of beneficial ownership is based on 182,963,444 shares of our common stock outstanding as of September 18, 2014. Except as otherwise indicated in the footnotes to this table, each of the beneficial owners listed has, to our knowledge, sole voting and investment power with respect to the indicated shares of common stock.

Name and address of beneficial owner	Shares Beneficially Owned Before the Offering and After the Offering				
	Shares Beneficially Owned Before the Offering	Percentage of Shares Beneficially Owned	Number of Shares to be Sold in the Offering	Shares Beneficially Owned After the Offering	Percentage of Shares Beneficially Owned
CD&R Affiliates(1)(5)(6)	67,937,797	37.1%	17,080,652	50,857,145	27.7%
William A. Sanger(2)(3)(4)	4,443,840	2.4%	200,000	4,243,840	2.3%
Randel G. Owen(2)(3)(4)	1,509,694	*	150,000	1,359,694	*
Dighton C. Packard, M.D.(2)(4)	324,224	*	32,400	291,824	*
Steve W. Ratton, Jr.(2)(4)	128,845	*	25,000	103,845	*
Edward Van Horne(2)(7)	85,490	*	4,948	80,542	*
Michael L. Smith(2)(3)(8)	54,236	*	7,000	47,236	*

*

Less than 1%

(1)

Represents shares of the Company's common stock held by the CD&R Affiliates as follows: (i) 34,464,780 shares of the Company's common stock held by Clayton, Dubilier & Rice Fund VIII, L.P.; (ii) 33,298,523 shares of the Company's common stock held by CD&R EMS Co-Investor, L.P.; (iii) 130,070 shares of the Company's common stock held by CD&R Advisor Fund VIII Co-Investor, L.P.; and (iv) 44,424 shares of the Company's common stock held by CD&R Friends & Family Fund VIII, L.P. CD&R Associates VIII, Ltd., as the general partner of each of the CD&R Affiliates, CD&R Associates VIII, L.P., as the sole stockholder of CD&R Associates VIII, Ltd., and CD&R Investment Associates VIII, Ltd., as the general partner of CD&R Associates VIII, L.P., may each be deemed to beneficially own the shares of the Company's common stock held by the CD&R Affiliates. CD&R Investment Associates VIII, Ltd. is managed by a two-person board of directors. Donald J. Gogel and Kevin J. Conway, as the directors of CD&R Investment Associates VIII, Ltd., may be deemed to share beneficial ownership of the shares of the Company's common stock shown as beneficially owned by the CD&R Affiliates. Such persons expressly disclaim such beneficial ownership. Investment and voting decisions with respect to shares held by each of the CD&R Affiliates are made by an investment committee of limited partners of CD&R Associates VIII, L.P., currently consisting of more than ten individuals (the "Investment Committee"). All members of the Investment Committee expressly disclaim beneficial

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ownership of the shares shown as beneficially owned by the CD&R Affiliates. Each of CD&R Associates VIII, Ltd., CD&R Associates VIII, L.P. and CD&R Investment Associates VIII, Ltd. expressly disclaims beneficial ownership of the shares of the Company's common stock held by the CD&R Affiliates.

- (2) The business address for these persons is c/o Envision Healthcare Holdings, Inc., 6200 S. Syracuse Way, Suite 200, Greenwood Village, CO 80111.
- (3) Member of our Board of Directors.
- (4) Named executive officers. Represents shares of common stock and options to purchase shares of common stock which are currently exercisable or which will become exercisable within 60 days of the determination date.
- (5) The address for the CD&R Affiliates, CD&R Associates VIII, L.P., CD&R Associates VIII, Ltd. and CD&R Investment Associates VIII, Ltd. is c/o Maples Corporate Services Limited, P.O. Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. The business address for Clayton, Dubilier & Rice, LLC is 375 Park Avenue, 18th Floor, New York, New York 10152.
- (6) For information regarding certain material relationships between the selling stockholders and the Company, see "Related Party Transactions" included in our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 28, 2014, which is incorporated by reference into this prospectus.
- (7) Mr. Van Horne is an executive officer. Represents shares of common stock and options to purchase shares of common stock which are currently exercisable or which will become exercisable within 60 days of the determination date.
- (8) Represents shares of common stock and shares of common stock underlying restricted stock units. The shares of common stock to be sold in the offering are indirectly held by Mr. Smith in the Michael L. Smith 2013 GRAT I.

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UNDERWRITING

We, the selling stockholders and Citigroup Global Markets Inc. have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, the underwriter has agreed to purchase the number of shares indicated in the following table.

Underwriter	Number of Shares
Citigroup Global Markets Inc.	17,500,000

The underwriter is committed to take and pay for all of the shares being offered, if any are taken.

The underwriter may offer the shares of common stock from time to time for sale in one or more transactions on the NYSE, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale or at negotiated prices. The underwriter may effect such transactions by selling shares of common stock to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriter and/or purchasers of shares of common stock for whom they may act as agents or to whom they may sell as principal. The difference between the price at which the underwriter purchases shares and the price at which the underwriter resells such shares may be deemed underwriting compensation.

The offering of the shares by the underwriter is subject to receipt and acceptance and subject to the underwriter's right to reject any order in whole or in part.

We, the CD&R Affiliates, the other selling stockholders and our named executive officers signed lock-up agreements under which, subject to certain exceptions, including, without limitation, with respect to sales or transfers pursuant to any trading plan in effect prior to the date of this prospectus supplement intended to comply with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, covering up to approximately 3.2 million shares of our common stock in the aggregate for William A. Sanger, Randel G. Owen, Todd G. Zimmerman and Edward Van Horne at varying prices, each agreed not to sell, transfer or dispose of or hedge, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock for a period of 45 days, subject to possible extension under certain circumstances, after the date of this prospectus, except with the prior written consent of the underwriter. These agreements will not apply to any existing employee benefit plans.

The 45-day restricted period described in the preceding paragraph will be automatically extended if: (1) during the last 17 days of the 45-day restricted period, we issue an earnings release or announce material news or a material event; or (2) prior to the expiration of the 45-day restricted period, we announce that we will release earnings results during the 15-day period following the last day of the 45-day period, in which case the restrictions described in the preceding paragraph will continue to apply until the expiration of the 18-day period beginning on the date of release of the earnings results or the announcement of the material news or material event, as applicable, except with the prior written consent of the underwriter.

Our common stock is listed on the NYSE under the symbol "EVHC".

In connection with the offering, the underwriter may purchase and sell shares of common stock in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriter of a greater number of shares than they are required to purchase in the offering, and a short position represents the amount of such sales that have not been covered by subsequent purchases. The underwriter may cover any covered short position by purchasing shares in the open market. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriter in the open market prior to the completion of the offering.

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Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriter for its own account, may have the effect of preventing or retarding a decline in the market price of the company's stock, and together with the imposition of the penalty bid, may stabilize, maintain or otherwise affect the market price of the common stock. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. The underwriter is not required to engage in these activities and may end any of these activities at any time. These transactions may be effected on the NYSE, in the over-the-counter market or otherwise.

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100, or, if the Relevant Member State has implemented the relevant portion of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriter;
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall require the Company or the underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression Prospectus Directive means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State) and includes any relevant implementing measure in each Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

The underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Market Act 2000 ("FSMA")) received by it in connection with the issue or sale of the shares in circumstances in which Section 21(1) of the FSMA does not apply to the Company; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares in, from or otherwise involving the United Kingdom.

We have not and will not register with the Swiss Financial Market Supervisory Authority ("FINMA") as a foreign collective investment scheme pursuant to Article 119 of the Federal Act on Collective Investment Scheme of 23 June 2006, as amended ("CISA"), and accordingly the securities being offered pursuant to this prospectus have not and will not be approved, and may not be licenseable, with FINMA. Therefore, the securities have not been authorized for distribution by FINMA as a foreign collective investment scheme pursuant to Article 119 CISA and the securities offered hereby may not be offered to the public (as this term is defined in Article 3 CISA) in or from Switzerland. The securities may solely be offered to "qualified investors," as this term is defined in

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Article 10 CISA, and in the circumstances set out in Article 3 of the Ordinance on Collective Investment Scheme of 22 November 2006, as amended ("CISO"), such that there is no public offer. Investors, however, do not benefit from protection under CISA or CISO or supervision by FINMA. This prospectus and any other materials relating to the securities are strictly personal and confidential to each offeree and do not constitute an offer to any other person. This prospectus may only be used by those qualified investors to whom it has been handed out in connection with the offer described herein and may neither directly or indirectly be distributed or made available to any person or entity other than its recipients. It may not be used in connection with any other offer and shall in particular not be copied and/or distributed to the public in Switzerland or from Switzerland. This prospectus does not constitute an issue prospectus as that term is understood pursuant to Article 652a and/or 1156 of the Swiss Federal Code of Obligations. We have not applied for a listing of the securities on the SIX Swiss Exchange or any other regulated securities market in Switzerland, and consequently, the information presented in this prospectus does not necessarily comply with the information standards set out in the listing rules of the SIX Swiss Exchange and corresponding prospectus schemes annexed to the listing rules of the SIX Swiss Exchange.

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose

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is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the "Financial Instruments and Exchange Law") and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

No prospectus or other disclosure document (as defined in the Corporations Act 2001 (Cth) of Australia ("Corporations Act")) in relation to the common stock has been or will be lodged with the Australian Securities & Investments Commission ("ASIC"). This document has not been lodged with ASIC and is only directed to certain categories of exempt persons. Accordingly, if you receive this document in Australia:

(a) you confirm and warrant that you are either:

(i) a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;

(ii) a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to us which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;

(iii) a person associated with the Company under section 708(12) of the Corporations Act; or

(iv) a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act, and to the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this document is void and incapable of acceptance; and

(b) you warrant and agree that you will not offer any of the common stock for resale in Australia within 12 months of that common stock being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

We estimate that our share of the total expenses of the offering will be approximately \$1 million.

We and the selling stockholders have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act.

The underwriter and its affiliates is a full service financial institution engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. The underwriter and its affiliates have provided, and may in the future provide, a variety of these services to us and to persons and entities with relationships with us, for which they received or will receive customary fees and expenses. Affiliates of

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the underwriter are lenders and/or agents under senior secured credit facilities. In addition, affiliates of the underwriter from time to time have acted or in the future may continue to act as agents and lenders to us and our affiliates and subsidiaries under our or their respective credit facilities, for which services they have received or expect to receive customary compensation. Affiliates of the underwriter serve as joint lead arrangers or joint book managers under our senior secured credit facilities. The underwriter was one of the initial purchasers of our 5.125% Senior Notes due 2022. In addition, the underwriter or its affiliates was one of the underwriters in our initial public offering and subsequent secondary offerings and received customary fees in connection therewith.

In the ordinary course of their various business activities, the underwriter and its affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to our assets, securities and/or instruments (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with us. The underwriter and its affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

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LEGAL MATTERS

The validity of the common stock offered in this offering has been passed upon for us by Debevoise & Plimpton LLP, New York, New York. Various legal matters relating to this offering will be passed upon for the underwriter by Cahill Gordon & Reindel LLP, New York, New York.

EXPERTS

The consolidated financial statements of Envision Healthcare Holdings, Inc. appearing in Envision Healthcare Holdings' Annual Report (Form 10-K) for the year ended December 31, 2013 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the reports of Ernst & Young LLP pertaining to such financial statements (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

The audited combined financial statements of Phoenix Physicians, LLC and affiliates included as Exhibit 99.1 to Envision Healthcare Holdings, Inc.'s Current Report on Form 8-K/A filed on August 28, 2014 and incorporated by reference in this prospectus supplement have been so incorporated in reliance on the report of DaszkalBolton LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended, with respect to the common stock offered hereby. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein are part of a registration statement that we filed with the SEC and do not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. Some items are omitted in accordance with the rules and regulations of the SEC. For further information with respect to us and the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed therewith. Statements contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein as to the contents of any contract, agreement or any other document referred to are summaries of the material terms of the respective contract, agreement or other document. With respect to each of these contracts, agreements or other documents filed as an exhibit to the registration statement or the documents incorporated by reference into this prospectus supplement or the accompanying prospectus, reference is made to the exhibits for a more complete description of the matter involved.

We are subject to the informational and reporting requirements of the Exchange Act and, in accordance therewith, file reports and other information with the SEC. The registration statement, reports and other information we file with the SEC can be read and copied at the SEC's Public Reference Room at 100 F Street, N.E., Washington D.C. 20549. You may obtain information regarding the operation of the public reference room by calling 1-800-SEC-0330. The SEC also maintains a website (<http://www.sec.gov>) that contains reports, proxy and information statements and other information that we file electronically with the SEC. We also maintain a website at <http://www.evhc.net>. Our website, and the information contained on or accessible through our website, is not part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus supplement information we file with the SEC in other documents. This means that we can disclose important information to you by

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referring to another document we filed with the SEC. The information relating to us contained in this prospectus supplement and the accompanying prospectus should be read together with the information in the documents incorporated by reference.

We incorporate by reference, as of their respective dates of filing, the documents listed below (excluding any portions of such documents that have been "furnished" but not "filed" for purposes of the Exchange Act):

our Annual Report on Form 10-K for the year ended December 31, 2013, filed with the SEC on March 14, 2014 (SEC File No. 001-36048);

our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed with the SEC on May 13, 2014 (SEC File No. 001-36048);

our Quarterly Report on Form 10-Q for the quarter ended June 30, 2014, filed with the SEC on August 14, 2014 (SEC File No. 001-36048);

our Current Reports on Form 8-K filed with the SEC on January 6, 2014, January 30, 2014, May 19, 2014, June 2, 2014, June 10, 2014 and June 19, 2014 (SEC File No. 001-36048);

our Current Report on Form 8-K/A filed with the SEC on August 28, 2014 (SEC File No. 001-36048);

our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 28, 2014 (SEC File No. 001-36048);

the description of capital stock contained in the Registration Statement on Form 8-A, as filed with the SEC on August 6, 2013 (SEC File No. 001-36048), as supplemented by the "Description of Capital Stock" found on page 6 of the prospectus, as incorporated by reference, and including any amendments or reports filed for the purpose of updating such description; and

all documents filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, as amended (other than Current Reports on Form 8-K furnished under Items 2.02 and 7.01 (including any financial statements or exhibits relating thereto furnished pursuant to Item 9.01) of Form 8-K), after the date of this prospectus supplement.

You should read the information relating to us in this prospectus supplement and the accompanying prospectus together with the information in the documents incorporated by reference herein. Nothing contained herein shall be deemed to incorporate information furnished to, but not filed with, the SEC.

Any person including any beneficial owner to whom this prospectus supplement is delivered may request copies of this prospectus supplement, the accompanying prospectus and any of the documents incorporated by reference into this prospectus, without charge, by written or oral request directed to Envision Healthcare Holdings, Inc., 6200 S. Syracuse Way, Suite 200, Greenwood Village, CO 80111, Attention: Investor Relations, Telephone (303) 495-1200, on the investor relations page of our website at <http://investor.evhc.net> or from the SEC through the SEC's Internet website at the address provided under "Where You Can Find More Information". All other information contained on our website is not a part of this prospectus supplement. Documents incorporated by reference in this prospectus supplement are available without charge.

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PROSPECTUS

Envision Healthcare Holdings, Inc.

Common Stock

The selling stockholders to be named in a prospectus supplement may offer and sell shares of common stock of Envision Healthcare Holdings, Inc. from time to time in amounts, at prices and on terms that will be determined at the time of the offering.

Each time shares of common stock are offered pursuant to this prospectus, we will provide a prospectus supplement and attach it to this prospectus. The prospectus supplement will contain more specific information about the offering. The prospectus supplement may also add, update or change information contained in this prospectus. This prospectus may not be used to offer or sell securities without a prospectus supplement describing the method and terms of the offering.

You should carefully read this prospectus and any accompanying prospectus supplement, together with the documents we incorporate by reference, before you invest in our common stock.

Investing in our common stock involves risks. See the section entitled "Risk Factors" on page 5 of this prospectus and any risk factors described in any applicable prospectus supplement and in the documents we incorporate by reference.

The common stock of Envision Healthcare Holdings, Inc. is listed on the New York Stock Exchange under the symbol "EVHC". The last reported sale price of our common stock on September 22, 2014 was \$36.06 per share.

Neither the U.S. Securities and Exchange Commission (the "SEC") nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is September 23, 2014.

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ABOUT THIS PROSPECTUS

Unless the context otherwise requires, in this prospectus: (i) references to the "Company", "EVHC", "we", "us" and "our" mean Envision Healthcare Holdings, Inc., (ii) references to "AMR" mean American Medical Response, Inc., an indirect wholly owned subsidiary of the Company, and (iii) references to "EmCare" mean EmCare Holdings Inc., an indirect wholly owned subsidiary of the Company.

This prospectus is part of an "automatic shelf" registration statement on Form S-3 that we filed with the SEC as a "well-known seasoned issuer" as defined in Rule 405 under the Securities Act of 1933, as amended (the "Securities Act"), utilizing a "shelf" registration process. Under this shelf registration process, selling stockholders over time may offer and sell shares of our common stock in one or more offerings or resales. This prospectus provides you with a general description of the shares of common stock selling stockholders may offer. Each time selling stockholders sell shares of common stock, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement and any free writing prospectus may also add to, update, supplement or clarify information contained or incorporated by reference in this prospectus. Any statement that we make in this prospectus will be modified or superseded by any inconsistent statement made by us in a prospectus supplement.

The rules of the SEC allow us to incorporate information by reference into this prospectus. This information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. See "Incorporation of Certain Information by Reference." You should read both this prospectus and any prospectus supplement together with additional information described under the heading "Where You Can Find More Information."

Neither we, the selling stockholders nor the underwriters have authorized anyone to provide you with different information or to make any representations other than those contained or incorporated by reference into this prospectus or in any free writing prospectuses we have prepared. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus does not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus in any jurisdiction in which it is unlawful to make such offer or solicitation.

You should not assume that the information incorporated by reference or provided in this prospectus or any applicable prospectus supplement or any free writing prospectus prepared by us is accurate as of any date other than the date on the front cover of those documents. Our business, financial condition, results of operations and prospectus may have changed since that date.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INFORMATION

This prospectus, the accompanying prospectus supplement and the documents incorporated by reference herein and therein contain statements about future events and expectations that constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on our beliefs, assumptions and expectations of our future financial and operating performance and growth plans, taking into account the information currently available to us. These statements are not statements of historical fact. Forward-looking statements involve risks and uncertainties that may cause our actual results to differ materially from the expectations of future results we express or imply in any forward-looking statements and you should not place undue reliance on such statements. Factors that could contribute to these differences include, but are not limited to, the following:

Decreases in our revenue and profit margin under our fee-for-service contracts due to changes in volume, payor mix and third party reimbursement rates, including from political discord in the federal budgeting process;

The loss of existing contracts;

Failure to accurately assess costs under new contracts;

Difficulties in our ability to recruit and retain qualified physicians and other healthcare professionals, and enforce our non-compete agreements with our physicians;

Failure to implement some or all of our business strategies, including our efforts to grow our Evolution Health, LLC business and cross-sell our services;

Lawsuits for which we are not fully reserved;

The adequacy of our insurance coverage and insurance reserves;

Our ability to successfully integrate strategic acquisitions;

The high level of competition in the markets we serve;

The cost of capital expenditures to maintain and upgrade our vehicle fleet and medical equipment;

The loss of one or more members of our senior management team;

Our ability to maintain or implement complex information systems;

Disruptions in disaster recovery systems or management continuity planning;

Our ability to adequately protect our intellectual property and other proprietary rights or to defend against intellectual property infringement claims;

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Challenges by tax authorities on our treatment of certain physicians as independent contractors;

The impact of labor union representation;

The impact of fluctuations in results due to our national contract with the Federal Emergency Management Agency;

Potential penalties or changes to our operations, including our ability to collect accounts receivable, if we fail to comply with extensive and complex government regulation of our industry;

The impact of changes in the healthcare industry, including changes due to healthcare reform;

Our ability to timely enroll our providers in the Medicare program;

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Our ability to restructure our operations to comply with future changes in government regulation;

The outcome of government investigations of certain of our business practices;

Our ability to comply with the terms of our settlement agreements with the government;

Our ability to generate cash flow to service our substantial debt obligations; and

The significant influence of investment funds sponsored by, or affiliated with, Clayton, Dubilier & Rice, LLC (the "CD&R Affiliates") over us.

Words such as "anticipates", "believes", "continues", "estimates", "expects", "goal", "objectives", "intends", "may", "opportunity", "plans", "potential", "near term", "long term", "projections", "assumptions", "projects", "guidance", "forecasts", "outlook", "target", "trends", "should", "could", "would", "will" and similar expressions are intended to identify such forward-looking statements. We qualify any forward-looking statements entirely by these cautionary factors.

Other risks, uncertainties and factors, included or incorporated in this prospectus and any accompanying prospectus supplement, particularly under the heading "Risk Factors," among others, could cause our actual future results to differ materially from those projected in any forward-looking statements we make. Readers should read carefully the factors described in "Risk Factors" and the documents incorporated by reference to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements.

We assume no obligation, other than as may be required by law, to update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data.

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THE COMPANY

We are a leading provider of physician-led, outsourced medical services in the United States. We offer a broad range of clinically-based and coordinated care solutions across the patient continuum, by which we mean the patient treatment cycle, from medical transportation to hospital encounters to comprehensive care alternatives in various settings. We believe that our capabilities offer a powerful value proposition to healthcare facilities, communities and payors by helping to improve the quality of care and lower overall healthcare costs. We market our services on a stand-alone, multi-service and integrated basis, primarily under our EmCare and AMR brands. EmCare is a leading provider of integrated facility-based physician services, including emergency, anesthesiology, hospitalist/inpatient care, radiology, teleradiology and surgery. EmCare also offers physician-led care management solutions outside the hospital. AMR is a leading provider and manager of community-based medical transportation services, including emergency, non-emergency, managed transportation, fixed-wing air ambulance and disaster response. In 2012, we expanded EmCare's physician-led services outside the hospital through the formation of Evolution Health. Evolution Health provides comprehensive care management solutions through a suite of physician-led services, including transitional care teams, direct patient care and care coordination by clinicians outside the acute-care setting, as well as telemonitoring and telemedicine. Evolution Health serves patients who require comprehensive care across various settings, many of whom suffer from advanced illnesses and chronic diseases.

Envision Healthcare Holdings, Inc. is a Delaware corporation. Our principal executive offices are located at 6200 S. Syracuse Way, Suite 200, Greenwood Village, CO 80111, and our telephone number at that address is (303) 495-1200.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you make your investment decision, you should carefully consider all the information contained or incorporated by reference in this prospectus and any accompanying prospectus supplement. In particular, we urge you to consider carefully the risks and uncertainties discussed in "Item 1A Risk Factors" of our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2014, as such risk factors may be updated by our annual, quarterly and current reports that we may file with the SEC after the date of this prospectus and that are incorporated by reference in this prospectus and any accompanying prospectus supplement.

USE OF PROCEEDS

We will not receive any proceeds from the sale of our common stock by the selling stockholders.

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DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 2,000,000,000 shares of common stock, par value \$0.01 per share, and 200,000,000 shares of undesignated preferred stock, par value \$0.01 per share. As of September 18, 2014, we had 182,963,444 shares of our common stock issued and outstanding, not including 13,104,316 shares of our common stock issuable upon exercise of outstanding stock options and 123,723 shares of our common stock subject to outstanding restricted stock units.

The following descriptions of our capital stock, amended and restated certificate of incorporation and amended and restated by-laws are intended as summaries only and are qualified in their entirety by reference to our amended and restated certificate of incorporation and amended and restated by-laws, copies of which are incorporated by reference as exhibits to the registration statement, of which this prospectus forms a part, and to the applicable provisions of the General Corporation Law of the State of Delaware, or the "DGCL."

Common Stock

Holders of common stock are entitled:

to cast one vote for each share held of record on all matters submitted to a vote of the stockholders;

to receive, on a pro rata basis, dividends and distributions, if any, that the Board of Directors may declare out of legally available funds, subject to preferences that may be applicable to preferred stock, if any, then outstanding; and

upon our liquidation, dissolution or winding up, to share equally and ratably in any assets remaining after the payment of all debt and other liabilities, subject to the prior rights, if any, of holders of any outstanding shares of preferred stock.

Any dividends declared on the common stock will not be cumulative. Our ability to pay dividends on our common stock is subject to our subsidiaries' ability to pay dividends to us, which is in turn subject to the restrictions set forth in the Senior Credit Facilities and the indentures governing our outstanding notes.

The holders of our common stock do not have any preemptive, cumulative voting, subscription, conversion, redemption or sinking fund rights. The common stock is not subject to future calls or assessments by us. The rights and privileges of holders of our common stock are subject to any series of preferred stock that we may issue in the future, as described below.

As of September 18, 2014, we had 182,963,444 shares of common stock outstanding and 41 holders of record of our common stock.

Preferred Stock

Under our amended and restated certificate of incorporation, our Board of Directors has the authority, without further action by our stockholders, to issue up to 200,000,000 shares of preferred stock in one or more series and to fix the voting powers, designations, preferences and the relative participating, optional or other special rights and qualifications, limitations and restrictions of each series, including dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any series. No shares of our authorized preferred stock are currently outstanding. Because the Board of Directors has the power to establish the preferences and rights of the shares of any additional series of preferred stock, it may afford holders of any preferred stock preferences, powers and rights, including voting and dividend rights,

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senior to the rights of holders of our common stock, which could adversely affect the holders of the common stock and could delay, discourage or prevent a takeover of us even if a change of control of our company would be beneficial to the interests of our stockholders.

Annual Stockholders Meeting

Our amended and restated by-laws provide that annual stockholder meetings will be held at a date, time and place, if any, as exclusively selected by our Board of Directors. To the extent permitted under applicable law, we may conduct meetings by remote communications, including by webcast.

Voting

The affirmative vote of a plurality of the shares of our common stock present, in person or by proxy, at the meeting and entitled to vote on the election of directors will decide the election of any directors, and the affirmative vote of a majority of the shares of our common stock present, in person or by proxy, at the meeting and entitled to vote at any annual or special meeting of stockholders will decide all other matters voted on by stockholders, unless the question is one upon which, by express provision of law, under our amended and restated certificate of incorporation, or under our amended and restated by-laws, a different vote is required, in which case such provision will control.

Anti-Takeover Effects of our Certificate of Incorporation and By-Laws

The provisions of our amended and restated certificate of incorporation and amended and restated by-laws summarized below may have an anti-takeover effect and may delay, defer or prevent a tender offer or takeover attempt that you might consider in your best interest, including an attempt that might result in your receipt of a premium over the market price for your shares. These provisions are also designed, in part, to encourage persons seeking to acquire control of us to first negotiate with our Board of Directors, which could result in an improvement of their terms.

Authorized but Unissued Shares of Capital Stock

Common Stock. The remaining shares of authorized and unissued common stock are available for future issuance without additional stockholder approval. While the additional shares are not designed to deter or prevent a change of control, under some circumstances we could use the additional shares to create voting impediments or to frustrate persons seeking to effect a takeover or otherwise gain control by, for example, issuing those shares in private placements to purchasers who might side with our Board of Directors in opposing a hostile takeover bid.

Preferred Stock. Under our amended and restated certificate of incorporation, our Board of Directors has the authority, without further action by our stockholders, to issue up to 200,000,000 shares of preferred stock in one or more series and to fix the voting powers, designations, preferences and the relative participating, optional or other special rights and qualifications, limitations and restrictions of each series, including dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any series. The existence of authorized but unissued preferred stock could reduce our attractiveness as a target for an unsolicited takeover bid since we could, for example, issue shares of preferred stock to parties who might oppose such a takeover bid or shares that contain terms the potential acquiror may find unattractive. This may have the effect of delaying or preventing a change of control, may discourage bids for the common stock at a premium over the market price of the common stock, and may adversely affect the market price of, and the voting and other rights of the holders of, our common stock.

Classified Board of Directors. In accordance with the terms of our amended and restated certificate of incorporation, our Board of Directors is divided into three classes, Class I, Class II and

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Class III, with members of each class serving staggered three-year terms. Under our amended and restated certificate of incorporation, our Board of Directors consists of such number of directors as may be determined from time to time by resolution of the Board of Directors, but in no event may the number of directors be less than one. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. Our amended and restated certificate of incorporation provides that any vacancy on our Board of Directors, including a vacancy resulting from an enlargement of our Board of Directors, may be filled only by the affirmative vote of a majority of our directors then in office, even if less than a quorum, or by a sole remaining director, subject to our stockholders agreement with respect to the director designation rights of the CD&R Affiliates. Any director elected to fill a vacancy will hold office until such director's successor shall have been duly elected and qualified or until such director's earlier death, resignation or removal. Our classified Board of Directors could have the effect of delaying or discouraging an acquisition of us or a change in our management.

Special Meetings of Stockholders. Our amended and restated certificate of incorporation provides that a special meeting of stockholders may be called only by the Chairman of our Board of Directors or by a resolution adopted by a majority of our Board of Directors.

No Stockholder Action by Written Consent. Our amended and restated certificate of incorporation provides that stockholder action may be taken only at an annual meeting or special meeting of stockholders.

Removal of Directors. Our amended and restated certificate of incorporation provides that directors may be removed only for cause upon the affirmative vote of holders of at least a majority of the outstanding shares of common stock then entitled to vote at an election of directors.

Stockholder Advance Notice Procedure. Our amended and restated by-laws establish an advance notice procedure for stockholders to make nominations of candidates for election as directors or to bring other business before an annual meeting of our stockholders. The amended and restated by-laws provide that any stockholder wishing to nominate persons for election as directors at, or bring other business before, an annual meeting must deliver to our corporate secretary a written notice of the stockholder's intention to do so. These provisions may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed. We expect that these provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company. To be timely, the stockholder's notice must be delivered to our corporate secretary at our principal executive offices not less than 90 days nor more than 120 days before the first anniversary date of the annual meeting for the preceding year; provided, however, that in the event that the annual meeting is set for a date that is more than 30 days before or more than 70 days after the first anniversary date of the preceding year's annual meeting, a stockholder's notice must be delivered to our corporate secretary (x) not less than 90 days nor more than 120 days prior to the meeting or (y) no later than the close of business on the 10th day following the day on which a public announcement of the date of the meeting is first made by us.

Amendments to Certificate of Incorporation and By-Laws. Our amended and restated certificate of incorporation provides that our amended and restated certificate of incorporation may be amended by both the affirmative vote of a majority of our Board of Directors and the affirmative vote of the holders of a majority of the outstanding shares of our common stock then entitled to vote at any annual or special meeting of stockholders; provided that, specified provisions of our amended and restated certificate of incorporation may not be amended, altered or repealed unless the amendment is approved by the affirmative vote of the holders of at least 66²/₃% of the outstanding shares of our

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common stock then entitled to vote at any annual or special meeting of stockholders, including the provisions governing:

liability and indemnification of directors;

corporate opportunities;

prohibition on the rights of stockholders to call a special meeting;

removal of directors for cause;

classified Board of Directors; and

required approval of the holders of at least 66²/₃% of the outstanding shares of our common stock to amend our amended and restated by-laws and certain provisions of our amended and restated certificate of incorporation.

In addition, our amended and restated certificate of incorporation and amended and restated by-laws provide that our amended and restated by-laws may be amended, altered or repealed, or new by-laws may be adopted, by the affirmative vote of a majority of the Board of Directors, or by the affirmative vote of the holders of at least 66²/₃%, of the outstanding shares of our common stock then entitled to vote at any annual or special meeting of stockholders.

These provisions make it more difficult for any person to remove or amend any provisions in our amended and restated certificate of incorporation and amended and restated by-laws that may have an anti-takeover effect.

Section 203 of the DGCL. In our amended and restated certificate of incorporation, we have elected not to be governed by Section 203 of the DGCL, as permitted under and pursuant to subsection (b)(3) of Section 203. Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination, such as a merger, with a person or group owning 15% or more of the corporation's outstanding voting stock for a period of three years following the date the person became an interested stockholder, unless (with certain exceptions) the business combination or the transaction in which the person became an interested stockholder is approved in a prescribed manner. Accordingly, we are not subject to any anti-takeover effects of Section 203.

Limitations on Liability and Indemnification

Our amended and restated certificate of incorporation contains provisions permitted under the DGCL relating to the liability of directors. These provisions eliminate a director's personal liability to the fullest extent permitted by the DGCL for monetary damages resulting from a breach of fiduciary duty, except in circumstances involving:

any breach of the director's duty of loyalty;

acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of the law;

Section 174 of the DGCL (unlawful dividends); or

any transaction from which the director derives an improper personal benefit.

The principal effect of the limitation on liability provision is that a stockholder will be unable to prosecute an action for monetary damages against a director unless the stockholder can demonstrate a basis for liability for which indemnification is not available under the DGCL. These

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provisions, however, do not limit or eliminate our rights or any stockholder's rights to seek non-monetary relief, such as an injunction or rescission, in the event of a breach of director's fiduciary duty. These provisions do not alter a director's liability under federal securities laws. The inclusion of this provision

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in our amended and restated certificate of incorporation may discourage or deter stockholders or management from bringing a lawsuit against directors for a breach of their fiduciary duties, even though such an action, if successful, might otherwise have benefited us and our stockholders.

Our amended and restated by-laws require us to indemnify and advance expenses to our directors and officers to the fullest extent not prohibited by the DGCL and other applicable law, except in the case of a proceeding instituted by the director without the approval of our Board of Directors. Our amended and restated by-laws provide that we are required to indemnify our directors and executive officers, to the fullest extent permitted by law, for all judgments, fines, settlements, legal fees and other expenses incurred in connection with pending or threatened legal proceedings because of the director's or officer's positions with us or another entity that the director or officer serves at our request, subject to various conditions, and to advance funds to our directors and officers to enable them to defend against such proceedings. To receive indemnification, the director or officer must have been successful in the legal proceeding or have acted in good faith and in what was reasonably believed to be a lawful manner in our best interest and, with respect to any criminal proceeding, have had no reasonable cause to believe his or her conduct was unlawful.

In connection with our initial public offering, we entered into an indemnification agreement with each of our directors. On November 11, 2013, we entered into an indemnification agreement with Mark V. Mactas. The indemnification agreements provide our directors with contractual rights to the indemnification and expense advancement rights provided under our amended and restated by-laws, as well as contractual rights to additional indemnification as provided in the indemnification agreements.

Corporate Opportunities

Our amended and restated certificate of incorporation provides that we, on our behalf and on behalf of our subsidiaries, renounce any interest or expectancy in, or in being offered an opportunity to participate in, corporate opportunities, that are from time to time presented to the CD&R Affiliates or any of their respective officers, directors, employees, agents, stockholders, members, partners, affiliates or subsidiaries (other than us and our subsidiaries), even if the opportunity is one that we or our subsidiaries might reasonably be deemed to have pursued or had the ability or desire to pursue if granted the opportunity to do so. Neither the CD&R Affiliates nor their respective officers, directors, employees, agents, stockholders, members, partners, affiliates or subsidiaries will generally be liable to us or any of our subsidiaries for breach of any fiduciary or other duty, as a director or otherwise, by reason of the fact that such person pursues or acquires such corporate opportunity, directs such corporate opportunity to another person or fails to present such corporate opportunity, or information regarding such corporate opportunity, to us or our subsidiaries unless, in the case of any such person who is a director or officer of the Company, such corporate opportunity is expressly offered to such director or officer in writing solely in his or her capacity as a director or officer of the Company. Stockholders are deemed to have notice of and consented to this provision of our amended and restated certificate of incorporation.

Choice of Forum

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed to the Company or the Company's stockholders by any of the Company's directors, officers, employees or agents, (iii) any action asserting a claim against the Company arising under the DGCL or (iv) any action asserting a claim against the Company that is governed by the internal affairs doctrine. We may consent in writing to alternative forums. By becoming a stockholder of the Company, you will be deemed to have notice of and have consented to the provisions of our amended and restated certificate of incorporation related to choice of forum.

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Market Listing

Our common stock is listed on the New York Stock Exchange under the symbol "EVHC".

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

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SELLING STOCKHOLDERS

We may register securities covered by this prospectus for re-offers and resales by any selling stockholders named in a prospectus supplement. We are a well-known seasoned issuer, as defined in Rule 405 of the Securities Act, which allows us to add secondary sales of shares of our common stock by any selling stockholders by filing a prospectus supplement with the SEC. We may register these shares to permit selling stockholders to resell their shares when they deem appropriate. Selling stockholders may resell all, a portion or none of their shares at any time and from time to time. Selling stockholders may also sell, transfer or otherwise dispose of some or all of their shares of our securities in transactions exempt from the registration requirements of the Securities Act. We do not know when or in what amounts the selling stockholders may offer shares for sale under this prospectus and any prospectus supplement. We may pay all expenses incurred with respect to the registration of the shares of common stock owned by the selling stockholders, other than underwriting fees, discounts or commissions, which will be borne by the selling stockholders. We will provide you with a prospectus supplement naming the selling stockholders, the amount of securities to be registered and sold and any other terms of the securities being sold by the selling stockholders.

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PLAN OF DISTRIBUTION

General

The selling stockholders may sell the shares of our common stock covered by this prospectus using one or more of the following methods:

underwriters in a public offering;

"at the market" to or through market makers or into an existing market for the securities;

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

privately negotiated transactions;

short sales (including short sales "against the box");

through the writing or settlement of standardized or over-the-counter options or other hedging or derivative transactions, whether through an options exchange or otherwise;

by pledge to secure debts and other obligations;

in other ways not involving market makers or established trading markets, including direct sales to purchasers or sales effected through agents;

a combination of any such methods of sale; and

any other method permitted pursuant to applicable law.

To the extent required by law, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. Any prospectus supplement relating to a particular offering of our common stock by the selling stockholders may include the following information to the extent required by law:

the name or names of the selling stockholders and the amounts to be sold by them;

the terms of the offering;

the names of any underwriters or agents;

the purchase price of the securities;

any delayed delivery arrangements;

any underwriting discounts and other items constituting underwriter compensation;

any initial public offering price; and

any discounts or concessions allowed, reallocated or paid to dealers.

The selling stockholders may offer our common stock to the public through underwriting syndicates represented by managing underwriters or through underwriters without an underwriting syndicate. If underwriters are used for the sale of our common stock, the securities will be acquired by the underwriters for their own account. The underwriters may resell the common stock in one or more transactions, including in negotiated transactions at a fixed public offering price or at varying prices determined at the time of sale. In connection with any such underwritten sale of common stock, underwriters may receive compensation from the selling stockholders, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell common stock to or

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through dealers, and the dealers may receive compensation in the form of discounts, concessions or commissions from underwriters and/or commissions from the purchasers for whom they may act as agents. Such compensation may be in excess of customary discounts, concessions or commissions.

If the selling stockholders use an underwriter or underwriters to effectuate the sale of shares of common stock, we and/or they will execute an underwriting agreement with those underwriters at the time of sale of those securities. To the extent required by law, the names of the underwriters will be set forth in the prospectus supplement used by the underwriters to sell those securities. Unless otherwise indicated in the prospectus supplement relating to a particular offering of common stock, the obligations of the underwriters to purchase the securities will be subject to customary conditions precedent and the underwriters will be obligated to purchase all of the securities offered if any of the securities are purchased.

In effecting sales, brokers or dealers engaged by the selling stockholders may arrange for other brokers or dealers to participate. Broker-dealers may receive discounts, concessions or commissions from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. Such compensation may be in excess of customary discounts, concessions or commissions. If dealers are utilized in the sale of securities, the names of the dealers and the terms of the transaction will be set forth in a prospectus supplement, if required.

The selling stockholders may also sell shares of our common stock from time to time through agents. We will name any agent involved in the offer or sale of such shares and will list commissions payable to these agents in a prospectus supplement, if required. These agents will be acting on a best efforts basis to solicit purchases for the period of their appointment, unless we state otherwise in any required prospectus supplement.

The selling stockholders may sell shares of our common stock directly to purchasers. In this case, they may not engage underwriters or agents in the offer and sale of such shares.

Any underwriters, broker-dealers or agents that participate in the sale of the selling stockholders' shares of common stock or interests therein may be "underwriters" within the meaning of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are "underwriters" within the meaning of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. We will make copies of this prospectus available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act, if applicable. If any entity is deemed an underwriter or any amounts deemed underwriting discounts and commissions, the prospectus supplement will identify the underwriter or agent and describe the compensation received from the selling stockholders.

We are not aware of any plans, arrangements or understandings between any of the selling stockholders and any underwriter, broker-dealer or agent regarding the sale of the shares of our common stock by the selling stockholders. We cannot assure you that the selling stockholders will sell any or all of the shares of our common stock offered by them pursuant to this prospectus. In addition, we cannot assure you that the selling stockholders will not transfer, devise or gift the shares of our common stock by other means not described in this prospectus. Moreover, shares of common stock covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than pursuant to this prospectus.

From time to time, one or more of the selling stockholders may pledge, hypothecate or grant a security interest in some or all of the shares owned by them. The pledgees, secured parties or persons to whom the shares have been hypothecated will, upon foreclosure, be deemed to be selling stockholders. The number of a selling stockholder's shares offered under this prospectus will decrease as and when it takes such actions. The plan of distribution for that selling stockholder's shares will

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otherwise remain unchanged. In addition, a selling stockholder may, from time to time, sell the shares short, and, in those instances, this prospectus may be delivered in connection with the short sales and the shares offered under this prospectus may be used to cover short sales.

A selling stockholder may enter into hedging transactions with broker-dealers and the broker-dealers may engage in short sales of the shares in the course of hedging the positions they assume with that selling stockholder, including, without limitation, in connection with distributions of the shares by those broker-dealers. A selling stockholder may enter into option or other transactions with broker-dealers that involve the delivery of the shares offered hereby to the broker-dealers, who may then resell or otherwise transfer those securities.

A selling stockholder which is an entity may elect to make a pro rata in-kind distribution of the shares of common stock to its members, partners or shareholders. In such event we may file a prospectus supplement to the extent required by law in order to permit the distributees to use the prospectus to resell the common stock acquired in the distribution. A selling stockholder which is an individual may make gifts of shares of common stock covered hereby. Such donees may use the prospectus to resell the shares or, if required by law, we may file a prospectus supplement naming such donees.

Indemnification

We and the selling stockholders may enter agreements under which underwriters, dealers and agents who participate in the distribution of our common stock may be entitled to indemnification by us and/or the selling stockholders against various liabilities, including liabilities under the Securities Act, and to contribution with respect to payments which the underwriters, dealers or agents may be required to make.

Price Stabilization and Short Positions

If underwriters or dealers are used in the sale, until the distribution of the securities is completed, rules of the SEC may limit the ability of any underwriters to bid for and purchase the securities. As an exception to these rules, representatives of any underwriters are permitted to engage in transactions that stabilize the price of the securities. These transactions may consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities. If the underwriters create a short position in the securities in connection with an offering (that is, if they sell more securities than are set forth on the cover page of the applicable prospectus supplement) the representatives of the underwriters may reduce that short position by purchasing securities in the open market.

We make no representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, we make no representation that the representatives of any underwriters will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

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LEGAL MATTERS

The validity of the common stock offered in this offering will be passed upon for us by Debevoise & Plimpton LLP, New York, New York.

EXPERTS

The consolidated financial statements of Envision Healthcare Holdings, Inc. appearing in Envision Healthcare Holdings' Annual Report (Form 10-K) for the year ended December 31, 2013 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the reports of Ernst & Young LLP pertaining to such financial statements (to the extent covered by consents filed with the Securities and Exchange Commission) given on the authority of such firm as experts in accounting and auditing.

The audited combined financial statements of Phoenix Physicians, LLC and affiliates included as Exhibit 99.1 to Envision Healthcare Holdings, Inc.'s Current Report on Form 8-K/A filed on August 28, 2014 and incorporated by reference in this prospectus have been so incorporated in reliance on the report of DaszkalBolton LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information set forth in the registration statement and the exhibits thereto. Some items are omitted in accordance with the rules and regulations of the SEC. For further information with respect to us and the common stock offered hereby, we refer you to the registration statement and the exhibits therewith. Statements contained in this prospectus and the documents incorporated by reference into this prospectus as to the contents of any contract, agreement or any other document referred to are summaries of the material terms of the respective contract, agreement or other document. With respect to each of these contracts, agreements or other documents filed as an exhibit to the registration statement or the documents incorporated by reference into this prospectus, reference is made to the exhibits for a more complete description of the matter involved.

We are subject to the informational and reporting requirements of the Exchange Act and, in accordance therewith, file reports and other information with the SEC. The registration statement, reports and other information we file with the SEC can be read and copied at the SEC's Public Reference Room at 100 F Street, N.E., Washington D.C. 20549. You may obtain information regarding the operation of the public reference room by calling 1-800-SEC-0330. The SEC also maintains a website (<http://www.sec.gov>) that contains reports, proxy and information statements and other information that we file electronically with the SEC. We also maintain a website at <http://www.evhc.net>. Our website, and the information contained on or accessible through our website, is not part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus information we file with the SEC in other documents. This means that we can disclose important information to you by referring to another document we filed with the SEC. The information relating to us contained in this prospectus should be read together with the information in the documents incorporated by reference.

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We incorporate by reference, as of their respective dates of filing, the documents listed below (excluding any portions of such documents that have been "furnished" but not "filed" for purposes of the Exchange Act):

our Annual Report on Form 10-K for the year ended December 31, 2013, filed with the SEC on March 14, 2014 (SEC File No. 001-36048);

our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed with the SEC on May 13, 2014 (SEC File No. 001-36048);

our Quarterly Report on Form 10-Q for the quarter ended June 30, 2014, filed with the SEC on August 14, 2014 (SEC File No. 001-36048);

our Current Reports on Form 8-K filed with the SEC on January 6, 2014, January 30, 2014, May 19, 2014, June 2, 2014, June 10, 2014 and June 19, 2014 (SEC File No. 001-36048);

our Current Report on Form 8-K/A filed with the SEC on August 28, 2014 (SEC File No. 001-36048);

our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 28, 2014 (SEC File No. 001-36048);

the description of capital stock contained in the Registration Statement on Form 8-A, as filed with the SEC on August 6, 2013 (SEC File No. 001-36048), as supplemented by the "Description of Capital Stock" found on page 6 of this prospectus and including any amendments or reports filed for the purpose of updating such description; and

all documents filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, as amended (other than Current Reports on Form 8-K furnished under Items 2.02 and 7.01 (including any financial statements or exhibits relating thereto furnished pursuant to Item 9.01) of Form 8-K), after the date of this prospectus.

You should read the information relating to us in this prospectus together with the information in the documents incorporated by reference herein. Nothing contained herein shall be deemed to incorporate information furnished to, but not filed with, the SEC.

Any person including any beneficial owner to whom this prospectus is delivered may request copies of this prospectus and any of the documents incorporated by reference into this prospectus, without charge, by written or oral request directed to Envision Healthcare Holdings, Inc., 6200 S. Syracuse Way, Suite 200, Greenwood Village, CO 80111, Attention: Investor Relations, Telephone (303) 495-1200, on the investor relations page of our website at <http://investor.evhc.net> or from the SEC through the SEC's Internet website at the address provided under "Where You Can Find More Information". All other information contained on our website is not a part of this prospectus. Documents incorporated by reference in this prospectus are available without charge.

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17,500,000 Shares

Envision Healthcare Holdings, Inc.

Common Stock

PROSPECTUS SUPPLEMENT

September 23, 2014

Citigroup
