

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement is part of an effective registration statement filed with the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not offers to sell these securities, and neither we nor the selling shareholder are soliciting offers to buy these securities, in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION DATED AUGUST 22, 2018

PRELIMINARY PROSPECTUS SUPPLEMENT TO PROSPECTUS DATED OCTOBER 23, 2017

5,224,997 Shares

Medpace Holdings, Inc.

Common Stock

The selling shareholder named in this prospectus supplement is offering 5,224,997 shares of our common stock in this offering. We will not receive any proceeds from the sale of our common stock by the selling shareholder in this offering.

Our common stock is listed on the NASDAQ Global Select Market, or NASDAQ, under the symbol "MEDP." On August 21, 2018, the closing sale price of our common stock as reported on NASDAQ was \$57.08 per share.

We are an "emerging growth company" as defined by the Jumpstart Our Business Startups Act of 2012 and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus supplement and future filings.

Investing in our common stock involves risks. See "[Risk Factors](#)" beginning on page S-6 of this prospectus supplement and the risk factors described in the documents incorporated by reference in this prospectus supplement, including our 2017 10-K, our 2018 First Quarter 10-Q and our 2018 Second Quarter 10-Q (each as defined herein), and the accompanying prospectus to read about factors you should consider before purchasing our common stock.

Neither the Securities and Exchange Commission nor any state securities commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement. Any representation to the contrary is a criminal offense.

The underwriter has agreed to purchase the shares of common stock from the selling shareholder at a price of \$ _____ per share, which will result in \$ _____ of aggregate proceeds to the selling shareholder before expenses. The underwriter proposes to offer the shares of common stock from time to time for sale in one or more transactions on NASDAQ, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale, at prices related to such prevailing market prices or negotiated prices, subject to their right to reject any order in whole or in part. We have agreed to reimburse the underwriter for certain expenses in connection with this offering. See "Underwriting (Conflicts of Interest)."

Delivery of the shares of common stock is expected to be made on or about _____, 2018.

Morgan Stanley

Prospectus Supplement dated _____, 2018.

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You should rely only on the information contained in this prospectus supplement, the accompanying prospectus, or incorporated by reference herein and therein, or in any free writing prospectus we may authorize to be delivered or made available to you. Neither we, the selling shareholder nor the underwriter (or any of our or its respective affiliates) have authorized anyone to provide any information other than that contained in this prospectus supplement, the accompanying prospectus, or incorporated by reference herein and therein, or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. Neither we, the selling shareholder nor the underwriter (or any of our or its respective affiliates) take any responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We, the selling shareholder and the underwriter (or any of our or its respective affiliates) are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, or incorporated by reference herein and therein, and any free writing prospectus is only accurate as of its date. Our business, financial condition, results of operations and prospects may have changed since such date.

TRADEMARKS

We own or have the rights to use various trademarks referred to or incorporated by reference in this prospectus supplement and the accompanying prospectus, including, among others, Medpace and ClinTrak and their respective logos. Solely for convenience, we may refer to or incorporate by reference trademarks in this prospectus supplement and the accompanying prospectus without the TM and ® symbols. Such references are not intended to indicate, in any way, that we will not assert, to the fullest extent permitted by law, our rights to our trademarks. Other trademarks appearing in this prospectus supplement, the accompanying prospectus and documents incorporated by reference herein and therein, are the property of their respective owners.

MARKET AND INDUSTRY INFORMATION

Market data used throughout or incorporated by reference in this prospectus supplement and the accompanying prospectus is based on management's knowledge of the industry and the good faith estimates of management. All of management's estimates presented or incorporated by reference in this prospectus supplement and the accompanying prospectus are based on industry sources, including analyst reports and management's knowledge. We also relied, to the extent available, upon management's review of independent industry surveys and publications prepared by a number of sources and other publicly available information. We are responsible for all of the disclosure included or incorporated by reference in this prospectus supplement and the accompanying prospectus and while we believe that each of the publications, studies and surveys used throughout or incorporated by reference in this prospectus supplement and the accompanying prospectus are prepared by reputable sources, neither we nor the underwriter have independently verified market and industry data from third-party sources.

All of the market data used or incorporated by reference in this prospectus supplement and the accompanying prospectus involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the estimated market position, market opportunity and market size information included or incorporated by reference in this prospectus supplement and the accompanying prospectus is generally reliable, such information, which in part is derived from management's estimates and beliefs, is inherently uncertain and imprecise and has not been verified by any independent source. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors", elsewhere in this prospectus supplement, the accompanying prospectus and in the documents incorporated by reference herein and therein. These and other factors could cause results to differ materially from those expressed in our estimates and beliefs and in the estimates prepared by independent parties. See "Cautionary Note Regarding Forward Looking Statements."

GLOSSARY

We define the terms below that appear throughout this prospectus supplement as follows:

"2017 10-K." 2017 10-K refers to our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the Securities and Exchange Commission, or the SEC, on February 27, 2018, which is incorporated by reference herein.

"2017 Proxy Statement." refers to our Definitive Proxy Statement on Schedule 14A for the year ended December 31, 2017, filed with the SEC on April 5, 2018, which is incorporated by reference herein.

"2018 First Quarter 10-Q." 2018 First Quarter 10-Q refers to our Quarterly Report on Form 10-Q, filed with the SEC on May 1, 2018, which is incorporated by reference herein.

"2018 Second Quarter 10-Q." 2018 Second Quarter 10-Q refers to our Quarterly Report on Form 10-Q, filed with the SEC on July 31, 2018, which is incorporated by reference herein.

“Backlog.” Backlog represents anticipated future net revenue from net new business awards that have commenced, but have not been completed.

“Large pharmaceutical companies.” Large pharmaceutical companies represent the top 20 pharmaceutical companies by worldwide prescription drug sales in the year ended December 31, 2016 as classified by Evaluate Ltd in EvaluatePharma© World Preview 2017 Outlook to 2022, an industry report.

“Mid-sized biopharmaceutical companies.” Mid-sized biopharmaceutical companies represent biopharmaceutical companies with at least \$250 million in sales in the year ended December 31, 2016, based on publicly available data and management’s knowledge, that are not classified as a top 20 pharmaceutical company by Evaluate Ltd in EvaluatePharma© World Preview 2017 Outlook to 2022, an industry report.

“Net new business awards.” Net new business awards represent gross new business awards received in a period offset by total cancellations in that period. New business awards represent the value of anticipated future revenue that has been awarded during the period that is recognized in backlog. This value is recognized upon the signing of a contract or receipt of a written pre-contract confirmation from a customer that confirms an agreement in principle on budget and scope. New business awards also include contract amendments, or changes in scope, where the customer has provided written authorization for changes in budget and scope or has approved us to perform additional work as of the measurement date. Awards may not be recognized as backlog after consideration of a number of factors, including whether (i) the relevant revenue is expected only after a pending regulatory hurdle, which might result in cancellation of the study, (ii) the customer funding needed for commencement of the study is not believed to have been secured or (iii) study timelines are uncertain or not well defined. In addition, study amounts that extend beyond a three-year timeline are not included in backlog.

“Phase I.” Phase I trials are typically conducted in healthy individuals or, on occasion, in patients, and typically involve 20 to 80 subjects and range from a few months to several years. These trials are designed to establish the basic safety, dose tolerance, absorption, metabolism, distribution and excretion of the clinical product candidate, the side effects associated with increasing doses, and if possible, early evidence of effectiveness. If the trial establishes the basic safety and metabolism of the clinical product candidate, Phase II trials are generally initiated.

“Phase II.” Phase II trials are conducted in a limited population of patients with the disease or condition that the clinical product candidate is intended to treat. These trials typically test a few hundred patients and last on average 12 to 18 months. Phase II trials are typically designed to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the clinical product candidate for specific targeted diseases or conditions, and to determine dose tolerance, optimal dosage and dosing schedule. Phase II trials are sometimes divided into two phases: Phase IIa trials typically evaluate the dose response of the clinical product candidate and Phase IIb trials typically evaluate the efficacy of the clinical product candidate at the prescribed doses. If the Phase II trials indicate that the clinical product candidate may be safe and effective, Phase III trials are generally initiated.

“Phase III.” Phase III trials evaluate the clinical product candidate in significantly larger and more diverse patient populations than Phase I and II trials and are conducted at multiple, geographically dispersed sites. On average, this phase lasts from one to three years. Depending on the size and complexity, Phase III CRO contracts may include multiple sequential trials. During this phase, the clinical product candidate’s overall benefit/risk ratio and the basis for product approval are established. If the clinical product candidate successfully completes Phase III, then the sponsor may submit a New Drug Application or Biologics License Application for approval by the United States Food and Drug Administration, or FDA, or a similar marketing authorization application for approval by non-U.S. regulatory agencies.

“Phase IV.” Phase IV or “post-approval” trials are intended to monitor the drug’s long-term risks and benefits, to analyze different dosage levels, to evaluate different safety and efficacy parameters in target populations or to

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substantiate marketing claims. Phase IV trials typically enroll thousands of patients and last from six months to several years. The FDA may require Phase IV testing and surveillance programs to monitor the effect of approved drugs which have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of post-marketing programs.

“**Small biopharmaceutical companies.**” Small biopharmaceutical companies represent biopharmaceutical companies that have less than \$250 million in sales in the year ended December 31, 2016, based on publicly available data and management’s knowledge.

ABOUT THIS PROSPECTUS SUPPLEMENT

On September 1, 2017, we filed with the SEC a registration statement on Form S-3 utilizing a shelf registration process related to the securities described in this prospectus supplement, which was declared effective on October 23, 2017.

This document consists of two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates the information contained or incorporated by reference in the accompanying prospectus. The second part is the accompanying prospectus, which contains more general information, some of which may not apply to this offering. You should read both this prospectus supplement and the accompanying prospectus, together with any documents incorporated by reference herein and therein and the additional information described below under the headings “Where You Can Find More Information” and “Incorporation of Documents by Reference” in its entirety before making an investment decision. To the extent there is a variation between information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus, on the other hand, you should rely on the information in this prospectus supplement.

Any statement made in this prospectus supplement or in a document incorporated or deemed to be incorporated by reference in this prospectus supplement will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document that is also incorporated or deemed to be incorporated by reference in this prospectus supplement modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus supplement, the accompanying prospectus and documents incorporated by reference herein and therein. This summary does not contain all of the information you should consider before investing in our common stock. You should read this entire prospectus supplement, the accompanying prospectus and documents incorporated by reference herein and therein carefully, including the risks of investing in our common stock discussed under “Risk Factors” and our consolidated financial statements and the related notes thereto included or incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision.

As used in this prospectus supplement, the accompanying prospectus and documents incorporated by reference herein and therein, unless the context otherwise requires, references to “Medpace,” “the Company,” “our company,” “we,” “us,” and “our” refer to Medpace Holdings, Inc., its consolidated subsidiaries and its predecessor entities.

Throughout this prospectus supplement, the accompanying prospectus and documents incorporated by reference herein and therein, we present financial information for two periods, Predecessor and Successor, which relate to the period preceding the consummation of the Transaction (as defined below) on April 1, 2014 and the period succeeding the consummation of the Transaction, respectively. References to the “Successor nine month period ended December 31, 2014” refer to the period from April 1, 2014 to December 31, 2014 and references to the “Predecessor three month period ended March 31, 2014” refer to the period from January 1, 2014 to March 31, 2014.

Overview

We are one of the world’s leading clinical contract research organizations, or CROs, by revenue, solely focused on providing scientifically-driven outsourced clinical development services to the biotechnology, pharmaceutical and medical device industries. Our mission is to accelerate the global development of safe and effective medical therapeutics. We differentiate ourselves from our competitors by our disciplined operating model centered on providing full-service Phase I-IV clinical development services and our therapeutic expertise. We believe this combination results in timely and cost-effective delivery of clinical development services for our customers. We believe that we are a partner of choice for small and mid-sized biopharmaceutical companies based on our ability to consistently utilize our full-service, disciplined operating model to deliver timely and high-quality results for our customers. Accordingly, we believe we are well positioned to continue to expand our market share in the growing Phase I-IV CRO market.

We were founded in 1992 by Dr. August J. Troendle, an industry pioneer, as a Phase II-IV focused CRO with a strong, scientifically-driven and disciplined operating model, and we continue today as a founder-led enterprise with Dr. Troendle retaining a significant ownership stake in Medpace. Throughout our 25-year history, we have grown almost exclusively organically, with our core founding members having been integrally involved in developing and instilling our differentiated culture and operating philosophy across our company. We focus on conducting clinical trials across all major therapeutic areas, with particular strength in Cardiology, Metabolic Disease, Oncology, Endocrinology, Central Nervous System, Antiviral and Anti-infective, as well as therapeutic expertise in Medical Devices. Our global platform includes approximately 2,700 employees across 36 countries, providing our customers with broad access to diverse markets and patient populations as well as local regulatory expertise and market knowledge.

Our singular focus on executing our disciplined, full-service operating model is a core tenet of our differentiated approach. Our operating model entails partnering with our customers from the beginning of the clinical trial process and holistically navigating all subsequent components of the process. This approach differs from other leading CROs that provide functional or partial outsourcing services as a core component of their business. We believe our full-service approach allows us to deliver timely and high-quality results for our customers. By

clearly communicating and aligning our expectations with those of our customers at the beginning of an engagement, we develop a trusted relationship where our customers typically grant us greater control over the clinical trial process. This results in greater accountability on our part and, we believe, more consistent delivery of our services. We believe our partnering approach, coupled with our full-service, scientifically-driven model, ensures efficient and high-quality trial execution, limits changes in the scope of trials and enables timely completion of trials.

We focus on providing clinical development solutions primarily to companies that recognize the benefits of utilizing our full-service outsourcing model. We believe our model is particularly attractive to small and mid-sized biopharmaceutical companies, which seek specialized capabilities and infrastructure required for complex and global clinical trials, including therapeutic expertise, insightful protocol design, project feasibility assessment and timely and high-quality trial execution. We expect that outsourced development expenditures for small and mid-sized biopharmaceutical companies will continue to grow. We believe we can expand our market share with this customer segment given our continued strategic focus and the attractiveness of our model to these companies. Furthermore, as the clinical development and regulatory processes grow increasingly more global and complex, we believe large pharmaceutical companies will increasingly recognize the benefits of our disciplined, full-service operating model.

Implications of Being an Emerging Growth Company

As a company with less than \$1.07 billion in revenues during our last fiscal year, we qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of specified reduced reporting and other regulatory requirements for up to five years that are otherwise applicable generally to public companies. These provisions include, among other matters:

- exemption from the auditor attestation requirement on the effectiveness of our system of internal control over financial reporting;
- exemption from the adoption of new or revised financial accounting standards until they would apply to private companies;
- exemption from compliance with any new requirements adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotation or a supplement to the auditor’s report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer;
- an exemption from the requirement to seek non-binding advisory votes on executive compensation and golden parachute arrangements; and
- reduced disclosure about executive compensation arrangements.

Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended, or the Securities Act, for complying with new and revised accounting standards. An emerging growth company can, therefore, delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. However, we chose to “opt out” of that extended transition period and, as a result, we plan to comply with new and revised accounting standards on the relevant dates on which adoption of those standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision to opt out of the extended transition period for complying with new and revised accounting standards is irrevocable.

We will remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of the completion of our initial public offering, or IPO, unless, prior to that time, we (i) have more than

\$1.07 billion in annual revenues, (ii) have a market value for our common stock held by non-affiliates of more than \$700 million as of the last day of our second fiscal quarter of the fiscal year when a determination is made whether we are deemed to be a “large accelerated filer,” as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended, or the Exchange Act, or (iii) issue more than \$1.0 billion of non-convertible debt over a three-year period.

We have elected to take advantage of some of the reduced disclosure obligations listed above in this prospectus supplement and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our shareholders may be different than you might receive from other public reporting companies in which you hold equity interests. In addition, it is possible that some investors will find our common stock less attractive as a result of our elections, which may cause a less active trading market for our common stock and more volatility in our stock price.

The Transaction

In April 2014, investment funds managed by Cinven, a private equity firm, acquired 100% of the outstanding shares of Medpace IntermediateCo, Inc., or Medpace IntermediateCo, for an aggregate purchase price of \$921.3 million. In connection with the acquisition, certain employees of the Company, through Medpace Investors, LLC, or MPI, agreed to contribute shares held in Medpace IntermediateCo in exchange for a percentage stake in Medpace Holdings, Inc. We refer to these transactions, collectively, as the “Transaction.”

Our Private Equity Sponsor

Cinven is a leading private equity firm, founded in 1977, with offices in Guernsey, London, Frankfurt, Paris, Madrid, Milan, Luxembourg, Hong Kong and New York. Cinven focuses on investments across six core sectors: Healthcare, Financial Services, Business Services, Consumer, Industrials and Technology and Media and Telecommunications. Its funds acquire high-quality companies and work with them to help them grow and develop. Cinven is a responsible investor, seeking to build long-term value through sustainable growth in the portfolio companies of its funds with consideration for their employees, suppliers, local communities, the environment and society. Since 1977, Cinven has completed transactions valued at in excess of approximately €100 billion.

As of August 21, 2018, the Cinven Stockholders (as defined herein) owned approximately 14.7% of the outstanding shares of our common stock. Upon the completion of this offering, the Cinven Stockholders will not own any shares of our common stock. See “Selling Shareholder.”

Recent Developments

On August 10, 2018, two directors affiliated with Cinven, John Richardson and Anastasya Molodykh resigned from our Board. Two new directors, Fred B. Davenport Jr. and Cornelius P. McCarthy III, have been appointed to our Board. For additional information, see the Form 8-K filed with the SEC on August 13, 2018, which is incorporated by reference herein.

Corporate Information

We are a Delaware corporation and were incorporated on February 18, 2014. Our principal executive offices are located at 5375 Medpace Way, Cincinnati, Ohio 45227, and our telephone number is (513) 579-9911. Our corporate website address is www.medpace.com. Our website and the information contained in, or that can be accessed through, our website is not deemed to be incorporated by reference in, and is not considered part of, this prospectus supplement nor the accompanying prospectus. You should not rely on any such information in making your decision whether to purchase our common stock.

THE OFFERING

Common stock offered by the selling shareholder	5,224,997 shares.
Selling shareholder	The selling shareholder identified in “Selling Shareholder.”
Common stock to be outstanding after this offering	35,571,504 shares.
Use of proceeds	We will not receive any proceeds from the sale of common stock by the selling shareholder in this offering. See “Use of Proceeds.”
Conflicts of Interest	<p>All of the common stock offered by this prospectus supplement is being sold by the selling shareholder. We will not receive any of the proceeds from the sale of shares by the selling shareholder in this offering. For more information about the selling shareholder, see “Selling Shareholder.”</p> <p>We expect that certain of the proceeds of the sale of shares will be used to repay the remaining outstanding amount under the MLP Credit Agreement, in which case an affiliate of Morgan Stanley & Co. LLC will receive more than 5% of the net proceeds of this offering, not including underwriting compensation. Accordingly, this offering is being made in compliance with the requirements of Rule 5121 (Public Offerings of Securities with Conflicts of Interest) of the Financial Industry Regulatory Authority, Inc. (“FINRA”). Pursuant to that rule, the appointment of a “qualified independent underwriter” is not necessary in connection with this offering because the shares of common stock have a “bona fide public market” (as such terms are defined in FINRA Rule 5121).</p>
Dividend policy	We have no current plans to pay any cash dividends on our common stock in the foreseeable future; however, we may change this policy in the future. See “Dividend Policy.”
Risk factors	Investing in our common stock involves a high degree of risk. See “Risk Factors” beginning on page S-6 of this prospectus supplement and the risk factors described in the accompanying prospectus and in the documents incorporated by reference herein and therein for a discussion of factors you should consider carefully before investing in our common stock.
Listing	Our common stock is listed on NASDAQ under the symbol “MEDP.”

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Except as otherwise indicated in this prospectus supplement, the number of shares of common stock to be outstanding after this offering is based on 35,571,504 shares outstanding as of August 21, 2018, which includes 5,224,997 shares of common stock to be sold by the selling shareholder, and:

- excludes 2,956,747 shares of common stock issuable upon exercise of stock options outstanding as of August 21, 2018 at a weighted average exercise price of \$22.82 per share; and
- excludes an additional 4,049,893 shares of common stock reserved for future issuance under our 2016 Incentive Award Plan, or the Plan.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider uncertainties described below together with the other information included in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference herein and therein, including our audited consolidated financial statements and related notes in our 2017 10-K and our unaudited condensed consolidated financial statements and related notes in our 2018 First Quarter 10-Q and our 2018 Second Quarter 10-Q, each incorporated by reference herein and therein, before deciding to purchase our common stock. The occurrence of any of the following risks may materially and adversely affect our business, financial condition, results of operations and future prospects. In such an event, the market price of our common stock could decline, and you could lose part or all of your investment.

Risks Relating to Our Common Stock and This Offering

Our Chief Executive Officer and founder controls a substantial amount of our outstanding common stock, and his interests may be different from or conflict with those of our other shareholders.

As of August 21, 2018, Dr. August J. Troendle, our Chief Executive Officer and founder, through his direct ownership of 351,851 shares of our common stock and his beneficial ownership of 9,145,510 shares of our common stock held by MPI, controlled approximately 26.7% of the outstanding shares of our common stock. Additionally, upon a distribution of our common stock held by MPI, our Chief Executive Officer would receive approximately 75% of such distributed shares. Accordingly, Dr. Troendle is able to exert a significant degree of influence over our management and affairs and all corporate actions requiring shareholder approval, irrespective of how our other shareholders may vote, including:

- the election and removal of directors and the size of our board of directors, or the Board;
- any amendment of our amended and restated certificate of incorporation or amended and restated bylaws; and
- the approval of mergers and other significant corporate transactions, including a sale of substantially all of our assets.

Moreover, Dr. Troendle's share ownership may also adversely affect the trading price for our common stock to the extent investors perceive disadvantages in owning shares of a company with a significant shareholder.

On August 10, 2018, we ceased to be a "controlled company" within the meaning of the NASDAQ rules. Previously, we qualified for and relied on, exemptions from certain corporate governance requirements and our shareholders did not have the same protections afforded to shareholders of companies that are subject to such requirements.

Substantially concurrently with the closing of the IPO, the Cinven Stockholders and Dr. August J. Troendle, our Chief Executive Officer and founder, entered into a voting agreement, or the Voting Agreement. Pursuant to the terms of the Voting Agreement, for so long as the Cinven Stockholders and Dr. Troendle collectively hold at least 40% of our outstanding voting shares, or the Voting Agreement is otherwise terminated in accordance with its terms, the Cinven Stockholders have agreed to vote their shares of our common stock in favor of the election of Dr. Troendle to our Board (so long as Dr. Troendle remains our Chief Executive Officer) upon his nomination by our Board and Dr. Troendle has agreed to vote his shares of our common stock in favor of the election of the directors affiliated with Cinven upon their nomination by our Board. Following this offering, the Cinven Stockholders will no longer beneficially own any of our outstanding voting shares and the Cinven Stockholders and Dr. Troendle will no longer collectively hold at least 40% of our outstanding voting shares. Accordingly, the Voting Agreement will terminate and the remaining director on our Board affiliated with Cinven may resign from our Board.

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As used herein, “Cinven Stockholders” means, depending on the context, either of (i) Medpace Limited Partnership or (ii) Fifth Cinven Fund (No. 1) Limited Partnership, Fifth Cinven Fund (No. 2) Limited Partnership, Fifth Cinven Fund (No. 3) Limited Partnership, Fifth Cinven Fund (No. 4) Limited Partnership, Fifth Cinven Fund (No. 5) Limited Partnership, Fifth Cinven Fund (No. 6) Limited Partnership, Fifth Cinven Fund Co-Investment Partnership and Fifth Cinven Fund FCP-SIF.

“Cinven” means, depending on the context, any of or collectively, Cinven Partners LLP, Cinven Limited, Cinven (LuxCo 1) S.A. and their respective Associates (as defined in the UK Companies Act 2006) and/or to funds managed or advised by the foregoing.

Because of the Voting Agreement, up until August 10, 2018, we were considered a “controlled company” within the meaning of the corporate governance standards of NASDAQ. Under these rules, a company of which more than 50% of the voting power for the election of directors is held by an individual, group or another company is a “controlled company” and may elect not to comply with certain corporate governance requirements, including the requirements that:

- we have a Board that is composed of a majority of “independent directors,” as defined under the rules of such exchange;
- we have a compensation committee that is composed entirely of independent directors with a written charter addressing the committee’s purpose and responsibilities; and
- director nominations be made, or recommended to the full Board, by our independent directors or by a nominating and corporate governance committee that is composed entirely of independent directors with a written charter addressing the committee’s purpose and responsibilities.

On August 10, 2018, we ceased to be considered a “controlled company.” As a result, we are required to comply with the above-referenced requirements within one year of when we ceased to be a “controlled company.” We currently do not have a nominating and corporate governance committee.

We may have difficulties complying with the NASDAQ rules listed above. While we intend to comply with these NASDAQ rules, there can be no assurance that we will be able to comply with such rules before the end of the phase-in period for compliance.

Investment funds affiliated with Cinven pledged all of its owned shares of our common stock as collateral for borrowings under a credit agreement unaffiliated with Medpace.

On June 16, 2017, Cinven informed us that Medpace Limited Partnership (“Medpace Limited”), an entity formed by Cinven to hold all the Cinven Stockholders’ equity interests in us, entered into a credit agreement (the “MLP Credit Agreement”) with Credit Suisse AG, Cayman Islands Branch, and Morgan Stanley Bank, N.A., as lenders (together, the “Lenders”), Credit Suisse AG, Cayman Islands Branch, as administrative agent, and Credit Suisse Securities (USA) LLC, as calculation agent. Pursuant to the MLP Credit Agreement, Medpace Limited entered into a pledge agreement (the “MLP Pledge Agreement”) with Credit Suisse Securities (USA) LLC, as secured party and Morgan Stanley Bank, N.A., as secured party (together, the “Secured Parties”). Pursuant to the MLP Pledge Agreement, Medpace Limited pledged all of its shares of our common stock, \$0.01 par value per share, to the Secured Parties.

On June 21, 2017 (the “MLP Funding Date”), Medpace Limited borrowed \$150.0 million under the MLP Credit Agreement. Pursuant to the MLP Pledge Agreement, to secure any borrowings under the MLP Credit Agreement, Medpace Limited pledged 22,999,997 shares of our common stock as of the MLP Funding Date. In December 2017, May 2018, June 2018 and August 2018 a total of 15,775,000 shares of common stock were released from the pledge and sold in registered public offerings. As of August 21, 2018, the number of shares of common stock pledged by Medpace Limited pursuant to the MLP Pledge Agreement was 5,224,997 (collectively, the “MLP

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Pledged Shares”). The MLP Pledged Shares represented approximately 14.7% of our issued and outstanding common stock as of August 21, 2018. All of the MLP Pledged Shares were contributed to Medpace Limited from the other Cinven Stockholders, which collectively own all of the equity interest in Medpace Limited.

The MLP Credit Agreement contains customary default provisions. In the event of a default under the MLP Credit Agreement by Medpace Limited, the Lenders and their affiliates and assignees may foreclose upon any and all MLP Pledged Shares and may seek recourse against Medpace Limited. We are not a party to the MLP Credit Agreement or the MLP Pledge Agreement and have no obligations thereunder, but have delivered a letter agreement to the Lenders in which we have, among other things, agreed, subject to applicable law and stock exchange rules, not to take any action intended to hinder or delay the exercise of any remedies by the Lenders under the MLP Credit Agreement or the MLP Pledge Agreement.

Any foreclosure upon the MLP Pledged Shares could result in sales of a substantial amount of shares of our common stock in the public market, which could cause the market price of our common stock to drop significantly, even if our business is doing well. See “—*Shares of our common stock may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.*” In connection with the closing of this offering, we expect that amounts due under the MLP Credit Agreement will be repaid in full and that the MLP Credit Agreement will be terminated.

Our anti-takeover provisions could prevent or delay a change in control of our company, even if such change in control would be beneficial to our shareholders.

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law could discourage, delay or prevent a merger, acquisition or other change in control of our company, even if such change in control would be beneficial to our shareholders. These provisions include:

- authorizing the issuance of “blank check” preferred stock that could be issued by our Board to increase the number of outstanding shares and thwart a takeover attempt;
- establishing a classified Board so that not all members of our Board are elected at one time;
- the removal of directors only for cause;
- prohibiting the use of cumulative voting for the election of directors;
- limiting the ability of shareholders to call special meetings or amend our amended and restated bylaws;
- requiring all shareholder actions to be taken at a meeting of our shareholders and not by written consent; and
- establishing advance notice and duration of ownership requirements for nominations for election to the Board or for proposing matters that can be acted upon by shareholders at shareholder meetings.

These provisions could also discourage proxy contests and make it more difficult for you and other shareholders to elect directors of your choosing and cause us to take other corporate actions you desire. In addition, because our Board is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our shareholders to replace current members of our management team.

In addition, the Delaware General Corporation Law, or the DGCL, to which we are subject, prohibits us, except under specified circumstances, from engaging in any mergers, significant sales of stock or assets or business combinations with any shareholder or group of shareholders who owns at least 15% of our common stock for three years following their becoming the owner of 15% of our common stock.

Cinven and our non-employee directors may acquire interests and positions that could present potential conflicts with our and our shareholders’ interests.

Cinven and our non-employee directors make investments in companies and may, from time to time, acquire and hold interests in businesses that compete directly or indirectly with us. Cinven and our non-employee directors

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may also pursue, for their own accounts, acquisition opportunities that may be complementary to our business, and as a result, those acquisition opportunities might not be available to us. Our organizational documents contain provisions renouncing any interest or expectancy held by Cinven or by our non-employee directors in corporate opportunities. Accordingly, the interests of Cinven and our non-employee directors may supersede ours, causing Cinven or its affiliates or our non-employee directors and their affiliates to compete against us or to pursue opportunities instead of us, for which we have no recourse. Such actions on the part of Cinven or our non-employee directors and inaction on our part could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Full-time investment professionals of Cinven occupy one seat on our Board. Because Cinven could invest in entities that directly or indirectly compete with us, when conflicts arise between the interests of Cinven and the interests of our shareholders, this director may not be disinterested.

We may issue shares of preferred stock in the future, which could make it difficult for another company to acquire us or could otherwise adversely affect holders of our common stock, which could depress the price of our common stock.

Our amended and restated certificate of incorporation authorizes us to issue one or more series of preferred stock. Our Board has the authority to determine the preferences, limitations and relative rights of the shares of preferred stock and to fix the number of shares constituting any series and the designation of such series, without any further vote or action by our shareholders. Our preferred stock could be issued with voting, liquidation, dividend and other rights superior to the rights of our common stock. The potential issuance of preferred stock may delay or prevent a change in control of us, discourage bids for our common stock at a premium to the market price, and materially and adversely affect the market price and the voting and other rights of the holders of our common stock.

The provision of our amended and restated certificate of incorporation requiring exclusive venue in the Court of Chancery in the State of Delaware for certain types of lawsuits may have the effect of discouraging lawsuits against our directors and officers.

Our amended and restated certificate of incorporation requires, to the fullest extent permitted by law, that (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our shareholders, (iii) any action asserting a claim against us arising pursuant to any provision of the DGCL or our amended and restated certificate of incorporation or our amended and restated bylaws or (iv) any action asserting a claim against us governed by the internal affairs doctrine will have to be brought only in the Court of Chancery in the State of Delaware. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers.

Failure to establish and maintain effective internal controls in accordance with Section 404 of the Sarbanes-Oxley Act could have a material adverse effect on our business and stock price.

As a public company, we are now required to comply with the rules of the SEC, implementing Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and are therefore required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. We are required to comply with the SEC's rules implementing Sections 302 and 404 of the Sarbanes-Oxley Act, which require management to certify financial and other information in our quarterly and annual reports and provide an annual management report on the effectiveness of controls over financial reporting. As an emerging growth company, our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 until the later of the year following our first annual report required to be filed with the SEC or the date we are no longer an emerging growth company. At such time, our

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independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating.

To comply with the requirements of being a newly public company, we have undertaken various actions, and may need to take additional actions, such as implementing new internal controls and procedures and hiring additional accounting or internal audit staff. Testing and maintaining internal control can divert our management's attention from other matters that are important to the operation of our business. Additionally, when evaluating our internal control over financial reporting, we may identify material weaknesses that will cause us to be out of compliance with the requirements of Section 404. If we are unable to comply with the requirements of Section 404 or assert that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal control over financial reporting once we are no longer an emerging growth company, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could be negatively affected, and we could become subject to investigations by NASDAQ, the SEC or other regulatory authorities, which could require additional financial and management resources.

We have incurred, and will continue to incur, significant costs as a result of operating as a public company, and our management will devote substantial time to new compliance initiatives.

As a publicly traded company, we have incurred, and will continue to incur, significant legal, accounting and other expenses that we were not required to incur prior to our IPO. Further, these costs may increase after we are no longer an "emerging growth company" as defined under the JOBS Act. In addition, compliance with new and changing laws, regulations and standards relating to corporate governance and public disclosure, including the Dodd-Frank Wall Street Reform and Customer Protection Act, or the Dodd-Frank Act, and the rules and regulations promulgated and to be promulgated thereunder, as well as under the Sarbanes-Oxley Act, and the rules and regulations of the SEC, has increased and will continue to increase our legal and financial compliance costs and make some activities more difficult, time-consuming or costly. For example, the Exchange Act requires us, among other things, to file annual, quarterly and current reports with respect to our business and operating results. Being a public company and being subject to new rules and regulations has made it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to continue to obtain coverage. As such, we expect to continue to incur additional annual expenses of \$3.0 million to \$4.0 million related to operating as a public company. These factors may therefore strain our resources, divert management's attention, and affect our ability to attract and retain qualified members of our Board and adversely affect our operating margins.

Furthermore, the need to continue to establish the corporate infrastructure demanded of a public company may divert management's attention from implementing our growth strategy, which could prevent us from improving our business, results of operations and financial condition. We have made, and will continue to make, changes to our internal controls and procedures for financial reporting and accounting systems to meet our reporting obligations as a publicly traded company. However, the measures we take may not be sufficient to satisfy our obligations as a publicly traded company.

Our operating results and share price may be volatile, and the market price of our common stock after this offering may drop below the price you pay.

Our quarterly operating results have fluctuated, and are likely to fluctuate in the future. In addition, securities markets worldwide have experienced, and are likely to continue to experience, significant price and volume fluctuations. This market volatility, as well as general economic, market or political conditions, could subject the market price of shares of our common stock to wide price fluctuations regardless of our operating performance.

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The public market for our common stock is new and the trading price of shares of our common stock may fluctuate in response to various factors, including:

- market conditions in the broader stock market or in the healthcare sector;
- developments affecting biopharmaceutical companies generally or biopharmaceutical research and development outsourcing;
- actual or anticipated fluctuations in our quarterly financial and operating results;
- introduction of new products or services by us or our competitors;
- the public's reaction to our press releases, our other public announcements and our filings with the SEC;
- changes in, or failure to meet, earnings estimates or recommendations by research analysts who track our common stock or the stock of other companies in our industries;
- strategic actions by us, our customers or our competitors, such as acquisitions or restructurings;
- changes in accounting standards, policies, guidance, interpretations or principles;
- issuance of new or changed securities analysts' reports or recommendations or termination of coverage of our common stock by securities analysts;
- sales, or anticipated sales, of large blocks of our stock;
- the granting or exercise of employee stock options;
- volume of trading in our common stock;
- additions or departures of key personnel;
- regulatory or political developments;
- litigation and governmental investigations;
- changing economic conditions;
- defaults on our indebtedness;
- exchange rate fluctuations; and
- the other factors listed in this "Risk Factors" section and the "Risk Factors" section in our 2017 10-K incorporated by reference in this prospectus supplement.

These and other factors, many of which are beyond our control, may cause our operating results and the market price and demand for shares of our common stock to fluctuate substantially. While we believe that operating results for any particular quarter are not necessarily a meaningful indication of future results, fluctuations in our quarterly operating results could limit or prevent investors from readily selling their shares and may otherwise negatively affect the market price and liquidity of shares of our common stock. In addition, in the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the company that issued the stock. If any of our shareholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management from our business, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Shares of our common stock may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. After this offering, we will have 35,571,504 shares of outstanding common stock. Outstanding shares of our common

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stock are freely tradable without restriction under the Securities Act, except as described in the next paragraph with respect to the lock-up arrangements and for any shares of our common stock that are held or acquired by our directors, executive officers and other affiliates, as that term is defined in the Securities Act, which will be or are restricted securities under the Securities Act. Restricted securities may not be sold in the public market unless the sale is registered under the Securities Act or an exemption from registration is available.

On August 7, 2018, we, along with our directors and executive officers, MPI and the selling shareholder, agreed with Morgan Stanley & Co. LLC, subject to certain exceptions, not to sell or otherwise dispose of any shares of our common stock or other capital stock or other securities exercisable or convertible therefor for a period of at least 30 days without the prior written consent of Morgan Stanley & Co. LLC. Morgan Stanley & Co. LLC has provided its consent for the sale of shares by the selling shareholder in this offering. See “Underwriting (Conflicts of Interest).” All of the shares of our common stock outstanding as of the date of this prospectus supplement may be sold in the public market by existing shareholders following the expiration of the applicable lock-up period, subject to applicable limitations imposed under federal securities laws.

We are also party to a registration rights agreement pursuant to which the shares of common stock held by the Cinven Stockholders and Dr. August J. Troendle, our Chief Executive Officer and founder, are eligible for resale, subject to certain limitations set forth therein. See “Certain Relationships” in our 2017 Proxy Statement, portions of which are incorporated by reference herein. See “Incorporation of Documents by Reference”. We have filed a shelf registration statement on Form S-3 with the SEC that registers for sale by us up to \$75,000,000 in the aggregate of common stock, preferred stock, debt securities, depositary shares, warrants and units, as well as up to 31,366,923 shares in the aggregate of common stock, including the shares to be sold in this offering, and 15,775,000 shares sold in prior offerings in December 2017, May 2018, June 2018 and August 2018, by the selling stockholders identified therein, including Dr. August J. Troendle, the Cinven Stockholders and MPI.

In connection with the IPO, we filed a registration statement on Form S-8 under the Securities Act to register all shares of common stock issued or issuable under the Plan, which became effective upon filing. Accordingly, shares registered under such registration statement will be available for sale in the open market following the expiration of the applicable lock-up period. The registration statement on Form S-8 covers 6,000,000 shares of our common stock.

As restrictions on resale expire or as shares are registered or otherwise sold pursuant to an exemption from registration under the Securities Act, our share price could drop significantly if the holders of these restricted or newly registered shares sell them or are perceived by the market as intending to sell them. These sales might also make it more difficult for us to sell securities in the future at a time and at a price that we deem appropriate.

In the future, we may also issue additional securities if we need to raise capital or make acquisitions, which could constitute a material portion of our then-outstanding shares of common stock.

Because we have no current plans to pay regular cash dividends on our common stock following this offering, you may not receive any return on investment unless you sell your common stock for a price greater than that which you paid for it.

We do not anticipate paying any regular cash dividends on our common stock for the foreseeable future. Any decision to declare and pay dividends in the future will be made at the discretion of our Board and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that our Board may deem relevant. In addition, our ability to pay dividends is, and may continue to be, limited by covenants of existing and any future outstanding indebtedness we or our subsidiaries incur, including under our Senior Secured Credit Facilities (as defined in the 2017 10-K). Therefore, any return on investment in our common stock is solely dependent upon the appreciation of the price of our common stock on the open market, which may not occur. See “Dividend Policy”.

We are a holding company and rely on dividends and other payments, advances and transfers of funds from our subsidiaries to meet our obligations and pay any dividends.

We have no direct operations and no significant assets other than ownership of 100% of the capital stock of our subsidiaries. Because we conduct our operations through our subsidiaries, we depend on those entities for dividends and other payments to generate the funds necessary to meet our financial obligations, and to pay any dividends with respect to our common stock. Legal and contractual restrictions in our Senior Secured Credit Facilities and other agreements which may govern future indebtedness of our subsidiaries, as well as the financial condition and operating requirements of our subsidiaries, may limit our ability to obtain cash from our subsidiaries. The earnings from, or other available assets of, our subsidiaries might not be sufficient to pay dividends or make distributions or loans to enable us to pay any dividends on our common stock or other obligations. Any of the foregoing could materially and adversely affect our business, financial condition, results of operations and cash flows. See “Dividend Policy.”

If securities or industry analysts do not publish research or reports about our business, if they adversely change their recommendations regarding our common stock or if our results of operations do not meet their expectations, our share price and trading volume could decline.

The trading market for shares of our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. We do not have any control over these analysts. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our share price or trading volume to decline. Moreover, if one or more of the analysts who cover us downgrade our stock, or if our results of operations do not meet their expectations, our share price could decline.

We are an “emerging growth company” and as a result of the reduced disclosure and governance requirements applicable to emerging growth companies, our common stock may be less attractive to investors.

The JOBS Act provides that, so long as a company qualifies as an “emerging growth company,” it will, among other things:

- be exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that its independent registered public accounting firm provide an attestation report on the effectiveness of its internal control over financial reporting;
- be exempt from the “say on pay” and “say on golden parachute” advisory vote requirements of the Dodd-Frank Act;
- be exempt from certain disclosure requirements of the Dodd-Frank Act relating to compensation of its executive officers and be permitted to omit the detailed compensation discussion and analysis from proxy statements and reports filed under the Exchange Act; and
- be exempt from any rules that may be adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotations or a supplement to the auditor’s report on the financial statements.

We currently take advantage of each of the exemptions described above. In connection with our IPO, we irrevocably elected not to take advantage of the extension of time to comply with new or revised financial accounting standards available under Section 107(b) of the JOBS Act. We could be an emerging growth company up to the last day of the fiscal year following the fifth anniversary of the completion of our IPO. We cannot predict if investors will find our common stock less attractive if we elect to rely on these exemptions, or if taking advantage of these exemptions would result in less active trading or more volatility in the price of our common stock. For additional information about the implications of qualifying as an emerging growth company, see “Prospectus Summary—Implications of Being an Emerging Growth Company.”

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, including the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and “Business,” contain forward looking statements. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act. All statements other than statements of historical facts contained in this prospectus supplement, any applicable prospectus supplement and the documents that we incorporate by reference in each, including statements regarding our results of operations; financial position and performance; liquidity and our ability to fund our business operations and initiatives; capital expenditure and debt service obligations; business strategies, plans and goals, including those related to marketing, acquisitions and expansion of our business; product approvals and plans; industry trends; expectations regarding consumer behaviors and trends; our culture and operating philosophy; human resource management; arrangements with and delivery of our services to the customers; conversion of backlog; dividend policy; legal proceedings; and our objectives for future operations, are forward looking statements. The words “expect,” “anticipate,” “intend,” “plan,” “believe,” “seek,” “see,” “will,” “would,” “target,” “may,” “might,” “estimate,” “should” and similar expressions are intended to identify forward looking statements. Examples of forward looking statements include, but are not limited to, statements we make regarding: (i) growth of (a) the CRO market, (b) biopharmaceutical companies’ development expenditures and (c) the percentage of biopharmaceutical clinical development costs that are outsourced to CROs; (ii) the amount of the expected conversion of our backlog to net service revenue; (iii) high-growth therapeutic areas and (iv) the continuous enhancement of our clinical development services and our therapeutic expertise. Forward looking statements are based largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward looking statements are subject to inherent uncertainties, risks, changes in circumstances and other important factors that are difficult to predict. Moreover, we operate in a very competitive and rapidly changing environment in which new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all important factors on our business or the extent to which any factor, or combination of such factors, may cause actual results to differ materially from those contained in any forward looking statements we may make. In light of these risks, uncertainties and assumptions, the forward looking events and circumstances discussed or incorporated by reference in this prospectus supplement and the accompanying prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward looking statements. We caution you therefore against relying on these forward looking statements.

Some of the key factors that could cause actual results to differ from our expectations include regional, national or global political, economic, business, competitive, market and regulatory conditions, the other important factors included in “Risk Factors” of our 2017 10-K, which is incorporated by reference herein, and the following:

- the potential loss, delay or non-renewal of our contracts, or the non-payment by customers for services we have performed;
- the failure to convert backlog to revenue at our historical conversion rate;
- fluctuation in our results between fiscal quarters and years;
- decreased operating margins due to increased pricing pressure or other pressures;
- failure to perform our services in accordance with contractual requirements, government regulations and ethical considerations;
- the impact of underpricing our contracts, overrunning our cost estimates or failing to receive approval for or experiencing delays with documentation of change orders;
- our failure to successfully execute our growth strategies;

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- the impact of a failure to retain key personnel or recruit experienced personnel;
- the risks associated with our information systems infrastructure, including potential security breaches and other disruptions which could compromise our information;
- our failure to manage our growth effectively;
- adverse results from customer or therapeutic area concentration;
- the risks associated with doing business internationally;
- the risks associated with the Foreign Corrupt Practices Act and other anti-corruption laws;
- future net losses;
- the impact of income tax rate fluctuations on operations, earnings and earnings per share;
- the risks associated with our intercompany transfer pricing policies;
- our failure to attract suitable investigators and patients for our clinical trials;
- the liability risks associated with our R&D services;
- the risks related to our Phase I clinical services;
- inadequate insurance coverage for our operations and indemnification obligations;
- fluctuations in exchange rates;
- the risks related to our relationships with existing or potential customers who are in competition with each other;
- our failure to successfully integrate potential future acquisitions;
- potential impairment of goodwill or other intangible assets;
- our limited ability to utilize our net operating loss carryforwards or other tax attributes;
- the risks associated with the use and disposal of hazardous substances and waste;
- the failure of third parties to provide us critical support services;
- our limited ability to protect our intellectual property rights;
- the impact of the United Kingdom's referendum on withdrawal from the EU;
- the risks associated with potential future investments in our customers' businesses or drugs;
- the impact of a natural disaster or other catastrophic event;
- negative outsourcing trends in the biopharmaceutical industry and a reduction in aggregate expenditures and R&D budgets;
- our inability to compete effectively with other CROs;
- the impact of healthcare reform;
- the impact of recent consolidation in the biopharmaceutical industry;
- failure to comply with federal, state and foreign healthcare laws;
- the effect of current and proposed laws and regulations regarding the protection of personal data;
- our potential involvement in costly intellectual property lawsuits;
- actions by regulatory authorities or customers to limit the scope of or withdraw an approved drug, biologic or medical device from the market;

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- failure to keep pace with rapid technological changes;
- the impact of industry-wide reputational harm to CROs;
- our ability to fulfill our debt obligations;
- the risks associated with incurring additional debt or undertaking additional debt obligations;
- the effect of covenant restrictions under our debt agreements on our ability to operate our business;
- our inability to generate sufficient cash to service all of our indebtedness;
- fluctuations in interest rates;
- our dependence on our lenders, which may not be able to fund borrowings under their credit commitments, and our inability to borrow; and
- the other factors set forth in “Risk Factors” herein and in our 2017 10-K.

See “Risk Factors” in this prospectus supplement and in our 2017 10-K incorporated by reference in this prospectus supplement and the accompanying prospectus for a further description of these and other factors. The forward looking statements included or incorporated by reference in this prospectus supplement and the accompanying prospectus are made only as of the date hereof. You should not rely upon forward looking statements as predictions of future events. Although we believe that the expectations reflected in the forward looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward looking statements. We undertake no obligation to update publicly any forward looking statements for any reason after the date of this prospectus supplement to conform these statements to actual results or to changes in our expectations, except as may be required by law.

You should read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

MARKET PRICE OF OUR COMMON STOCK

Our common stock has been listed on NASDAQ under the symbol “MEDP” since August 11, 2016. Prior to that time, there was no public market for our common stock. The following table sets forth for the periods indicated the high and low sale prices of our common stock on NASDAQ.

	HIGH	LOW
2016		
Third Quarter (beginning August 11, 2016)	\$31.35	\$26.51
Fourth Quarter	\$38.94	\$28.50
2017		
First Quarter	\$37.22	\$26.01
Second Quarter	\$32.62	\$21.76
Third Quarter	\$33.50	\$26.56
Fourth Quarter	\$39.64	\$31.70
2018		
First Quarter	\$39.63	\$31.75
Second Quarter	\$45.94	\$33.52
Third Quarter (through August 21, 2018)	\$63.97	\$42.43

A recent reported closing price for our common stock is set forth on the cover page of this prospectus supplement. American Stock Transfer & Trust Company, LLC is the transfer agent and registrar for our common stock. On August 21, 2018, we had approximately 34 holders of record of our common stock. The actual number of holders of common stock is greater than this number of record holders and includes shareholders who are beneficial owners, but whose shares are held in street name by brokers and nominees. The number of holders of record also does not include shareholders whose shares may be held in trust by other entities.

USE OF PROCEEDS

All of the common stock offered by this prospectus supplement is being sold by the selling shareholder. We will not receive any of the proceeds from the sale of shares by the selling shareholder in this offering. For more information about the selling shareholder, see “Selling Shareholder.”

DIVIDEND POLICY

We have no current plans to pay any cash dividends on our common stock for the foreseeable future and instead intend to retain earnings, if any, for future operations, expansion and debt repayment. However, in the future, subject to the factors described below and our future liquidity and capitalization, we may change this policy and choose to pay dividends.

We are a holding company which does not conduct any business operations of our own. As a result, our ability to pay cash dividends on our common stock is dependent upon cash dividends and distributions and other transfers from our subsidiaries. The ability of our subsidiaries to pay dividends is currently restricted by the terms of our Senior Secured Credit Facilities and may be further restricted by any future indebtedness we or they incur.

In addition, under Delaware law, our Board may declare dividends only to the extent of our surplus (which is defined as total assets at fair market value minus total liabilities, minus statutory capital) or, if there is no surplus, out of our net profits for the then current and/or immediately preceding fiscal year.

Any future determination to declare dividends will be at the discretion of our Board and will take into account:

- restrictions in our debt instruments, including our Senior Secured Credit Facilities;
- general economic business conditions;
- our net income, financial condition and results of operations;
- our capital requirements;
- our prospects;
- the ability of our operating subsidiaries to pay dividends and make distributions to us;
- legal restrictions; and
- such other factors as our Board may deem relevant.

See the section entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Indebtedness” in our 2017 10-K, 2018 First Quarter 10-Q and 2018 Second Quarter 10-Q, each incorporated by reference in this prospectus supplement for information about restrictions on our ability to pay dividends.

SELLING SHAREHOLDER

The following table sets forth the beneficial ownership of our common stock by the selling shareholder as of August 21, 2018 and immediately after the completion of this offering by the selling shareholder.

To our knowledge, each person named in the table has sole voting and investment power with respect to all of the securities shown as beneficially owned by such person, except as otherwise set forth in the notes to the table. The number of securities shown represents the number of securities the person “beneficially owns,” as determined by the rules of the SEC. The SEC has defined “beneficial” ownership of a security to mean the possession, directly or indirectly, of voting power and/or investment power. A security holder is also deemed to be, as of any date, the beneficial owner of all securities that such security holder has the right to acquire within 60 days after that date through (1) the exercise of any option, warrant or right, (2) the conversion of a security, (3) the power to revoke a trust, discretionary account or similar arrangement, or (4) the automatic termination of a trust, discretionary account or similar arrangement.

The percentages reflect beneficial ownership immediately prior to and immediately after the completion of this offering as determined in accordance with Rule 13d-3 under the Exchange Act and are based on 35,571,504 shares of our common stock outstanding as of August 21, 2018, which includes 5,224,997 shares of common stock to be sold by the selling shareholder.

<u>Name of Beneficial Owner</u>	<u>SHARES BENEFICIALLY OWNED PRIOR TO OFFERING</u>		<u>SHARES BENEFICIALLY OWNED AFTER OFFERING</u>	
	<u>NUMBER</u>	<u>PERCENTAGE</u>	<u>NUMBER</u>	<u>PERCENTAGE</u>
Investment funds affiliated with Cinven Capital Management (V) General Partner Limited (1)	5,224,997	14.7%	—	—

- (1) Medpace Limited is the record holder of the shares reported herein and has pledged such shares as collateral to secure its obligations under a margin loan agreement entered into on June 16, 2017. Cinven Capital Management (V) General Partner Limited (“Cinven MGP”) is the Managing General Partner of Cinven Capital Management (V) Limited Partnership Incorporated (“GPLP”), which is the Managing General Partner of a majority of the stockholders of Medpace GP Limited (“Medpace GP”), which is the general partner of Medpace Limited. The board of directors of Medpace GP has voting and investment discretion with respect to the shares held of record by Medpace Limited. Cinven MGP, as Managing General Partner of the Managing General Partner of a majority of the stockholders of Medpace GP, indirectly controls Medpace GP. Decisions of Cinven MGP are taken by its board of directors, which is comprised of Robin Hall, Brian Linden, Hayley Tanguy, John Boothman, Rupert Dorey and William Scott. Each such director disclaims beneficial ownership of the shares reported herein. The principal business address of Cinven MGP is Level Four, Mill Court, La Charroterie, St Peter Port, Guernsey GY1 1EJ.

The principal business address of each of GPLP, Medpace GP and Medpace Limited is East Wing, Trafalgar Court, Les Banques, St. Peter Port, Guernsey, GY1 3PP.

**MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES
TO NON-U.S. HOLDERS**

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock purchased pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or the IRS, in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a “capital asset” within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder’s particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons subject to the alternative minimum tax;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers or traders in securities;
- “controlled foreign corporations,” “passive foreign investment companies,” and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation; and
- tax-qualified retirement plans.

If an entity or arrangement treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR

SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a “Non-U.S. Holder” is any beneficial owner of our common stock that is neither a “U.S. person” nor an entity or arrangement treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and one or more “United States persons” (within the meaning of Section 7701(a)(30) of the Code) is able to control all its substantial decisions, or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under “—Sale or Other Taxable Disposition.”

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder’s conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder’s conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject

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to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

Subject to the discussion below regarding FATCA, a Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually and/or constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person, or the

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holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or "FATCA") on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States-owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock, and will apply to payments of gross proceeds from the sale or other disposition of such stock on or after January 1, 2019.

Prospective investors should consult their tax advisors regarding the potential application of withholding tax under FATCA to their investment in our common stock.

UNDERWRITING (CONFLICTS OF INTEREST)

Subject to the terms and conditions set forth in the underwriting agreement, dated _____, 2018, among us, Morgan Stanley & Co. LLC, as underwriter, and the selling shareholder, the selling shareholder has agreed to sell to the underwriter, and the underwriter has agreed to purchase from the selling shareholder 5,224,997 shares of common stock.

The underwriting agreement provides that the obligations of the underwriter are subject to certain conditions precedent such as the receipt by the underwriter of officers' certificates and legal opinions and approval of certain legal matters by its counsel. The underwriting agreement provides that the underwriter will purchase all of the shares of common stock if any of them are purchased. If the underwriter defaults, the underwriting agreement provides that the underwriting agreement may be terminated. We and the selling shareholder have agreed to indemnify the underwriter and certain of its controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriter may be required to make in respect of those liabilities.

The underwriter has advised us that, following the completion of this offering, it currently intends to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriter is not obligated to do so, and the underwriter may discontinue any market-making activities at any time without notice in its sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriter is offering the shares of common stock subject to its acceptance of the shares of common stock from the selling shareholder and subject to prior sale. The underwriter reserves the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part. In addition, the underwriter has advised us that it does not intend to confirm sales to any account over which it exercises discretionary authority.

The underwriter has agreed to purchase the shares of common stock from the selling shareholder at a price of \$ _____ per share, which will result in \$ _____ of aggregate proceeds to the selling shareholder before expenses. The underwriter proposes to offer the shares of common stock for sale from time to time in one or more transactions on NASDAQ, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices, subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part. In connection with the sale of the shares of common stock offered hereby, the underwriter may be deemed to have received compensation in the form of underwriting discounts. The underwriter may effect such transactions by selling the 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 it acts as agents or to whom it sells as principal.

We estimate expenses payable by us in connection with this offering, including expenses incurred by the selling shareholder but not including any underwriting discounts and commissions referred to above, will be approximately \$ _____. We have also agreed to reimburse the underwriter for certain expenses, including up to an aggregate of \$15,000 in connection with the clearance of this offering with the Financial Industry Regulatory Authority, as set forth in the underwriting agreement.

Listing

Our common stock is listed on NASDAQ under the trading symbol “MEDP.”

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

No Sales of Similar Securities

On August 7, 2018, we, our officers, directors, MPI and the selling shareholder agreed not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open “put equivalent position” within the meaning of Rule 16a-1(h) under the Exchange Act;
- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially; or
- publicly announce an intention to do any of the foregoing for a period of 30 days without the prior written consent of the underwriter.

This restriction terminates after the close of trading of the common stock on and including the 30th day after August 7, 2018, and is subject to certain customary restrictions, in addition to:

- in the case of the selling shareholder, the continued pledge of common stock not being sold in this offering pursuant to the MLP Credit Agreement and any transfer of shares in the event of foreclosure upon the pledged shares; and
- subject to the requirements of Rule 144, sales of shares of common stock held by the August J. Troendle Revocable Trust acquired in our IPO may occur if effected pursuant to the Rule 10b5-1 trading plan in existence on the date of this prospectus supplement. In connection with such sales, any required filings may be made with the SEC.

The underwriter may, in its sole discretion and at any time or from time to time before the termination of the 30-day period release all or any portion of the securities subject to lock-up agreements. Morgan Stanley & Co. LLC has provided such a release to allow for the sale of shares by the selling shareholder in this offering.

Stabilization

The underwriter has advised us that, pursuant to Regulation M under the Exchange Act, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve “naked” short sales.

“Naked” short sales are sales made without the option to purchase additional shares of our common stock. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of shares in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriter for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the

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purchase of shares of common stock on behalf of the underwriter to reduce a short position incurred by the underwriter in connection with the offering. Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriter to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we, the selling shareholder nor the underwriter make any 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. The underwriter is not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

Conflicts of Interest

All of the common stock offered by this prospectus supplement is being sold by the selling shareholder. We will not receive any of the proceeds from the sale of shares by the selling shareholder in this offering. For more information about the selling shareholder, see "Selling Shareholder."

We expect that certain of the proceeds of the sale of shares will be used to repay the remaining outstanding amount under the MLP Credit Agreement, in which case an affiliate of Morgan Stanley & Co. LLC will receive more than 5% of the net proceeds of this offering, not including underwriting compensation. Accordingly, this offering is being made in compliance with the requirements of Rule 5121 (Public Offerings of Securities with Conflicts of Interest) of the Financial Industry Regulatory Authority, Inc. ("FINRA"). Pursuant to that rule, the appointment of a "qualified independent underwriter" is not necessary in connection with this offering because the shares of common stock have a "bona fide public market" (as such terms are defined in FINRA Rule 5121).

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriter or its affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriter may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriter on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriter's web site and any information contained in any other web site maintained by the underwriter is not part of this prospectus, has not been approved and/or endorsed by us or the underwriter and should not be relied upon by investors.

Other Activities and Relationships

The underwriter and certain of its affiliates are full-service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and certain of its affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In particular, an affiliate of Morgan Stanley & Co. LLC serves as a lender under our Senior Secured Credit Facilities and under the MLP Credit Agreement. Morgan Stanley & Co. LLC is also a secured party under the MLP Pledge Agreement.

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In the ordinary course of their various business activities, the underwriter and certain of its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriter or its affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriter and its affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriter and certain of 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 securities or instruments and may at any time hold, or recommend to customers that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

This prospectus supplement and the accompanying prospectus does not constitute an offer to sell to, or a solicitation of an offer to buy from, anyone in any country or jurisdiction (i) in which such an offer or solicitation is not authorized, (ii) in which any person making such offer or solicitation is not qualified to do so or (iii) in which any such offer or solicitation would otherwise be unlawful. No action has been taken that would, or is intended to, permit a public offer of the shares of common stock or possession or distribution of this prospectus supplement and the accompanying prospectus or any other offering or publicity material relating to the shares of common stock in any country or jurisdiction (other than the United States) where any such action for that purpose is required. Accordingly, the underwriter has undertaken that it will not, directly or indirectly, offer or sell any shares of common stock or have in its possession, distribute or publish any prospectus, form of application, advertisement or other document or information in any country or jurisdiction except under circumstances that will, to the best of its knowledge and belief, result in compliance with any applicable laws and regulations and all offers and sales of the shares of common stock by it will be made on the same terms.

European Economic Area

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), an offer to the public of any common shares which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State except that an offer to the public in that Relevant Member State of any common shares may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- to any legal entity which is a “qualified investor” as defined in the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision 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 or the underwriter nominated by us for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of common shares shall require us 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 common shares to the public” in relation to the common 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 common shares to be offered so as to enable an investor to decide to purchase or subscribe to the common 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

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“Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated (each such person being referred to as a “relevant person”). This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Australia

This prospectus is not a disclosure document for the purposes of Australia’s Corporations Act 2001 (Cth) of Australia, or the Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a “sophisticated investor” under section 708(8)(a) or (b) of the Corporations Act;
- a “sophisticated investor” under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant’s certificate to the Company 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;
- a person associated with the Company under Section 708(12) of the Corporations Act; or
- a “professional investor” within the meaning of section 708(11)(a) or (b) of the Corporations Act.

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 prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the securities issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong, or SFO, and any rules made under that Ordinance; or in other circumstances which do not result in the document being a “prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong, or CO, or which do not constitute an offer or invitation to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession

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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 of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the underwriter 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, or for the benefit of, any resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Notice to Investors in Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In the State of Israel, this document is being distributed only to, and is directed only at, and any offer of the shares is directed only at, investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and “qualified individuals”, each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

Singapore

This prospectus has not been and will not be lodged or 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 common stock may not be circulated or distributed, nor may the common stock 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, or the SFA, (ii) to a relevant person pursuant to Section 275(1), 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 common stock is subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) 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

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- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the common stock pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

Canada

The securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts* ("NI 33-105"), the underwriter is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

Certain legal matters in connection with this offering, including the validity of the shares of our common stock offered hereby, will be passed upon for us by Latham & Watkins LLP, New York, New York. The underwriter is being represented by Gibson, Dunn & Crutcher LLP, New York, New York.

EXPERTS

The consolidated financial statements of Medpace Holdings, Inc. and subsidiaries incorporated in this prospectus supplement and the accompanying prospectus by reference from Medpace Holdings, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2017 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of common stock offered by this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to us and the shares of common stock offered by this prospectus supplement and the accompanying prospectus, you should refer to the registration statement and to the exhibits and schedules filed therewith. Statements contained in this prospectus supplement and the accompanying prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. We are also required to file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings, including our registration statement and the exhibits and schedules thereto, may be inspected without charge at the public reference room maintained by the SEC located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Copies of all or any portion of the registration statement, the prospectus supplement, the accompanying prospectus and the filings may be obtained from such offices upon payment of prescribed fees. The public may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330 or (202) 551-8090. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC.

You may also obtain a copy of any of our filings, at no cost, by writing or telephoning us at:

Medpace Holdings, Inc.
5375 Medpace Way
Cincinnati, Ohio 45227
(513) 579-9911

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” information we file with it into our registration statement of which this prospectus supplement is a part, which means that we can disclose important information to you by referring you to other documents. The information incorporated by reference is considered to be part of this prospectus supplement. We incorporate by reference into this prospectus supplement the documents listed below, except for information “furnished” under Items 2.02, 7.01 (or exhibits related to such items) on Form 8-K or other information “furnished” to the SEC which is not deemed filed and not incorporated in this prospectus supplement.

We hereby incorporate by reference the following documents:

- our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 27, 2018 (including the portions of our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 5, 2018, incorporated by reference therein);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2018 and June 30, 2018, filed with the SEC on May 1, 2018 and July 31, 2018, respectively;
- our Current Reports on Form 8-K filed with the SEC on February 26, 2018 (with respect to Item 8.01 only), May 4, 2018, May 23, 2018, June 8, 2018, June 13, 2018, August 6, 2018, August 9, 2018 and August 13, 2018; and
- the description of our common stock contained in our registration statement on Form 8-A, dated August 9, 2016, filed with the SEC on August 9, 2016 and any amendment or report filed with the SEC for the purpose of updating the description.

We will provide to each person, including any beneficial owners, to whom a prospectus supplement is delivered, upon written or oral request of any such person, a copy of the reports and documents that have been incorporated by reference into this prospectus supplement and the accompanying prospectus, at no cost. Any such request should be directed to: Medpace Holdings, Inc., 5375 Medpace Way, Cincinnati, Ohio 45227, (513) 579-9911. These documents are also available on the Investor Relations section of our website, which is located at <http://www.medpace.com>, or as described under “Where You Can Find More Information” above. The reference to our website address does not constitute incorporation by reference of the information contained on our website.

Any statement in a document incorporated or deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus shall be deemed to be modified or superseded for the purposes of this prospectus supplement to the extent that a statement contained herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement or the accompanying prospectus.

PROSPECTUS

Medpace Holdings, Inc.

\$75,000,000

**Common Stock
Preferred Stock
Debt Securities
Depositary Shares
Warrants
Units**

31,366,923 Shares

Common Stock

Offered by the Selling Securityholders

We may offer and sell up to \$75,000,000 in the aggregate of the securities identified above, and the selling securityholders may offer and sell up to 31,366,923 shares in the aggregate of common stock identified above, in each case from time to time in one or more offerings. This prospectus provides you with a general description of the securities. We will not receive any proceeds from the sale of our common stock by the selling securityholders.

Each time we or any of the selling securityholders offer and sell securities, we or such selling securityholders will provide a supplement to this prospectus that contains specific information about the offering and, if applicable, the selling securityholders, as well as the amounts, prices and terms of the securities. The supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. In addition, the selling securityholders may offer and sell shares of our common stock from time to time, together or separately. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled "About this Prospectus" and "Plan of Distribution" for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "[RISK FACTORS](#)" ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "MEDP." On October 3, 2017, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$33.11 per share.

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

The date of this prospectus is October 23, 2017.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, using a “shelf” registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings up to a total dollar amount of \$75,000,000 and the selling securityholders named herein or to be named in a supplement to this prospectus may, from time to time, sell up to 31,366,923 shares of common stock from time to time in one or more offerings as described in this prospectus. Each time that we or the selling securityholders offer and sell securities, we or the selling securityholders will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuses), together with the additional information described under the heading “Where You Can Find More Information; Incorporation by Reference.”

Neither we, nor the selling securityholders, have authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We and the selling securityholders take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the selling securityholders will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates and assumptions and these estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to “Medpace,” “we,” “our,” “us” and the “Company” in this prospectus, we mean Medpace Holdings, Inc. and its consolidated subsidiaries and predecessor entities, unless otherwise specified. When we refer to “you,” we mean the potential holders of the applicable series of securities.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. Information filed with the SEC by us can be inspected and copied at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of this information by mail from the Public Reference Room of the SEC at prescribed rates. Further information on the operation of the SEC's Public Reference Room in Washington, D.C. can be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is www.sec.gov.

Our web site address is www.medpace.com. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus.

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 in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Forms of the indenture and other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement at the SEC's Public Reference Room in Washington, D.C. or through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus or a subsequently filed document incorporated by reference to the extent that a statement contained in this prospectus modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

- Our Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on February 28, 2017.
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017 and June 30, 2017, filed with the SEC on May 2, 2017 and August 1, 2017, respectively.
- Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 5, 2017.
- Our Current Reports on Form 8-K filed with the SEC on February 28, 2017, May 1, 2017 (with respect to Item 8.01 only), May 23, 2017, June 15, 2017, June 21, 2017 and August 22, 2017.
- The description of our Common Stock contained in our registration statement on Form 8-A, dated August 9, 2016, filed with the SEC on August 9, 2016 and any amendment or report filed with the SEC for the purpose of updating the description.

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All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which refer to as the “Exchange Act” in this prospectus, prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

Medpace Holdings, Inc.
5375 Medpace Way
Cincinnati, Ohio 45227
(513) 579-9911

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

THE COMPANY

We are one of the world's leading clinical contract research organizations, or CROs, by revenue, solely focused on providing scientifically-driven outsourced clinical development services to the biotechnology, pharmaceutical and medical device industries. Our mission is to accelerate the global development of safe and effective medical therapeutics. We differentiate ourselves from our competitors by our disciplined operating model centered on providing full-service Phase I-IV clinical development services and our therapeutic expertise. We believe this combination results in timely and cost-effective delivery of clinical development services for our customers. We believe that we are a partner of choice for small- and mid-sized biopharmaceutical companies based on our ability to consistently utilize our full-service, disciplined operating model to deliver timely and high-quality results for our customers.

We filed our amended and restated certificate of incorporation with the Secretary of State of Delaware on August 16, 2016.

Our principal executive offices are located at 5375 Medpace Way, Cincinnati, Ohio 45227, and our telephone number is (513) 579-9911.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K we file after the date of this prospectus, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement and the documents that we incorporate by reference in each, contains forward looking statements. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. All statements other than statements of historical facts contained in this prospectus, any applicable prospectus supplement and the documents that we incorporate by reference in each, including statements regarding our results of operations; financial position and performance; liquidity and our ability to fund our business operations and initiatives; capital expenditure and debt service obligations; business strategies, plans and goals, including those related to marketing, acquisitions and expansion of our business; product approvals and plans; industry trends; expectations regarding consumer behaviors and trends; our culture and operating philosophy; human resource management; arrangements with and delivery of our services to the customers; conversion of backlog; dividend policy; legal proceedings; and our objectives for future operations, are forward looking statements. The words “believe,” “may,” “might,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “seek,” “plan,” “should,” “expect” and similar expressions are intended to identify forward looking statements. Forward looking statements are based largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward looking statements are subject to inherent uncertainties, risks, changes in circumstances and other important factors that are difficult to predict. Moreover, we operate in a very competitive and rapidly changing environment in which new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all important factors on our business or the extent to which any factor, or combination of such factors, may cause actual results to differ materially from those contained in any forward looking statements we may make. In light of these risks, uncertainties and assumptions, the forward looking events and circumstances discussed in this prospectus, any applicable prospectus supplement and the documents that we incorporate by reference in each, may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward looking statements. We caution you therefore against relying on these forward looking statements.

Some of the important factors that could cause actual results to differ from our expectations include regional, national or global political, economic, business, competitive, market and regulatory conditions and the other important factors included in “Item 1A Risk Factors” of our most recent Annual Report on Form 10-K. We qualify all of our forward-looking statements by these cautionary statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained in this prospectus, any applicable prospectus supplement or the documents that we incorporate by reference in each, whether as a result of any new information, future events, changed circumstances or otherwise. For a further discussion of the risks relating to our business, see “Item 1A Risk Factors” of our most recent Annual Report on Form 10-K.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement. We will not receive any of the proceeds from the sale of common stock being offered by any of the selling securityholders.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The following table sets forth the historical ratios of earnings to fixed charges and preferred stock dividends for Medpace and its consolidated subsidiaries and predecessor entities for the periods indicated.

	Successor			Predecessor
	Six Months Ended June 30, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015	
Ratio of earnings (loss) to fixed charges	8.81	2.13	*	*

* Earnings for the three month period from January 1, 2014 through March 31, 2014, the nine month period from April 1, 2014 through December 31, 2014 and the year ended December 31, 2015 were inadequate to cover fixed charges by approximately \$222,000, \$21.0 million and \$7.8 million, respectively.

For purposes of calculating the ratios in the table above, earnings consist of income (loss) before income taxes. "Fixed charges" consist of interest from indebtedness, loan cost amortization and the portion of rental expense that is representative of the interest factor.

For the periods indicated above, we have no outstanding shares of preferred stock with required dividend payments. Therefore, the ratios of earnings to combined fixed charges and preferred stock dividends are identical to the ratios presented in the tables above.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our amended and restated certificate of incorporation, which has been publicly filed with the SEC. See “Where You Can Find More Information; Incorporation by Reference.”

Authorized Capital

Our authorized capital stock consists of:

- 250,000,000 shares of common stock, \$0.01 par value; and
- 5,000,000 shares of preferred stock, \$0.01 par value.

Unless our board of directors, or the Board, determines otherwise, we will issue all shares of our capital stock in uncertificated form.

Common Stock

Voting Rights

Holders of our common stock are entitled to one vote for each share held of record on all matters to which shareholders are entitled to vote generally, including the election or removal of directors. The holders of our common stock do not have cumulative voting rights in the election of directors. Accordingly, a holder or group of holders of a majority of the shares of our common stock are able to elect all of the directors.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our Board out of legally available funds.

Liquidation

Upon our liquidation, dissolution or winding up and after payment in full of all amounts required to be paid to creditors and to the holders of preferred stock having liquidation preferences, if any, the holders of our common stock will be entitled to receive pro rata our remaining assets available for distribution.

Rights and Preferences

Holders of our common stock do not have preemptive, subscription, redemption or conversion rights. The common stock is not subject to further calls or assessment by us. There are no redemption or sinking fund provisions applicable to the common stock. All shares of our common stock that are outstanding are fully paid and non-assessable. The rights, powers, preferences and privileges of holders of our common stock are subject to and may be adversely affected by the rights of the holders of any shares of our preferred stock we may authorize and issue in the future.

Preferred Stock

Our amended and restated certificate of incorporation provides that our Board has the authority, without action by the shareholders, to designate and issue up to 5,000,000 shares of preferred stock in one or more classes or series and to fix the powers, rights, preferences, and privileges of each class or series of preferred stock,

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including dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any class or series, which may be greater than the rights of the holders of the common stock. There are no shares of preferred stock outstanding.

The purpose of authorizing our Board to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a shareholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. Additionally, the issuance of preferred stock may adversely affect the holders of our common stock by restricting dividends on our common stock, diluting the voting power of our common stock or subordinating the liquidation rights of our common stock. As a result of these or other factors, the issuance of preferred stock could have an adverse impact on the market price of our common stock.

Exclusive Venue

Our amended and restated certificate of incorporation, requires, to the fullest extent permitted by law, that (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our shareholders, (iii) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware, or the DGCL, or our amended and restated certificate of incorporation or our amended and restated bylaws or (iv) any action asserting a claim against us governed by the internal affairs doctrine will have to be brought only in the Court of Chancery in the State of Delaware. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and consented to the forum provisions in our amended and restated certificate of incorporation. However, the enforceability of similar forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be unenforceable.

Anti-Takeover Effects of Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws and Certain Provisions of Delaware Law

Our amended and restated certificate of incorporation, amended and restated bylaws and the DGCL, which are summarized in the following paragraphs, contain provisions that are intended to enhance the likelihood of continuity and stability in the composition of our Board. These provisions are intended to avoid costly takeover battles, reduce our vulnerability to a hostile change of control and enhance the ability of our Board to maximize shareholder value in connection with any unsolicited offer to acquire us. However, these provisions may have an anti-takeover effect and may delay, deter or prevent a merger or acquisition of our company by means of a tender offer, a proxy contest or other takeover attempt that a shareholder might consider in its best interest, including those attempts that might result in a premium over the prevailing market price for the shares of common stock held by shareholders.

Authorized but Unissued Capital Stock

The authorized but unissued shares of common stock and preferred stock are available for future issuance without shareholder approval, subject to any limitations imposed by the listing standards of the NASDAQ Global Select Market. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

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Classified Board

Our amended and restated certificate of incorporation provides that our Board is divided into three classes of directors, with the classes to be as nearly equal in number as possible, and with the directors serving three-year terms. As a result, approximately one-third of our Board is elected each year. In addition, our amended and restated certificate of incorporation provides that directors may only be removed from our Board for cause by the affirmative vote of at least a majority of our common stock. The classification of directors has the effect of making it more difficult for shareholders to change the composition of our Board. Our amended and restated certificate of incorporation and amended and restated bylaws provide that, subject to any rights of holders of preferred stock to elect additional directors under specified circumstances, the number of directors are fixed from time to time exclusively pursuant to a resolution adopted by the Board.

Business Combinations

We are subject to Section 203 of the DGCL. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a “business combination” with any “interested stockholder” for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger or consolidation involving us and the “interested stockholder” and the sale of more than 10% of our assets. In general, an “interested stockholder” is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

No Cumulative Voting

Under Delaware law, the right to vote cumulatively does not exist unless the certificate of incorporation specifically authorizes cumulative voting. Our amended and restated certificate of incorporation does not authorize cumulative voting. Accordingly, a holder or group of holders of a majority of the shares of our common stock are able to elect all of the directors.

Requirements for Advance Notification of Shareholder Meetings, Director Nominations and Shareholder Proposals

Our amended and restated certificate of incorporation provides that shareholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our Board or by a qualified shareholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the shareholder’s intention to bring such business before the meeting. Our amended and restated certificate of incorporation provides that, subject to applicable law, special meetings of the shareholders may be called only by a resolution adopted by the affirmative vote of the majority of the directors then in office. Our amended and restated bylaws prohibit the conduct of any business at a special meeting other than as specified in the notice for such meeting. In addition, any shareholder who wishes to bring business before an annual meeting or nominate directors must comply with the advance notice and duration of ownership requirements set forth in our amended and restated bylaws and provide us with certain information. These provisions may have the effect of deferring, delaying or discouraging hostile takeovers or changes in control of us or our management.

Our amended and restated bylaws establish advance notice procedures with respect to shareholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of the Board or a committee of the Board. In order for any matter to be “properly brought” before a meeting, a shareholder will have to comply with advance notice requirements and provide us with certain information. Our amended and restated bylaws allow the chairman of the meeting at a meeting of the shareholders to adopt rules and regulations for the conduct of meetings which may have the effect of precluding the conduct of certain

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business at a meeting if the rules and regulations are not followed. These provisions may also defer, delay or discourage a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to influence or obtain control of our company.

Shareholder Action by Written Consent

Pursuant to Section 228 of the DGCL, any action required to be taken at any annual or special meeting of the shareholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of our stock entitled to vote thereon were present and voted, unless our amended and restated certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation provides that shareholder action by written consent is permitted only if the action to be effected by such written consent and the taking of such action by such written consent have been previously approved by the board of directors.

Amendment of Amended and Restated Certificate of Incorporation or Amended and Restated Bylaws

The DGCL provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our amended and restated bylaws may be amended or repealed by a majority vote of our Board or by the affirmative vote of the holders of at least 66-2/3% of the votes which all our shareholders would be entitled to cast in any annual election of directors. In addition, the affirmative vote of the holders of at least 66-2/3% of the votes which all our shareholders would be entitled to cast in any election of directors will be required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our certificate described above.

The foregoing provisions of our amended and restated certificate of incorporation and amended and restated bylaws could discourage potential acquisition proposals and could delay or prevent a change in control. These provisions are intended to enhance the likelihood of continuity and stability in the composition of our Board and in the policies formulated by our Board and to discourage certain types of transactions that may involve an actual or threatened change of control. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for shares of our common stock and, as a consequence, they also may inhibit fluctuations in the market price of our common stock that could result from actual or rumored takeover attempts. Such provisions also may have the effect of preventing changes in our management or delaying or preventing a transaction that might benefit you or other minority shareholders.

Dissenters' Rights of Appraisal and Payment

Under the DGCL, with certain exceptions, our shareholders have appraisal rights in connection with a merger or consolidation of us. Pursuant to the DGCL, shareholders who properly request and perfect appraisal rights in connection with such merger or consolidation will have the right to receive payment of the fair value of their shares as determined by the Delaware Court of Chancery.

Shareholders' Derivative Actions

Under the DGCL, any of our shareholders may bring an action in our name to procure a judgment in our favor, also known as a derivative action, provided that the shareholder bringing the action is a holder of shares of our common stock at the time of the transaction to which the action relates or such shareholder's stock thereafter devolved by operation of law and such suit is brought in the Court of Chancery in the State of Delaware. See "—Exclusive Venue" above.

Conflicts of Interest

Delaware law permits corporations to adopt provisions renouncing any interest or expectancy in certain opportunities that are presented to the corporation or its officers, directors or shareholders. Our amended and restated certificate of incorporation, to the maximum extent permitted from time to time by Delaware law, renounces any interest or expectancy that we have in, or right to be offered an opportunity to participate in, specified business opportunities that are from time to time presented to our officers, directors or shareholders or their respective affiliates, other than those officers, directors, shareholders or affiliates who are our or our subsidiaries' employees. Our amended and restated certificate of incorporation provides that, to the fullest extent permitted by law, each of investment funds managed by Cinven Capital Management (V) General Partner Limited, or Cinven, or any of its affiliates or any director who is not employed by us (including any non-employee director who serves as one of our officers in both his director and officer capacities) or his or her affiliates has no duty to refrain from (i) engaging in a corporate opportunity in the same or similar lines of business in which we or our affiliates now engage or propose to engage or (ii) otherwise competing with us or our affiliates. In addition, to the fullest extent permitted by law, in the event that Cinven or any non-employee director acquires knowledge of a potential transaction or other business opportunity which may be a corporate opportunity for itself or himself or its or his affiliates or for us or our affiliates, such person will have no duty to communicate or offer such transaction or business opportunity to us or any of our affiliates and they may take any such opportunity for themselves or offer it to another person or entity. Our amended and restated certificate of incorporation does not renounce our interest in any business opportunity that is expressly offered to a non-employee director solely in his or her capacity as a director or officer of the Company. To the fullest extent permitted by law, no business opportunity will be deemed to be a potential corporate opportunity for us unless we would be permitted to undertake the opportunity under our amended and restated certificate of incorporation, we have sufficient financial resources to undertake the opportunity and the opportunity would be in line with our business.

Limitations on Liability and Indemnification of Officers and Directors

Our amended and restated certificate of incorporation and amended and restated bylaws provide indemnification for our directors and officers to the fullest extent permitted by the DGCL. We have entered into indemnification agreements with each of our directors that may, in some cases, be broader than the specific indemnification provisions contained under Delaware law. In addition, as permitted by Delaware law, our amended and restated certificate of incorporation includes provisions that eliminate the personal liability of our directors for monetary damages resulting from breaches of certain fiduciary duties as a director. The effect of this provision is to restrict our rights and the rights of our shareholders in derivative suits to recover monetary damages against a director for breach of fiduciary duties as a director, except that a director will be personally liable for:

- any breach of his duty of loyalty to us or our shareholders;
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- any transaction from which the director derived an improper personal benefit; or
- improper distributions to shareholders.

These provisions may be held not to be enforceable for violations of the federal securities laws of the United States.

Voting Agreement

In connection with our initial public offering, the Cinven Stockholders (as defined below) and Dr. August J. Troendle, our Chief Executive Officer and founder, entered into a voting agreement, or the Voting Agreement.

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Pursuant to the terms of the Voting Agreement, for so long as the Cinven Stockholders and Dr. Troendle collectively hold at least 40% of our outstanding voting shares, or until the Voting Agreement is otherwise terminated in accordance with its terms, the Cinven Stockholders have agreed to vote its shares of our common stock in favor of the election of Dr. Troendle to our Board (so long as Dr. Troendle remains our Chief Executive Officer) upon his nomination by our Board and Dr. Troendle has agreed to vote his shares of our common stock in favor of the election of the directors affiliated with Cinven upon their nomination by our Board; provided, that in the event that the Cinven Stockholders hold less than (a) 40% but greater than or equal to 25% of our voting shares then outstanding, Dr. Troendle shall be required to vote for two directors affiliated with Cinven, after giving effect to the Cinven directors then sitting on the Board, (b) 25% but greater than or equal to 10% of our voting shares then outstanding, Dr. Troendle shall be required to vote for one director affiliated with Cinven, after giving effect to the Cinven directors then sitting on the Board and (c) 10% of our voting shares then outstanding, Dr. Troendle shall not be required to vote for any directors affiliated with Cinven.

On June 16, 2017, Medpace Limited Partnership (“Medpace Limited”) entered into a Joinder Agreement to the Voting Agreement, pursuant to which Medpace Limited agreed to become a party to the Voting Agreement, on the same terms and conditions as applicable to the Cinven Stockholders.

As used herein, “Cinven Stockholders” means Fifth Cinven Fund (No. 1) Limited Partnership, Fifth Cinven Fund (No. 2) Limited Partnership, Fifth Cinven Fund (No. 3) Limited Partnership, Fifth Cinven Fund (No. 4) Limited Partnership, Fifth Cinven Fund (No. 5) Limited Partnership, Fifth Cinven Fund (No. 6) Limited Partnership (the foregoing, collectively, the “Limited Partnerships”), Fifth Cinven Fund Co-Investment Partnership (“CIP”) and Fifth Cinven Fund FCP-SIF (“FCP”).

Registration Rights Agreement

In connection with our initial public offering, we entered into a registration rights agreement, or the Registration Rights Agreement, with the Cinven Stockholders and Dr. August J. Troendle, our Chief Executive Officer and founder, pursuant to which such holders have specified rights to require us to register all or any portion of their shares under the Securities Act.

On June 16, 2017, Medpace Limited entered into a Joinder Agreement to the Registration Rights Agreement, pursuant to which Medpace Limited agreed to become a party to the Registration Rights Agreement, on the same terms and conditions as applicable to the Cinven Stockholders.

Transfer Agent and Registrar

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

Listing

Our common stock is listed on the Nasdaq Global Select Market under the symbol “MEDP.”

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement or free writing prospectus, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a supplement to this prospectus. We will also indicate in the supplement to what extent the general terms and provisions described in this prospectus apply to a particular series of debt securities.

Subject to limitations under our existing debt facilities, we may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a supplement to this prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and Wells Fargo Bank, National Association, as trustee. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement and you should read the indenture for provisions that may be important to you. In the summary below, we have included references to the section numbers of the indenture so that you can easily locate these provisions. Capitalized terms used in the summary and not defined herein have the meanings specified in the indenture.

As used in this section only, “Medpace,” “we,” “our” or “us” refer to Medpace Holdings, Inc., excluding our subsidiaries, unless expressly stated or the context otherwise requires.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our Board and set forth or determined in the manner provided in a resolution of our Board, in an officer’s certificate or by a supplemental indenture. (Section 2.2) The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series (including any pricing supplement or term sheet).

We can issue an unlimited amount of debt securities under the indenture that may be in one or more series with the same or various maturities, at par, at a premium, or at a discount. (Section 2.1) We will set forth in a prospectus supplement (including any pricing supplement or term sheet) relating to any series of debt securities being offered, the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title and ranking of the debt securities (including the terms of any subordination provisions);
- the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;
- any limit on the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the securities of the series is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;

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- the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;
- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of debt securities and the period or periods within which, the price or prices at which and in the terms and conditions upon which securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- the currency of denomination of the debt securities, which may be United States Dollars or any foreign currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
- the designation of the currency, currencies or currency units in which payment of principal of, premium and interest on the debt securities will be made;
- if payments of principal of, premium or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
- the manner in which the amounts of payment of principal of, premium, if any, or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;
- any provisions relating to any security provided for the debt securities;
- any addition to, deletion of or change in the Events of Default described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to, deletion of or change in the covenants described in this prospectus or in the indenture with respect to the debt securities;
- any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;
- the provisions, if any, relating to conversion or exchange of any debt securities of such series, including if applicable, the conversion or exchange price and period, provisions as to whether conversion or exchange will be mandatory, the events requiring an adjustment of the conversion or exchange price and provisions affecting conversion or exchange;
- any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and
- whether any of our direct or indirect subsidiaries will guarantee the debt securities of that series, including the terms of subordination, if any, of such guarantees. (Section 2.2)

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We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium and interest on any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, or the Depository, or a nominee of the Depository (we will refer to any debt security represented by a global debt security as a “book-entry debt security”), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a “certificated debt security”) as set forth in the applicable prospectus supplement. Except as set forth under the heading “Global Debt Securities and Book-Entry System” below, book-entry debt securities will not be issuable in certificated form.

Certificated Debt Securities. You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. (Section 2.4) No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange. (Section 2.7)

You may effect the transfer of certificated debt securities and the right to receive the principal of, premium and interest on certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Global Debt Securities and Book-Entry System. Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the Depository, and registered in the name of the Depository or a nominee of the Depository. Please see “Global Securities.”

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities. (Article IV)

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a “successor person”) unless:

- we are the surviving corporation or the successor person (if other than Medpace) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes our obligations on the debt securities and under the indenture; and

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- immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties to us. (Section 5.1)

Events of Default

“Event of Default” means with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee or Medpace and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of Medpace;
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement. (Section 6.1)

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. (Section 6.1) The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiaries outstanding from time to time.

We will provide the trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action we are taking or propose to take in respect thereof. (Section 6.1)

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. (Section 6.2) We refer you to the prospectus

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supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee may refuse to perform any duty or exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in performing such duty or exercising such right or power. (Section 7.1(e)) Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series. (Section 6.12)

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days. (Section 6.7)

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment. (Section 6.8)

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. (Section 4.3) If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall mail to each Securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a responsible officer of the trustee has knowledge of such Default or Event of Default. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities. (Section 7.5)

Modification and Waiver

We and the trustee may modify, amend or supplement the indenture or the debt securities of any series without the consent of any holder of any debt security:

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture described above under the heading "Consolidation, Merger and Sale of Assets";
- to provide for uncertificated securities in addition to or in place of certificated securities;
- to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;

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- to add covenants or events of default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depository;
- to make any change that does not adversely affect the rights of any holder of debt securities;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee; or
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act. (Section 9.1)

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of or premium on or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of, premium or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, premium and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security. (Section 9.3)

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. (Section 9.2) The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration. (Section 6.13)

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series (subject to certain exceptions). We will be so discharged upon the irrevocable deposit with the trustee, in trust, of money and/or U.S. government obligations (or other securities as agreed in writing from time to time with the Trustee), that, through the payment of interest and principal in accordance with their terms, will provide money or U.S. government obligations in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred. (Section 8.3)

Defeasance of Certain Covenants. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

- we may omit to comply with the covenant described under the heading “Consolidation, Merger and Sale of Assets” and certain other covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement; and
- any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series (“covenant defeasance”).

The conditions include:

- depositing with the trustee money and/or U.S. government obligations (or other securities as agreed in writing from time to time with the Trustee), that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities; and
- delivering to the trustee an opinion of counsel to the effect that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred. (Section 8.4)

No Personal Liability of Directors, Officers, Employees or Stockholders

None of our past, present or future directors, officers, employees or stockholders, as such, will have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, or in

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respect or by reason of, such obligations or their creation. By accepting a debt security, each holder waives and releases all such liability. This waiver and release is part of the consideration for the issue of the debt securities. However, this waiver and release may not be effective to waive liabilities under U.S. federal securities laws, and it is the view of the SEC that such a waiver is against public policy.

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the securities, will be governed by the laws of the State of New York.

The indenture will provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to the indenture, the debt securities or the transactions contemplated thereby.

The indenture will provide that any legal suit, action or proceeding arising out of or based upon the indenture or the transactions contemplated thereby may be instituted in the federal courts of the United States of America located in the City of New York or the courts of the State of New York in each case located in the City of New York, and we, the trustee and the holder of the debt securities (by their acceptance of the debt securities) irrevocably submit to the non-exclusive jurisdiction of such courts in any such suit, action or proceeding. The indenture will further provide that service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party's address set forth in the indenture will be effective service of process for any suit, action or other proceeding brought in any such court. The indenture will further provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the courts specified above and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum. (Section 10.10)

DESCRIPTION OF DEPOSITARY SHARES

We may, at our option, elect to offer depositary shares rather than full shares of preferred stock. Each depositary share will represent ownership of and entitlement to all rights and preferences of a fraction of a share of preferred stock of a specified series (including dividend, voting, redemption and liquidation rights). The applicable fraction will be specified in a prospectus supplement. The shares of preferred stock represented by the depositary shares will be deposited with a depositary named in the applicable prospectus supplement, under a deposit agreement among us, the depositary and the holders of the certificates evidencing depositary shares, or depositary receipts. Depositary receipts will be delivered to those persons purchasing depositary shares in the offering. The depositary will be the transfer agent, registrar and dividend disbursing agent for the depositary shares. Holders of depositary receipts agree to be bound by the deposit agreement, which requires holders to take certain actions such as filing proof of residence and paying certain charges.

The summary of the terms of the depositary shares contained in this prospectus does not purport to be complete and is subject to, and qualified in its entirety by, the provisions of the deposit agreement and our amended and restated certificate of incorporation and the certificate of designation that are, or will be, filed with the SEC for the applicable series of preferred stock.

Dividends

The depositary will distribute all cash dividends or other cash distributions received in respect of the series of preferred stock represented by the depositary shares to the record holders of depositary receipts in proportion to the number of depositary shares owned by such holders on the relevant record date, which will be the same date as the record date fixed by us for the applicable series of preferred stock. The depositary, however, will distribute only such amount as can be distributed without attributing to any depositary share a fraction of one cent, and any balance not so distributed will be added to and treated as part of the next sum received by the depositary for distribution to record holders of depositary receipts then outstanding.

In the event of a distribution other than in cash, the depositary will distribute property received by it to the record holders of depositary receipts entitled thereto, in proportion, as nearly as may be practicable, to the number of depositary shares owned by such holders on the relevant record date, unless the depositary determines (after consultation with us) that it is not feasible to make such distribution, in which case the depositary may (with our approval) adopt any other method for such distribution as it deems equitable and appropriate, including the sale of such property (at such place or places and upon such terms as it may deem equitable and appropriate) and distribution of the net proceeds from such sale to such holders.

Liquidation Preference

In the event of the liquidation, dissolution or winding up of the affairs of Medpace, whether voluntary or involuntary, the holders of each depositary share will be entitled to the fraction of the liquidation preference accorded each share of the applicable series of preferred stock as set forth in the applicable prospectus supplement.

Redemption

If the series of preferred stock represented by the applicable series of depositary shares is redeemable, such depositary shares will be redeemed from the proceeds received by the depositary resulting from the redemption, in whole or in part, of the preferred stock held by the depositary. Whenever we redeem any preferred stock held by the depositary, the depositary will redeem as of the same redemption date the number of depositary shares representing the shares of preferred stock so redeemed. The depositary will mail the notice of redemption promptly upon receipt of such notice from us and not less than 30 nor more than 60 days prior to the date fixed for redemption of the preferred stock and the depositary shares to the record holders of the depositary receipts.

Voting

Promptly upon receipt of notice of any meeting at which the holders of the series of preferred stock represented by the applicable series of depositary shares are entitled to vote, the depositary will mail the information contained in such notice of meeting to the record holders of the depositary receipts as of the record date for such meeting. Each such record holder of depositary receipts will be entitled to instruct the depositary as to the exercise of the voting rights pertaining to the number of shares of preferred stock represented by such record holder's depositary shares. The depositary will endeavor, insofar as practicable, to vote such preferred stock represented by such depositary shares in accordance with such instructions, and we will agree to take all action which may be deemed necessary by the depositary in order to enable the depositary to do so. The depositary will abstain from voting any of the preferred stock to the extent that it does not receive specific instructions from the holders of depositary receipts.

Withdrawal of Preferred Stock

Upon surrender of depositary receipts at the principal office of the depositary and payment of any unpaid amount due the depositary, and subject to the terms of the deposit agreement, the owner of the depositary shares evidenced thereby is entitled to delivery of the number of whole shares of preferred stock and all money and other property, if any, represented by such depositary shares. Partial shares of preferred stock will not be issued. If the depositary receipts delivered by the holder evidence a number of depositary shares in excess of the number of depositary shares representing the number of whole shares of preferred stock to be withdrawn, the depositary will deliver to such holder at the same time a new depositary receipt evidencing such excess number of depositary shares. Holders of preferred stock thus withdrawn will not thereafter be entitled to deposit such shares under the deposit agreement or to receive depositary receipts evidencing depositary shares therefor.

Amendment and Termination of Deposit Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may at any time and from time to time be amended by agreement between us and the depositary. However, any amendment which materially and adversely alters the rights of the holders (other than any change in fees) of depositary shares will not be effective unless such amendment has been approved by at least a majority of the depositary shares then outstanding. No such amendment may impair the right, subject to the terms of the deposit agreement, of any owner of any depositary shares to surrender the depositary receipt evidencing such depositary shares with instructions to the depositary to deliver to the holder of the preferred stock and all money and other property, if any, represented thereby, except in order to comply with mandatory provisions of applicable law.

The deposit agreement will be permitted to be terminated by us upon not less than 30 days prior written notice to the applicable depositary if a majority of each series of preferred stock affected by such termination consents to such termination, whereupon such depositary will be required to deliver or make available to each holder of depositary receipts, upon surrender of the depositary receipts held by such holder, such number of whole or fractional shares of preferred stock as are represented by the depositary shares evidenced by such depositary receipts together with any other property held by such depositary with respect to such depositary receipts. In addition, the deposit agreement will automatically terminate if (a) all outstanding depositary shares thereunder shall have been redeemed, (b) there shall have been a final distribution in respect of the related preferred stock in connection with any liquidation, dissolution or winding-up of Medpace and such distribution shall have been distributed to the holders of depositary receipts evidencing the depositary shares representing such preferred stock or (c) each share of the related preferred stock shall have been converted into stock of Medpace not so represented by depositary shares.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will pay charges of the depositary in connection with the initial deposit of the

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preferred stock and initial issuance of the depositary shares, and redemption of the preferred stock and all withdrawals of preferred stock by owners of depositary shares. Holders of depositary receipts will pay transfer, income and other taxes and governmental charges and certain other charges as are provided in the deposit agreement to be for their accounts. In certain circumstances, the depositary may refuse to transfer depositary shares, may withhold dividends and distributions and sell the depositary shares evidenced by such depositary receipt if such charges are not paid. The applicable prospectus supplement will include information with respect to fees and charges, if any, in connection with the deposit or substitution of the underlying securities, the receipt and distribution of dividends, the sale or exercise of rights, the withdrawal of the underlying security, and the transferring, splitting or grouping of receipts. The applicable prospectus supplement will also include information with respect to the right to collect the fees and charges, if any, against dividends received and deposited securities.

Miscellaneous

The depositary will forward to the holders of depositary receipts all notices, reports and proxy soliciting material from us which are delivered to the depositary and which we are required to furnish to the holders of the preferred stock. In addition, the depositary will make available for inspection by holders of depositary receipts at the principal office of the depositary, and at such other places as it may from time to time deem advisable, any notices, reports and proxy soliciting material received from us which are received by the depositary as the holder of preferred stock. The applicable prospectus supplement will include information about the rights, if any, of holders of receipts to inspect the transfer books of the depositary and the list of holders of receipts.

Neither the depositary nor Medpace assumes any obligation or will be subject to any liability under the deposit agreement to holders of depositary receipts other than for its negligence or willful misconduct. Neither the depositary nor Medpace will be liable if it is prevented or delayed by law or any circumstance beyond its control in performing its obligations under the deposit agreement. The obligations of Medpace and the depositary under the deposit agreement will be limited to performance in good faith of their duties thereunder, and they will not be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or preferred stock unless satisfactory indemnity is furnished. Medpace and the depositary may rely on written advice of counsel or accountants, on information provided by holders of the depositary receipts or other persons believed in good faith to be competent to give such information and on documents believed to be genuine and to have been signed or presented by the proper party or parties.

In the event the depositary shall receive conflicting claims, requests or instructions from any holders of depositary receipts, on the one hand, and us, on the other hand, the depositary shall be entitled to act on such claims, requests or instructions received from us.

Resignation and Removal of Depositary

The depositary may resign at any time by delivering to us notice of its election to do so, and we may at any time remove the depositary, any such resignation or removal to take effect upon the appointment of a successor depositary and its acceptance of such appointment. Such successor depositary must be appointed within 60 days after delivery of the notice for resignation or removal and must be a bank or trust company having its principal office in the United States and having a combined capital and surplus of at least \$150,000,000.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or preferred stock or of debt securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. The following summary of material provisions of the warrants and warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the date, if any, on and after which the warrants and the related debt securities, preferred stock or common stock will be separately transferable;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- United States Federal income tax consequences applicable to the warrants; and
- any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders of Medpace.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

A holder of warrant certificates may exchange them for new warrant certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any

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other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, the holders of the warrants will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or payments upon any liquidation, dissolution or winding up on the common stock or preferred stock, if any.

DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in a prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depository, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred, except as a whole by the depository to its nominee or by the nominee to the depository, or by the depository or its nominee to a successor depository or to a nominee of the successor depository.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a “banking organization” within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a “clearing corporation” within the meaning of the New York Uniform Commercial Code; and
- a “clearing agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants’ accounts, thereby eliminating the need for physical movement of securities certificates. “Direct participants” in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC’s records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants’ records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC’s partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC’s records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

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So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depository and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depository or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depository with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depository is not obtained, securities certificates are required to be printed and delivered.

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As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

- DTC notifies us that it is unwilling or unable to continue as a depository for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depository is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;
- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- an Event of Default has occurred and is continuing with respect to such series of securities,

we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities. Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depository directs. It is expected that these directions will be based upon directions received by the depository from its participants with respect to ownership of beneficial interests in the global securities.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as "Clearstream," or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as "Euroclear," either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositories, which in turn will hold such interests in customers' securities accounts in such depositories' names on DTC's books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositories; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depository to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving

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payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositaries.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, Clearstream and Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

SELLING SECURITYHOLDERS

This prospectus also relates to the possible resale by certain of our stockholders, who we refer to in this prospectus as the “selling securityholders,” of up to 31,366,923 shares of our common stock that were issued and outstanding, or that are issuable upon exercise of options to acquire common stock that were issued and outstanding, prior to the original date of filing of the registration statement of which this prospectus forms a part. The selling securityholders originally acquired the shares of our common stock included in this prospectus (1) in connection with pre-initial public offering financings by our Company, including in April 2014, when the Cinven Stockholders acquired 100% of the outstanding shares of Medpace IntermediateCo, Inc., or Medpace IntermediateCo, for an aggregate purchase price of \$921.3 million and in connection with the acquisition, certain employees of the Company, through Medpace Investors, LLC agreed to contribute shares held in Medpace IntermediateCo in exchange for a percentage stake in Medpace Holdings, Inc., (2) pursuant to previously issued awards under a compensatory plan or arrangement with us or (3) with respect to certain of the shares of common stock held by Dr. August J. Troendle, our Chief Executive Officer and founder, in connection with our initial public offering at the initial public offering price per share.

The table below sets forth information regarding the beneficial ownership of our common stock by the selling securityholders. The information regarding the selling securityholders’ beneficial ownership after the sales made pursuant to this prospectus assumes that all of the common stock subject to sale pursuant to this prospectus will have been sold and that the selling securityholders do not acquire any additional shares. Information in the table below, with respect to beneficial ownership, has been furnished by the selling securityholders.

Information concerning the selling securityholders may change from time to time and any changed information will be set forth in supplements to this prospectus, if and when necessary. The selling securityholders may offer all, some or none of our common stock. We cannot advise you as to whether the selling securityholders will in fact sell any or all of such shares of common stock. In addition, the selling securityholders listed in the table below may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, shares of our common stock in transactions exempt from the registration requirements of the Securities Act, after the date on which they provided the information set forth in the table below.

To our knowledge, each person named in the table has sole voting and investment power with respect to all of the securities shown as beneficially owned by such person, except as otherwise set forth in the notes to the table. The number of securities shown represents the number of securities the person “beneficially owns,” as determined by the rules of the SEC. The SEC has defined “beneficial” ownership of a security to mean the possession, directly or indirectly, of voting power and/or investment power. A security holder is also deemed to be, as of any date, the beneficial owner of all securities that such security holder has the right to acquire within 60 days after that date through (1) the exercise of any option, warrant or right, (2) the conversion of a security, (3) the power to revoke a trust, discretionary account or similar arrangement, or (4) the automatic termination of a trust, discretionary account or similar arrangement.

The percentages in the table below reflect beneficial ownership immediately prior to the date of this prospectus and immediately after the resale of all shares subject to resale pursuant to this prospectus as

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determined in accordance with Rule 13d-3 under the Exchange Act and are based on 37,581,022 shares of our common stock outstanding as of the date of this prospectus.

Selling Securityholders	Amount and Nature of Beneficial Ownership				
	Immediately Prior to this Prospectus		Number of Shares Subject to Resale Pursuant to this Prospectus	Immediately After Resale of All Shares Subject to Resale Pursuant to this Prospectus*	
	Shares Owned	Percentage		Shares Owned	Percentage
Investment funds affiliated with Cinven Capital Management (V) General Partners Limited (1)	20,999,997	55.9%	20,999,997	—	— %
Medpace Investors, LLC(2)	9,145,510	24.3%	9,145,510	—	— %
Dr. August J. Troendle(3)	10,366,926	27.6%	10,366,926	—	— %

* Assumes that the selling securityholders will sell all of their common stock subject to resale pursuant to this prospectus. There is no assurance that the selling securityholders will resell all or any of their common stock. After the completion of this offering none of the selling securityholders will hold one percent or more of our common stock assuming that all of the selling securityholders resell all of their common shares subject to resale pursuant to this prospectus.

- (1) Medpace Limited is the record holder of the shares reported herein and has pledged such shares as collateral to secure its obligations under a margin loan agreement entered into on June 16, 2017. Cinven Capital Management (V) General Partner Limited (“Cinven MGP”) is the Managing General Partner of Cinven Capital Management (V) Limited Partnership Incorporated (“GPLP”), which is the Managing General Partner of a majority of the stockholders of Medpace GP Limited (“Medpace GP”), which is the general partner of Medpace Limited. The board of directors of Medpace GP has voting and investment discretion with respect to the shares held of record by Medpace Limited. Cinven MGP, as Managing General Partner of the Managing General Partner of a majority of the stockholders of Medpace GP, indirectly controls Medpace GP. Decisions of Cinven MGP are taken by its board of directors, which is comprised of Robin Hall, Brian Linden, Hayley Tanguy, John Boothman, Rupert Dorey, William Scott and Matthew Chick as Alternate Director. Each such director disclaims beneficial ownership of the shares reported herein.

The principal business address of each of Cinven MGP, GPLP, Medpace GP and Medpace Limited is East Wing, Trafalgar Court, Les Banques, St. Peter Port, Guernsey, GY1 3PP.

- (2) Dr. August J. Troendle, as the sole manager of Medpace Investors, LLC, or MPI, has sole voting and investment power with respect to these shares. The principal business address for MPI is c/o Medpace Holdings, Inc. at 5375 Medpace Way, Cincinnati, Ohio 45227.
- (3) Consists of 1,221,416 shares of common stock directly held by the August J. Troendle Revocable Trust and 9,145,510 shares of common stock directly held by MPI. Dr. Troendle is the sole trustee, sole beneficiary and settlor of the August J. Troendle Revocable Trust and has sole voting and investment power over the shares held by such trust. Dr. Troendle, as the sole manager of MPI, has sole voting and dispositive power with respect to the shares held by MPI. The principal business address for Dr. August J. Troendle is c/o Medpace Holdings, Inc. at 5375 Medpace Way, Cincinnati, Ohio 45227.

PLAN OF DISTRIBUTION

We or the selling securityholders may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods or through underwriters or dealers, through agents and/or directly to one or more purchasers. The securities may be distributed from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Each time that we or any of the selling securityholders sell securities covered by this prospectus, we or the selling securityholders will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us or the selling securityholders, if applicable.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, or the selling securityholders, or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock will be listed on the Nasdaq Global Select Market, but any other securities may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons

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would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

We may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc., or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate proceeds of the offering.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

LEGAL MATTERS

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of Medpace Holdings, Inc. Additional legal matters may be passed upon for us, the selling securityholders or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Medpace Holdings, Inc. and subsidiaries incorporated in this Prospectus by reference from Medpace Holdings, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

5,224,997 Shares

Medpace Holdings, Inc.

Common Stock

PROSPECTUS SUPPLEMENT

Morgan Stanley

, 2018
