



emyria

(ASX:EMD)

A **clinical stage** biotech, informed by the **patient experience**, tackling unmet needs in **mental health** and **neuroscience**

March 2023

Broker Briefing

DISCLAIMER

This presentation has been prepared by Emyria Limited ACN 625 085 734 (Company or Emyria). This presentation is not a financial product or investment advice or recommendation, offer or invitation by any person or to any person to sell or purchase securities in Emyria in any jurisdiction. This presentation contains general information only and does not consider the investment objectives, financial situation and needs of individual investors. Investors should make their own independent assessment of the information in this presentation and obtain their own independent advice from a qualified financial adviser having regard to their personal objectives, financial situation and needs before taking any action. No representation or warranty, express or implied, is made as to the accuracy, completeness, reliability or adequacy of any statements, estimates, opinions or other information, or the reasonableness of any assumption or other statement, contained in this presentation. Nor is any representation or warranty (express or implied) given as to the accuracy, completeness, likelihood of achievement or reasonableness of any forecasts, prospective statements or returns contained in this presentation. Such forecasts, prospective statements or returns are by their nature subject to significant uncertainties and contingencies, many of which are outside the control of Emyria. To the maximum extent permitted by law, Emyria and its related bodies corporate, directors, officers, employees, advisers and agents disclaim all liability and responsibility (including without limitation any liability arising from fault or negligence) for any direct or indirect loss or damage which may arise or be suffered through use or reliance on anything contained in, or omitted from, this presentation. An investment in Emyria securities should be considered speculative and is subject to investment and other known and unknown risks, some of which are beyond the control of Emyria. Emyria does not guarantee any rate of return or the absolute or relative investment performance of Emyria securities. The distribution of this presentation including in jurisdictions outside Australia, may be restricted by law. Any person who receives this presentation must seek advice on and observe any such restrictions.

This release may contain certain forward-looking statements with respect to matters including but not limited to the financial condition, results of operations and business of Emyria and certain of the plans and objectives of Emyria with respect to these items. These forward-looking statements are not historical facts but rather are based on Emyria's current expectations, estimates and projections about the industry in which Emyria operates, and its beliefs and assumptions. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates," "guidance" and similar expressions are intended to identify forward looking statements and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the endeavour of building a business around such products and services. These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of Emyria, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward looking statements. Emyria cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of Emyria only as of the date of this release. The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made. Emyria will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.

Presentation release authorised by Michael Winlo, CEO and Managing Director

emyria

Advancing
CBD & **MDMA** to
address unmet
needs in Mental
Health & CNS

(EMD : ASX)

¹Tenmile = Forrest Family
Health-Focused Investment Fund

CLINICAL FOCUS

Mental Health & Neuroscience



COMPARATIVE ADVANTAGES

- **Strong register** - Tenmile¹ 7.8% / Directors 27% / Top 50 70+%
- **Unique Ultra-Pure CBD formulations** - delivers clinical advantages
- **Novel MDMA-inspired chemical entities** - substantial preclinical assets
- **Proprietary Real-World Data** - guiding clinical development
- **Front-line clinical delivery (*Emerald Clinics*)** - provides patient access
- **Global leadership team & partners** with drug registration successes

LEADING PROGRAMS & TRACTION

ULTRA-PURE (lab-made) CANNABINOID MEDICINES

- *First dose form (EMD-RX5) in **Phase 3 clinical trials** (ACTRN: 12622001319763)*
- Proprietary "RX" formulation **high bioavailability**, safe, tolerable, **low cost**
- Multiple global drug registration opportunities; **FDA-compliant** formulations

MDMA-INSPIRED MEDICINES (TGA now accepts MDMA as Schedule 8 medicine)

- One of **world's largest MDMA analogue libraries**
- Partnership with University of Western Australia
- Establishing **MDMA-assisted therapy network** in Australia via specialists

IP & PROTECTION

Growing patent library covering **novel formulations, methods of treatment** and **new chemical entities**

emyria'S MAJOR DISEASE TARGETS



Problem Size



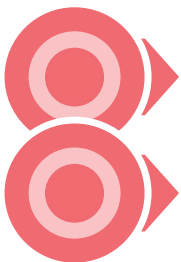
Unmet Needs



The Opportunity



Emyria's Advanced Treatment Programs



MILD SYMPTOMS ANXIETY DISORDERS

15% of all adults from time to time

(DOI: 10.25816/5psl-j259 2021)

>300M w GAD (most prevalent mental health disorder, & rising)

(<https://ourworldindata.org/mental-health> 2021)

No over the counter treatments

80% of patients on prescription treatments have at least 1 **side effect**

(Sienaert P., et al 2014)

CBD shown to be effective in Real-World studies **but current products limited by low purity & potency and high costs**

(Vickery A., et al 2022)

Ultra-Pure "Over the counter" CBD (slide 11)

Ultra-Pure "Prescription" CBD (slide 12)



POST-TRAUMATIC STRESS DISORDER

350M worldwide (>\$200B in costs)

(Davis, L. L., et al. 2022)

Up to **50%** of patients **resistant to current treatments**

(ncbi.nlm.nih.gov/books/NBK224874/)

MDMA-assisted therapy showing promising outcomes **but delivery challenging**

(Mitchell J.M., et al 2021)

MDMA-assisted therapy network (slide 17)

"Faster-acting" MDMA (slide 19)



L-DOPA INDUCED DYSKINESIA ('LID')

10M w Parkinson's (up to **80%** develop **LID** which increases treatment costs **40%**)

(Thanvi B., et al 2007)

Most effective current treatment achieves only **24%** reduction in symptoms

(Kwon, D.K., et al 2022)

Case studies have shown **MDMA** can help with symptoms **but has unwanted side effects**

(<http://news.bbc.co.uk/2/hi/health/1169980.stm>)

MDMA without the "high" (slide 20)

emyria BUSINESS STRUCTURE & ASSETS

PERSONALISED CARE

+ SERVICE REVENUES



DATA



ADVANCED TREATMENTS

+ COMMERCIAL DEALS



Specialist cannabinoid clinics
caring for 1,000's of Australians
- demand is strong

ULTRA-PURE CBD

EMD-RX5 (over-the-counter CBD)
IN PHASE 3

EMD-RX7 (prescription)
PREPARING FOR PHASE 1

emyria

REAL-WORLD DATA

Dose responses, clinical outcomes,
product intelligence
Supports development
of new treatments

MDMA-INSPIRED THERAPIES

MDMA-ASSISTED THERAPY MODEL
Licenced care model & MDMA package

MDMA ANALOGUES
Next-gen MDMA tackling neuropsychiatric disorders

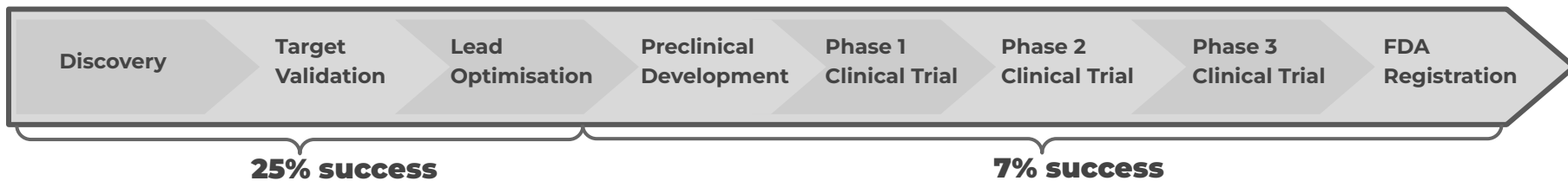


A psychiatry network delivering
psychedelic-assisted therapy¹

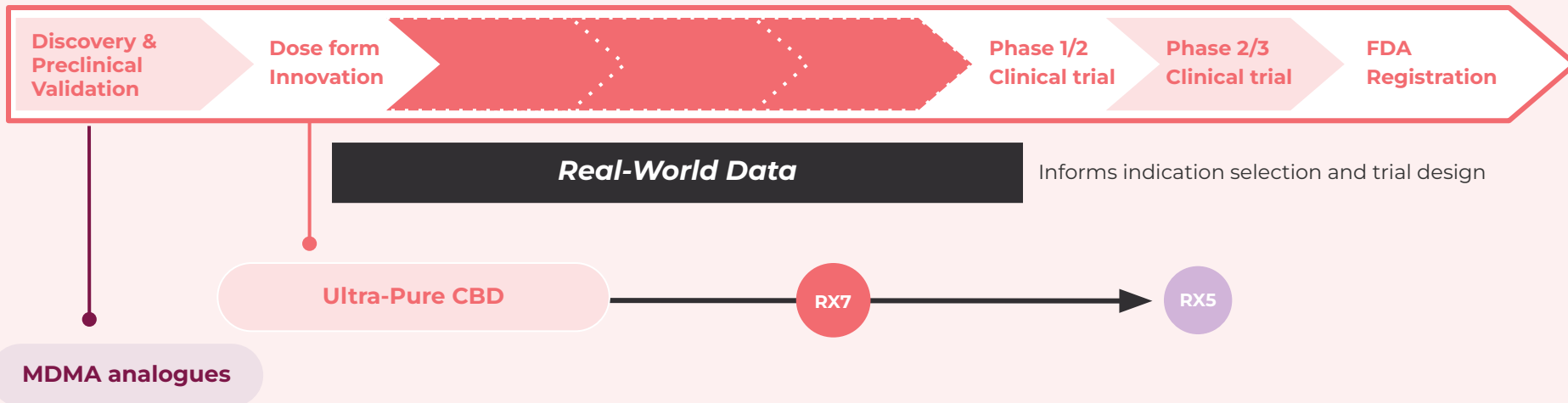


“DELIVERY & DATA” DE-RISKS & **ACCELERATES** DRUG REGISTRATION

TRADITIONAL DRUG DEVELOPMENT (costly, time-intensive, high-risk) →



emyria DRUG DEVELOPMENT APPROACH (Gather insights with patients to de-risk & accelerate drug development) → *time*



LEADERSHIP | GLOBAL DRUG DEVELOPMENT & COMMERCIALISATION SUCCESSES



Dr Stewart Washer
Executive Chairman
PhD (Microbiology)

- Emyria founder, largest shareholder
- Founded multiple ASX companies
- Multiple trade sales

Rumin8



Prof Sir John Tooke
Non-Executive Director &
Chair of the Risk Committee
FRCP, FMedSci

- Knighted for services to medicine
- Clinician researcher - past President AMS
- Advisor to NHS on "learning health systems"



Dr Karen Smith
Executive Director
MD, PhD, MBA, LLM

- Experienced biopharma C-suite exec
- Overseen 20+ FDA approvals
- Multiple, \$B+ M&A completions



Jazz Pharmaceuticals



Dr Michael Winlo
CEO & Managing Director
MBBS(Hons), MBA (Stanford)

- Data, trials and drug development
- Paper-to-digital at Linear
- Founding five, Palantir Health Team



C/Prof Alistair Vickery
Medical Director
MBBS, FRACGP, FCHSM

- Big Data researcher, epidemiology
- Chair of Black Swan Health
- Professor of Medicine at UWA



Matt Callahan
Non-Executive Director
LLB

- 4 FDA approvals
- Venture capital experience
- Successful exit - iCeutica to Iroko



Rumin8

MARKET OPPORTUNITY FOR CANNABINOIDS

A single registered product sells

> \$1B/year ¹

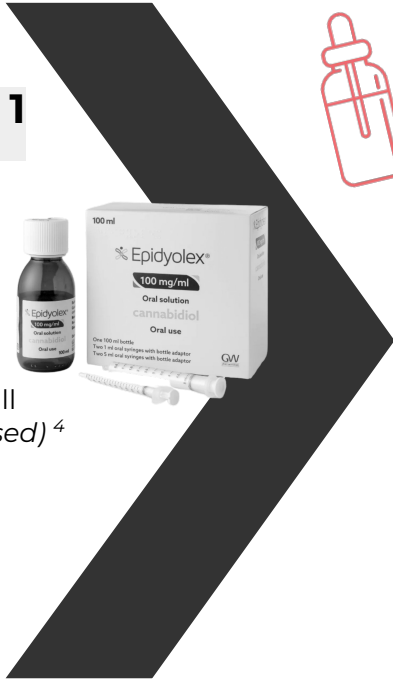
\$2B spent on clinical development ²

Acquired by Jazz for US\$7.2B ³

FDA-approved as small molecule (*still plant-based*) ⁴

Limited to rare disease indications ⁵

Oil dose form with limited GI tolerability ⁵



BUT, TODAY'S CBD

PRODUCTS

Variable potency ⁶
(*inaccurate labels*)

Impurities present
(*most plant-base with THC & heavy metals*)

Poor bioavailability ⁵
(*only 6.5% average*)

Expensive ⁷
(*\$200-800/m low dose*)

Limited dose forms
(*most are oils*)

emyria FORMULATIONS

Proprietary, solid, oral CBD

Registration for **multiple indications**

OTC & prescription.



➤ **Ultra-Pure CBD**
lab-made, *no THC or impurities*

➤ **FDA Drug Master File (API)**
facilitates FDA approval

➤ **Excellent Bioavailability,**
less dose variability, lower costs, lower environmental impact

SOURCES:

1. <https://investor.jazzpharma.com/news-releases/news-release-details/jazz-pharmaceuticals-announces-full-year-and-fourth-quarter-2022>

2. <https://www.europeanpharmaceuticalreview.com/news/152570/highest-british-business-award-goes-to-cannabis-drug-developer-gw-pharmaceuticals/>

3. <https://www.prnewswire.com/news-releases/jazz-pharmaceuticals-completes-acquisition-of-gw-pharmaceuticals-plc-301284512.html>

4. GW Pharmaceuticals Annual Report June 2018

5. <https://www.tga.gov.au/sites/default/files/auspar-cannabidiol-210115.pdf>

6. Johnson, E., Kilgore, M. & Babalonis, S. Label accuracy of unregulated cannabidiol (CBD) products: measured concentration vs. label claim. J Cannabis Res 4, 28 (2022). <https://doi.org/10.1186/s42238-022-00140-1>

7. <https://freshleafanalytics.com.au/wp-content/uploads/2021/10/FreshLeaf-Analytics-H2-2021.pdf>

ANXIETY DISORDERS

Excessive, persistent fear and excessive worry that interferes with daily activities.

3.9% of all adults - most common mental health concern, globally.¹

TREATMENT OPTIONS FOR ANXIETY DISORDERS



COUNSELLING & PSYCHOTHERAPY



PRESCRIPTION



EXPOSURE THERAPY
Re-imagining events in a safe environment



GROUP THERAPY

Up to **80%** patients experience at least one side effect from common prescription treatments²

CANNABINOID THERAPY

PUBLISHED EVIDENCE:

"The most replicable results...related to the ability of CBD...to ameliorate anxiety".³

EMYRIA'S REAL-WORLD DATA:

Long-term data on ~4,000 patients reveals **improvements in anxiety & stress** as measured on DASS-21⁴

BUT most CBD products

- Plant-based oils
- Low bioavailability
- Low purity
- High cost

THEREFORE:

- No registered OTC product
- No prescription dose form for anxiety

emyria

OPPORTUNITIES

OVER-THE-COUNTER CBD (EMD-RX5)

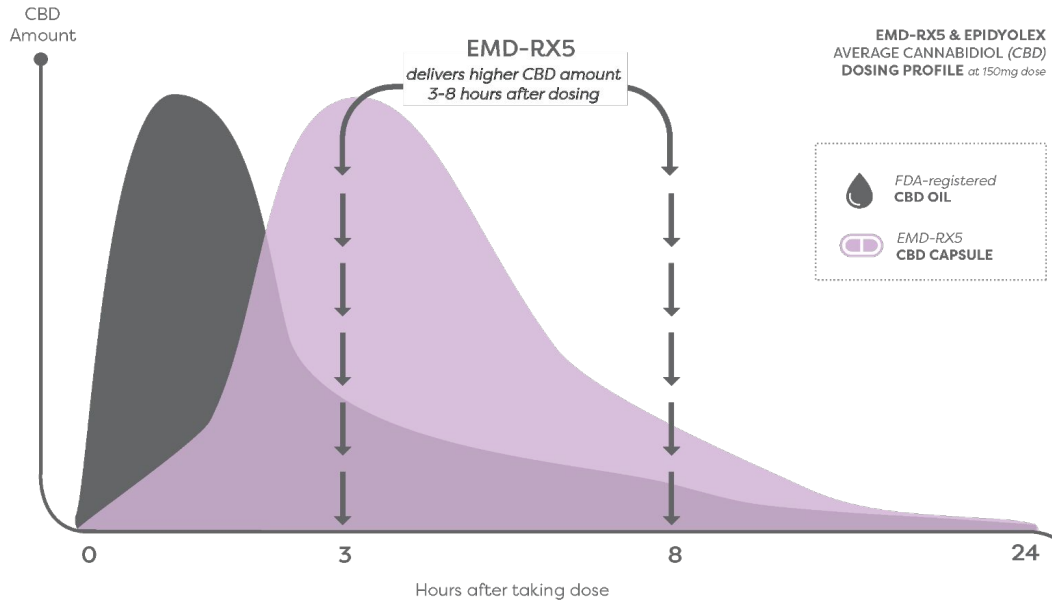
- FDA-compliant / global potential
- **In Phase 3 trials** pursuing TGA "over-the-counter" registration for mild **anxiety/stress** (~15% of pop.)
- Low cost of goods

PRESCRIPTION CBD (EMD-RX7)

- **Potent** dose form, **high bioavailability**
- **Multiple indication** potential
- **Preparing for Phase 1 trials**

EMD-RX5 | ULTRA-PURE CBD CAPSULE VS EPIDYOLEX™ OIL IN PHASE 3 CLINICAL TRIALS (due to complete H2, 2023)

In head-to-head with **Epidyolex**: **EMD-RX5** was safe & well tolerated with:
(1) high bioavailability (2) slow release profile (3) lower dose variability



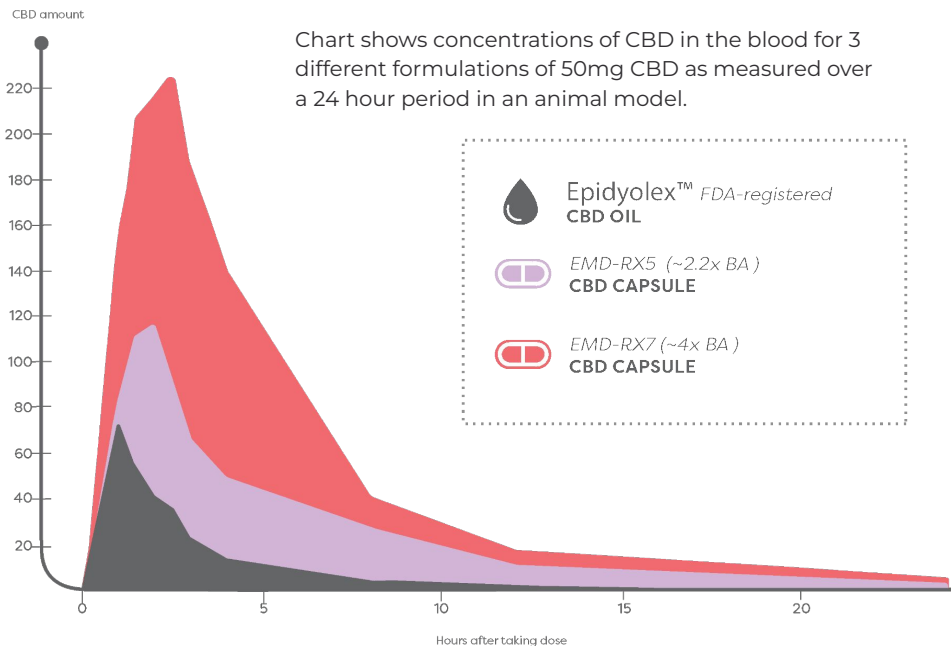
EMD-RX5 currently pursuing TGA registration:

In active Phase 3 clinical trials
due to complete H2, 2023

Ultra Pure CBD with a Drug Master File (DMF)
allows assessment as “small molecule” with FDA after TGA registration

Suitable for multiple registration opportunities
Ready for indication, and geographic, expansion

EMD-RX7 | HIGHLY BIOAVAILABLE **ULTRA-PURE CBD** FOR PRESCRIPTION USE



EMD-RX7 showed **more than 4 times the bioavailability** of Epidyolex [1]

Phase 1 trials and advanced preclinical screening in planning alongside the selection of FDA-focussed indications via 505(b)2 pathway. [2]



KEY INSIGHT

HIGHER BIOAVAILABILITY CBD has potential to support multiple, global prescription registrations

MDMA & PSILOCYBIN RECOGNISED AS “MEDICINES” BY TGA

HOWEVER...

ONLY AVAILABLE VIA
PSYCHIATRISTS OR
CLINICAL TRIALS

Change to classification of psilocybin and MDMA to enable prescribing by authorised psychiatrists

Published: 3 February 2023



Australian Government
Department of Health and Aged Care
Therapeutic Goods Administration

From 1 July this year, medicines containing the psychedelic substances psilocybin and MDMA (3,4-methylenedioxy-methamphetamine) can be prescribed by specifically authorised psychiatrists for the treatment of certain mental health conditions.

“For approval to prescribe, psychiatrists will need to demonstrate **appropriate training, patient selection, evidence-based treatment protocols and patient monitoring.**

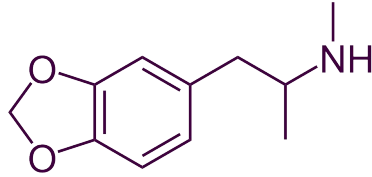
Further, ongoing **psychotherapeutic support remains an essential component** of the psychedelic treatment model.”

-RANZCP (College of Psychiatrists)



The Royal
Australian &
New Zealand
College of
Psychiatrists

WHAT IS **MDMA**?



MDMA (3,4-methylenedioxymethamphetamine or “ecstasy”)

- an amphetamine that causes release of 3 neurotransmitters:

1

Serotonin

contributes to *mood*,
prosocial effects

2

Dopamine

associated with *reward*,
euphoria

3

Noradrenaline

stimulant activity,
attention

MDMA is the best known member of the **“entactogens”** - drugs that produce feelings of ***emotional communion***, oneness, relatedness, emotional openness and fear extinction.

UNIQUE PSYCHOPHARMACOLOGICAL **EFFECTS OF MDMA**

INCREASED



- feelings of wellbeing
- sociability and extroversion
- interpersonal trust

AN ALERT BUT ALTERED STATE OF CONSCIOUSNESS

DECREASED



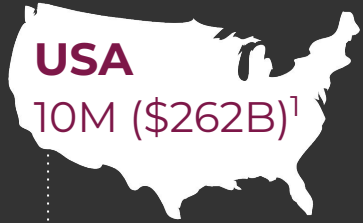
- feelings of fear & defensiveness



These effects suggest MDMA could be a promising **adjunct to psychotherapy** for a range of challenging MENTAL HEALTH CONDITIONS.

POST-TRAUMATIC STRESS DISORDER

A chronic, debilitating mental health disorder that can occur following a traumatic event



TREATMENT OPTIONS FOR PTSD



COUNSELLING & PSYCHOTHERAPY



PRESCRIPTION



EXPOSURE THERAPY
Re-imagining events in a safe environment

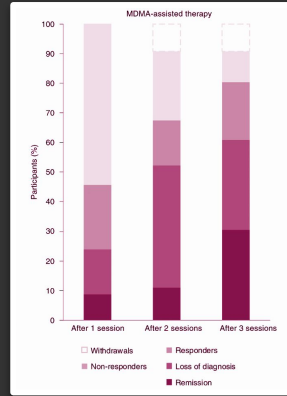


GROUP THERAPY

Up to **50%** treatment resistance²

MDMA-ASSISTED THERAPY

Providing of MDMA with therapy.



67% of participants in the MDMA group **no longer met criteria for PTSD** two months after the sessions. (c/w 32% of participants in the placebo group)³

BUT delivery is complex & costly

- Requires special training + facilities
- Strict drug management
- **Long Sessions** (8+ hrs)
- Strict patient selection criteria

TGA Schedule 8 Medicine

(from July 1st)

emyria

OPPORTUNITIES

BUILD MDMA-ASSISTED THERAPY NETWORK DELIVERING

- Patient outcomes
- Licence revenues
- Real-World Data

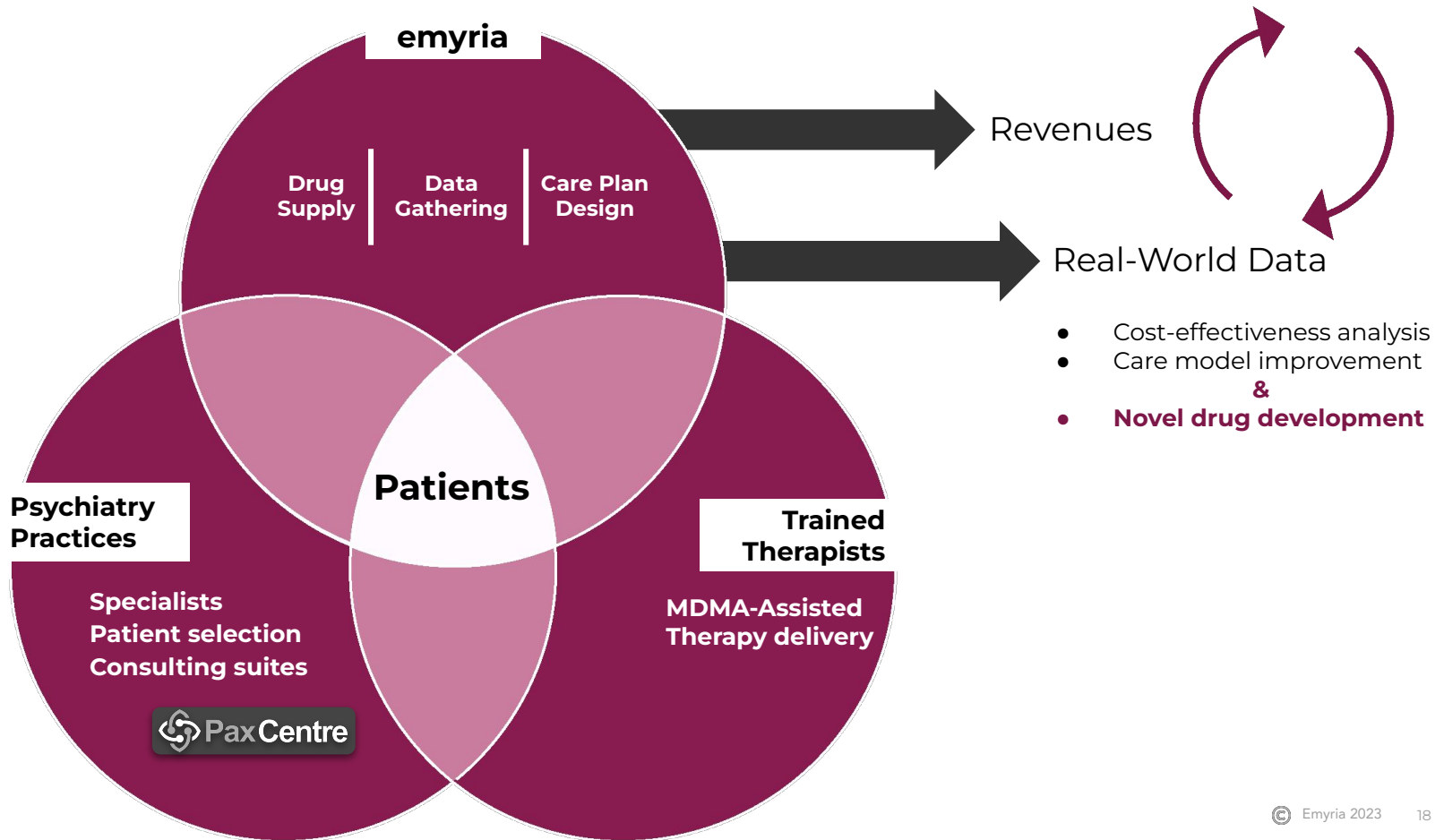
CREATE "NEXT-GEN" MDMA DELIVERING

- **Faster onset MDMA**
- **Safer MDMA** (fewer side effects)
- **Novel treatments for neuropsychiatric disorders**

SOURCES:

1. Davis LL, Schein J, Cloutier M, et al. The economic burden of posttraumatic stress disorder in the United States from a societal perspective. J Clin Psychiatry. 2022;83(3):21m14116
2. Committee on the Assessment of Ongoing Efforts in the Treatment of Posttraumatic Stress Disorder; Board on the Health of Select Populations; Institute of Medicine. Washington (DC): National Academies Press (US); 2014 Jun 17.
3. Mitchell, J.M., Bogenschutz, M., Lilienstein, A. et al. MDMA-assisted therapy for severe PTSD: a randomized, double-blind, placebo-controlled phase 3 study. Nat Med 27, 1025–1033 (2021)

1) BUILDING AN MDMA-ASSISTED THERAPY NETWORK



2) CREATING “NEXT-GEN” MDMA

with

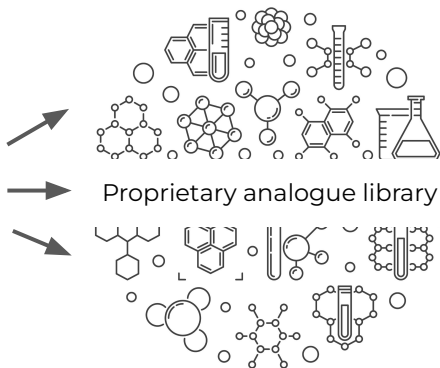
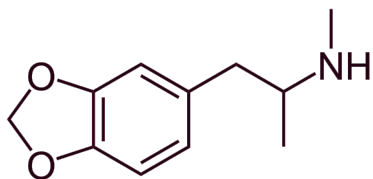


Take MDMA
as inspiration

Design & synthesise
new analogues

Advanced
screening

Prioritise
indications



Proprietary analogue library

>140 novel chemical
entities and growing

- Pharmacology (target) screens
- Safety screens
- Behavioural studies
- Metabolism assays
- Peripheral effects



PTSD
(Faster MDMA)



**L-DOPA Induced
Dyskinesia**
(MDMA “without the high”)



Non-neurological
(eg. Fibrotic diseases)

ANALOGUE DEVELOPMENT GOAL

FASTER-ACTING MDMA

WHY? MDMA-assisted therapy has potential to address PTSD.

BUT

Therapy sessions can last 6-12 hours. This limits the number of patients that can be treated per day per site.

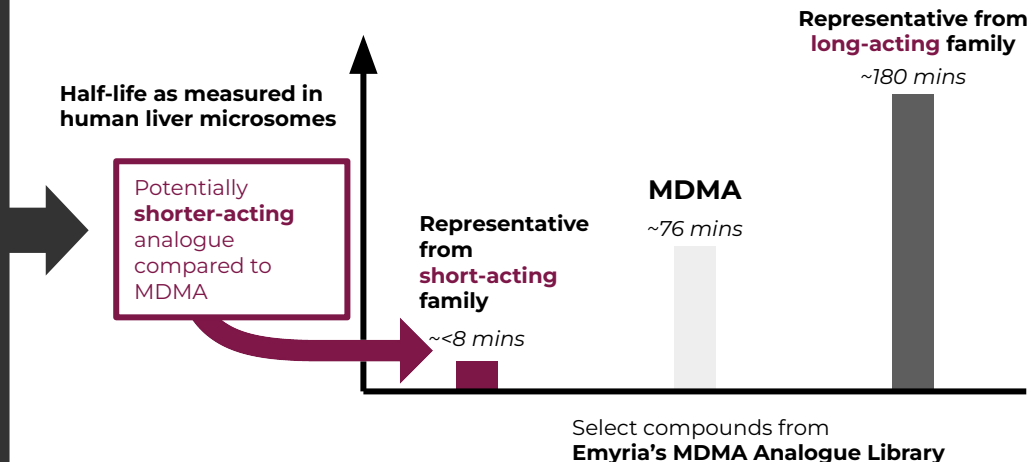
GOAL: Faster-acting MDMA could shorten treatment sessions and allow more patients to be treated per site

COMMERCIAL: New chemical entities have strong IP and license potential.

Shortening treatment session times could **increase number of patients that can be treated per site.**

EARLY RESULTS:

Metabolic studies performed to-date demonstrate Emyria's compound library contains novel MDMA analogues with both **rapid-**, and **long-acting** metabolism profiles.



ANALOGUE DEVELOPMENT GOAL

MDMA WITHOUT THE “HIGH”

WHY? MDMA improves symptoms of “**L-DOPA induced dyskinesia**”.¹ A common side-effect of Parkinson’s treatment.

BUT --> MDMA has unwanted side-effects (*euphoria, increased sociability, amphetamine effects*)

GOAL: An “MDMA-like” drug that delivers antiparkinsonian benefits **“without the high”**

COMMERCIAL: Drugs with antiparkinsonian benefits can generate strong commercial returns:

Example:

- Ongentys™ (*opicapone*) increases “ON-time” by ~6% over 24 hours²
- Expected peak sales of US\$300M/year³



DAY 1 L-DOPA + placebo

DAY 2 L-DOPA + ecstasy

ANALOGUE DEVELOPMENT GOAL

MDMA WITHOUT THE “HIGH”

WHY? MDMA improves symptoms of “*L-DOPA induced dyskinesia*”.¹ A common side-effect of Parkinson’s treatment.

BUT → MDMA has unwanted side-effects (*euphoria, increased sociability, amphetamine effects*)

GOAL: An “MDMA-like” drug that delivers antiparkinsonian benefits “*without the high*”

COMMERCIAL: Drugs with antiparkinsonian benefits can generate strong commercial returns:

Example:

- Ongentys™ (*opicapone*) increases “ON-time” by ~6% over 24 hours²
- Expected peak sales of US\$300M/year³

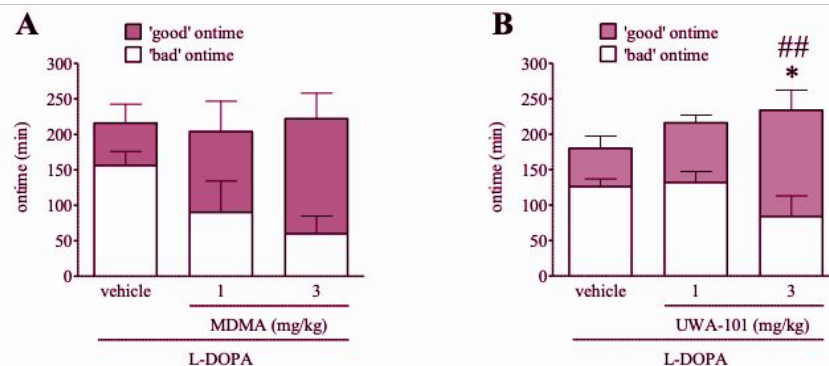
EARLY RESULTS (UWA-101):

In gold-standard preclinical model:

Increased the total duration of L-DOPA-induced antiparkinsonian benefit (total ON-time) by ~30%.

Significantly increased the duration of “good” quality ON-time by 178%.⁴

Additional novel compounds are in preclinical screening.



MDMA-INSPIRED DRUG DISCOVERY | MULTIPLE \$B OPPORTUNITIES

Clinical focus	Role of MDMA?	Goals for analogue program	Early proof-of-concept?	What's next?
<p>Treatment Resistant PTSD (5% adults, 30-50% treatment resistant)</p> <p>Costs of \$25B/year ¹</p>	<p>MDMA increases feelings of <i>compassion</i> and <i>sociability</i> while reducing <i>fear</i> & <i>defensiveness</i>.</p> <p>Phase 3 trials have shown MDMA-assisted therapy can have a profound benefit.</p>	<p>Faster-acting MDMA with improved tolerability could increase the potential pool of patients.</p>	<p>Sub-set of analogues show faster rates of metabolism.</p>	<p>Advanced screening to identify rapidly metabolised compounds.</p>
<p>L-DOPA induced dyskinesia in Parkinson's Disease (40% of PD patients at 4 years of treatment)</p> <p>Costs of \$1B/year ²</p>	<p>MDMA has been shown to improve the "on-time" (beneficial effects) of L-DOPA but has numerous, unwanted side-effects.</p>	<p>Remove the "high" from MDMA while preserving beneficial effects on movement disorders.</p>	<p>Gold-standard preclinical model demonstrates analogues can increase on-time by 200%.</p> <p>C/W recently approved PBS drug (Ongentys) which increases on-time by 1hr/24hrs.</p>	<p>Advance new compounds.</p> <p>Long-term safety and tolerability studies.</p>
<p>Fibrotic disease (1.2M patients globally)</p> <p>Costs of \$3B/year ³</p>	<p>Some analogues can induce fibrosis.</p> <p>Can MDMA analogues be developed to <i>reduce</i> it?</p>	<p>Identify compounds with 5HT2B antagonism (a known target for anti-fibrosis medicines).</p>	<p>Cell assays demonstrate reduced collagen deposition at test concentrations.</p>	<p>Further proof-of-concept studies to identify lead compounds.</p>

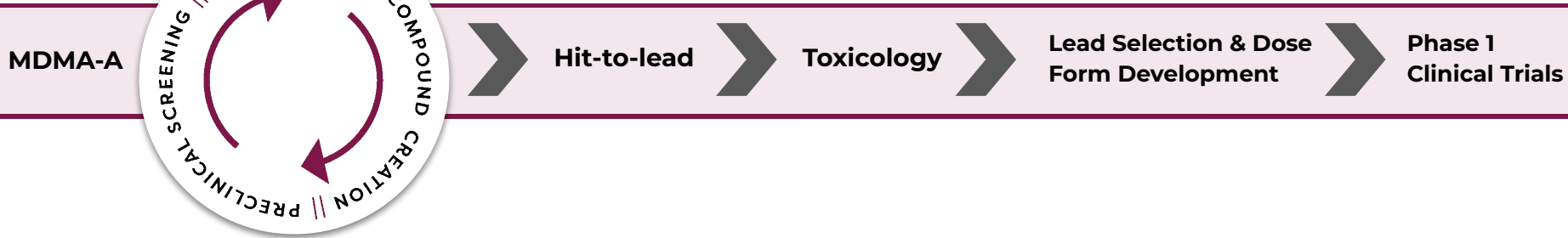
SOURCES:

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7366572/>
- <https://www.nature.com/articles/s41531-020-0117-1>
- <https://www.lung.org/lung-health-diseases/lung-disease-lookup/pulmonary-fibrosis/patients/how-is-pulmonary-fibrosis-treated>

MDMA-INSPIRED DRUG DISCOVERY NEXT 12 MONTHS



- **EXPAND** the MDMA-analogue library
- **DELIVER RESULTS** from preclinical screening
- **FILE ADDITIONAL PATENTS** and pursue commercialisation discussions
- **SELECT LEADS** for further proof-of-concept efficacy studies in animal models



emyria INVESTMENT HIGHLIGHTS

1

Significant target markets

Emyria's treatment programs are targeting major unmet needs in **multiple, \$Billion+ markets:**

PTSD

Anxiety disorders

Parkinson's disease

Complex pain

2

Advanced clinical programs

First **Ultra-Pure CBD** dose form in **Phase 3 trials; partnership ready**

US-focused registration programs

MDMA-assisted therapy network in development

3

Favourable regulatory environment

TGA rescheduled **MDMA** & psilocybin *(following similar changes for medicinal cannabis in 2016)*

Opens pathway to **registration & reimbursement** for Emyria's novel analogues

4

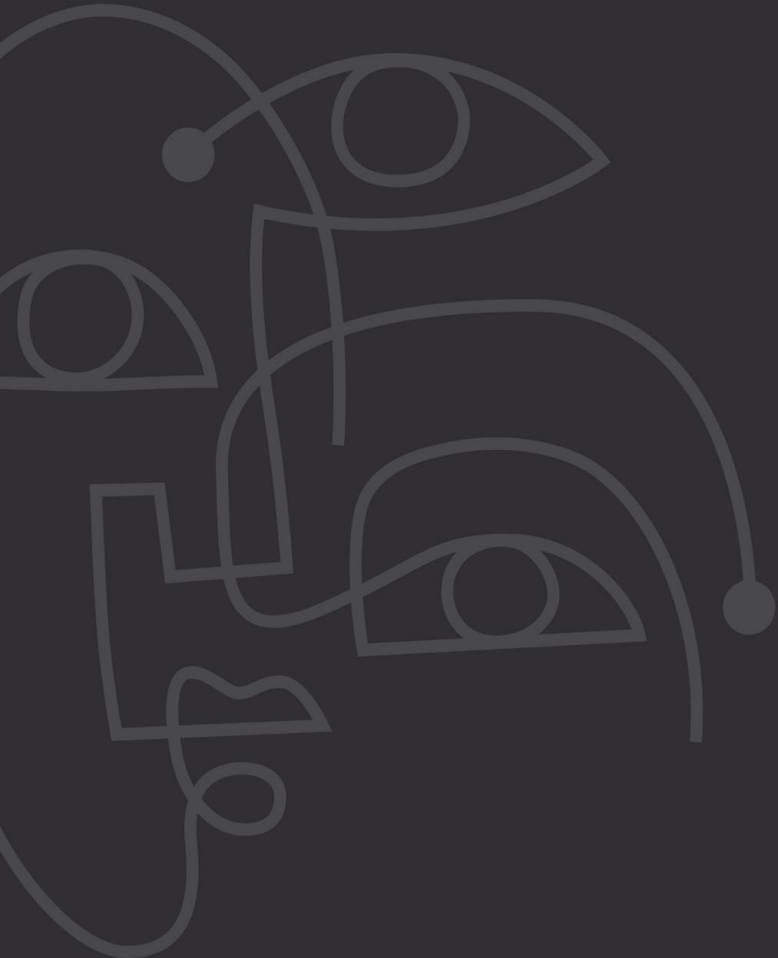
Substantial R&D pipeline

One of world's largest MDMA analogue libraries - novel, neuroactive molecules with potential to become novel neuropsychiatric treatments

5

Advanced capabilities & world-class team

Emyria's in-house expertise has had **multiple FDA registrations** with deep knowledge of drug development, data analysis & patient care.



CONTACT INFORMATION

Michael Winlo	mwinlo@emyria.com
Investors	investors@emyria.com
Media	media@emyria.com
General	info@emyria.com