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The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission and is effective. This preliminary prospectus supplement is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to completion, dated May 26, 2020

Preliminary prospectus supplement (To prospectus dated May 21, 2020)

\$60,000,000



TransMedics Group, Inc.

Common stock

We are selling shares of our common stock with an aggregate offering price of \$60,000,000. Our common stock is listed on the Nasdaq Global Market under the symbol "TMDX". On May 22, 2020, the last reported sale price of our common stock as reported on the Nasdaq Global Market was \$16.00 per share.

We are an "emerging growth company" as defined under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus supplement and future filings.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page S-7.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

PRICE \$ A SHARE

	Per share	Total
Public offering price	\$	\$
Underwriting discounts and commissions(1)	\$	\$
Proceeds, before expenses, to us	\$	\$

⁽¹⁾ We have agreed to reimburse the underwriters for certain FINRA-related expenses. See "Underwriting" for additional information regarding the underwriters' compensation.

We have granted the underwriters an option to purchase up to an additional shares of our common stock from us, at the public offering price, less the underwriting discounts and commissions, for a period of 30 days after the date of this prospectus supplement. The underwriters expect to deliver the shares against payment to the purchasers on or about , 2020.

Joint book-running managers

J.P. Morgan

Morgan Stanley

Lead manager

Canaccord Genuity

The date of this prospectus supplement is

, 2020.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under "Where You Can Find Additional Information." These documents contain information you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference therein filed before the date of this prospectus supplement, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference therein.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses we may provide to you in connection with this offering. We have not, and the underwriters have not, authorized any other person to provide any information other than that contained or incorporated by reference in this prospectus supplement or in any free writing prospectus prepared by or on behalf of us. Neither we nor the underwriters take any responsibility for, and can provide no assurance as to the reliability of, any information that others may give you. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation. Neither the delivery of this prospectus supplement and the accompanying prospectus, nor any sale made hereunder, shall under any circumstances create any implication that there has been no change in our affairs since the date of this prospectus supplement, or that the information contained or incorporated by reference in this prospectus supplement or the accompanying prospectus is correct as of any time after the date of that information. Our business, financial condition, results of operations, cash flows or prospects may have changed since tho

Unless the context otherwise requires, the terms "TransMedics," the "Company," "we," "us" and "our" relate, prior to the Corporate Reorganization, to TransMedics, Inc., together with its consolidated subsidiaries, and, following the Corporate Reorganization, to TransMedics Group, Inc. together with its consolidated subsidiaries. See "Prospectus Supplement Summary—Our Corporate Information."

Industry and Market Data

The market data and certain other statistical information used throughout this prospectus supplement and the accompanying prospectus are based on independent industry publications, government publications and other published sources. Some data, such as our estimates of the potential pool of donors and our potential addressable commercial opportunity, are also based on our good faith estimates. Although we believe these third-party sources are reliable as of their respective dates, neither we nor the underwriters have independently verified the accuracy or completeness of this information. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section entitled "Risk Factors." These and other factors could cause results to differ materially from those expressed in these publications.

Trademarks and Tradenames

This prospectus supplement and the accompanying prospectus contain references to our trademarks and to trademarks belonging to other entities. "TransMedics" is a registered trademark of TransMedics. The TransMedics logo, Organ Care System and OCS are trademarks of TransMedics. Each of the other trademarks, trade names and service marks included in this prospectus supplement and the accompanying prospectus belongs to its respective holder. Solely for convenience, trademarks and trade names referred to in this prospectus supplement and the accompanying prospectus, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus, including the sections entitled "Prospectus Supplement Summary" and "Risk Factors", contain forward-looking statements that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "should," "could," "target," "predict," "seek" and similar expressions are intended to identify forward-looking statements. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those referenced in the section titled "Risk Factors," which could cause actual results to differ materially. Moreover, we operate in a very competitive and rapidly changing environment, and 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 factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in or implied by any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this 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.

Some of the key factors that could cause actual results to differ include:

- that we continue to incur losses;
- our need to raise additional funding;
- our existing and any future indebtedness, including our ability to comply with affirmative and negative covenants under our credit agreement to which we will remain subject to until maturity, and our ability to obtain additional financing on favorable terms or at all;
- the fluctuation of our financial results from quarter to quarter;
- our ability to use net operating losses and research and development credit carryforwards;
- our dependence on the success of the OCS;
- the rate and degree of market acceptance of the OCS;
- our ability to educate patients, surgeons, transplant centers and private payors of benefits offered by the OCS;
- the impact of the outbreak of the novel strain of coronavirus (COVID-19) and associated containment and remediation efforts;
- our ability to improve the OCS platform;
- our dependence on a limited number of customers for a significant portion of our net revenue;
- the timing of and our ability to obtain and maintain regulatory approvals or clearances for our OCS products;
- our ability to adequately respond to FDA follow-up inquiries in a timely manner;
- the performance of our third-party suppliers and manufacturers;
- the timing or results of clinical trials for the OCS;
- our manufacturing, sales, marketing and clinical support capabilities and strategy;
- attacks against our information technology infrastructure;
- the economic, political and other risks associated with our foreign operations;
- our ability to attract and retain key personnel;

- our ability to protect, defend, maintain and enforce our intellectual property rights relating to the OCS and avoid allegations that our products infringe, misappropriate or otherwise violate the intellectual property rights of third parties;
- our ability to obtain and maintain regulatory approvals or clearance for our OCS products;
- the pricing of the OCS, as well as the reimbursement coverage for the OCS in the United States and internationally;
- regulatory developments in the United States, European Union and other jurisdictions;
- the extent and success of competing products that are or may become available;
- the impact of any product recalls or improper use of our products;
- our use of proceeds from this offering and our initial public offering, or IPO; and
- · our estimates regarding revenues, expenses and needs for additional financing.

The forward-looking statements included in this prospectus supplement and the accompanying prospectus are made only as of the dates of each document. You should not rely upon forward-looking statements as predictions of future events. 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 and the accompanying prospectus to conform these statements to actual results or reflect interim developments.

You should read this prospectus supplement and the accompanying prospectus supplement with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information included elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary does not contain all the information you should consider before investing in our common stock. You should read and consider carefully this entire prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, as well as any free writing prospectus we provide you, including the information referenced in the section titled "Risk Factors," before making any investment decision.

Our Business

We are a commercial-stage medical technology company transforming organ transplant therapy for end-stage organ failure patients across multiple disease states. We developed the OCS to replace a decades-old standard of care that we believe is significantly limiting access to life-saving transplant therapy for hundreds of thousands of patients worldwide. Our innovative OCS technology replicates many aspects of the organ's natural living and functioning environment outside of the human body. As such, the OCS represents a paradigm shift that transforms organ preservation for transplantation from a static state to a dynamic environment that enables new capabilities, including organ optimization and assessment. We believe our substantial body of clinical evidence has demonstrated the potential for the OCS to significantly increase the number of organ transplants and improve post-transplant outcomes.

We developed the OCS to comprehensively address the major limitations of cold storage. The OCS is a portable organ perfusion, optimization and monitoring system that utilizes our proprietary and customized technology to replicate near-physiologic conditions for donor organs outside of the human body. We designed the OCS technology platform to perfuse donor organs with warm, oxygenated, nutrient-enriched blood, while maintaining the organs in a living, functioning state; the lung is breathing, the heart is beating and the liver is producing bile. Because the OCS significantly reduces injurious ischemic time on donor organs as compared to cold storage and enables the optimization and assessment of donor organs, it has demonstrated improved clinical outcomes relative to cold storage and offers the potential to significantly improve donor organ utilization.

We designed the OCS to be a platform that allows us to leverage core technologies across products for multiple organs. To date, we have developed three OCS products, one for each of lung, heart and liver transplantations, making the OCS the only multi-organ technology platform. Our OCS products have been used for over 1,600 human organ transplants. During our clinical trials, we established relationships with over 55 leading transplant programs worldwide. We have commercialized the OCS Lung and OCS Heart outside of the United States and received our first premarket approval, or PMA, from the FDA in March 2018 for the use in the United States of the OCS Lung for donor lungs currently utilized for transplantation and since May 2019, for donor lungs currently unutilized for transplantation. We expect FDA action over the next nine months on our OCS Heart PMA application and we plan to submit a PMA application to the FDA for our OCS Liver in the second quarter of 2020.

Our corporate headquarters, manufacturing and clinical training facilities are located in Andover, Massachusetts. We have additional distribution and commercial operations in Europe and Asia-Pacific. As of April 30, 2020, we employed 103 people globally.

Recent Developments

Top-Line Clinical Results of the OCS Liver PROTECT Trial

We announced top-line results from our OCS Liver PROTECT Trial on May 26, 2020. The primary effectiveness endpoint for the study was the incidence of early allograft dysfunction, or EAD, in the first seven days following transplant procedures. The use of the OCS Liver resulted in a significantly lower incidence of EAD compared to control (17.3% OCS vs. 30.5% Control; p=0.009) across both the donors after brain death, or DBD, and donors after circulatory death, or DCD, cohorts in the trial. EAD is the most common severe complication that occurs early after liver transplantation. EAD serves as a potential indicator of preservation injury to the donor liver and is associated with significant increase in ICU and hospital stay. The trial also met its three secondary effectiveness endpoints. The OCS Liver was able to maintain a near physiologic functioning state and monitor the condition of the liver outside of the human body. Patient survival at 30 days post-transplant was high and non-inferior to control (99.3% OCS vs. 99.3% Control; p=0.0004). In addition, the use of the OCS Liver resulted in a significantly lower incidence of ischemic cholangiopathy complications at six months post-transplantation (1.4% OCS vs. 8.5% Control; p=0.005), a leading cause of late graft failure after liver transplantation. The primary safety endpoint for the study was the average number of liver graft-related safety adverse events, or SAEs, per patient measured over 30 days following transplant procedures. The primary safety endpoint was met, as the average liver graft-related serious adverse events, or SAEs, per patient observed using the OCS Liver was non-inferior to Control (0.046 OCS vs. 0.075 Control; p<0.0001). In the OCS Liver PROTECT Trial, 155 donor livers, including both DBD and DCD, were instrumented on the OCS Liver, of which 152 were successfully transplanted, yielding a 98.1% utilization rate. These top-line results do not represent final study results and could be subject to change.

We expect to submit a PMA application for the OCS Liver in the second quarter of 2020 based on the results of the OCS Liver PROTECT Trial. In addition, in February 2020, we began enrollment in the OCS Liver PROTECT continued access protocol (CAP) Trial and are continuing to enroll patients.

The OCS Liver PROTECT Trial was a two-armed, multicenter, prospective, randomized, controlled pivotal trial to evaluate the effectiveness and safety of the OCS Liver to preserve and assess donor livers intended for transplantation. The trial enrolled 300 patients, with 153 patients randomized to transplantation using the OCS Liver and 147 patients randomized to the control group, which used cold storage methods. Enrollment was completed in October 2019, with transplants conducted across a network of 18 major liver transplant centers in the United States. In addition to those described above, the study measured clinical endpoints throughout the first year after liver transplantation.

COVID-19

While the COVID-19 pandemic did not significantly impact our business or results of operations during the first quarter of 2020, we anticipate a negative impact to OCS product sales for the remainder of 2020, as healthcare facilities reallocate resources to address the COVID-19 response. For example, healthcare providers have, and may need to further, reallocate resources, such as physicians, staff, hospital beds and intensive care unit facilities, and these actions significantly delay the provision of other medical care such as organ transplantation and have reduced the number of transplant procedures that are performed, which has had, and may continue to have, a negative impact on our revenue and clinical trial activities.

We expect that the frequency of organ transplant procedures will return to more normalized rates as healthcare providers are able to allocate resources away from the crisis and return to performing organ transplant procedures. In addition, while the number of transplant procedures performed has declined during the COVID-19 pandemic, organ transplantations are non-elective, life-saving procedures and we believe that the need for these procedures will persist. However, as interventions to contain the spread of the virus are lifted or reduced, new

COVID-19 outbreaks may result in new or heightened restrictions, which could make the recent increase in organ transplant procedures a temporary trend. We anticipate a negative impact to OCS product sales for the remainder of 2020; however, the length and extent of the pandemic, its consequences, and containment efforts will determine the future impact on our operations and financial condition.

We continue to monitor developments regarding the COVID-19 pandemic and its impact on our business, financial condition, results of operations and prospects. However, we remain unable to predict the extent of the impact with confidence due to the uncertainty of future developments, such as the duration of the pandemic, additional or modified government actions, new information which may emerge concerning the severity and incidence of COVID-19 and actions to contain the virus or treat its impact. In particular, the speed of the continued spread of COVID-19 globally, and the magnitude of interventions to contain the spread of the virus, such as government-imposed quarantines, including shelter-in-place mandates, sweeping restrictions on travel, mandatory shutdowns for non-essential businesses, requirements regarding social distancing, and other public health safety measures, will determine the impact of the pandemic on our business.

For a more detailed discussion of the recent COVID-19 pandemic and its impact on our business, see "COVID-19" under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "The outbreak of the novel strain of coronavirus (COVID-19) impacts our business, financial condition, operating results, cash flows and prospects" under the heading "Risk Factors" in our Quarterly Report on Form 10-Q for the period ended March 31, 2020.

Implications of Being an Emerging Growth Company and Smaller Reporting Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies, including:

- reduced disclosure about our executive compensation arrangements;
- · exemption from the requirements to hold non-binding advisory votes on executive compensation and golden parachute payments; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions until the last day of the fiscal year following the fifth anniversary of our IPO or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company earlier if we have more than \$1.07 billion in annual revenue, we have more than \$700 million in market value of our stock held by non-affiliates or we issue more than \$1 billion of non-convertible debt securities over a three-year period. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. We may choose to take advantage of some, but not all, of the available exemptions.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected not to "opt out" of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard and will do so until such time that we either (i) irrevocably elect to "opt out" of such extended transition period or (ii) no longer

qualify as an emerging growth company. Therefore, the reported results of operations contained in our financial statements may not be directly comparable to those of other public companies.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than \$700 million and our annual revenue is less than \$100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than \$250 million or (ii) our annual revenue is less than \$100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than \$700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Our Corporate Information

Our predecessor TransMedics, Inc. was incorporated in Delaware in August 1998. We were incorporated in Massachusetts in October 2018. On May 6, 2019, immediately prior to the completion of our IPO, we completed a corporate reorganization whereby TransMedics, Inc., or TransMedics, the direct parent of TransMedics Group, Inc., or TransMedics Group, prior to the corporate reorganization, became a direct, whollyowned subsidiary of TransMedics Group pursuant to the merger of TMDX, Inc., a direct, whollyowned subsidiary of TransMedics Group prior to the corporate reorganization, with and into TransMedics, with TransMedics as the surviving corporation. This is referred to as the "Corporate Reorganization."

Immediately following the Corporate Reorganization, (i) TransMedics Group became a holding company with no material assets other than 100% of the equity interests in TransMedics, (ii) the holders of capital stock in TransMedics became shareholders of TransMedics Group and (iii) the historical consolidated financial statements of TransMedics became the historical consolidated financial statements of TransMedics Group because the Corporate Reorganization was accounted for as a reorganization of entities under common control. Prior to the Corporate Reorganization, TransMedics Group had not conducted any activities other than in connection with its formation and in preparation for the IPO and had no material assets other than 100% of the equity interests in TMDX, Inc.

Our principal executive offices are located at 200 Minuteman Road, Andover, MA 01810, and our telephone number is (978) 552-0900. Our website address is www.transmedics.com. Information contained on, or that can be accessed through, our website is not part of this prospectus supplement or the accompanying prospectus.

THE OFFERING

Common stock offered by us \$60 million of shares of our common stock.

Common stock outstanding after this offering shares (shares if the underwriters exercise their option to purchase

additional shares in full).

Underwriters' option to purchase additional shares of

our common stock from us

We have granted the underwriters an option to purchase up to an additional shares of our common stock from us, at the public offering price, less the underwriting discounts and commissions, for a period of 30 days after the date of this prospectus supplement.

Use of proceeds We estimate that the net proceeds from the sale of our common stock by us in this offering

will be approximately \$ million (or approximately \$ million if the underwriters exercise their option to purchase additional shares in full), after deducting estimated underwriting discounts and commissions and estimated offering expenses

payable by us.

We intend to use the net proceeds from this offering to expand our commercial organization including continuing to operationalize our organ retrieval and OCS perfusion service offering, to expand our manufacturing infrastructure to support our growth and provide business continuity, and for general corporate purposes.

See "Use of Proceeds."

Dividend policy We do not anticipate declaring or paying any cash dividends on our capital stock in the

foreseeable future. See "Dividend Policy."

Risk factors You should carefully read the "Risk Factors" section of this prospectus supplement and the

accompanying prospectus and the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors

that you should consider before deciding to invest in our common stock.

Listing Our common stock is listed on the Nasdaq Global Market under the symbol "TMDX."

The number of shares of common stock to be outstanding after this offering is based on 21,343,480 shares of common stock outstanding as of March 31, 2020, and excludes:

- 2,178,215 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2020 under our 2004 Stock Incentive Plan, or our 2014 Plan, and our 2019 Stock Incentive Plan, or our 2019 Stock Plan, at a weighted average exercise price of \$7.49 per share;
- 64,440 shares of common stock issuable upon the exercise of warrants outstanding as of March 31, 2020, at a weighted average
 exercise price of \$10.70 per share;

- 2,609,280 shares of common stock available for future issuance as of March 31, 2020 under our 2019 Stock Plan; and
- 358,979 shares of common stock available for future issuance as of March 31, 2020 under our 2019 Employee Stock Purchase Plan, or our 2019 ESPP.

Except as otherwise noted or the context otherwise requires, all information in this prospectus supplement assumes:

- no exercise of the outstanding stock options described above; and
- ullet no exercise by the underwriters of their option to purchase additional shares.

RISK FACTORS

An investment in our common stock involves risks. You should consider carefully the following risks and all of the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, including "Part I, Item 1A. Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 28, 2019 and "Part II, Item 1A. Risk Factors" in our Quarterly Report on Form 10-Q for the period ended March 31, 2020, which are incorporated by reference herein, before investing in our common stock. If any of these risk, including with respect to the COVID-19 pandemic, actually occur, our business, prospects, operating results and financial condition could suffer materially, the trading price of our common stock could decline and you could lose all or part of your investment. These risks and uncertainties are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business. See "Cautionary Note Regarding Forward-Looking Statements" elsewhere in this prospectus supplement.

To the extent the COVID-19 pandemic adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described below and in the documents incorporated by reference herein. For a discussion of the recent COVID-19 pandemic and its impact on our business, see "COVID-19" under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "The outbreak of the novel strain of coronavirus (COVID-19) impacts our business, financial condition, operating results, cash flows and prospects" under the heading "Risk Factors" in our Quarterly Report on Form 10-Q for the period ended March 31, 2020.

Risks Related to Our Common Stock and this Offering

The market price of our common stock has been and may continue to be volatile, which could result in substantial losses for investors purchasing shares in this offering and could subject us to securities class action litigation.

The market price of our common stock could be subject to significant fluctuations after this offering, and it may decline below the offering price. Since the shares were sold in our IPO in May 2019 at a price of \$16.00 per share and through May 22, 2020, the price per share of our common stock has ranged from as low as \$10.10 to as high as \$31.54. Some of the factors that may cause the market price of our common stock to fluctuate include:

- price and volume fluctuations in the overall stock market;
- volatility in the market price and trading volume of comparable companies;
- · actual or anticipated changes in our earnings or fluctuations in our operating results or in the expectations of securities analysts;
- results of clinical trials relating to the OCS or competing products;
- failure or discontinuation of any of our product development and research programs;
- regulatory or legal developments in the United States and other countries, including changes in the healthcare payment systems;
- results of applications for regulatory approvals or clearances for the OCS or competing products;
- our announcements or our competitors' announcements of new products, procedures or therapies;
- departure of key personnel;
- litigation involving us or that may be perceived as having an adverse effect on our business;
- · developments or disputes concerning patent applications, issued patents or other proprietary rights;
- market conditions in the medical device and biotechnology sectors;

- changes in general economic, industry and market conditions and trends;
- the impact of the COVID-19 pandemic;
- · investors' general perception of us; and
- sales of large blocks of our stock.

The market for medical device and biotechnology companies, in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management's attention and resources from our business.

An active trading market may not be sustained.

You may not be able to sell your shares quickly or at a recently reported market price if trading in our common stock does not remain active. The lack of an active market may also reduce the fair market value of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

We will have broad discretion in the use of the net proceeds received by us from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds received by us from the sale of our shares in this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations, the occurrence and timing of regulatory approvals and clinical trials, the anticipated growth of our business and the availability and terms of alternative financing sources to fund our growth. Because we will have broad discretion in the application of the net proceeds received by us from this offering, our management may fail to apply these funds effectively, which could materially and adversely affect our ability to operate and grow our business.

Purchasers in this offering will incur immediate and substantial dilution in the book value of their investment as a result of this offering.

If you purchase shares of our common stock in this offering, you will incur immediate dilution of \$ per share as of March 31, 2020, representing the difference between our as adjusted net tangible book value per share after giving effect to this offering and the public offering price. You may experience additional dilution upon the exercise of options to purchase shares of our common stock, including those options currently outstanding and those granted in the future, and the issuance of restricted stock or other equity awards under our stock incentive plans. To the extent we raise additional capital by issuing equity securities, our shareholders also may experience substantial additional dilution. See "Dilution."

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

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline. Moreover, if any of the analysts who cover us issue

an adverse or misleading opinion regarding us, our business model or our stock performance, or if our operating results fail to meet the expectations of the investor community, one or more of the analysts who cover our company may change their recommendations regarding our company, and our stock price could decline.

Because we do not expect to pay any dividends on our common stock for the foreseeable future, investors in this offering may never receive a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay cash dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, to realize a return on their investment.

A significant portion of our total outstanding shares may be sold into the public market at any time, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Following completion of this offering, we will have shares of common stock outstanding (or shares of common stock if the underwriters exercise their option to purchase additional shares in full), based on the amount of shares of common stock outstanding as of March 31, 2020. Of the shares of our common stock to be outstanding following completion of this offering, shares of our common stock, including all 6,543,500 of the shares issued and sold by us in our IPO and all of the shares offered by this prospectus supplement and the accompanying prospectus, will be eligible for immediate sale in the public market without restriction by persons other than our affiliates. The remaining outstanding shares of our common stock are available for resale in the public market subject to the provisions of Rule 144 and Rule 701 and the lock-up agreements described below.

Each of our officers and directors and affiliated shareholders holding greater than 5% of our outstanding shares have entered into a lock-up agreement with J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, as representatives of the underwriters, which regulates their sales of our common stock for a period of 90 days after the date of this prospectus supplement, subject to certain exceptions. The representatives may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements at any time and for any reason.

Sales of substantial amounts of our common stock in the public market after this offering, the perception that such sales will occur, or early release of these lock-up agreements could adversely affect the market price of our common stock and make it difficult for us to raise funds through securities offerings in the future.

We have adopted anti-takeover provisions in our restated articles of organization and amended and restated bylaws and are subject to provisions of Massachusetts law that may frustrate any attempt to remove or replace our current board of directors or to effect a change of control or other business combination involving our company.

Our restated articles of organization and amended and restated bylaws and certain provisions of Massachusetts law may discourage certain types of transactions involving an actual or potential change of control of our company that might be beneficial to us or our security holders. For example, our amended and restated bylaws grant the chairperson presiding over any meetings of shareholders the right to adjourn such meeting. Our board of directors also may issue shares of any class or series of preferred stock in the future without shareholder approval and upon such terms as our board of directors may determine. The rights of the holders of our common stock will be subject to, and may be harmed by, the rights of the holders of any class or series of preferred stock that may be issued in the future. Massachusetts state law also prohibits us from engaging in specified business combinations unless the combination is approved or consummated in a prescribed manner. These provisions, alone or together, could delay hostile takeovers and changes in control of our company or changes in our management.

Our restated articles of organization designate the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts (or, if and only if the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts lacks jurisdiction, another state or federal court located within the Commonwealth of Massachusetts) as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our shareholders, which could discourage lawsuits against us and our directors and officers.

Our restated articles of organization designate the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts (or, if and only if the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts lacks jurisdiction, another state or federal court located within the Commonwealth of Massachusetts) as the sole and exclusive forum for any action under Massachusetts statutory or common law: brought derivatively on our behalf, asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our shareholders, asserting a claim arising pursuant to any provision of the Massachusetts Business Corporation Act or asserting a claim governed by the internal affairs doctrine, in all cases subject to the court's having personal jurisdiction over the indispensable parties named as defendants. In addition, our restated articles of organization provide that any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have notice of and consented to the foregoing provisions. This provision does not apply to actions arising under the Securities Exchange Act of 1934, as amended, or the Exchange Act, or the Securities Act of 1933, as amended, or the Securities Act. This exclusive forum provision may limit the ability of our shareholders to bring a claim in a judicial forum that such shareholders find favorable for disputes with us or our directors or officers, which may discourage such lawsuits against us and our directors and officers. Alternatively, if the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts or a court outside of Massachusetts were to find this exclusive forum provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings described above, we may incur additional costs associated with resolving such matters in other venues or jurisdictions.

Our management team has limited experience managing a public company.

Most members of our management team have limited experience managing a publicly-traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage our ongoing transition to being a public company subject to significant regulatory oversight and reporting obligations under the federal securities laws and the scrutiny of securities analysts and investors. These obligations and constituents require significant attention from our management team and could divert their attention away from the day-to-day management of our business, which could materially and adversely affect our business, financial condition, operating results, cash flows and prospects.

Our directors, executive officers and affiliates have significant voting power and may take actions that may not be in the best interests of our other shareholders.

Following completion of this offering, our directors, executive officers and affiliates will collectively control approximately % of our outstanding common stock (approximately % if the underwriters exercise their option to purchase additional shares in full). As a result, these shareholders, if they act together, will be able to control the management and affairs of our company and most matters requiring shareholder approval, including the election of directors and approval of significant corporate transactions. The interests of these shareholders may not be the same as or may even conflict with your interests. For example, these shareholders could attempt to delay or prevent a change in control of the Company, even if such change in control would benefit our other shareholders. As a result, this concentration of ownership may not be in the best interests of our other shareholders.

If we fail to maintain effective internal control over financial reporting and effective disclosure controls and procedures, we may not be able to accurately report our financial results in a timely manner or prevent fraud, which may adversely affect investor confidence in our company.

We are not required to make a formal assessment of the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act until our annual report on Form 10-K for the year ending December 31, 2020 is filed with the SEC. We are required to comply with the SEC's rules implementing Section 302 of the Sarbanes-Oxley Act, which requires management to certify financial and other information in our quarterly and annual reports. As an emerging growth company, our independent registered public accounting firm will not be 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 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 operated. Additionally, our independent registered public accounting firm will not be required to formally attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 while we are a "smaller reporting company" as defined in the Exchange Act and have less than \$100 million in annual revenue.

To comply with the requirements of being a public company, we have undertaken certain actions, such as implementing new internal controls and procedures and hiring additional accounting staff. We may also need to undertake certain other actions in the future, including the hiring of internal audit staff or additional accounting staff. Testing and maintaining internal control can divert our management's attention from other matters that are important to the operation of our business. In addition, when evaluating our internal control over financial reporting, we may identify material weaknesses that we may not be able to remediate in time to meet the applicable deadline imposed upon us for compliance with the requirements of Section 404. If we identify any material weaknesses in our internal controls over financial reporting or we are unable to comply with the requirements of Section 404 in a timely manner or assert that our internal control over financial reporting is effective, or if our independent registered public accounting firm expresses an adverse 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. As a result, the market price of our common stock could be materially adversely affected.

We are an "emerging growth company" and "smaller reporting company," and the reduced disclosure requirements applicable to emerging growth companies and smaller reporting companies may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company until the last day of our fiscal year following the fifth anniversary of our IPO, subject to specified conditions. We would cease to be an emerging growth company prior to such date if we have more than \$1.07 billion in annual revenue, we have more than \$700 million in market value of our stock held by non-affiliates or we issue more than \$1 billion of non-convertible debt securities over a three-year period. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include reduced disclosure obligations regarding executive compensation and no requirements to hold non-binding advisory votes on executive compensation and golden parachute payments, to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and to comply with certain requirements of Auditing Standard 3101 relating to providing a supplement to the auditor's report regarding critical audit matters. In this prospectus supplement and the accompanying prospectus, we have not included all of the executive compensation-related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption, and the reported results of operations contained in our financial statements may not be directly comparable to those of other public companies. Accordingly, we will incur additional costs in connection with complying with the accounting standards applicable to public companies at such time or times as they become applicable to us.

We are also a "smaller reporting company," as defined under Regulation S-K. We would cease to be a smaller reporting company after this offering if we have (i) more than \$250 million in the market value of our shares held by non-affiliates as of the last business day of our second fiscal quarter or (ii) more than \$100 million of annual revenues in our most recent fiscal year completed before the last business day of our second fiscal quarter and a market value of our shares held by non-affiliates more than \$700 million as of the last business day of our second fiscal quarter. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Changes in accounting standards and subjective assumptions, estimates and judgments by management related to complex accounting matters could significantly affect our financial condition and results of operations.

Accounting principles and related pronouncements, implementation guidelines and interpretations we apply to a wide range of matters that are relevant to our business, including, but not limited to, revenue recognition, leases and stock-based compensation, are complex and involve subjective assumptions, estimates and judgments by our management. Changes in accounting pronouncements or their interpretation or changes in underlying assumptions, estimates or judgments by our management could significantly change our reported or expected financial performance.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of our common stock by us in this offering will be approximately \$ million, or approximately \$ million if the underwriters exercise in full their option to purchase additional shares from us in this offering, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering to expand our commercial organization including continuing to operationalize our organ retrieval and OCS perfusion service offering, to expand our manufacturing infrastructure to support our growth and provide business continuity, and for general corporate purposes.

In addition, we believe that opportunities may exist from time to time to expand our current business through acquisitions of or investments in complementary products, technologies or businesses. While we have no current agreements, commitments or understandings for any specific acquisitions or in-licenses at this time, we may use a portion of our net proceeds for these purposes.

Our management will have broad discretion in the application of the net proceeds we receive from this offering, and investors will be relying on the judgment of our management regarding the application of our net proceeds. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations, the occurrence and timing of regulatory approvals and clinical trials, the anticipated growth of our business and the availability and terms of alternative financing sources to fund our growth. Pending their use as described above, we intend to invest the net proceeds we receive from this offering in saving, certificate of deposit and money market accounts as well as short-term and intermediate investment-grade interest-bearing securities and obligations, such as money market funds, commercial paper and obligations of the United States government and its agencies.

DIVIDEND POLICY

We have never declared or paid any dividends on our capital stock. We do not anticipate declaring or paying any cash dividends on our capital stock in the foreseeable future. Any future determination to declare and pay cash dividends, if any, will be made at the discretion of our board of directors and will depend on a variety of factors, including applicable laws, our financial condition, results of operations, contractual restrictions, capital requirements, business prospects, general business or financial market conditions and other factors our board of directors may deem relevant. In addition, our credit agreement with OrbiMed Royalty Opportunities II, LP, or the Credit Agreement, contains covenants that restrict our ability to pay cash dividends. Investors should not purchase our common stock with the expectation of receiving cash dividends.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the as adjusted net tangible book value per share of our common stock after this offering.

Our historical net tangible book value as of March 31, 2020 was \$46.7 million, or \$2.19 per share of common stock. Our historical net tangible book value is the amount of our total tangible assets less our total liabilities. Historical net tangible book value per share represents historical net tangible book value divided by the 21,343,480 shares of common stock outstanding as of March 31, 2020.

After giving effect to the issuance and sale by us of shares of our common stock in this offering at the public offering price of \$ per share, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of March 31, 2020 would have been \$ million, or \$ per share. This represents an immediate increase in as adjusted net tangible book value per share of \$ to existing shareholders and immediate dilution of \$ in as adjusted net tangible book value per share to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting as adjusted net tangible book value per share after this offering from the public offering price of \$ per share, paid by new investors. The following table illustrates this dilution on a per share basis:

Public offering price per share		\$
Historical net tangible book value per share as of March 31, 2020	\$2.19	
Increase in as adjusted net tangible book value per share attributable to new investors purchasing common stock in this offering		
As adjusted net tangible book value per share after this offering		
Dilution per share to new investors purchasing common stock in this offering		\$

If the underwriters exercise their option to purchase additional shares in full, our as adjusted net tangible book value per share after this offering would be \$, representing an immediate increase in as adjusted net tangible book value per share of \$ to existing shareholders and immediate dilution in as adjusted net tangible book value per share of \$ to new investors purchasing common stock in this offering, based on the public offering price of \$ per share, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The table and discussion above is based on the number of shares of our common stock outstanding as of March 31, 2020, and excludes:

- 2,178,215 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2020 under our 2004 Plan, our 2014 Plan, and our 2019 Stock Plan, at a weighted average exercise price of \$7.49 per share;
- 64,440 shares of common stock issuable upon the exercise of warrants outstanding as of March 31, 2020, at a weighted average exercise price of \$10.70 per share;
- 2,609,280 shares of common stock available for future issuance as of March 31, 2020 under our 2019 Stock Plan; and
- 358,979 shares of common stock available for future issuance as of March 31, 2020 under our 2019 ESPP.

To the extent that new stock options or warrants are issued, or we issue additional shares of common stock in the future, there may be further dilution to new investors. In addition, we may choose to raise additional

capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our shareholders.

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF COMMON STOCK

The following discussion is a summary of the material U.S. federal income and estate tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock sold 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 and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the Code, U.S. 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;
- tax-qualified retirement plans;
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds; and
- persons subject to special tax accounting rules as a result of any item of gross income with respect to our common stock being taken into
 account in an applicable financial statement.

This discussion does not address the tax treatment of partnerships or other pass-through entities, or persons who hold our common stock through partnerships or other pass-through entities, for U.S. federal income tax purposes. 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.

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 the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code) 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 any distributions 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 discussions below on effectively connected income, FATCA, and backup withholding, 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. 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 its effectively connected earnings and profits attributable to such 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 discussions below on backup withholding and 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.

If a Non-U.S. Holder is engaged in a trade or business in the United States and gain recognized by the Non-U.S. Holder on a sale or other disposition of our common stock is effectively connected with the conduct of such trade or business, the Non-U.S. Holder generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. 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.

We believe we currently are not, and we do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends 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 U.S. Treasury Regulations) on an established securities market, and such Non-U.S. Holder owned, actually and 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.

A nonresident alien who is subject to U.S. federal income tax because such individual was present in the United States for 183 days or more in the taxable year of the taxable disposition of our common stock will be subject to a flat 30% tax on the gain derived from such disposition, which may be offset by U.S. source capital loss. Non-U.S. Holders should consult their tax advisors regarding any 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 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 and Information Reporting Requirements

Sections 1471 through 1474 of the Code and related U.S. Treasury Regulations, together with other U.S. Treasury Department or IRS guidance issued thereunder, and intergovernmental agreements, legislation, rules and other official guidance adopted pursuant to such intergovernmental agreements (commonly referred to as "FATCA") generally impose a U.S. federal withholding tax of 30% on payments to certain non-U.S. entities (including certain intermediaries), including dividends on our common stock, unless such persons comply with a complicated U.S. information reporting, disclosure and certification regime or an exemption applies. Although gross proceeds from a sale or other disposition of shares of our common stock are subject to the same rules, proposed U.S. Treasury Regulations (upon which taxpayers may rely pending finalization) eliminate FATCA withholding on gross proceeds from the sale or other disposition of common stock. This regime requires, among other things, a broad class of persons to enter into agreements with the IRS to obtain, disclose and report information about their investors and account holders. An intergovernmental agreement between the U.S. and an applicable foreign country may, however, modify these requirements. Prospective investors should consult their own tax advisors regarding the possible impact of these rules on their investment in our common stock, and the possible impact of these rules on the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of this 30% withholding tax under FATCA.

U.S. Federal Estate Tax

Common stock owned or treated as owned by an individual who is a Non-U.S. Holder at the time of death generally will be included in the individual's gross estate for U.S. federal estate tax purposes and may be subject to U.S. federal estate tax unless an applicable estate or other tax treaty provides otherwise.

UNDERWRITING

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares indicated below.

<u>Underwriters</u>	Number of Shares
J.P. Morgan Securities LLC	
Morgan Stanley & Co. LLC	
Canaccord Genuity LLC	
Total	

The underwriters and the representatives are collectively referred to as the "underwriters" and the "representatives," respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriting agreement provides for a firm commitment underwriting, and the underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' option to purchase additional shares described below.

The underwriters propose to offer the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of \$ per share. After the initial offering of the shares of common stock to the public, if all of the common shares are not sold at the public offering price, the underwriters may change the offering price and other selling terms. Sales of shares made outside of the United States may be made by affiliates of the underwriters. The offering of the shares of common stock by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of our common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of our common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds, before expenses, to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase up to an aggregate of additional shares of common stock from us.

		To	otal
	Per Share	No Exercise	Full Exercise
Public offering price	\$	\$	\$
Underwriting discounts and commissions	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately \$ million. We have agreed to reimburse the underwriters for expenses relating to clearance of this offering with the Financial Industry Regulatory Authority, or FINRA, for up to \$30,000.

Our common stock is listed on the Nasdaq Global Market under the symbol "TMDX."

We have agreed that for a period of 90 days after the date of this prospectus, or the restricted period, we will not, subject to certain exceptions, (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock or (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock, whether any such transaction described in (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise or (3) file or confidentially submit any registration statement with the Commission relating to the offering of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock; or publicly disclose the intention to do any of the foregoing.

The restrictions described in the immediately preceding paragraph shall not apply to, among other items:

- a) the shares to be sold in this public offering;
- b) the issuance by us of shares of common stock upon the exercise of an option or warrant or the conversion or settlement of a security outstanding on the date hereof that is described herein or in the registration statement;
- c) any stock-based awards granted under an employee benefit or stock-based compensation plan or agreement described herein;
- d) filings on Form S-8 relating to an employee benefit or stock-based compensation plan or agreement described herein or in the registration statement; or
- e) the entry into an agreement providing for the issuance of common stock or any securities convertible into or exercisable or exchangeable for common stock, and the issuance of any such securities pursuant to such an agreement, in connection with (A) the acquisition by us or any of our subsidiaries of the securities, business, property or other assets of another person or entity, including pursuant to an employee benefit or equity-based compensation plan or agreement assumed by us or any of our subsidiaries in connection with such acquisition, or (B) joint ventures, licensing arrangements, commercial relationships or other strategic transactions; provided that the aggregate number of shares of common stock issued or issuable pursuant to this item (e) shall not exceed five percent (5%) of the total number of shares of common stock issued and outstanding immediately following the offering of the shares pursuant to the underwriting agreement and provided further that we shall cause each recipient of such shares to execute and deliver to the representatives, on or prior to such issuance, a "lock-up" agreement.

All of our directors and officers and certain affiliated funds have entered into lock-up agreements with the underwriters prior to the commencement of this public offering pursuant to which each of these persons or entities, will not, during the restricted period, without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC: (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of common stock beneficially owned (as such term is used in Rule 13d-3 of the Exchange Act) or any other securities convertible into or exercisable or exchangeable for shares of common stock, or publicly announce the intention to enter into any such transaction, or (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock, whether any such transaction described in (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise.

The restrictions described in the immediately preceding paragraph shall not apply to, among other items:

a) transactions relating to shares of common stock or other securities acquired in this public offering or in open market transactions after the completion of this public offering;

- b) transfers of shares of common stock or other securities as a bona fide gift or for bona fide estate planning purposes or to a charitable organization or educational institution in a transaction not involving a disposition for value;
- c) transfers or dispositions of shares of common stock or other securities to any member of the immediate family or any trust for the direct or indirect benefit of the party subject to the lock-up restrictions or the immediate family of such person in a transaction not involving a disposition for value;
- d) transfers or dispositions of shares of common stock or other securities to any corporation, partnership, limited liability company or other entity all of the beneficial ownership interests of which are held by the party subject to the lock-up restrictions or the immediate family of such person in a transaction not involving a disposition for value;
- e) transfers or dispositions of shares of common stock or other securities (i) by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the party subject to the lock-up restrictions upon the death of the party subject to the lock-up restrictions, or (ii) by operation of law pursuant to a domestic order or negotiated divorce settlement; or
- f) if the party subject to the lock-up restrictions is an entity, (i) transfers or dispositions of shares of common stock or other securities to another corporation, member, partnership, limited liability company, trust or other entity that is a direct or indirect affiliate (as defined under Rule 12b-2 of the Exchange Act) of the party subject to the lock-up restrictions, or to an investment fund or other entity that controls or manages, or is under common control with, the party subject to the lock-up restrictions, in a transaction not involving a disposition for value or (ii) distributions of shares of common stock or other securities to partners, members, stockholders, beneficiaries or other equity holders of the party subject to the lock-up restrictions in a transaction not involving a disposition for value;

provided that in the case of any transfer, disposition or distribution (i) pursuant to (b) through (f) above, each transferee, donee or distributee shall sign and deliver a lock-up agreement substantially in the form of the lock-up agreement unless prohibited by an order of a court and (ii) pursuant to (a) through (f) above, no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of common stock, or other public announcement shall be required or shall be voluntarily made during the restricted period (other than, if the party subject to the lock-up restrictions is subject to Section 16 reporting with respect to the Company under the Exchange Act, in the case of a transfer or other disposition pursuant to clauses (b), (c), (d) or (e) above, any Form 5 required to be filed under the Exchange Act, or in the case of a transfer or other disposition pursuant to clause (e) above, any Form 4 required to be filed under the Exchange Act and, in each case, and indicating by footnote disclosure or otherwise the nature of the transfer or disposition);

- transfers or dispositions of shares of common stock or other securities to the Company pursuant to any contractual arrangement in effect on the date of the lock-up agreement that provides for the repurchase of the party subject to the lock-up restrictions' common stock or other securities by the Company or in connection with the termination of the party subject to the lock-up restrictions' employment with or service to the Company, provided that no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of common stock, or other public announcement shall be required or shall be voluntarily made during the restricted period in connection with such transfers or dispositions (other than, after the date that is 90 days after the date of this prospectus, any Form 4 or Form 5 required to be filed under the Exchange Act if the party subject to the lock-up restrictions is subject to Section 16 reporting with respect to the Company under the Exchange Act and indicating by footnote disclosure or otherwise the nature of the transfer or disposition);
- h) transfers or dispositions of shares of common stock or other securities to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under (a) through (f) above, provided that any such shares of common stock shall be subject to the lock-up restrictions;

- i) (i) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act (a "Rule 10b5-1 Plan") for the transfer of shares of common stock, provided that (A) such plan does not provide for the transfer of common stock during the restricted period and (B) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the party subject to the lock-up restrictions or the Company regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of shares of common stock may be made under such plan during the restricted period, or (ii) any transactions effected pursuant to a Rule 10b5-1 Plan established prior to the date of the lock-up agreement, *provided*, that to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the party subject to the lock-up restrictions' or the Company regarding such transaction, such announcement or filing shall include a statement to the effect that such transfer of shares of common stock was made under such plan;
- (i) the receipt by the party subject to the lock-up restrictions from the Company of shares of common stock upon the exercise of any j) options, or the settlement of any other equity-based award, granted under an employee benefit or equity compensation plan or agreement described in this prospectus and the registration statement of which this prospectus forms a part, or upon the exercise of warrants, insofar as such warrant is outstanding as of the date of this prospectus and which are described in this prospectus and the registration statement of which this prospectus forms a part; provided that any such shares of common stock received by the party subject to the lock-up restrictions shall be subject to the terms of the lock-up agreement, or (ii) the withholding by, or transfer to, the Company of shares of common stock in connection with the vesting or settlement of any equity-based award or the exercise of any options or warrants, which are described in this prospectus and the registration statement of which this prospectus forms a part, to purchase the Company's securities on a "cashless" or "net exercise" basis to the extent permitted by the instruments representing such options or warrants (and any transfer to the Company necessary to generate such amount of cash needed for the payment of taxes, including estimated taxes, due as a result of such vesting, settlement or exercise, whether by means of a "cashless exercise," "net exercise" or otherwise) so long as such "cashless exercise," "net exercise" or settlement is effected solely by the surrender of outstanding options, warrants or other equity-based awards (or the common stock issuable upon the exercise or settlement thereof) to the Company and the Company's cancellation of all or a portion thereof to pay the exercise price and/or withholding tax obligations, but for the avoidance of doubt, excluding all methods of exercise or settlement that would involve a sale other than to the Company of any shares of common stock relating to options, warrants or other equity-based awards, whether to cover the applicable exercise price and/or withholding tax obligations or otherwise, provided that in the case of either (i) or (ii), any filing under Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that (A) the filing relates to the circumstances described in (i) or (ii), as the case may be, (B) no shares were sold by the reporting person, and (C) in the case of (i), the shares received upon the exercise of the option or warrant or the settlement of the other equity-based award are subject to the lock-up restrictions with the underwriters of the public offering; or
- k) transfers or dispositions of shares of common stock or other securities pursuant to a bona fide tender offer for shares of the Company's capital stock, merger, consolidation or other similar transaction made to all holders of the Company's securities involving a change of control of the Company (including without limitation, the entering into of any lock-up, voting or similar agreement pursuant to which the party subject to the lock-up restrictions may agree to transfer, sell, tender or otherwise dispose of shares of common stock or other securities in connection with such transaction) that has been approved by the board of directors of the Company; provided that, in the event that such change of control transaction is not consummated, the shares and other securities shall remain subject to the lock-up restrictions.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell

more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the option to purchase additional shares. The underwriters can close out a covered short sale by exercising the option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the option to purchase additional shares. The underwriters may also sell shares in excess of the option to purchase additional shares, creating a naked short position. The underwriters 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 underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

Relationships

The underwriters and their respective 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. Certain of the underwriters and their respective affiliates may in the future perform various financial advisory and investment banking services for us, for which they will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective 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 may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Selling Restrictions

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an

offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Australia

This prospectus:

- does not constitute a disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the "Corporations Act");
- has not been, and will not be, lodged with the Australian Securities and Investments Commission ("ASIC"), as a disclosure document for
 the purposes of the Corporations Act and does not purport to include the information required of a disclosure document for the purposes of
 the Corporations Act; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, available under section 708 of the Corporations Act ("Exempt Investors").

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of 12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those shares to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Canada

The shares of our common stock 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 shares of our common stock 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 underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Dubai International Finance Centre

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority ("DFSA"). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

European Economic Area and the United Kingdom

In relation to each Member State of the European Economic Area and the United Kingdom (each a "Relevant State"), no shares have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that offers of shares may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

- (a) to any legal entity which is a qualified investor as defined under the Prospectus Regulation;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the underwriters; or
 - (c) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an "offer to the public" in relation to shares in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

United Kingdom

In addition, in the United Kingdom, this document is only being distributed to and is only directed at and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Regulation) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons") or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (the "SFO") of Hong Kong and any rules made thereunder; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong) (the "CO") or which do not constitute an offer to the public within the meaning of the CO. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, 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 to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made thereunder.

Japan

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, 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 a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

People's Republic of China

This prospectus will not be circulated or distributed in the PRC and the shares will not be offered or sold, and will not be offered or sold to any person for re-offering or resale directly or indirectly to any residents of the PRC except pursuant to any applicable laws and regulations of the PRC. Neither this prospectus nor any advertisement or other offering material may be distributed or published in the PRC, except under circumstances that will result in compliance with applicable laws and regulations.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the 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 shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

a) 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

- b) 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 shares pursuant to an offer made under Section 275 of the SFA except:
- a) 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;
 - b) where no consideration is or will be given for the transfer;
 - c) where the transfer is by operation of law;
 - d) as specified in Section 276(7) of the SFA; or
- e) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore Securities and Futures Act Product Classification

In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of shares, the company has determined, and hereby notifies all relevant persons (as defined in Section 309A(1) of the SFA), that the shares are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and 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 document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

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

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Ropes & Gray LLP. Certain legal matters in connection with this offering will be passed upon for the underwriters by Davis Polk & Wardwell LLP, New York, New York.

EXPERTS

The financial statements incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 28, 2019 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the SEC for the shares of common stock offered by this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus, including the information incorporated by reference herein and therein, do not include all of the information contained in the registration statement. You should refer to the registration statement and its exhibits for additional information. Statements contained in this prospectus supplement or 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 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 file annual, quarterly and current reports, proxy statements and other information with the SEC under the Exchange Act. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge on our website at http://www.transmedics.com under the "Investors—Financial Information" caption. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of this prospectus supplement or the accompanying prospectus.

You should rely only on the information provided in, and incorporated by reference in, this prospectus supplement and the accompanying prospectus and the registration statement to which this prospectus supplement and accompanying prospectus form a part. We have not authorized anyone else to provide you with different information. Our securities are not being offered in any jurisdiction where the offer is not permitted. The information contained in documents that are incorporated by reference in this prospectus supplement is accurate only as of the dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" certain information into this prospectus supplement and accompanying prospectus, which means that we can disclose important information about us by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this this prospectus supplement and accompanying prospectus, and information in documents that we file later with the SEC will automatically update and supersede information in this prospectus supplement and accompanying prospectus. We incorporate by reference into this prospectus supplement the documents listed below and any future filings, including all filings made after the date of the filing of the registration statement of which this prospectus is part and prior to the effectiveness of such registration statement, made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except for information "furnished" under Items 2.02, 7.01 or 9.01 on Form 8-K or other information "furnished" to the SEC which is not deemed filed and not incorporated in this prospectus supplement, in each case, until the offering described under the registration statement is terminated or completed:

- our Annual Report on Form 10-K for the fiscal year ended December 28, 2019, as filed with the SEC on March 17, 2020;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2020, as filed with the SEC on May 6, 2020;
- our Current Reports on Form 8-K filed with the SEC on <u>January 15, 2020</u>, <u>February 28, 2020</u>, <u>April 13, 2020</u> (only with respect to <u>Item 5.02</u> and <u>Exhibit 10.1</u>), <u>April 24, 2020</u>, <u>April 28, 2020</u> and <u>May 26, 2020</u>;
- portions of the <u>Definitive Proxy Statement</u> on Schedule 14A, filed with the SEC on April 14, 2020 that are incorporated by reference into Part III of our Annual Report on <u>Form 10-K</u> for the year ended December 31, 2019, filed with the SEC on March 17, 2020; and
- the description of capital stock contained in the Registration Statement on Form 8-A, as filed with the SEC on May 1, 2019, as supplemented by the "Description of Capital Stock" found on page 10 of the accompanying prospectus, and including any amendments or reports filed for the purpose of updating such description.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus supplement and accompanying prospectus filed before the date of this prospectus supplement or the accompanying prospectus will be deemed modified, superseded or replaced for purposes of this prospectus supplement and accompanying prospectus to the extent that a statement contained in this prospectus supplement or accompanying prospectus modifies, supersedes or replaces such statement.

Upon request, either orally or in writing, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus supplement and accompanying prospectus is delivered, a copy of the documents incorporated by reference into this prospectus supplement and accompanying prospectus but not delivered with the prospectus. You may request a copy of these filings and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus supplement, at no cost, by writing to us at the following address: TransMedics Group, Inc., 200 Minuteman Road, Andover, Massachusetts 01810, Attention: Corporate Secretary, or via telephone at (978) 552-0900.

Copies of these filings are also available, without charge, on the SEC's website at www.sec.gov and on our website at https://www.transmedics.com under the "Investors—Financial Information" caption as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not part of this prospectus supplement and or accompanying prospectus supplement.

PROSPECTUS



TransMedics Group, Inc.

\$200,000,000

Common Stock Preferred Stock Subscription Rights Warrants Units

We may offer and sell common stock, preferred stock, subscription rights, warrants, or units described in this prospectus from time to time in one or more transactions.

We will provide specific terms of any offering in a supplement to this prospectus. Any prospectus supplement may also add, update, or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby.

These securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers. The names of any underwriters, dealers, or agents involved in the sale of our securities and their compensation will be described in the applicable prospectus supplement.

General Information

Our common stock is traded on The Nasdaq Global Market under the symbol "TMDX." On May 4, 2020, the closing price of our common stock was \$16.79. We have not yet determined whether the other securities that may be offered by this prospectus will be listed on any exchange, interdealer quotation system or over-the-counter market. If we decide to seek the listing of any such securities upon issuance, the prospectus supplement relating to those securities will disclose the exchange, quotation system or market on which those securities will be listed.

Investing in our securities involves certain risks. See "<u>Risk Factors</u>" beginning on page 5 of this prospectus and in any prospectus supplement for a discussion of the factors you should carefully consider before deciding to purchase our securities.

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 May 21, 2020.

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ABOUT THIS PROSPECTUS

This prospectus is part of a shelf registration statement that we filed with the Securities and Exchange Commission, or SEC. By using a shelf registration statement, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings, up to a total dollar amount of \$200,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement and, if necessary, a free writing prospectus, that will contain specific information about the terms of that offering. The prospectus supplement and, if necessary, a free writing prospectus, may also add to, update or change information contained in this prospectus. Accordingly, to the extent inconsistent, the information in this prospectus will be deemed to be modified or superseded by any inconsistent information contained in a prospectus supplement or a free writing prospectus. You should read carefully this prospectus, the applicable prospectus supplement and any free writing prospectus, together with the additional information incorporated by reference in this prospectus described below under "Where You Can Find More Information" before making an investment in our securities.

We have not authorized anyone to give you any additional information different from that contained in this prospectus, any accompanying prospectus supplement or any free writing prospectus provided in connection with an offering. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you.

You should assume that the information appearing in this prospectus, any prospectus supplement, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus is not an offer to sell or solicitation of an offer to buy our securities in any circumstances under which or jurisdiction in which the offer or solicitation is unlawful. Unless the context otherwise indicates, the terms "TMDX," "TransMedics," "Company," "we," "us," and "our" as used in this prospectus refer to TransMedics Group, Inc. and its subsidiaries. The phrase "this prospectus" refers to this prospectus and any applicable prospectus supplement, unless the context otherwise requires.

INDUSTRY AND MARKET DATA

The market data and certain other statistical information used throughout this prospectus and any applicable prospectus supplement and documents incorporated by reference herein and therein are based on independent industry publications, government publications and other published sources. Some data, such as our estimates of the potential pool of donors and our potential addressable commercial opportunity, are also based on our good faith estimates. Although we believe these third-party sources are reliable as of their respective dates, we have not independently verified the accuracy or completeness of this information. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those referenced in the section of any accompanying prospectus supplement entitled "Risk Factors" and the risk factors and cautionary statements referenced in other documents that we file from time to time with the SEC, specifically under "Item 1A. Risk Factors" and elsewhere in our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K. These and other factors could cause results to differ materially from those expressed in these publications.

TRADEMARKS AND TRADENAMES

This prospectus and any applicable prospectus supplement and documents incorporated by reference herein and therein contain references to our trademarks and to trademarks belonging to other entities. "TransMedics" is a registered trademark of TransMedics. The TransMedics logo, Organ Care System and OCS are trademarks of TransMedics. Each of the other trademarks, trade names and service marks included in this prospectus belongs to its respective holder. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

IMPLICATIONS OF BEING AN EMERGING GROWTH COMPANY AND SMALLER REPORTING COMPANY

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies, including:

- reduced disclosure about our executive compensation arrangements;
- · exemption from the requirements to hold non-binding advisory votes on executive compensation and golden parachute payments; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions until the last day of the fiscal year following the fifth anniversary of our initial public offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company earlier if we have more than \$1.07 billion in annual revenue, we have more than \$700 million in market value of our stock held by non-affiliates (and we have been a public company for at least 12 months and have filed one annual report on Form 10-K with the SEC) or we issue more than \$1 billion of non-convertible debt securities over a three-year period. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. We may choose to take advantage of some, but not all, of the available exemptions.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected not to "opt out" of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard and will do so until such time that we either (i) irrevocably elect to "opt out" of such extended transition period or (ii) no longer qualify as an emerging growth company. Therefore, the reported results of operations contained in our financial statements may not be directly comparable to those of other public companies.

We are also a "smaller reporting company," as defined in Regulation S-K. We will cease to be a smaller reporting company if we have (i) more than \$250 million in market value of our shares held by non-affiliates as of the last business day of our second fiscal quarter or (ii) more than \$100 million of annual revenues in our most recent fiscal year completed before the last business day of our second fiscal quarter and a market value of our shares held by non-affiliates more than \$700 million as of the last business day of our second fiscal quarter. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

THE COMPANY

The following is a summary of selected information contained elsewhere or incorporated by reference in this prospectus. It does not contain all of the information that you should consider before buying our securities. You should read this entire prospectus carefully, as well as any applicable prospectus supplement, the documents incorporated by reference into this prospectus or the applicable prospectus supplement, and any free writing prospectus we have prepared, including the material referenced under the heading "Risk Factors".

Overview

We are a commercial-stage medical technology company transforming organ transplant therapy for end-stage organ failure patients across multiple disease states. We developed the Organ Care System, or the OCS, to replace a decades-old standard of care that we believe is significantly limiting access to life-saving transplant therapy for hundreds of thousands of patients worldwide. Our innovative OCS technology replicates many aspects of the organ's natural living and functioning environment outside of the human body. As such, the OCS represents a paradigm shift that transforms organ preservation for transplantation from a static state to a dynamic environment that enables new capabilities, including organ optimization and assessment. We believe our substantial body of clinical evidence has demonstrated the potential for the OCS to significantly increase the number of organ transplants and improve post-transplant outcomes.

To date, we have developed three OCS products, one for each of lung, heart and liver transplantations, making the OCS the only multi-organ technology platform. The OCS Lung has been approved by the FDA for commercial use in the United States since March 2018 for donor lungs that are currently utilized for transplantation and since May 2019 for donor lungs currently unutilized for transplantation. We also have commercialized the OCS Lung and OCS Heart outside of the United States. We submitted a premarket approval application to the FDA in December 2018 for the use of the OCS Heart for donor hearts currently utilized and unutilized for transplantation based on the results of our OCS Heart EXPAND Trial and OCS Heart PROCEED II Trial. In addition, we completed enrollment of the 300 patient OCS Liver PROTECT trial in October 2019.

Corporate Information

Our predecessor TransMedics, Inc. was incorporated in Delaware in August 1998. We were incorporated in Massachusetts in October 2018. On May 6, 2019, immediately prior to the closing of our initial public offering, we completed a corporate reorganization whereby TransMedics, Inc., the direct parent of TransMedics Group, Inc. prior to the corporate reorganization, became a direct, wholly-owned subsidiary of TransMedics Group pursuant to the merger of TMDX, Inc., a direct, wholly-owned subsidiary of TransMedics, with TransMedics as the surviving corporation.

Our principal executive offices are located at 200 Minuteman Road, Andover, MA 01810, and our telephone number is (978) 552-0900. Our website address is *www.transmedics.com*. Information contained on, or that can be accessed through, our website is not part of this prospectus.

RISK FACTORS

Investing in our securities involves significant risks. Please see the risk factors under "Item 1A. Risk Factors" in our most recent Annual Report on Form 10-K, as amended and revised or supplemented by any subsequent Quarterly Reports on Form 10-Q, each of which is on file with the SEC and incorporated by reference in this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations. If negative events occur, our business, financial condition, results of operations, or prospects could suffer. In that event, the market price of our securities could decline, and you may lose all or part of your investment.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains "forward-looking statements" that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "should," "could," "target," "predict," "seek" and similar expressions are intended to identify forward-looking statements. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those referenced in the section of any accompanying prospectus supplement entitled "Risk Factors" and the risk factors and cautionary statements described in other documents that we file from time to time with the SEC, specifically under "Item 1A. Risk Factors" and elsewhere in our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K, which could cause actual results to differ materially. Moreover, we operate in a very competitive and rapidly changing environment and 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 factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in or implied by 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 may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

Some of the key factors that could cause actual results to differ include:

- that we continue to incur losses;
- our need to raise additional funding;
- our existing and any future indebtedness, including our ability to comply with affirmative and negative covenants under our credit agreement to which we will remain subject to until maturity, and our ability to obtain additional financing on favorable terms or at all;
- the fluctuation of our financial results from quarter to quarter;
- our ability to use net operating losses and research and development credit carryforwards;
- our dependence on the success of the OCS;
- the rate and degree of market acceptance of the OCS;
- our ability to educate patients, surgeons, transplant centers and private payors of benefits offered by the OCS;
- the impact of the outbreak of the novel strain of coronavirus and associated containment and remediation efforts;
- our ability to improve the OCS platform;
- our dependence on a limited number of customers for a significant portion of our net revenue;
- the timing of and our ability to obtain and maintain regulatory approvals or clearances for our OCS products;
- our ability to adequately respond to FDA follow-up inquiries in a timely manner;
- the performance of our third-party suppliers and manufacturers;
- the timing or results of clinical trials for the OCS;
- our manufacturing, sales, marketing and clinical support capabilities and strategy;
- attacks against our information technology infrastructure;
- the economic, political and other risks associated with our foreign operations;

- our ability to attract and retain key personnel;
- our ability to protect, defend, maintain and enforce our intellectual property rights relating to the OCS and avoid allegations that our products infringe, misappropriate or otherwise violate the intellectual property rights of third parties;
- our ability to obtain and maintain regulatory approvals or clearance for our OCS products;
- the pricing of the OCS, as well as the reimbursement coverage for the OCS in the United States and internationally;
- · regulatory developments in the United States, European Union and other jurisdictions;
- the extent and success of competing products that are or may become available;
- · the impact of any product recalls or improper use of our products; and
- our use of proceeds from our initial public offering; and
- our estimates regarding revenues, expenses and needs for additional financing.

The forward-looking statements included in this prospectus are made only as of the date of this prospectus. You should not rely upon forward-looking statements as predictions of future events. 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 to conform these statements to actual results or reflect interim developments.

USE OF PROCEEDS

Except as otherwise provided in a prospectus supplement in connection with an offering of securities pursuant to this prospectus, we currently intend to use the net proceeds from the sale of any securities offered by us under this prospectus primarily for general corporate purposes. General corporate purposes may include, without limitation, working capital, paydown of debt, acquisitions and other business purposes. We may temporarily invest the net proceeds we receive in saving, certificate of deposit and money market accounts as well as short-term and intermediate investment-grade interest-bearing securities and obligations, such as money market funds, commercial paper and obligations of the United States government and its agencies.

We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will have broad discretion in the application of the net proceeds we may receive, and investors will be relying on the judgment of our management regarding the application of our net proceeds. Additional information on the use of net proceeds we receive from the sale of securities covered by this prospectus may be set forth in the prospectus supplement relating to the specific offering.

GENERAL DESCRIPTION OF SECURITIES

We may offer under this prospectus:

- common stock;
- preferred stock;
- · subscription rights;
- · warrants to acquire common stock or preferred stock; or
- any combination of the foregoing, either individually or as units consisting or two or more securities.

The following description of the terms of these securities sets forth some of the general terms and provisions of securities that may be offered. The particular terms of securities offered by any prospectus supplement and the extent, if any, to which the general terms set forth below do not apply to those securities, will be described in the related prospectus supplement. In addition, if we offer securities as units, the terms of the units will be described in the applicable prospectus supplement. If the information contained in the prospectus supplement differs from the following description, you should rely on the information in the prospectus supplement.

Whenever references are made in this prospectus to information that will be included in a prospectus supplement, to the extent permitted by applicable law, rules or regulations, we may instead include such information or add, update or change the information contained in this prospectus by means of a post-effective amendment to the registration statement of which this prospectus is a part, through filings we make with the SEC that are incorporated by reference in this prospectus or by any other method as may be permitted under applicable law, rules or regulations.

DESCRIPTION OF CAPITAL STOCK

General Matters

Our amended and restated articles of organization, or Articles of Organization, currently authorizes us to issue up to 150,000,000 shares of common stock, no par value per share, and 25,000,000 shares of preferred stock, no par value per share. As of April 30, 2020, we had approximately 21,361,513 shares of common stock and no shares of preferred stock outstanding.

The discussion set forth below describes the most important terms of our capital stock, Articles of Organization and amended and restated bylaws, or Bylaws. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description you should refer to our Articles of Organization and Bylaws, copies of which are on file with the SEC as exhibits to previous SEC filings. Please refer to "Where You Can Find More Information" below for directions on obtaining these documents.

Common Stock

Dividend Rights. Subject to preferences that may apply to shares of preferred stock outstanding at the time, holders of outstanding shares of common stock are entitled to receive dividends out of assets legally available at the times and in the amounts as our board of directors may from time to time determine.

Voting Rights. Holders of common stock are entitled to one vote for each share of common stock held on all matters submitted to a vote of shareholders, unless otherwise provided by our Articles of Organization. An election of directors by our shareholders is determined by a majority of the votes cast by the shareholders entitled to vote in the election. Other matters shall be decided by an affirmative vote of our shareholders having a majority in voting power of the votes cast by the shareholders present or represented and voting on such matter, except as otherwise disclosed below.

No Preemptive Rights. Our common stock is not entitled to preemptive or other similar subscription rights to purchase any of our securities.

Conversion or Redemption Rights. Our common stock is neither convertible nor redeemable.

Liquidation Rights. Upon our voluntary or involuntary liquidation, dissolution or winding up, the holders of our common stock will be entitled to receive pro rata our net assets which are legally available for distribution, after payment of all debts and other liabilities and subject to the preferential rights of any holders of preferred stock then outstanding.

Nasdaq Listing. Our common stock is listed on The Nasdaq Global Market under the symbol "TMDX."

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

Preferred Stock

Our board of directors may, without further action by our shareholders, from time to time, direct the issuance of shares of preferred stock in one or more series and may, at the time of issuance, determine the designations, powers, preferences, privileges, and relative participating, optional or special rights as well as the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights of our common stock. Satisfaction of any dividend preferences of outstanding shares of preferred stock would reduce the amount of funds available for the payment of dividends on shares of our common stock. Holders of shares of preferred stock may be

entitled to receive a preference payment in the event of our liquidation before any payment is made to the holders of shares of our common stock. Under certain circumstances, the issuance of shares of preferred stock may render more difficult or tend to discourage a merger, tender offer or proxy contest, the assumption of control by a holder of a large block of our securities or the removal of incumbent management. Upon the affirmative vote of a majority of the total number of directors then in office, our board of directors, without shareholder approval, may issue shares of preferred stock with voting and conversion rights, which could adversely affect the holders of shares of our common stock and the market value of our common stock.

If we offer a specific class or series of preferred stock under this prospectus, we will describe the terms of the preferred stock in the prospectus supplement for such offering and will file a copy of the certificate establishing the terms of the preferred stock with the SEC. To the extent appropriate, this description will include:

- the title and stated value;
- the number of shares offered, the liquidation preference per share and the purchase price;
- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption, if applicable;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price (or how it will be calculated) and conversion period;
- voting rights, if any, of the preferred stock;
- a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the affairs of the Company; and
- any material limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the Company.

The preferred stock offered by this prospectus when issued, will not have, or be subject to, any preemptive or similar rights.

Registration Rights

Pursuant to an amended and restated investor rights agreement, dated as of May 6, 2019, or Investor Rights Agreement, certain of our shareholders have the right to demand that we file a registration statement or request that their shares be included in a registration statement that we file otherwise. We refer to the shares held by holders having rights under this agreement as registrable securities. As of May 6, 2020, holders of 4,819,425 shares of registrable securities have registration rights under the Investor Rights Agreement.

Demand Registration Rights. Pursuant to the Investor Rights Agreement, until the fifth anniversary of the consummation of our initial public offering, the holders of at least 50% of the registrable securities then outstanding can demand that we file up to two registration statements on Form S-1 registering their registrable securities, if the aggregate anticipated offering price is at least \$5.0 million. Under specified circumstances, we

also have the right to defer filing of a requested registration statement for a period of not more than 90 days, which right may not be exercised more than once during any 12-month period. These registration rights are subject to additional conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances.

Form S-3 Registration Rights. Pursuant to the Investor Rights Agreement, the holders of at least 30% of the registrable securities then outstanding have the right to demand that we file additional registration statements, including a shelf registration statement, for such holders on Form S-3, if the aggregate anticipated offering price is at least \$1.0 million. These holders can demand up to two such registrations in any 12-month period.

Piggyback Registration Rights. Pursuant to the Investor Rights Agreement, if we propose to file a registration statement under the Securities Act (other than with respect to a registration statement on Form S-8 or Form S-4, or their successors, or any other form for a similar limited purpose, or any registration statement covering only securities proposed to be issued in exchange for securities or assets of another corporation), the holders of all registrable securities are entitled to receive notice of the registration and to include their registrable securities in such registration. The underwriters of any underwritten offering will have the right to limit the number of the number of registrable securities that may be included in the registration statement.

Expenses of Registration. We are required to pay all expenses relating to any demand, Form S-3 or piggyback registration, other than the underwriting discount, subject to certain limited exceptions. We will not pay for any expenses of any demand registration if the request is subsequently withdrawn by the holders of a majority of the shares requested to be included in such a registration statement, subject to limited exceptions.

Anti-takeover Effects of Our Articles of Organization and Bylaws

Our Articles of Organization and Bylaws contain certain provisions that are intended to enhance the likelihood of continuity and stability in the composition of our board of directors but which may have the effect of delaying, deferring or preventing a future takeover or change in control of us unless such takeover or change in control is approved by our board of directors.

These provisions include:

Action By Written Consent; Special Meetings of Shareholders. Our Bylaws provide that shareholder action can be taken only at an annual or special meeting of shareholders or by the unanimous written consent of all shareholders entitled to vote on the matter in lieu of such a meeting. Our Articles of Organization and Bylaws also provide that, except as otherwise required by law, special meetings of the shareholders can only be called pursuant to a resolution adopted by a majority of our board of directors or holders of at least 25% of all the votes entitled to be cast on any issue to be considered at the proposed special meeting. Except as described above, shareholders are not permitted to call a special meeting or to require our board of directors to call a special meeting.

Advance Notice Procedures. Our Bylaws establish an advance notice procedure for shareholder proposals to be brought before an annual meeting of our shareholders, including proposed nominations of persons for election to the board of directors. Shareholders at an annual meeting are only be able to consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors or by a shareholder who was a shareholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has given timely written notice, in proper form, of the shareholder's intention to bring that business before the meeting. Although the Bylaws do not give our board of directors the power to approve or disapprove shareholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting, the Bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of us.

Number of Directors and Filling Vacancies. Our Articles of Organization provide that the number of directors is established by the board of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office. The ability of our board of directors to increase the number of directors and fill any vacancies may make it more difficult for our shareholders to change the composition of our board of directors.

Authorized But Unissued Shares. Our authorized but unissued shares of common stock and preferred stock are available for future issuance without shareholder approval. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of a majority of our common stock by means of a proxy contest, tender offer, merger or otherwise.

Exclusive Forum. Our Articles of Organization require, to the fullest extent permitted by law, that any action under Massachusetts statutory or common law brought derivatively in the name of TransMedics Group, Inc., against directors, officers and employees for breach of a fiduciary duty and other similar actions may be brought only in the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts (or, if and only if the Business Litigation Session of the Superior Court of Suffolk County, Massachusetts lacks jurisdiction, another state or federal court located within the Commonwealth of Massachusetts). Although we believe this provision benefits us by providing increased consistency in the application of Massachusetts law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. In addition, our Articles of Organization provide that any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have notice of and consented to the foregoing provisions. This provision does not apply to actions arising under the Securities Exchange Act of 1934, as amended, or Exchange Act, or the Securities Act.

Anti-Takeover Provisions under Massachusetts Law

Provisions Regarding Business Combinations

We are subject to the provisions of Chapter 110F of the Massachusetts Business Corporation Act, or MBCA. In general, Chapter 110F prohibits a publicly held Massachusetts corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, five percent or more of the corporation's voting stock.

Under Chapter 110F, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions: before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder; upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 90% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or at or after the time the stockholder became interested, the business combination was approved by our board of directors of the corporation and authorized at an annual or special meeting of the shareholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Massachusetts corporation may "opt out" of these provisions with an express provision in its original articles of organization or an express provision in its articles of organization or bylaws resulting from a shareholders'

amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Provisions Regarding a Classified Board of Directors

Section 8.06(b) of the MBCA provides that, unless a company opts out of such provision, the terms of directors of a public Massachusetts company shall be staggered by dividing the directors into three groups, as nearly equal in number as possible, with only one group of directors being elected each year. Our board of directors has opted out of this default requirement for a classified board of directors, and all of our directors serve for one-year terms and are elected annually.

However, pursuant to Section 8.06(c)(2) of the MBCA, our board of directors may unilaterally opt back into default requirements under Section 8.06(b) of the MBCA and become a classified board of directors without the approval of our shareholders. Sections 8.06(d) and (e) of the MBCA provide that when a board of directors is so classified, (i) shareholders may remove directors only for cause, (ii) the number of directors shall be fixed only by the vote of the board of directors, (iii) vacancies and newly created directorships shall be filled solely by the affirmative vote of a majority of the remaining directors, and (iv) a decrease in the number of directors will not shorten the term of any incumbent director. If our board of directors opts into this classified structure in the future, these provisions are likely to increase the time required for shareholders to change the composition of our board of directors. For example, at least two annual meetings would generally be necessary for shareholders to effect a change in a majority of the members of our board of directors. As a result, the ability of our board of directors to adopt a classified structure in the future without the approval of our shareholders could have the effect of discouraging a potential acquirer from making a tender offer for a majority of the outstanding voting interest of our capital stock or otherwise attempting to obtain control of the Company.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase shares of our common stock and/or preferred stock in one or more series together with other securities or separately, as described in each applicable prospectus supplement. Below is a description of certain general terms and provisions of the warrants that we may offer. Particular terms of the warrants will be described in the applicable warrant agreements and the applicable prospectus supplement for the warrants.

To the extent appropriate, the applicable prospectus supplement will contain, where applicable, the following terms of and other information relating to the warrants:

- the specific designation and aggregate number of, and the price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the designation, amount and terms of the securities purchasable upon exercise of the warrants;
- if applicable, the exercise price for shares of our common stock and the number of shares of common stock to be received upon exercise of the warrants;
- if applicable, the exercise price for shares of our preferred stock, the number of shares of preferred stock to be received upon exercise, and a description of that class or series of our preferred stock;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if the warrants may not be continuously exercised throughout that period, the specific date or dates on which the warrants may be exercised;
- whether the warrants will be issued in fully registered form or bearer form, in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- · the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- if applicable, the date from and after which the warrants and the common stock and/or the preferred stock will be separately transferable;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the anti-dilution provisions of the warrants, if any;
- any redemption or call provisions;
- whether the warrants are to be sold separately or with other securities as parts of units; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

DESCRIPTION OF SUBSCRIPTION RIGHTS

We may issue subscription rights to purchase common stock, preferred stock, warrants or units or any combination thereof. These subscription rights may be issued independently or together with any other security offered by us and may or may not be transferable by the securityholder receiving the subscription rights in such offering. In connection with any offering of subscription rights, we may enter into a standby arrangement with one or more purchasers, including underwriters, pursuant to which such purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

To the extent appropriate, the applicable prospectus supplement will contain, where applicable, the following terms of and other information relating to the subscription rights to purchase shares of our securities offered thereby:

- the date of determining the securityholders entitled to the subscription rights distribution;
- the price, if any, for the subscription rights;
- · the exercise price payable for common stock, preferred stock or other securities upon the exercise of the subscription rights;
- the number of subscription rights issued to each securityholder;
- the amount of common stock, preferred stock or other securities that may be purchased per each subscription right;
- any provisions for adjustment of the amount of securities receivable upon exercise of the subscription rights or of the exercise price of the subscription rights;
- the extent to which the subscription rights are transferable;
- the date on which the right to exercise the subscription rights shall commence, and the date on which the subscription rights shall expire;
- the extent to which the subscription rights may include an over-subscription privilege with respect to unsubscribed securities;
- the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of subscription rights;
- · any applicable federal income tax considerations; and
- any other terms of the subscription rights, including the terms, procedures and limitations relating to the transferability, exchange and exercise of the subscription rights.

DESCRIPTION OF UNITS

The following is a general description of the terms of the units we may offer from time to time. Particular terms of the units will be described in the applicable unit agreements and the applicable prospectus supplement for the units. We urge you to read the applicable prospectus supplement related to the units that we may sell under this prospectus, as well as the complete unit agreements that will contain the terms of any 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 issue units directly or under a unit agreement to be entered into between us and a unit agent. We will name any unit agent in the applicable prospectus supplement. Any unit agent will act solely as our agent in connection with the units of a particular series and will not assume any obligation or relationship of agency or trust for or with any holders or beneficial owners of units.

Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time, or at any time before a specified date. We may issue units in such amounts and in such numerous distinct series as we determine.

To the extent appropriate, the applicable prospectus supplement will contain, where applicable, the following terms and other information relating to the units:

- 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 U.S. federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

PLAN OF DISTRIBUTION

We are registering securities, with an aggregate offering price not to exceed \$200,000,000, to be sold by us under a "shelf" registration process.

If we offer any securities under this prospectus, we will amend or supplement this prospectus by means of an accompanying prospectus supplement setting forth the specific terms and conditions and other information about that offering as is required or necessary.

We may sell the securities in any of the following ways (or in any combination) from time to time:

- to or through underwriters, brokers or dealers;
- · directly to one or more purchasers;
- through agents;
- "at-the-market" to or through market makers or into an existing market for the securities;
- as part of a collaboration with a third party;
- as part of an acquisition or merger with a third party;
- · in privately negotiated transactions; or
- any other method permitted pursuant to applicable law and described in an applicable prospectus supplement.

The prospectus supplement will set forth the terms of the offering of such securities, including:

- the name or names of any underwriters, dealers or agents and the amounts of securities underwritten or purchased by each of them;
- the terms of the securities being offered;
- any option under which underwriters may purchase additional securities from us; and
- the public offering price of the securities and the proceeds to us and any discounts, commissions or concessions allowed or reallowed or paid to dealers.

We may effect the distribution of the securities from time to time in one or more transactions either:

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

Offers to purchase securities may be solicited directly by us and the sale thereof may be made by us directly to institutional investors or others. In such a case, no underwriters or agents would be involved. We may use electronic media, including the Internet, to sell offered securities directly.

If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. Generally, the underwriters' obligations to purchase the securities will be subject to certain conditions precedent. Depending on the type of offering, the underwriters may be obligated to purchase all of the securities if they purchase any of the securities (other than any securities purchased upon exercise of any over-allotment option).

We may offer the securities covered by this prospectus into an existing trading market on the terms described in the prospectus supplement relating thereto. Underwriters, dealers and agents who participate in any at-the-market offerings will be described in the prospectus supplement relating thereto. To the extent that we make sales through one or more underwriters or agents in at-the-market offerings, we will do so pursuant to the terms of a sales agency financing agreement or other at-the-market offering arrangement between us and the underwriters or agents. If we engage in at-the-market sales pursuant to any such agreement, we will issue and sell our securities through one or more underwriters or agents, which may act on an agency basis or on a principal basis. During the term of any such agreement, we may sell our securities on a daily basis in exchange transactions or otherwise as we agree with the underwriters or agents. The agreement will provide that any common stock sold will be sold at prices related to the then-prevailing market prices for our securities. Therefore, exact figures regarding proceeds that will be raised or commissions to be paid cannot be determined at this time. Pursuant to the terms of the agreement, we also may agree to sell, and the relevant underwriters or agents may agree to solicit offers to purchase, blocks of our securities. The terms of each such agreement will be set forth in more detail in the applicable prospectus supplement.

We may sell the securities through agents from time to time. The prospectus supplement will name any agent involved in the offer or sale of the securities and any commissions paid to them. Generally, any agent will be acting on a best efforts basis for the period of its appointment.

If we utilize a dealer in the sale of the securities in respect of which this prospectus is delivered, we may sell those securities to the dealer, as principal. The dealer may then resell those securities to the public at varying prices to be determined by the dealer at the time of resale.

In effecting sales, broker-dealers or agents engaged by us may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts, or concessions from us in amounts to be negotiated immediately prior to the sale.

Any underwriter, broker-dealer, or agent that participates in the distribution of the securities may be deemed to be an "underwriter" as defined in the Securities Act. Any commissions paid or any discounts or concessions allowed to any such persons, and any profits they receive on resale of the securities, may be deemed to be underwriting discounts and commissions under the Securities Act. We will identify any underwriters or agents and describe their compensation in a prospectus supplement. 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 or agents may purchase and sell the securities in the open market. These transactions may include over-allotment, stabilizing transactions, syndicate covering transactions and penalty bids. Over-allotment involves sales in excess of the offering size, which creates a short position. Stabilizing transactions consist of bids or purchases for the purpose of preventing or retarding a decline in the market price of the securities and are permitted so long as the stabilizing bids do not exceed a specified maximum. Syndicate covering transactions involve the placing of any bid on behalf of the underwriting syndicate or the effecting of any purchase to reduce a short position created in connection with the offering. The underwriters or agents also may impose a penalty bid, which permits them to reclaim selling concessions allowed to syndicate members or certain dealers if they repurchase the securities in stabilizing or covering transactions. These activities may stabilize, maintain or otherwise affect the market price of the securities, which may be higher than the price that might otherwise prevail in the open market. These activities, if begun, may be discontinued at any time. These transactions may be effected on any exchange on which the securities are traded, in the over-the-counter market or otherwise.

Our common stock is listed on the Nasdaq Global Market under the symbol "TMDX."

Agents, broker-dealers and underwriters may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments which the agents or underwriters may be required to make in respect thereof.

Agents, broker-dealers and underwriters or their affiliates may be customers of, engage in transactions with, or perform services for, us in the ordinary course of business. We may also use underwriters or other third parties with whom we have a material relationship. We will describe the nature of any such relationship in the applicable prospectus supplement.

We are subject to the applicable provisions of the Exchange Act and the rules and regulations under the Exchange Act, including Regulation M, which may limit the timing of purchases and sales of any of the securities offered in this prospectus by any other person. The anti-manipulation rules under the Exchange Act may apply to sales of securities in the market and to the actions of the Company.

In order to comply with the securities laws of certain states, if applicable, the securities must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

To the extent required, this prospectus may be amended and/or supplemented from time to time to describe a specific plan of distribution. Instead of selling securities under this prospectus, we may sell the securities offered, including shares of common stock in compliance with the provisions of Rule 144 or Rule 144A under the Securities Act, if available, or pursuant to other available exemptions from the registration requirements of the Securities Act.

WHERE YOU CAN FIND MORE INFORMATION

We are currently subject to the information requirements of the Exchange Act and in accordance therewith file periodic reports, proxy statements and other information with the Securities and Exchange Commission. Our SEC filings will also be available to you on the SEC's website at http://www.sec.gov.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" certain information into this prospectus, which means that we can disclose important information about us by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede information in this prospectus. We incorporate by reference into this prospectus the documents listed below and any future filings, including all filings made after the date of the filing of the registration statement of which this prospectus is part and prior to the effectiveness of such registration statement, made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except for information "furnished" under Items 2.02, 7.01 or 9.01 on Form 8-K or other information "furnished" to the SEC which is not deemed filed and not incorporated in this prospectus, in each case, until the offering described under the registration statement is terminated or completed:

- our Annual Report on Form 10-K for the fiscal year ended December 28, 2019, as filed with the SEC on March 17, 2020;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2020, as filed with the SEC on May 6, 2020;
- our Current Reports on Form 8-K filed with the SEC on <u>January 15, 2020</u>, <u>February 28, 2020</u>, <u>April 13, 2020 (only with respect to Item 5.02 and Exhibit 10.1)</u>, <u>April 24, 2020</u> and <u>April 28, 2020</u>;
- portions of the <u>Definitive Proxy Statement</u> on Schedule 14A, filed with the SEC on April 14, 2020 that are incorporated by reference into Part III of our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 17, 2020; and
- the description of capital stock contained in the Registration Statement on <u>Form 8-A</u>, as filed with the SEC on May 1, 2019, as supplemented by the "Description of Capital Stock" found on page 10 of this prospectus, and including any amendments or reports filed for the purpose of updating such description.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus or the prospectus supplement will be deemed modified, superseded or replaced for purposes of this prospectus and the prospectus supplement to the extent that a statement contained in this prospectus or the prospectus supplement modifies, supersedes or replaces such statement.

Upon request, either orally or in writing, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus and the prospectus supplement is delivered, a copy of the documents incorporated by reference into this prospectus and the prospectus supplement but not delivered with the prospectus. You may request a copy of these filings and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost, by writing to us at the following address: TransMedics Group, Inc., 200 Minuteman Road, Andover, Massachusetts 01810, Attention: Corporate Secretary, or via telephone at (978) 552-0900.

Copies of these filings are also available, without charge, on the SEC's website at www.sec.gov and on our website at http://investors.transmedics.com as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not part of this prospectus.

LEGAL MATTERS

Unless the applicable prospectus supplement indicates otherwise, the validity of any securities offered from time to time by this prospectus and any related prospectus supplement will be passed upon for us by Ropes & Gray LLP, Boston, Massachusetts.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 28, 2019 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

\$60,000,000



Common stock

Prospectus supplement

Joint book-running managers

J.P. Morgan

Morgan Stanley

Lead manager

Canaccord Genuity

, 2020