



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

September 30, 2016

Via E-mail

Kevin M. King
Chief Executive Officer
iRhythm Technologies, Inc.
650 Townsend Street, Suite 500
San Francisco, CA 94103

**Re: iRhythm Technologies, Inc.
Registration Statement on Form S-1
Filed September 23, 2016
File No. 333-213773**

Dear Mr. King:

We have reviewed your 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 amending your registration statement and providing the requested information. 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 any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our April 19, 2016 letter.

Prospectus Summary, page 1

1. From your response to prior comment 1, it appears that you may have sponsored third-party researchers named in the prospectus. If so, please file the consent of the named researchers as exhibits to your registration statement. See Rule 436.

Clinical Results and Studies, page 78

2. We note your revision in response to prior comment 5 indicating that some of the results you present may not be statistically significant. Where you discuss the results of each study, please disclose whether those results are statistically significant or whether the statistical significance of the results was not assessed.

AF Burden as Predictor of Stroke Risk, page 80

3. It is unclear from your disclosure here and throughout whether your product is used for identifying arrhythmia itself, or if it is used to identify risk factors associated with already-identified arrhythmia. From your disclosure here, it appears that the patch is prescribed for use in arrhythmia-identified patients. Please clarify.

Non-Employee Directors, page 93

4. Please revise to clarify the business experience of Mr. Talwalkar since May 2014. See Item 401(e) of Regulation S-K.

Exhibits

5. Please ensure that you file complete exhibits, including all attachments. In this regard, we note, by way of example only, the missing attachments to exhibits 10.21 and 10.31.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement, please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow

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adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Kristin Lochhead at (202) 551-3664 or Gary Todd, Senior Accountant, at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Laurie Abbott at (202) 551-8071 or me at (202) 551-3528 with any other questions.

Sincerely,

/s/ Amanda Ravitz

Amanda Ravitz
Assistant Director
Office of Electronics and Machinery

cc: Philip H. Oettinger
Wilson Sonsini Goodrich & Rosati