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SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

August 4, 2004

(Date of earliest event reported)

MEDICAL DISCOVERIES, INC.

(Exact name of registrant as specified in its charter)

Utah	0-12627	87-0407858
(State or other jurisdiction of incorporation or organization)	(Commission File No.)	(I.R.S. Employer Identification No.)

738 Aspenwood Lane
Twin Falls, Idaho 83301
(208) 736-1799

(Address of principal executive offices and telephone number, including area code)

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Item 9. Regulation FD Disclosure

This Current Report on Form 8-K is filed for the purpose of disclosing the press release that was released on August 4, 2004 and is attached hereto as Exhibit 99.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MEDICAL DISCOVERIES, INC.

/s/ Judy M. Robinett
Judy M. Robinett
President and Chief Executive Officer

Date: August 4, 2004

INDEX OF EXHIBITS

Number	Description
99	Press Release issued August 4, 2004

EXHIBIT 99

Contact: Medical Discoveries, Inc.
208-736-1799

FOR IMMEDIATE RELEASE

MEDICAL DISCOVERIES INC. ANNOUNCES RECEIPT OF MULTIPLE CLINICAL DEVELOPMENT PRIORITIES UNDER A DRUG MASTER FILE

TWIN FALLS, IDAHO, August 4**,** 2004 – Medical Discoveries, Inc. (OTC-BB as MLSC) announced today an addition in clinical development priorities to multiple indications, led by Cystic Fibrosis (CF) and HIV, as allowed under an FDA Drug Master File (DMF).

The Company's clinical development objectives have been broadened to include Cystic Fibrosis (CF) as a lead indication, together with HIV. Both Initial New Drug applications (IND's) are expected to be filed with the FDA in Q4 of 2004 under MDI's Drug Master File, which is a submission to the Food and Drug Administration that may be used to provide confidential detailed information about facilities, processes, or articles used in the manufacturing, processing, packaging, and storing of one or more human drugs.

The decision to elevate CF to a clinical development status on par with HIV has come about for a number of reasons:

- Unlike HIV, which has numerous existing therapeutics in the market, CF has no existing life-extending therapies. The average age of mortality is 31 years, and CF represents an FDA Orphan Indication, which could mean 7 years of exclusivity in the U.S. and 10 years in the EU.

- Medical Discoveries now possesses pre-clinical data (a CF-like murine model) from the UW Medical School showing that MDI-P, the Company's therapeutic, provides exemplary pathogen-killing effect for the pulmonary infections characteristic of CF patients. Equally important, MDI-P appears to also process the mucus in CF-like lungs, allowing the viscous-state mucus to be removed from the plugged airways. As a result, MDI-P may represent a life-extending therapy for CF patients.

- While CF has an incidence of only 30,000 new cases/year in the U.S., there resides a surviving population approaching one million CF patients, with a similar number in the EU. Therefore, the market value of this indication may represent a multi-billion/year potential for MDI-P, should clinical therapeutic results be sufficiently strong. The unmet medical need of this CF population is substantial, with no drugs currently in the market or to MDI's knowledge under development which might offer a comparable life-extending effect.

- The Company expects an expedited FDA review and approval for Phase I clinical trials in CF. It is possible that CF could be approved for human clinical trials prior to MDI gaining similar approval for trials in HIV, due to a general absence of competing, life-extending therapies in CF. Therefore, the addition of CF as a lead indication should serve as insurance that MDI be allowed by the FDA to start trials for at least one of these indications in Q1 of 2005.

MDI will consider the option of retaining CF as an indication for full development and marketing on its own, using a small detail sales force, given the limited number of qualified CF sites (117 in the US, with only 18 primary sites). Unlike other indications such as HIV and asthma, where MDI will most likely pursue an out-licensing strategy, MDI could then retain all of the profits from CF sales, which could begin in as little as 2.5 years.

Consequently, MDI will be prosecuting its clinical trials under a Drug Master File application, in which INDs for both CF and HIV will be filed in Q4, 2004. Following approval of its first IND, the Company hopes to then initiate clinical trials in Q1 of 2005, to be followed by the second indication as soon as practicable.

MDI's President & Chief Executive Officer, Judy Robinett, commented: "We felt this adoption of multiple indications was the most prudent strategy to ensure timely start of clinical trials as early as possible in 2005. With the addition of CF to the first priority status, together with HIV, we now have improved our odds of starting at least one of these two indications in the clinic in Q1 of 2005. Momentum is important with biotech companies, and this multiple indication strategy under a DMF is a good insurance policy for MDI to maintain its clinical development

momentum. We are very comfortable with adding CF to be on a parallel development priority with HIV."

Robinett continued: "A Drug Master File is a valuable vehicle and procedure for use when a potential contractor or partner needs to review proprietary components involving the drug MDI-P and the device which makes it. While the FDA must have all of MDI's proprietary information to consider one or more IND's, the DMF allows other parties to reference part of this protected information without learning all of it. Filing a DMF clears the way for Medical Discoveries to develop and share its proprietary information with others, while still providing all of its information to the FDA in pursuit of clinical tests."

Formed in 1991, Medical Discoveries, Inc. is a publicly traded (OTC Bulletin Board as MLSC) development-stage biopharmaceutical research company engaged in the research, development and validation of its patented anti-infective technology. MDI's electrolyzed solution of free radicals represents a novel approach to treating its initial target indication, HIV.

Information in this press release relating to the potential of MDI constitutes forward-looking statements. Actual results in future periods may differ materially from the forward-looking statements because of a number of risks and uncertainties set forth in MDI's 2003 Annual Report on Form 10-KSB and other filings with the Securities and Exchange Commission.

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