

PSYCHEMEDICS CORPORATION

125 Nagog Park, Acton, Massachusetts 01720

(978) 206-8220

(Name, address and telephone number of agent for service)

Copies to:

Patrick J. Kinney, Jr., Esq.

Lynch, Brewer, Hoffman & Fink, LLP

75 Federal Street

Boston, Massachusetts 02110

(617) 951-0800

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer (as defined in Rule 12b-2 of the Securities Exchange Act of 1934).

Large accelerated filer

Non-accelerated filer (Do not check if smaller reporting Company)

Accelerated filer

Smaller Reporting Company

CALCULATION OF REGISTRATION FEE

| Title of securities of to be registered | Amount to be registered(1) | Proposed maximum offering price per share(2) | Proposed maximum aggregate offering price(2) | Amount of registration fee |
|---|----------------------------|--|--|----------------------------|
| Common Stock, \$.005 par value | 350,000 | \$ 13.91 | \$4,868,500 | \$ 490.26 |

(1) The registration statement also includes an indeterminable number of additional shares that may become issuable as a result of the antidilution provisions of the Plan.

(2) Estimated pursuant to Rule 457(c) and 457(h) solely for the purpose of calculating the amount of the registration fee based on the closing sale price reported for shares of the registrant's common stock as reported by the Nasdaq Stock Market on May 31, 2016.

EXPLANATORY NOTE

The 350,000 shares of Common Stock being registered pursuant to this Registration Statement are additional securities of the same class as other securities for which registration statements on Form S-8 (No. 333-134974 and 333-174531) on Form S-8 were filed with the Securities and Exchange Commission on June 13, 2006 and May 26, 2011, respectively. Pursuant to General Instruction E to Form S-8, the contents of such earlier registration statements are incorporated by reference into this Registration Statement, except that the provisions contained in Part II of such earlier registration statements are modified as set forth in this Registration Statement.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

Certain important information is set forth in certain reports or statements filed by Psychemedics Corporation with the Securities and Exchange Commission. The reports or documents listed below are incorporated herein by reference:

- (a) the registrant's Annual Report on Form 10-K for the year ended December 31, 2015 (which incorporates by reference certain portions of the registrant's Proxy Statement for the registrant's 2016 Annual Meeting of Stockholders held on May 12, 2016);
- (b) the registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016;
- (c) the registrant's proxy statement for the 2016 Annual Meeting filed on March 29, 2016,
- (d) the registrant's Current Reports on Form 8-K, filed on January 27, February 10, March 24, April 27 and May 19, 2016; and
- (e) the information set forth under "Description of Registrant's Securities to be Registered" in the registrant's Registration Statement on Form 8-A dated July 31, 2002 (File No. 1-13738).

All documents filed by the registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference and to be a part hereof from the date of filing such reports and documents.

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

Item 4. DESCRIPTION OF SECURITIES.

Not applicable.

Item 5. INTERESTS OF NAMED EXPERTS AND COUNSEL.

Lynch, Brewer, Hoffman & Fink, LLP, 75 Federal Street, 7th Floor, Boston, Massachusetts 02110, has rendered its opinion to the registrant that the shares included in this offering will, when sold in accordance with the terms of the Plan, be legally issued, fully paid and non-assessable. Patrick J. Kinney, Jr., a partner of Lynch, Brewer, Hoffman & Fink, LLP, is Secretary of the registrant.

Item 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law permits the registrant's board of directors to indemnify any person against expenses (including attorneys' fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred by him or her in connection with any threatened, pending, or completed action, suit, or proceeding in which such person is made a party by reason of his or her being or having been a director, officer, employee, or agent of the registrant, or serving or having served, at the request of the registrant, as a director, officer, employee, or agent of another corporation, partnership, joint venture, trust, or other enterprise, in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act. The statute provides that indemnification pursuant to its provisions is not exclusive of other rights of indemnification to which a person may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors, or otherwise.

Article Tenth of the registrant's amended and restated certificate of incorporation provides for indemnification of its directors, officers, employees, and other agents to the fullest extent permitted by law.

As permitted by sections 102 and 145 of the Delaware General Corporation Law, the registrant's amended and restated certificate of incorporation eliminates the liability of a director of the registrant for monetary damages to Psychemedics Corporation and its stockholders arising from a breach or alleged breach of a director's fiduciary duty except for liability for any breach of the director's duty of loyalty to the registrant or its stockholders, liability for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, liability under section 174 of the Delaware General Corporation Law, or liability for any transaction from which the director derived an improper personal benefit.

In addition, the registrant maintains officers' and directors' insurance covering certain liabilities that may be incurred by officers and directors in the performance of their duties.

Item 7. EXEMPTION FROM REGISTRATION CLAIMED.

Not Applicable

Item 8. EXHIBITS.

The Exhibit Index immediately preceding the exhibits is incorporated herein by reference.

Item 9. UNDERTAKINGS.

A. The registrant hereby undertakes:

(1) To file during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement, or any material change to such information in the registration statement;

provided, however, that paragraphs (A)(1)(i) and (A)(1)(ii) do not apply if the information required to be in a post-effective amendment by those paragraphs is contained in periodic reports filed by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the Plan.

(4) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the registrant undertakes that in a primary offering of securities of the registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to

the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

B. The registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

C. Insofar as indemnification for liabilities under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the registrant pursuant to the foregoing provisions or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and had duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the Town of Acton, Massachusetts, on this 1st day of June, 2016.

PSYCHEMEDICS CORPORATION

By /s/ Raymond C. Kubacki

Raymond C. Kubacki, President

and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated on June 1, 2016.

| <u>Signature</u> | <u>Title</u> |
|--|---|
| <u>/s/ Raymond C. Kubacki*</u> Raymond C. Kubacki | President, Chief Executive Officer, Director (principal executive officer) |
| <u>/s/ Neil L. Lerner*</u> Neil L. Lerner | Vice President - Finance (principal financial officer) |
| <u>/s/ A. Clinton Allen*</u> A. Clinton Allen | Director |
| <u>/s/ Harry F. Connick*</u> Harry F. Connick | Director |

/s/ Walter S. Tomenson* Director
Walter S. Tomenson

/s/ Fred J. Weinert* Director
Fred J. Weinert

*By: /s/ Patrick J. Kinney, Jr.

As Attorney-in-Fact

EXHIBIT INDEX

Exhibit

Number Description

- 4.1 Specimen Stock Certificate [incorporated by reference to the registrant's Registration Statement on Form 8-A filed on July 31, 2002 (File No. 1-13738)]
- 4.2 2006 Incentive Plan, as amended and restated on February 23, 2016 (incorporated by reference to the registrant's Current Report on Form 8-K filed on May 19, 2016)
- 4.3 Form of Stock Unit Award Agreement for Employees and Consultants under the 2006 Incentive Plan (incorporated by reference to the registrant's Current Report on Form 8-K filed on May 19, 2016)
- 4.4 Form of Stock Unit Award Agreement for Non-Employee Directors under the 2006 Incentive Plan (incorporated by reference to the registrant's Current Report on Form 8-K filed on May 19, 2016)
- 4.5 Form of Incentive Stock Option Agreement for Employees under the 2006 Incentive Plan (incorporated by reference to the registrant's Current Report on Form 8-K filed on May 19, 2016)
- 4.6 Form of Non-qualified Stock Option Agreement for Employees and Consultants under the 2006 Incentive Plan (incorporated by reference to the registrant's Current Report on Form 8-K filed on May 19, 2016)
- 4.3 Form of Non-Qualified Stock Option Agreement for Non-employee Directors under the 2006 Incentive Plan (incorporated by reference to the registrant's Current Report on Form 8-K filed on May 19, 2016)
- 5 Opinion of Lynch, Brewer, Hoffman & Fink, LLP
- 23.1 Consent of Lynch, Brewer, Hoffman & Fink, LLP (included in Exhibit 5)
- 23.2 Consent of BDO USA, LLP
- 24.1 Power of Attorney

