UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

April 24, 2014

Via E-mail
Mr. Peter Maag, Ph.D.
President and Chief Executive Officer
CareDx, Inc.
3260 Bayshore Boulevard
Brisbane, California 94005

Re: CareDx, Inc.
Draft Registration Statement on Form S-1
Submitted March 31, 2014
CIK No. 0001217234

Dear Mr. Maag:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

2. We will process your amendments without price ranges. As the price range you select will affect disclosure in several sections of the filing, we will need sufficient time to process your amendments once a price range is included and the material information

now appearing blank throughout the document has been provided. Please understand that the effect of the price range on disclosure throughout the document may cause us to raise issues on areas not previously commented on.

3. We note that a number of exhibits will be filed by amendment. Please note we will need adequate time to review your exhibits prior to the effectiveness of the registration statement.

4. Prior to effectiveness, please have a representative of the exchange where your common stock will be listed call the staff to confirm that your securities have been approved for listing or file the certification on EDGAR.

5. Prior to the effectiveness of the registration statement, please arrange to have FINRA call us or provide us with a letter indicating that FINRA has cleared the underwriting arrangements for the offering.

6. Please provide us with any gatefold information such as pictures, graphics or artwork that will be used in the prospectus. For guidance, see Securities Act Forms, Compliance and Disclosure Interpretation, Question 101.02.

7. Please advise whether disclosure in accordance with Item 304 of Regulation S-K is required, i.e., for the termination of the PwC engagement or re-appointment of Ernst & Young as your auditor within the past 24 months, and if so, provide the necessary information.

8. Please provide the basis for the factual assertions made throughout the prospectus, citing to the source(s) of such information. Provide us supplementally with copies of any reports or other sources that provide the basis for the statements made, clearly marking the section(s) of such report or other sources upon which you are relying. For example and without limitation, we note:

   - Your statements on page 1 that "clinicians tend to administer relatively high levels of immunosuppression therapy to control rejection risk" and that "[d]ue in part to this long-term high level of immunosuppression therapy, illness and mortality rates among transplant recipients remain well above those of the general population."
   - Your statement on page 4 that "[a]ccording to the *ISHLT's 30th Adult Heart Transplantation Report 2012*, there is a clear need for better methods to enable physicians to individualize treatment and minimize the intensity of immunosuppression while still avoiding rejection …."
   - Your statement on page 4 that "immunosuppressive therapy increases susceptibility of an individual to kidney failure, new onset diabetes, imbalances of blood lipid levels, hypertension and osteoporosis."
   - Your statement on page 6 that "there is meaningful variation in the level of rejection activity and need for immunosuppression among transplant recipients."

- Your statement on page 6 that "many individuals receive more immunosuppressants than they may actually need."

In addition, we note the references to your studies that were published, such as the disclosure on page 79. When referring to these studies, please provide a specific citation to the published study.

Prospectus Summary, page 1

9. Please revise to clarify industry jargon, including but not limited to "solid organ," "510(k) clearance," "allograft function," and "CE mark."

10. We note your disclosure on pages 6-7 regarding intended benefits of AlloMap and the solutions in your development pipeline. Please separately describe the intended benefits of AlloMap, which has been developed, and other solutions, which are being developed.

11. We note your disclosure on pages 3 and 86 that you "intend to build on [your] success in securing coverage and reimbursement for AlloMap and [your] future solutions …." Please revise to specify which tests, other than AlloMap, have received coverage and reimbursement.

12. Please revise to clarify here and in the Business section that the company has fully developed and marketed only one test, AlloMap. In that regard, we note your disclosure on pages 1 and 78 that the company "markets and delivers diagnostic surveillance solutions" and that AlloMap is your "first" commercialized testing solution. We also note your disclosure on page 6 that you "provide diagnostic surveillance testing solutions."

13. We note your statement on pages 2 and 78 that since the launch of AlloMap, the company has performed more than 55,000 commercial AlloMap tests. Please revise to clarify the approximate launch date.

Risk Factors, page 14

14. Please remove the statement that "the risks and uncertainties described below are not the only ones we face" and the reference to "additional risks and uncertainties that we are unaware of."

"We rely on sole suppliers for some of our laboratory instruments and testing supplies …, page 25

15. Please clarify the status of the process you are engaged in that allows for dual sourcing of a replacement for the master mix material currently supplied by Thermo Fisher Scientific Inc. In doing so, please clarify whether you have validated the replacement for the master mix material and how the use of the replacement product will impact your test.

Market and Industry Data, page 52

16. We note the statements that "this information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the market position, market opportunity and market size information included in this prospectus is generally reliable, such information is inherently imprecise.... These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us." Please remove such statements, as they imply that you are not responsible for the accuracy of the information you elect to include in your prospectus. In addition, please add a sentence confirming that the company is responsible for all of the disclosure in the prospectus.

Use of Proceeds, page 53

17. We note your disclosure that you intend to use a certain amount of the net proceeds for "research and development, including the development of our product pipeline." Please revise to clarify the reference to your product pipeline and to state whether any material amounts of other funds will be necessary to develop your product pipeline. Refer to Instruction 3 to Item 504 of Regulation S-K.

18. We note your disclosure on pages 45 and 53 that you "will have broad discretion in the use of the net proceeds from this offering." We also note similar disclosure on page 75. You may reserve the right to change the use of proceeds, provided that such reservation is due to certain contingencies that are discussed specifically and the alternatives to such use in that event are specified. See Instruction 7 to Item 504 of Regulation S-K. Please revise your disclosure to specifically discuss the contingencies that would cause you to apply the net proceeds of this offering differently than you currently anticipate and specify the alternative uses of the net proceeds in that event.

Business, page 78

19. Please describe the general development of the business of the company and its predecessor, XDx, Inc. during the past five years, as required by Item 101 of Regulation S-K.

20. We note the disclosure on page 91 that you expect to develop for research use only the cfDNA for heart transplants. Please clarify whether you would then need to seek 510(k) clearance from the FDA before this test could be sold in connection with the AlloMap test. Similarly, clarify whether the cfDNA for kidney transplants would require 510(k) clearance from the FDA.

21. Please revise the disclosure on page 92 to reflect the percent of revenues attributable to Medicare.

22. Please disclose the material terms of the distribution agreements with LifeLabs Medical Laboratories Services and Diaxonhit SA as discussed on page 95. Please provide a range of royalty percentages (such as low single digits, mid single digits or a range of no more than 10%).

23. Please disclose the material terms of the agreement with Roche on page 97. Please provide a range of royalty percentages (such as low single digits, mid single digits or a range of no more than 10%). In addition, please clarify the nature of the dispute regarding the royalties.

Management, page 105

24. Please update the disclosure as of a more recent practicable date. Also, for each employment disclosed in this section, please disclose the beginning and ending dates of employment. Lastly, please provide Mr. Goldberg's business experience from May 2011 to the present.

Executive Compensation, page 113

25. Please disclose the material terms of the change in control agreement to be entered into with Mr. Maag.

26. Please disclose whether the compensation arrangements or agreements with your named executive officers will change as a result of your initial public offering. To the extent you have or will enter into new agreements or arrangements, please disclose the material terms and file as exhibits.

Principal Stockholders, page 127

27. Please explain how you calculated the amount held by officers and directors as a group.

Description of Capital Stock, page 130

Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws, page 131

28. Please revise to discuss the super-majority voting provisions in the certificate of incorporation and bylaws to be in effect upon completion of the offering. For example, we note that Section 5.3 of the Amended and Restated Certificate of Incorporation filed as Exhibit 3.2 provides that a director may be removed by the stockholders "only by the affirmative vote of the holders of at least 66 2/3% in voting power." In addition, please reconcile your disclosure on pages 109 and 132 that directors may be removed by the affirmative vote of holders of a majority of shares entitled to vote at an election of

directors with Section 5.3 of the Amended and Restated Certificate of Incorporation filed as Exhibit 3.2.

Financial Statements, page F-1

29. Please update your financial statements, as applicable, pursuant to Rule 8-08 of Regulation S-X. Please also provide a current consent of the independent accountant as necessary

Notes to Financial Statements, page F-7

30. Please disclose subsequent events and the date through which you have evaluated subsequent events for the financial statements presented, and whether that date is either the date the financial statements were issued or available to be issued. Refer to ASC 855-10-50-1.

9. Collaboration and Licensing Agreements, page F-18

Laboratory Corporation of America Holdings ("LabCorp")

31. We note you entered into a Collaboration and License Agreement with LabCorp in April 2012, and received an upfront license fee payment of $1,000,000. You recognized revenue associated with this upfront payment in the amount of $437,000 and $328,000 for the years ended December 31, 2012 and 2013 respectively. The remaining $626,000 of the upfront license fee is included in deferred revenue at December 31, 2013. Given the fact that you recognized $765,000 of the total amount to date, please tell us why the remaining amount to be recognized is $626,000 rather than $235,000.

Recent Sales of Unregistered Securities, page II-1

32. Please disclose the facts supporting your reliance upon Section 4(2). In particular, please discuss the sophistication of the investors.

Exhibits

33. We note that you are missing exhibits, schedules and/or attachments to Exhibits 10.16, 10.18, and 10.19. Please file these exhibits in their entirety. In addition, Exhibit 10.18 does not include all of the amendments to this agreement.

34. Please file the distribution agreement with LifeLabs Medical Laboratories Services as an exhibit or advise why it is not a material agreement.

35. Please file the LabCorp agreement as an exhibit and disclose the material terms in the business section or provide your analysis as to why this is not a material agreement.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Joanna Lam at (202) 551-3476 or Tia Jenkins at (202) 551-3871 if you have questions regarding comments on the financial statements and related matters. Please contact Tiffany Posil at (202) 551-3589 or Pamela Howell at (202) 551-3357 with any other questions.

Sincerely,

/s/ Pamela Howell
for

John Reynolds
Assistant Director

cc: Via E-mail
Michael Danaher, Esq.
Wilson Sonsini Goodrich & Rosati, P.C.