



## Delivering Hope to Patients with Sickle Cell Disease

The First Treatment Developed  
Specifically for Sickle Cell Disease in  
almost 20 years

January 2019  
JP Morgan Healthcare Conference

Filed by MYnd Analytics, Inc.

Pursuant to Rule 425 under the Securities Act of  
1933 and deemed filed pursuant to Rule 14a-12 of the  
Securities Exchange Act of 1934

Subject Corporation:  
MYnd Analytics, Inc.  
Commission File No.: 001-35527.



**Important Information**

**IMPORTANT INFORMATION ABOUT THE TRANSACTIONS WILL BE FILED WITH THE SEC**

This communication is being made in respect of the proposed business combination involving MYnd Analytics, Inc. ("MYnd") and Emmaus Life Sciences, Inc. ("Emmaus"). In connection with the proposed transaction, MYnd and Emmaus plan to file documents with the SEC, including the filing by MYnd of a Registration Statement on Form S-4 containing a Joint Proxy Statement/Prospectus and each of MYnd and Emmaus plan to file with the SEC other documents regarding the proposed transactions. INVESTORS AND SECURITY HOLDERS OF MYND AND EMMAUS ARE URGED TO CAREFULLY READ THE JOINT PROXY STATEMENT/PROSPECTUS (WHEN AVAILABLE) AND OTHER DOCUMENTS FILED WITH THE SEC BY MYND AND EMMAUS BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTIONS. Investors and security holders may view these documents (when they are available) and other documents filed with the SEC at the SEC's web site at [www.sec.gov](http://www.sec.gov) and by contacting MYnd Investor Relations at [mynd@crescendo-ir.com](mailto:mynd@crescendo-ir.com). Investors and security holders may view the documents filed with the SEC on MYnd's website at [www.myndanalytics.com](http://www.myndanalytics.com) or through the SEC's website at [www.sec.gov](http://www.sec.gov). Investors and security holders are urged to read the Joint Proxy Statement/ Prospectus and other documents filed with the SEC before making any voting or investment decision in connection with the proposed transactions.

**PARTICIPANTS IN THE SOLICITATION**

MYnd, Emmaus and their respective directors and executive officers may be deemed participants in the solicitation of proxies with respect to the proposed transaction. Information regarding the interests of these directors and executive officers in the proposed transaction will be included in the Joint Proxy Statement/Prospectus described above. Additional information regarding the directors and executive officers of MYnd is also included in MYnd's proxy statement for its 2018 Annual Meeting of Shareholders, which was filed with the SEC on March 1, 2018, as updated in MYnd's Annual Report on Form 10-K for the fiscal year ended September 30, 2018, and additional information regarding the directors and executive officers of Emmaus is also included in Emmaus' proxy statement for its 2018 Annual Meeting of Stockholders, which was filed with the SEC on August 23, 2018. Additional information regarding the interests of those participants and other persons who may be deemed participants in the transaction may be obtained by reading the Joint Proxy Statement/Prospectus regarding the proposed transaction when it becomes available.

**NO OFFERS OR SOLICITATIONS**

This communication shall not constitute an offer to sell or the solicitation of an offer to sell or the solicitation of an offer to buy any securities, nor shall there be any sale of securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. No offer of securities shall be made except by means of a prospectus meeting the requirements of Section 10 of the Securities Act.

**CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS**

Certain statements in this communication, including statements relating to the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement and the combined company's future financial condition performance and operating results, strategy and plans are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 giving MYnd's and Emmaus' expectations or predictions of future financial or business performance or conditions. These forward-looking statements are subject to numerous assumptions, risks and uncertainties which change over time. Forward-looking statements speak only as of the date they are made and MYnd and Emmaus assume no duty to update forward-looking statements.

In addition to factors previously disclosed in MYnd's and Emmaus' reports filed with the U.S. Securities and Exchange Commission (the "SEC") and those identified elsewhere in this communication, the following factors, among others, could cause actual results to differ materially from forward-looking statements and historical performance: the ability to NasdaqCM listing approval and meet other closing conditions to the Merger, including requisite approval by MYnd's and Emmaus' stockholders on a timely basis or at all; delay in closing the Merger; the ability to effect the proposed spin-off; adverse tax consequences to shareholders of the proposed spin-off; disruption following the Merger; the availability and access, in general, of funds to fund operations and necessary capital expenditures.

Other risks and uncertainties are more fully described in MYnd's Annual Report on Form 10-K for the year ended September 30, 2018, and Emmaus' Annual Report on Form 10-K for the year ended December 31, 2017, each filed with the SEC, and in other filings that MYnd or Emmaus makes and will make with the SEC in connection with the proposed transactions, including the Joint Proxy Statement/Prospectus described herein under "Important Additional Information About the Transaction Will be Filed with the SEC." Existing and prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. The statements made in this Current Report on Form 8-K and the exhibits attached hereto speak only as of the date stated herein, and subsequent events and developments may cause MYnd's or Emmaus' expectations and beliefs to change. While MYnd or Emmaus may elect to update these forward-looking statements publicly at some point in the future, each of MYnd and Emmaus specifically disclaims any obligation to do so, whether as a result of new information, future events or otherwise, except as required by law. These forward-looking statements should not be relied upon as representing MYnd's or Emmaus' views as of any date after the date stated herein.



## Safe Harbor Statement

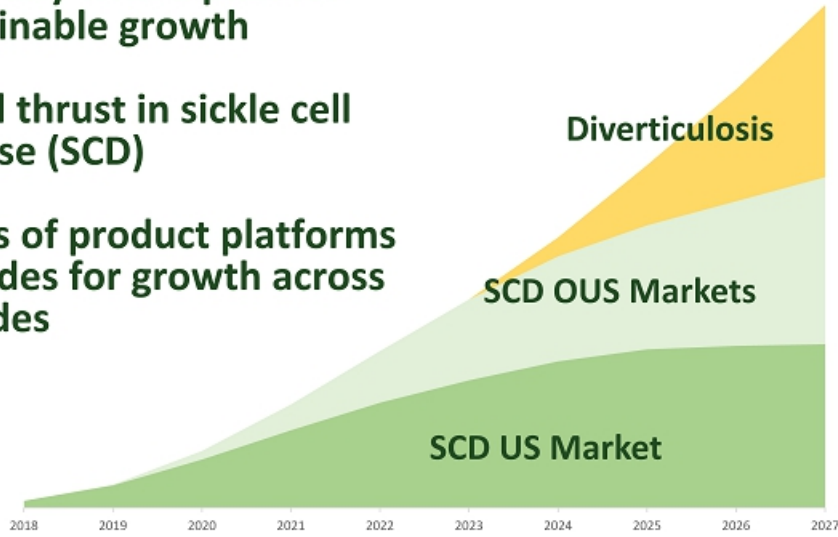
This presentation contains forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995, regarding the research, development and potential commercialization of pharmaceutical products. Such forward-looking statements are based on current expectations and involve inherent risks and uncertainties, including factors that could delay, divert or change any of them, and could cause actual outcomes and results to differ materially from current expectations. Additional risks and uncertainties are described in reports filed by Emmaus Life Sciences, Inc. with the U.S. Securities and Exchange Commission, including its Annual Report on Form 10-K and Quarterly Reports on Form 10-Q. Emmaus is providing this information as of the date of this publication and does not undertake any obligation to update any forward-looking statements as a result of new information, future events or otherwise.



**We are a  
biopharmaceutical  
company with a plan for  
sustainable growth**

**Initial thrust in sickle cell  
disease (SCD)**

**Series of product platforms  
provides for growth across  
decades**

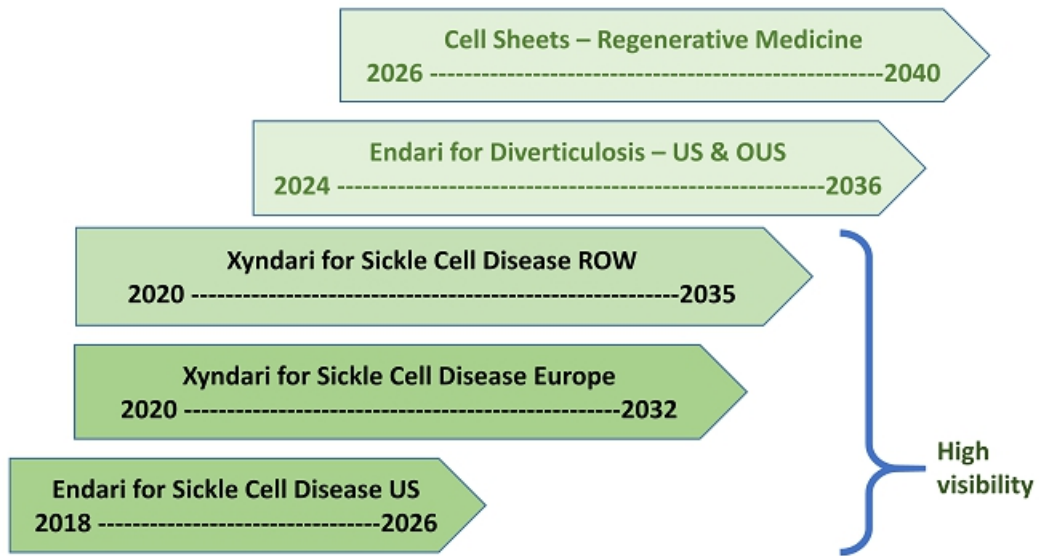


# Investment Highlights

- ❑ **Market Opportunity for treating Sickle Cell Disease (SCD)**
  - Underserved patient population and underdeveloped market – ripe for a new company – limited competition, no new treatments in ≈ 20 yrs.
  - Orphan market (but large) – 100,000 patients in U.S. – significant revenue opportunity
- ❑ **Emmaus Solution – Endari™ (L-glutamine oral powder)**
  - 1<sup>st</sup> FDA-approved treatment for pediatric patients (5 yrs. and up), and 1<sup>st</sup> in ≈ 20 years for adult patients – Orphan Drug Designation – protected through 2024
- ❑ **Clinical Results**
  - Phase 3 trial – lower crises, hospitalizations, acute chest syndrome compared to placebo
  - Published in The New England Journal of Medicine (July 2018)
- ❑ **Commercial Launch**
  - U.S. sales team deployed May 2018 – steep sales ramp
  - O.U.S. – MAA under review for EU – Middle East to come on in 2019
  - Emmaus 2018 net revenues unaudited: Q1 - \$781,000, Q2 - \$2,571,000, Q3 - \$4,882,000
- ❑ **Competitors**
  - Still in clinical development – safety & efficacy not determined
- ❑ **Valuation Considerations**
  - First mover advantage; high gross margin business; pipeline



# Sustainable Growth – Current and Pipeline



## Financial Profile

- Initial funding by NIH and FDA
- Raised over \$125m in total
- SEC voluntary reporting company – nontrading
- Beneficial ownership – officers and directors  $\approx$  40%
- Strong initial sales
- Cash burn nicely reduced by the steadily increasing revenues, break-even in the not-too-distant future
- Reverse merger



## Reverse Merger Announced

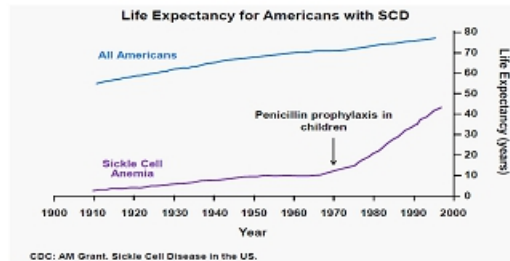
- The surviving company will change its name to Emmaus Life Sciences
- Nasdaq-listed – MYnd [MYND] will spin off legacy business, assets and liabilities to its shareholders
- Emmaus' ownership ratio of the combined entity will be approximately 94%
- Closing expected in Q2 2019, subject to closing conditions





# Sickle Cell Disease

- ❑ An inherited disease – autosomal recessive disorder -- each parent carries one copy of the mutated gene
- ❑ Sickle-shaped, adhesive and inflexible red blood cells can occlude blood vessels causing crises and intractable musculoskeletal and visceral pain
- ❑ Increased risk of heart attacks, strokes, acute chest syndrome and frequent infections
- ❑ In Central Africa if untreated, 90% die by age five, an even higher percentage by age 20, in the U.S. life expectancy <50 years



Low life expectancy – and those that do reach adult age suffer terrible lives – excruciating pain, frequent hospitalizations, in the grip of a disease that affects family, relationships and work

# Market for Treatment of Sickle Cell Disease

## □ A Worldwide Issue

- Orphan Disease – U.S. (100,000) and Europe (80,000)
- Middle East, North Africa (MENA) region 500,000 patients
- High prevalence in Brazil, Rest of South America and Africa
- 20 to 25 million patients worldwide



## □ Unmet Medical Need – underserved, undertreated, underdeveloped market

- SCD occludes blood vessels causing crises and intractable pain
- Increased risk of heart attacks, strokes, acute chest syndrome and frequent infections

## □ Economic and Clinical Impact

- U.S. treatments exceeding \$2 billion annually
- Some statistics point to an annual spend of \$200,000 per patient per year
- 30-day and 14-day re-hospitalization rates of 33.4% & 22.1% in U.S.

*20 to 25 million patients worldwide -- no new treatments in nearly 2 decades -- underserved, undertreated disease category – poised for disruption*



## Positioning our product Endari™

### Before...

Hospitalization  
Pain meds (opioids)  
Hydroxyurea

### Endari™

- Highly efficacious
- Well-tolerated
- Clean side-effect profile
- Orally administered
- Moderately priced

### Future...

Selectin inhibitors  
GBT's Hb O<sub>2</sub> binding enhancer  
bluebird's Lenti-Globin

*Endari™ a potential corner-stone therapy in the treatment of sickle cell disease – stand alone, or, with other existing treatments*



## Endari (L-Glutamine) mechanism of action

Oxidative stress plays a major role in the pathophysiology of SCD  
This stress, as manifest in a low redox ratio, makes red cells *POOR* performing (oxygen transfer, morphology, adhesiveness)



Poor performing red cells

Oxidants such as  $O_3$ ,  $H_2O_2$  and  $O_2\bullet$  are present in all cells, but to an even greater extent in the red cells of sickle cell patients  
These oxidants drive a reduction in the redox ratio and tilt the  $NAD^+$  and  $NADH$  equilibrium toward  $NAD^+$  (oxidized form)



Oxidants and  $NAD^+$

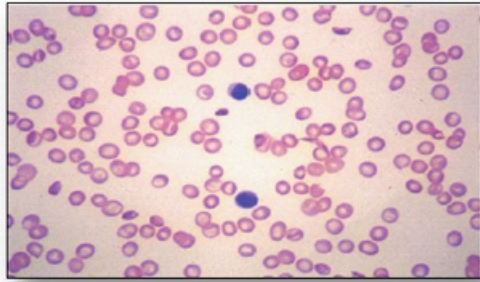
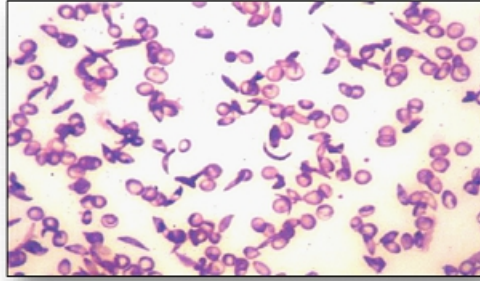
L-Glutamine



L-Glutamine causes cells to produce more  $NAD$  which, in effect, mops up the oxidants (essentially an anti-oxidant) – and, increases the redox ratio, prompting a whole series of red cell performance improvements



## Endari – it works



## Phase 3 Clinical Trial

- ❑ Multicenter, randomized, placebo-controlled, double blind
- ❑ Total of 230 patients (ages 5 to 58 years; 53.9% female), assigned 2:1 to treatment arm
  - 152 treatment arm; 78 placebo
- ❑ Treatment period 48 weeks
- ❑ Concomitant hydroxyurea use – 66% of patients
- ❑ Endpoints
  - Primary: number of pain crises through week 48
  - Secondary: Number of hospitalizations for sickle cell-related pain
  - Additional Analysis: Incidence of Acute Chest Syndrome

 ***RCT with clinically relevant endpoints***



## Phase 3 Results

Results <sup>(1)</sup>	Primary Endpoint	Secondary Endpoint	Additional Analysis		
Difference between treated and placebo arms	Lower frequency of sickle cell crises	Lower frequency of hospitalization	Lower cumulative hospital days	Delay in the onset of first sickle cell crises	Lower incidence of acute chest syndrome
Results	Median 3 vs. 4	Median 2 vs. 3	Median 6.5 days vs. 11 days	Median 54 days vs. 84 days	8.6 percent vs. 23.1 percent
Pct. Difference	25%	33%	41%	56%	63%
P-values	p=0.005	p=0.005	p=0.02	p=0.02	p=0.003

(1) P-values for crises, hospitalization, and ACS used CMH with modified ridit scores, adjusting for region and hydroxyurea use; cumulative hospital days used Wilcoxon rank sum test; and, delay in onset uses Log Rank test

- Safety profile similar to placebo with no Serious Adverse Events attributable to Endari
- The most common adverse reactions (incidence >10 percent) in clinical studies were constipation, nausea, headache, abdominal pain, cough, pain in extremity, back pain and chest pain



***The New England Journal of Medicine, July 2018***



# Endari Commercialization – Addressable Market

## □ U.S.

- Highly concentrated market – allows for efficient distribution
- Converting 20% of the 100,000 patient market translates to \$400 million (average annual ASP of \$20,000)

## □ EU

- Europe – distributor
- Converting 20% of the 80,000 patient market translates to \$240 million (average realized ASP of \$15,000)

## □ ROW

- MENA (Middle East, North Africa) distributor
- Africa – distributor
- Converting even just 5% of the potential market translates to \$3.4 billion

### Framing the addressable market:



U.S. & EU	\$0.64 billion
<u>ROW</u>	<u>\$3.40 billion</u>
Total	\$4.04 billion





## Endari Commercialization – Sales Network

- ❑ Sales force hired through Publicis, a Contract Sales Organization
  - Targeting SCD hematologists, physicians and sickle cell treatment centers
- ❑ Big 3 distributors – AmerisourceBergen, Cardinal, McKesson
  - Pharmacy network approximately 150 pharmacies and growing including Walgreens Specialty, IDNs and Hospital Outpatient
  - To date – Rx’s filled in 36 states, Puerto Rico and Washington D.C.
- ❑ Supporting sickle cell advocacy and foundations nationally and locally
- ❑ WAC price per patient averages \$30,000 per year – net approximately \$20,000
  - To date excellent payer coverage
  - Medicaid contract signed
  - Contracting with PBMs going well / High adjudication rate with PBMs
  - Payers cover majority of patients
    - Managed Medicaid will be the primary payer
    - Children’s Health Insurance Plan (CHIP) for low income families and children
    - Commercial Insurance
    - Medicare



## Competitors – other approaches

- ❑ Marketed Product
  - Hydroxyurea
- ❑ Developmental Products
  - Global Blood Therapeutics – small molecule that modifies hemoglobin – oxygenated state – introducing a new efficacy measure – Hb improvement > 1g/dL vs. baseline – seeking accelerated approval
  - Novartis AG – crizanlizumab – intravenous humanized monoclonal antibody mAb p-selectin inhibitor – to reduce pain crises -- expected to file for FDA review for approval in 2019
  - Pfizer Inc. – rivipansel (Glycomimetics), a pan-selectin inhibitor – to be administered intravenously during hospitalization for a VOC – to reduce duration of hospitalization -- preliminary results expected 2Q 2019
  - bluebird bio, Inc. – LentiGlobin BB305, which aims to treat SCD by inserting a functional human beta-globin gene into the patient’s own hematopoietic stem cells, or HSCs, ex vivo and then transplanting the modified stem cell into the patient’s bloodstream
  - Ironwood Pharmaceuticals – soluble guanylate cyclase (sGC) stimulators – works by increasing NO to improve blood flow – in Phase 2 trials



# Emmaus Patent Landscape

## Sickle Cell Disease

- Endari
  - Orphan Drug exclusivity in U.S.
    - 7 years
  - Orphan Drug exclusivity in EU
    - 10+2 years (pediatric investigation plan)

## Other Indications

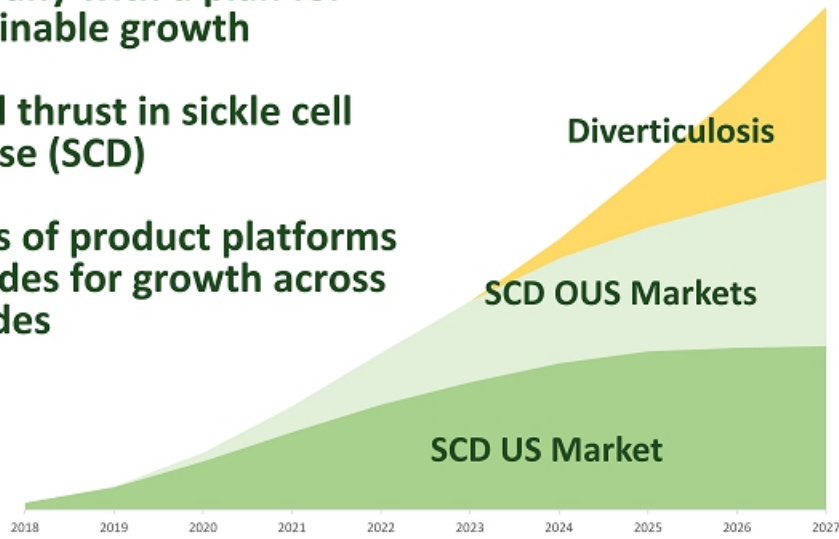
- Diverticulosis (IND approved)
  - Patents approved: U.S., EU, Australia, China, Russia, Japan, South Korea, Mexico and Indonesia
  - Patents pending: Brazil and India
- Diabetes
  - Patents approved: Japan and EU
  - Patents pending: U.S., China, Brazil, India, Philippines, and Indonesia



**We are a  
biopharmaceutical  
company with a plan for  
sustainable growth**

**Initial thrust in sickle cell  
disease (SCD)**

**Series of product platforms  
provides for growth across  
decades**



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