



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

DIVISION OF  
CORPORATION FINANCE

Mail Stop 4720

April 29, 2016

Robert W. Overell  
President and Chief Executive Officer  
PhaseRx, Inc.  
410 W. Harrison Street, Suite 300  
Seattle, WA 98119

**Re: PhaseRx, Inc.**  
**Registration Statement on Form S-1**  
**Filed April 18, 2016**  
**File No. 333-210811**

Dear Mr. Overell:

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.

Capitalization, page 47

1. Please tell us how you plan on accounting for the 1.4 million post-reverse stock split shares that majority stockholders of yours will transfer to Palladium Capital Advisors, LLC upon the completion of your offering and reference for us the authoritative literature you rely upon to support your anticipated accounting. Also tell us how you expect to reflect this transfer in your pro forma capitalization disclosure. Please see SAB 5:T.

UW License Agreement, page 88

2. We refer to prior comment 5. Please revise your disclosure on page 88 so that investors will have an understanding of the materiality and magnitude of the minimum annual royalty payments required pursuant to the UW License Agreement.

Executive Compensation  
2006 Stock Plan, page 105

3. We acknowledge your response to prior comment 4. As previously requested, please remove the reference to your February 8, 2016 fair value being determined by an independent appraiser and any other similar references in your filing.

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

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You may contact Keira Nakada at 202-551-3659 or Mark Brunhofer at 202-551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Dorrie Yale at 202-551-8776 or Joseph McCann at 202-551-6262 with any other questions.

Sincerely,

/s/ Joseph McCann for

Suzanne Hayes  
Assistant Director  
Office of Healthcare and Insurance

cc: Rick A. Werner, Esq. – Haynes and Boone, LLP