



Enalare Therapeutics Inc.

Developing Novel Therapies for Life-threatening Critical Care Conditions

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Enalare Therapeutics - Introduction

Who We Are

A clinical stage biopharmaceutical company dedicated to developing novel therapies for life-threatening critical care conditions, including acute respiratory depression

Company Profile

- Portfolio of New Chemical Entities (NCEs) with strong IP into the 2030s and beyond
- Multiple products addressing significant unmet medical needs in the community, hospital, and battlefield settings
- Establishing new standards of care with blockbuster potential across Drug Overdose, Post Operative Respiratory Depression, Apnea of Prematurity, and other diseases
- Strong leadership with world class scientists and top tier industry operators

Recent Developments

- Closed successful \$10 million seed round in early 2021
- Established partnership with BARDA¹ to develop product as Medical Countermeasure for potential Mass Casualty Events
- Developed new IM² formulation for community use and executed successful toxicology study
- Initiated breakthrough clinical study as the first product to reverse the respiratory depressive effects of propofol – important proof of concept for several potential products



¹ Biomedical Advanced Research and Development Authority, division of US Health and Human Services
² Intramuscular

Positioned to Change Standard of Care and Create Significant Enterprise Value

- ✓ **Proven top-tier team**
 - Demonstrated ability to develop and launch blockbuster products with consistent value creation
 - Industry leading scientists and advisors
- ✓ **Significant medical need**
 - Convergence of health emergencies with commonality of respiratory depression
 - Critical need for a safe, agnostic respiratory stimulant in multiple treatment settings
- ✓ **Breakthrough Science**
 - First-in-class NCE compounds with a novel mechanism-of-action
 - Composition-of-matter patents with exclusivity into the 2030s, additional patents pending
- ✓ **Robust proof-of-concept**
 - Positive safety and efficacy results across four human trials
 - Strong pre-clinical platform including extensive toxicology studies across multiple animal species
- ✓ **Large market opportunities**
 - Broad medical and health economic benefits driving \$1.5B+ sales potential*
 - Global rights for all products and indications



Led by Top-tier Industry Operators with Clear Focus on Execution and Building Value



Herm Cukier
Chief Executive Officer
& Board Member

- CEO and Board Member of BioDelivery Sciences (NASDAQ: BDSI)
- SVP of Allergan - leading several multi-billion dollar divisions
- Chief Marketing Officer and Member Company Management Team - Organon Biosciences
- Executive positions with top tier companies including Bayer, BMS, and Pfizer
- MBA Columbia Business School
- BSE University of Pennsylvania



Dr. Joseph Pergolizzi
Chief R&D Officer
& Board Member

- Internationally recognized thought leader in areas of perioperative and pain medicines, drug development and regulatory affairs
- Highly published in top tier journals
- Frequent scientific advisor for public and private companies
- Serial entrepreneur, started more than 20 companies
- Johns Hopkins School of Medicine
- Georgetown School of Medicine - residency



Daniel Motto
Chief Operating Officer

- EVP Hikma Pharmaceuticals leading US Injectable Division
- SVP Allergan (Actavis) - Head of Business Development, Portfolio & Business Intelligence, Global Generic Medicines
- SVP Teva, Global Business Development
- Executive positions with top tier companies including Johnson & Johnson and Novartis
- MBA Johnson College of Business, Cornell University
- MS Engineering, Cornell

Board of Directors

Gino Santini

Former member of Eli Lilly's executive committee leading Corporate Strategy and Business Development. Prior roles over a career spanning nearly three decades included president of US operations, various leadership positions in international regions and president of the women's health franchise. Board member of multiple public companies including Horizon, Collegium and Intercept Pharmaceuticals.

Bob Yedid

30 yrs of experience as a buy-side analyst, portfolio manager, private equity investor and investment banker holding positions at Warburg Pincus and Bear Sterns. Currently focuses on providing CEOs and CFOs with strategic advice on key investor issues at LifeSci Advisors. Former Board member of The Medicines Co. and Vaxart. MBA Stanford School of Business, BA Yale University.

Joseph Petko

20 yrs experience in corporate finance and investment analysis. Currently co-Chief Investment Officer for public equity investing at Ashford Capital, with a focus on small cap growth companies. Prior experience in financial positions in the pharmaceutical industry at Merck & Co. MBA Lehigh University, BBA Wharton, University of Pennsylvania.

Mark Coleman, MD

President of National Spine and Pain Centers, the nation's largest interventional pain management group. Early advisor in the formation of Axsome Therapeutics and a member of its board of directors since 2014. Diplomat of the American Board of Anesthesiology and highly sought after pharmaceutical and medical device scientific advisor. MD from Johns Hopkins University School of Medicine, BA Wesleyan Univ.



Scientific Team Supported by Globally Recognized Subject Matter Experts

Scientific Advisory Board

Lead Investigator



Albert Dahan, MD, PhD

World renowned expert in areas of anesthesia and pain and advisor to top regulatory agencies. Founder and Head of the Anesthesia & Pain Research Unit at Leiden University. Member of several editorial boards and has published hundreds of articles in peer reviewed journals. Leiden University Medical Center, Professor of Anesthesiology

Lead Investigator



TJ Gan, MD

Distinguished leader in anesthesiology working to define best-practice. Chairman of the Department of Anesthesiology at Stony Brook Medicine and former faculty at the Duke Clinical Research Institute. Founding President of the American Society for Enhanced Recovery (ASER) and dedicated to improving perioperative care through his role in establishing Enhanced Recovery After Surgery (ERAS) programs.



Robert Raffa, PhD

Internationally renowned scientist and key opinion leader in pain pathways and analgesics. Over 30 years industry, academia and government experience in engineering and pharmacology. Former team co-leader for analgesics drug discovery at Johnson & Johnson. Currently affiliated with University of Arizona College of Pharmacy and Temple University School of Pharmacy



David Battleman, MD

A seasoned healthcare executive with over 20 years of experience, spanning academia, industry and management consulting. Prior to establishing TrueNorth Lifesciences, David served as a senior principal in the consulting practice within IMS Health. MD, Weill Cornell Medical College, MBA Wharton School of Business, M.Sc. Harvard School of Public Health



Alexander Kraus, PhD

Accomplished international executive with over 20 years experience in the pharma industry. Former Head of Pharmacokinetics at Grünenthal GmbH and Vice President TRF Business at Grünenthal USA, Inc. Frequent presenter on abuse prevention of prescription drugs. Former Head of Search & Evaluation at Aquestive Therapeutics.



Eugene Vortsman DO

Practicing emergency medicine specialist with experience treating substance abuse and COVID-19 patients at the largest provider of healthcare in NY State, Northwell Health. Serves as the Medicine Lead for both the Opiate Task Force and Sepsis Task Force. Research experience at Northwell Health, Cornell-Presbyterian Hospital, and University of Medicine and Dentistry of New Jersey

Enalare Team Highlights

Alfred Schweikert, PhD, RAC - Regulatory Affairs & Quality Assurance

Over 35 years experience in the pharmaceutical industry, with 25 years devoted to management of regulatory affairs. Extensive global regulatory and development experience with drugs, devices and biologics covering the full life-cycle of development to post marketing. Prior roles with Hoffman La Roche, Schering Plough, Johnson & Johnson, and Baxter.

Thomas Miller, PhD – Clinical Development

More than 20 years of experience in the development of biophysical and pharmacological interventions targeted primarily at critical care pulmonary function and attenuation of ventilator-induced lung injury. Has established and led clinical development globally for the introduction of disruptive medical technologies, including the creation of a new standard of care and playing a significant scientific role in the path to an IPO. Prior roles with Vixiar Medical, Vapotherm and Nemours.

Frank Diana, PhD – CMC & Formulation Development

More than 30 years experience with CMC (Chemistry, Manufacturing and Controls), Analytical and Pharmaceutical Development for early development through NDA/BLA submission as well as for marketed products. Prior roles with Endo Pharmaceuticals, Johnson & Johnson and DuPont.



Problem to Solve - Acute Respiratory Depression

A Global Health Emergency

Normal Healthy Respiration

- 12-20 breaths/min
- Minute ventilation of 5 to 8 liter/min (resting)
- Harmonized balance of O₂ and CO₂ levels in the blood

Medications and health conditions impact the body's natural mechanism to maintain appropriate levels of blood gases

Breathing rate & quality

Insufficient respiration

Respiratory Depression

- <10 breaths/min
- Inadequate minute ventilation (hypoventilation)
- Low oxygen saturation
- High blood CO₂ levels

Illustrative

Initial Target Markets

Drug Overdose

- US deaths reached record high of 93K¹ in 2020 and still increasing
- Polysubstance (multi-drug) abuse a growing issue
- Current treatment option is incomplete – only addresses opioid overdose, potential severe withdrawal symptoms

Post-Operative Care

- Unmet medical need, 10x in-hospital mortality risk²
- 70mil+ surgeries in US performed annually with large at-risk populations – age, obesity, other health conditions
- Compelling health economic benefits by reducing ICU/overall hospital length of stay

Apnea of Prematurity

- Infants born preterm are predisposed to life-threatening episodes of cessation of breathing³
- Current standard of treatment is caffeine – not effective for all patients
- Opportunity for Orphan Drug/ Rare Pediatric designations



¹ US HHS, Centers for Disease Control and Prevention (CDC), Provisional Drug Overdose Death Counts 12-month ending Dec. 2020

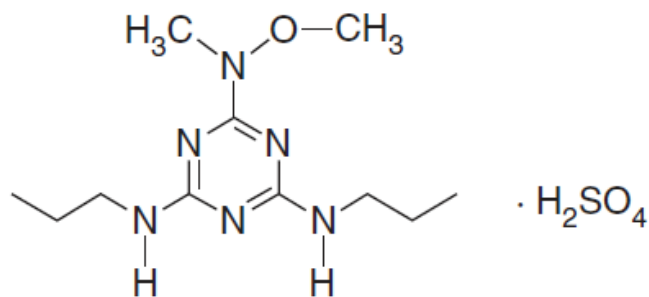
² Postoperative Respiratory Failure, Thompson, Shaun L.; Lisco, Steven J, International Anesthesiology Clinics. 56(1):147-164, Winter 2018

³ Merck Manual, Arcangela Lattari Balest, 2019, Pediatrics, Respiratory Problems in Neonates, Overview of Perinatal Respiratory Disorders

Potential Solution - Lead Compound ENA-001: A One-of-a-Kind New Chemical Entity (NCE)

Agnostic Respiratory Stimulant

- **Agnostic:** Novel mechanism-of-action (MoA) - inhibits Big Potassium (BK) ion channels
- **Peripheral:** Affects ventilation via the peripheral chemoreceptor pathways in the carotid body
- **Natural:** Utilizes the body's ventilation control system to beneficially influence breathing



ENA-001 hydrogen sulphate salt

2-N,O-dimethylhydroxylamino-4,6-bispropylamino-s-triazine

Product Profile

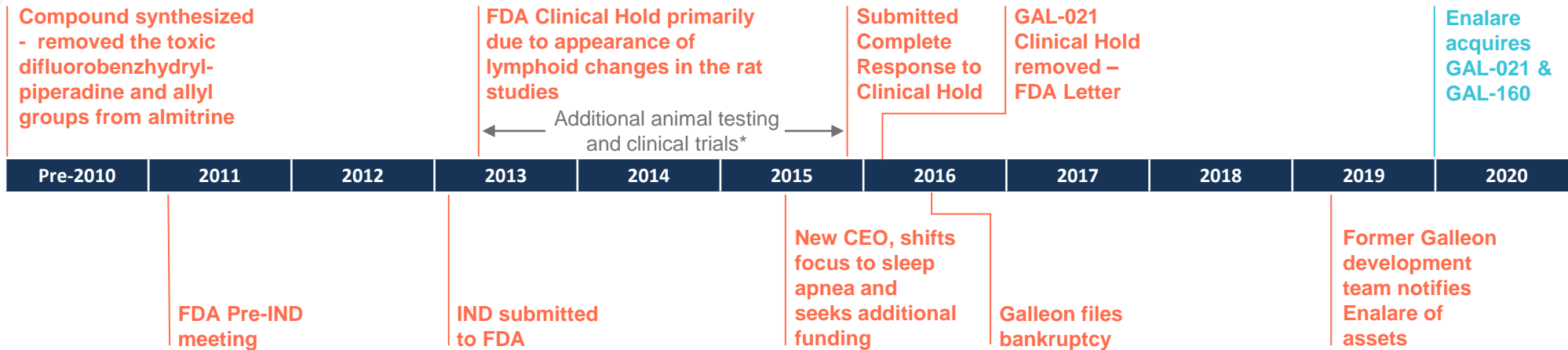
- Rapidly stimulates ventilation in patients with acute respiratory insufficiency, irrespective of the depressive cause
- Addresses both hypercapnia (high CO₂) and hypoxemia (low O₂) driven by pharmaceutical agents and underlying health conditions
- Safe and well tolerated in humans
- No interference with pain suppression or sedation
- Does not create withdrawal effect as experienced with opioid antagonist
- Parenteral administration – infusion or intramuscular injection



ENA-001 Historical Development Timeline

\$40mm Invested to date

Galleon Pharmaceuticals Development of GAL-021 (now ENA-001)



Market Developments

Growing need for a new respiratory stimulant

Obesity and aging population increasing respiratory risks

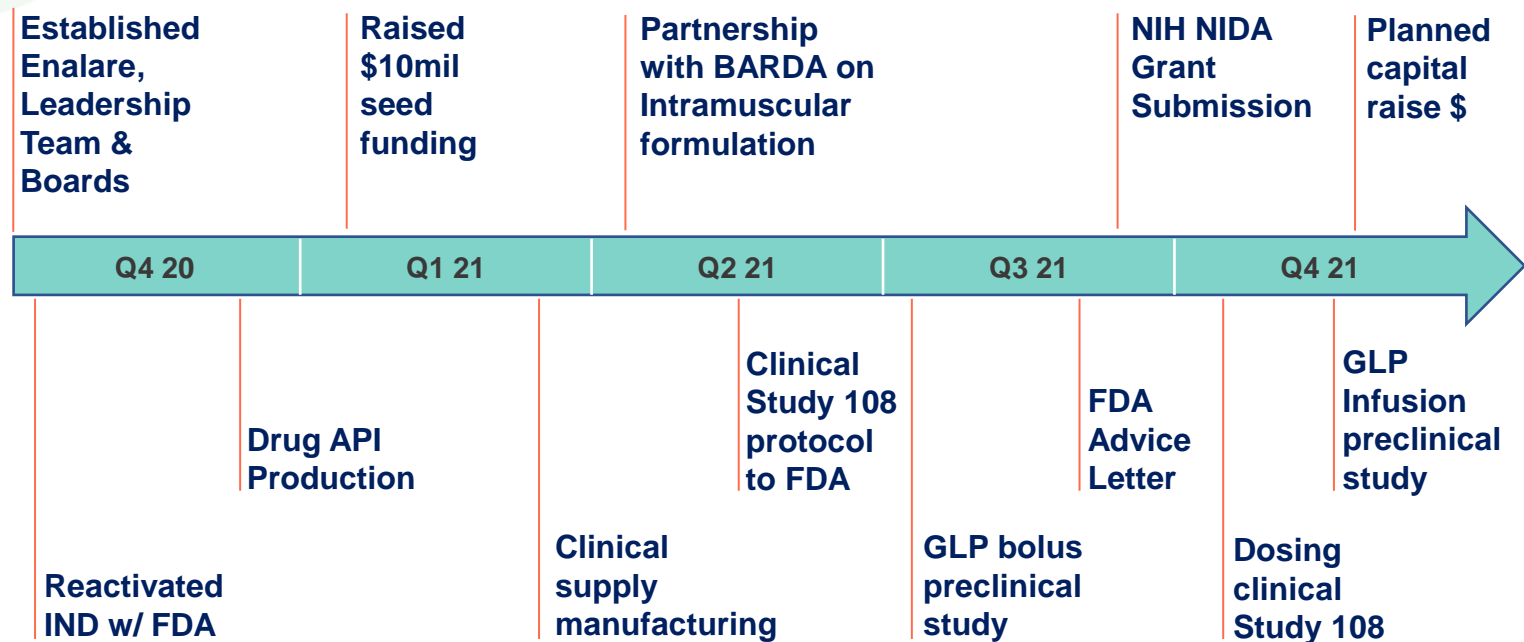
US substance abuse epidemic accelerates

COVID-19 pandemic highlights risks of infection-related silent hypoxemia

*GAL-021-104 & 106 studies in humans approved by the Dutch Early Ethics Committee



Significant Progress to date Leading to Major Value Milestones in 1H 2022



Key Catalysts (1H 2022)

- **Clinical Study 108 results** – breakthrough study addressing propofol inhibition of respiratory drive
- **IM Formulation development** – 1st phase of BARDA partnership completion
- **Additional Preclinical GLP Tox Studies**
 - Bolus dosing study
 - Continuous Infusion study
- **Post operative development plan** – alignment with FDA
- **Apnea of Prematurity** – Orphan Drug request, proof-of-concept preclinical study
- **Additional patents filed**



Partnership with BARDA for Development of ENA-001 as a Medical Countermeasure

BARDA Request A Meeting PHEMCE Partners

BARDA and Enalare Therapeutics announce partnership to advance ENA-001 as an emergency treatment for opioid-induced respiratory depression in the community setting

WEB ANNOUNCEMENT

SHARE    



BARDA and Enalare Therapeutics have partnered to reformulate ENA-001 for use as an emergency treatment against opioid-induced respiratory depression (OIRD). Respiratory depression is a condition characterized by slow and ineffective breathing (hypoventilation) that can result in low levels of oxygen and high levels of carbon dioxide and can be life-threatening if left untreated. OIRD can occur after the use of opioid analgesics and can progress to respiratory failure.

Under the Repurposing Drugs in Response to Chemical Threats (ReDIRECT) program from BARDA's Division of Research, Innovation, and Ventures (DRIVE), BARDA will provide funding to reformulate ENA-001 for intramuscular administration and preclinical pharmacokinetic testing of the new formulation. A new chemical entity (NCE), ENA-001 is an agnostic respiratory stimulant drug that may be useful as a potential emergency treatment for OIRD and other types of respiratory depression. ENA-001 is the third repurposed candidate being supported by BARDA's ReDIRECT program. If studies are successful, reformulating ENA-001 for intramuscular administration could enable its rapid use as a medical countermeasure to treat life-threatening respiratory depression in both mass casualty situations and in everyday opioid and other drug overdoses.

Biomedical Advanced Research and Development Authority partnership

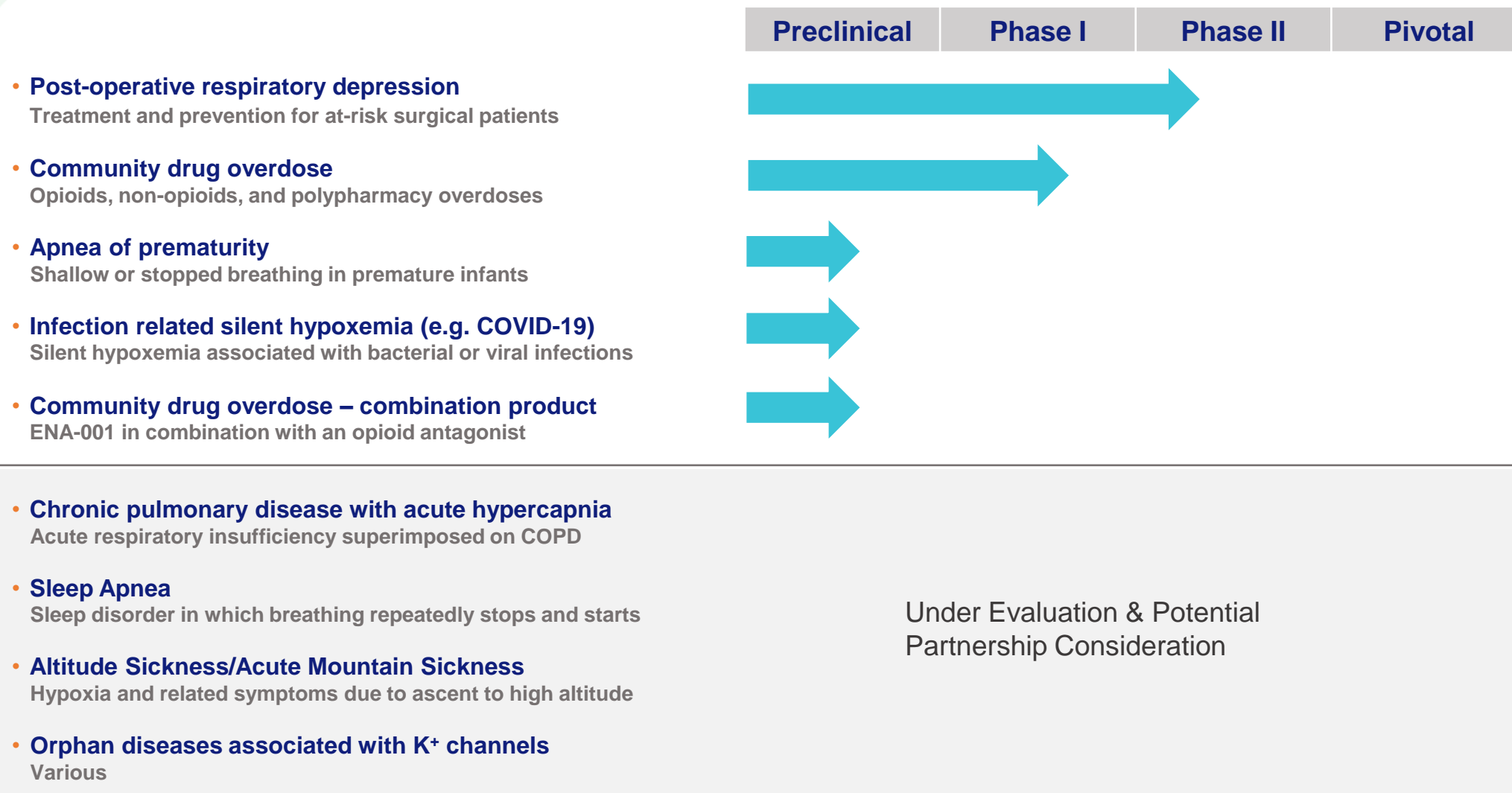
- US HHS division with mandate to protect Americans and respond to health security threats
- Grant under DRiVe ReDIRECT program
- Focus on development of an intramuscular formulation for use in the community setting

Enalare invited to present at BARDA events:

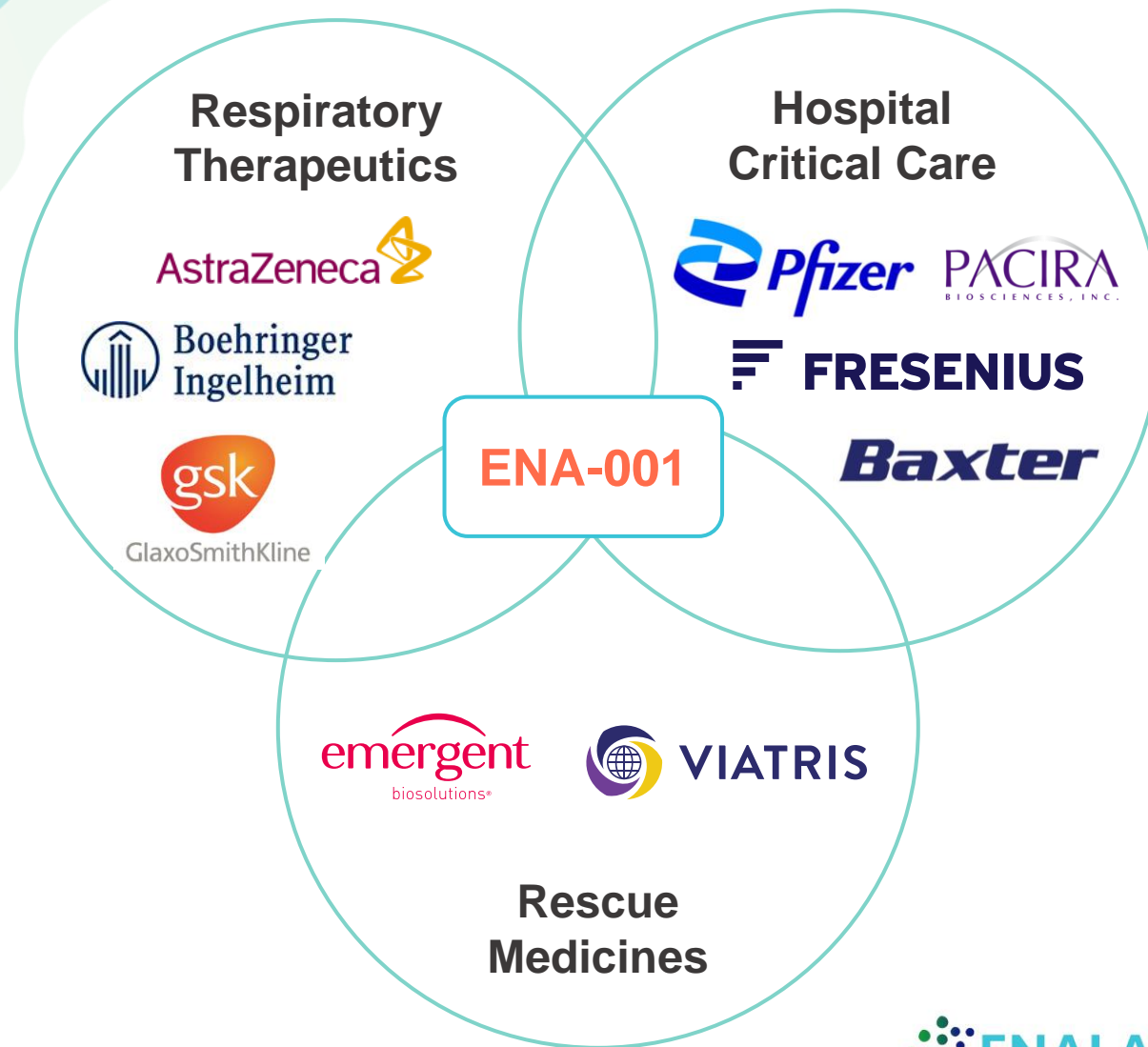
- BARDA Industry Day conference
- Life Sciences Summit, Stoney Brook University Center for Biotechnology, BARDA Accelerator



Enalare's Pipeline has the Potential to Dramatically Improve Patient Outcomes



ENA-001's Broad Applications Span Several Segments of the Healthcare Market



Healthcare categories:

- Respiratory Therapeutics
- Hospital Critical Care
- Rescue/Emergency Medicine



Strong Intellectual Property Includes Issued Composition-of-Matter Patents

Issued Patents

- **US 9,351,972**
Compounds as Respiratory Stimulants for Treatment of Breathing Control Disorders or Diseases
Includes NCE and Pharmaceutical Composition claims
Expires 11/29/2031 (+ 5 yr PTE* opportunity)
- **US 9,162,992**
Compounds and Compositions for Treatment of Breathing Control Disorders or Diseases
Includes NCE, Pharmaceutical Composition and Method of Treatment claims
Expires 11/29/2031

Patent and Trademark Applications

- Pending International PCT Application directed to combination therapy for the treatment of opioid overdose, stimulant overdose and polypharmacy overdose. Anticipated expiration of 2040
- Pending U.S. Provisional Application directed to composition and methods for the treatment of respiratory depression in infected patients (including COVID-19). Anticipated expiration of 2041
- “Enalare” and “Enalare Therapeutics” trademark applications pending and website domain secured (www.enalare.com)

Filing strategy in place for future patent opportunities including pharmaceutical formulations, pharmacokinetic/pharmacodynamic profiles, new indications and dosing regimens



*Patent term extension

ENA-001 Shown to be Safe and Efficacious Across Four Human Clinical Trials Totaling ~100 subjects

Study	Description	# of Subjects
GAL-021-101	Single, ascending dose study in healthy subjects.	30
GAL-021-102	Extended the dose range explored during the initial study by a factor of 2 and established the maximum respiratory stimulatory dose in the healthy subjects without concomitant use of opioids or anesthetic agents.	18
GAL-021-104	Assessed the potential therapeutic utility under conditions that simulate the post-operative state. Alfentanil was used to suppress ventilation.	23
GAL-021-106	Designed to evaluate the safety and tolerability in healthy subjects during 5 days of 12-hour continuous infusion of 0.125, 0.25, and 0.5 mg/kg.	28

Strong Foundation
of Evidence

- ✓ Dosing
- ✓ Proof-of-Concept Efficacy
- ✓ Safety & Tolerability

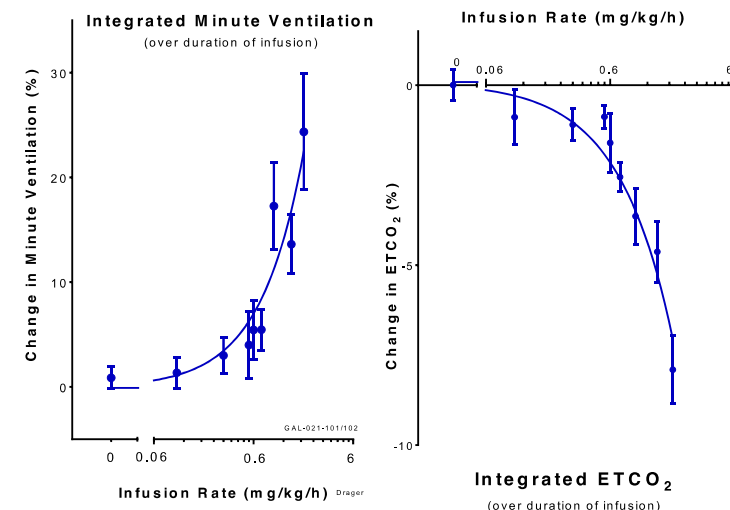
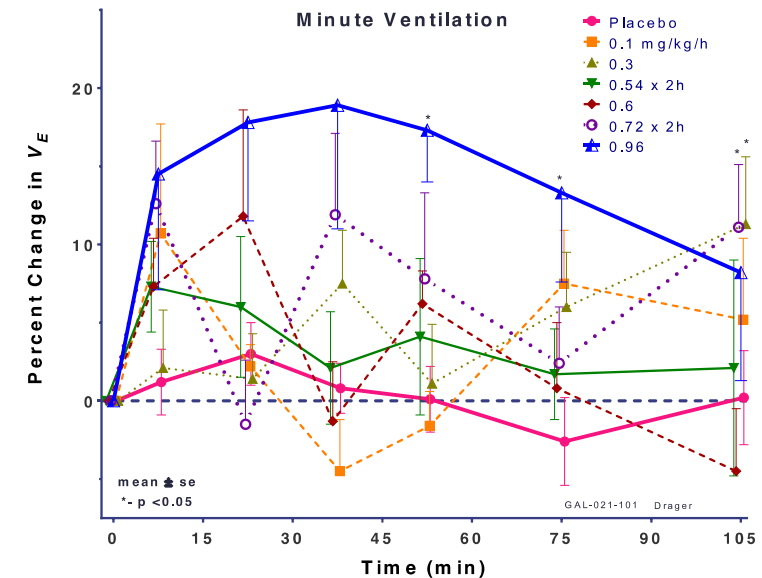


Clinical Study 101/102: Two Rising Single Dose Studies

- Repeated single-dose designs in healthy volunteers
 - Dose range: 0.1 to 1.92 mg/kg/h
- Safety - clean to ~1.1 mg/kg/h
 - Hyperventilation and hypocapnia in 2 subjects at 1.92 mg/kg/min
 - ETCO_2 \downarrow to 22 and 29 torr
 - IV site burning sensation (partially pH - related)
 - GI (N/V) – 4 subjects (top 2 doses)
 - Clinical chemistries – no change
- Pharmacodynamic (PD)
 - Increasing Minute Ventilation and decreasing ETCO_2
- Pharmacokinetic (PK)
 - Rapid rise and decline with infusion – Terminal half life ($t_{1/2}$) of 5.6 hours

Minute Ventilation is defined as the total volume of gas entering (or leaving) the lung per minute and is calculated as the product of tidal volume and respiratory rate

ETCO_2 : End Tidal CO_2 . Maximal concentration of carbon dioxide (CO_2) at the end of an exhaled breath



Clinical Study 104: Proof-of-Concept Study Design with an Opioid

Goal: Test ENA-001 IV under challenging conditions that simulate post-surgical care

- High carbon dioxide (also desensitizes ventilatory control arc to drugs)
- Opioid doses that cause moderate to severe respiratory depression
- Concomitant anti-emetics (required by opioid use)
- No interference with opioid analgesia

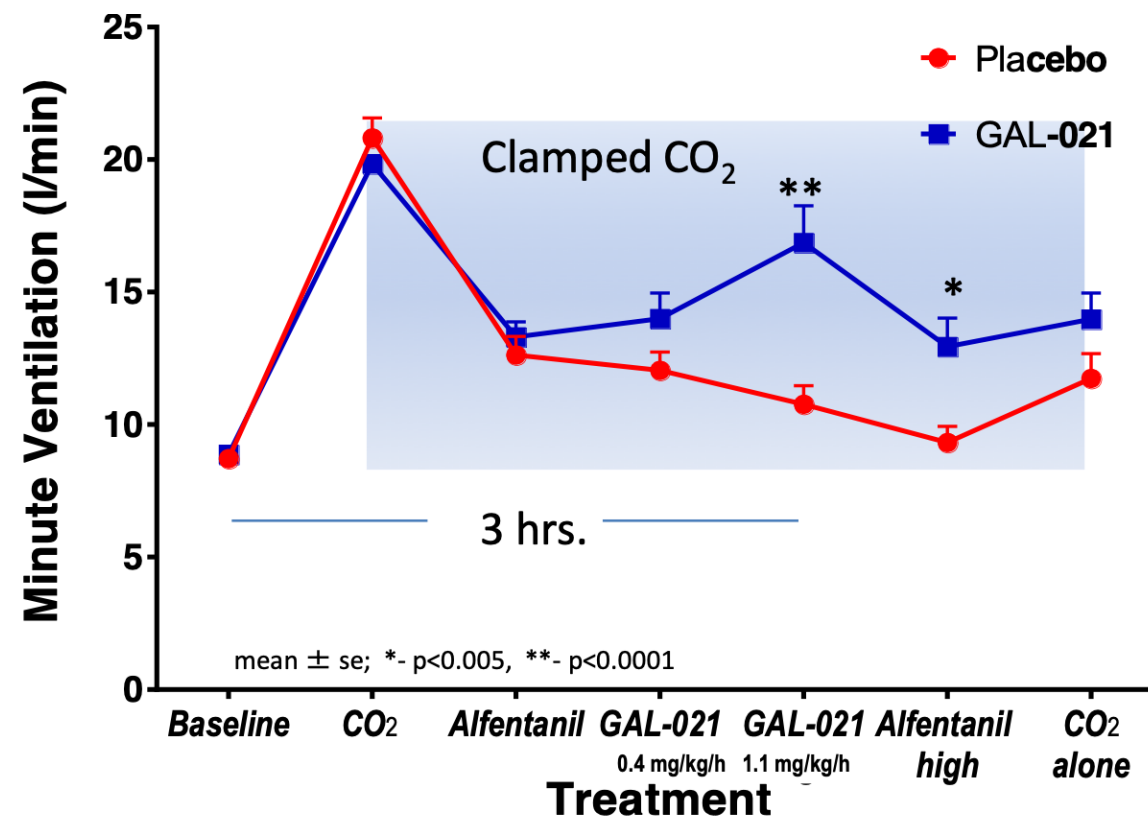
Period	Part 1	Part 2 (+ analgesia testing)
1	Baseline (n=12)	Baseline (n=8)
2	CO ₂ increased and clamped	Ambient air
3	Alfentanil (titrated) and continued	Same drug doses
4	ENA-001 at 0.4 mg/kg/hr	Same drug doses
5	ENA-001 at 1.1 mg/kg/hr	Same drug doses
6	Alfentanil increase X 2	Same drug doses
7	Continue CO ₂ clamp & stop drugs	Ambient air
Respiratory parameters measured on last 10 min of each 30+ minute period		

Design: Double-blind, placebo-controlled, 2-part, 4-period crossover study in 23 healthy subjects



Clinical Study 104: Respiratory Stimulatory Effects in Subjects with Impaired Respiratory Drive

1. Starting baseline
2. Minute ventilation increased rapidly with CO₂ administration to ≈ 20 l/min
3. Alfentanil administration decreased CO₂ - stimulated minute ventilation by 64% which further declined during the subsequent segments with placebo treatment
4. Low dose ENA-001 (0.4 mg/kg/h) tended to increase minute ventilation (9.8% vs. placebo, $p \approx 0.07$)
5. High dose ENA-001 (1.1 mg/kg/h) further increasing minute ventilation (21.4%, $p < 0.0001$)
6. Alfentanil and infusion rate increase, minute ventilation declined for both GAL-021 and placebo while statistically significant separations continued
7. Stop Alfentanil and ENA-001 administration



Minute Ventilation is defined as the total volume of gas entering (or leaving) the lung per minute and is calculated as the product of tidal volume and respiratory rate

GAL-021 = ENA-001



Clinical Study 106: Rising Multiple Dose 5-day Study of ENA-001

Objectives: Safety, Tolerability, Pharmacokinetics (PK)

- Standard Double Blinded, Placebo Controlled Study
- Infusions: 12 hours x 5 days
- Three Dose Levels (0.125, 0.25, 0.5 mg/kg/h)
- n= 28 subjects

Study 106 Results

Safety & Tolerability

- Well tolerated except for infusion site burning sensation and local phlebitis after several days of the infusions
- CV parameters similar (corrected for baseline)
 - Blood pressure transient post-infusion increase
 - Cardiac intervals unchanged
- Endocrine-metabolic parameters similar to placebo

Pharmacokinetics (PK)

- Similar Days 1 and 5
- “well-behaved” PK

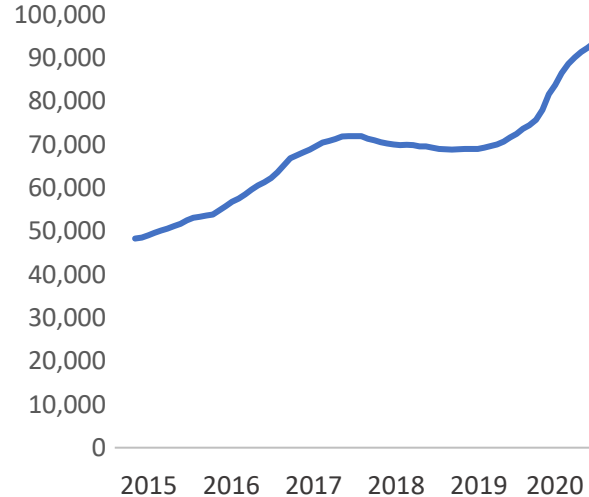


Multiple Products Offer a Diversified Pathway to a \$1 Billion+ Market Opportunity

Drug Overdose

- Sales potential (yr 5) of \$350M to \$500M+
- Drug overdose deaths at record high
- Clear unmet medical need for poly-substance overdose and managing withdrawal

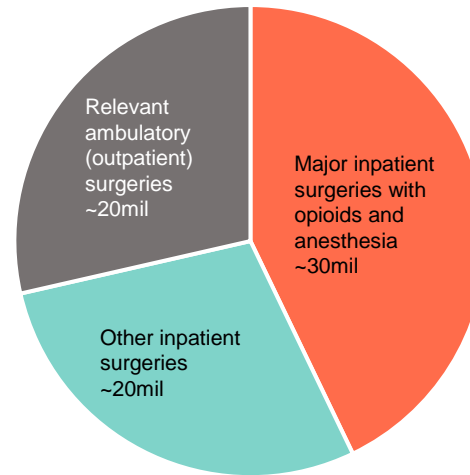
**Number of Drug Overdose Deaths
US CDC, 12 Months-ending Dec. 2020¹**



Post-Surgery

- Sales potential (yr 5) \$650M to \$1.5B+
- High incidence of respiratory depression episodes (> 40%), significant cost burden
- Limited treatment options available

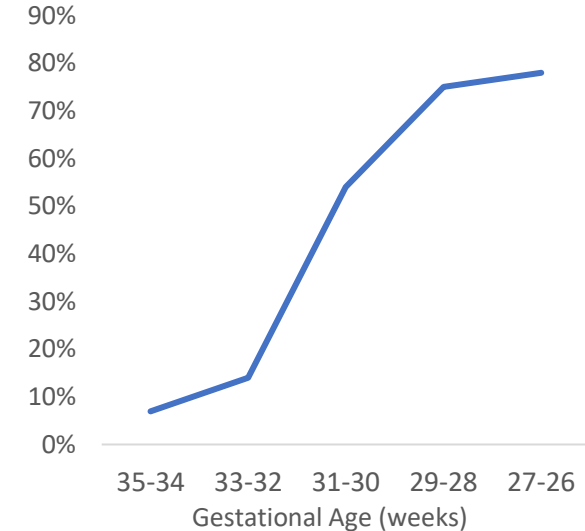
70+ million procedures performed annually in the US^{2,3}



Apnea of Prematurity

- Sales potential (yr 5) \$250M to \$500M++
- Steady prevalence of ~10% for preterm birth
- Treatment to be used as monotherapy and in conjunction with caffeine

Frequency of Apnea of Prematurity⁴



¹ US HHS, Centers for Disease Control and Prevention (CDC), Provisional Drug Overdose Death Counts 12-month ending Dec. 2020, data available as of August 2021

² Chronic Opioid Use After Surgery: Implications for Perioperative Management in the Face of the Opioid Epidemic, Anesth Analg. 2017 November ; 125(5): 1733–174



³ Ambulatory Surgery Data From Hospitals and Ambulatory Surgery Centers: United States, National Health Statistics Reports, Number 102, February 28, 2017

⁴ Bohin, S., Field, D.J., The Epidemiology of Neonatal Respiratory Disease, Early Human Development, volume 37, Issue 2, May 1994,

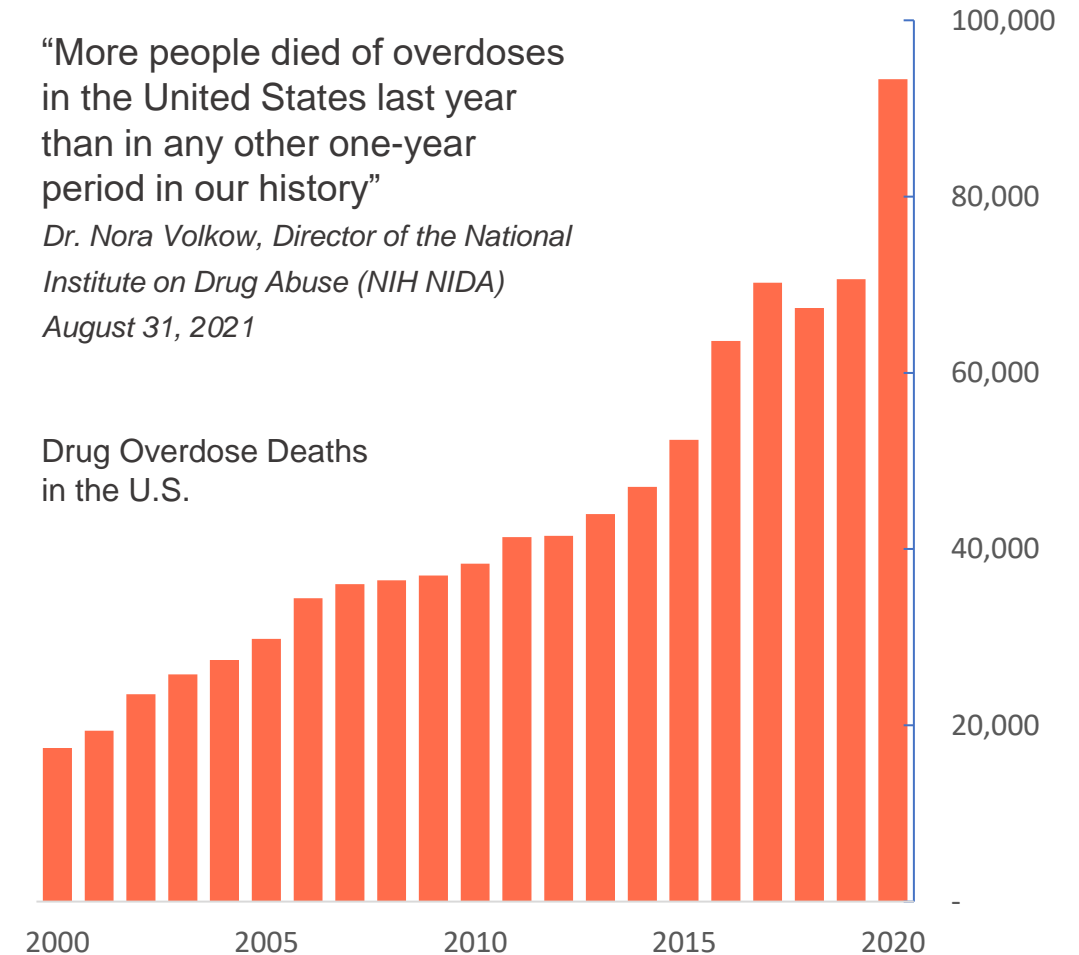
The Rapidly Escalating Drug Overdose Epidemic - Dire Need for Innovative Treatment Options

- COVID-19 has only further accelerated this trend, with 95,230 overdose deaths reported by the CDC¹
- Poly-pharmacy (multiple drug) abuse is estimated at greater than 40% and rising²
- For every drug overdose that results in death, there are many more non-fatal overdoses
 - Approximately 20mil users misuse opioids and other depressant drugs annually³
 - Significant burden on healthcare systems, hospital resources and payors⁴
- Naloxone (approved in 1971) is the only marketed reversal agent – problematic and incomplete:
 - Efficacy limited to opioid overdose
 - Agitated patients consume significant ER resources

“More people died of overdoses in the United States last year than in any other one-year period in our history”

Dr. Nora Volkow, Director of the National Institute on Drug Abuse (NIH NIDA)
August 31, 2021

Drug Overdose Deaths in the U.S.



¹ US HHS CDC, 12-month ending Jan. 2021, data available as of Sept. 2021

² NIH National Institute on Drug Abuse

³ Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Drug Use and Health, SAMHSA, U.S. Department of Health and Human Services

⁴ Opioid Overdoses Costing U.S. Hospitals an Estimated \$11 Billion Annually, Premier Inc, January 2019



Current Treatments for Drug Overdose are Inadequate

Drug overdose assessment - many unknowns

- ? Drugs involved, poly-pharmacy, potency
- ? Medical history, concomitant conditions
- ? Potential for agitation/combativeness and other withdrawal symptoms

Treatment needs:

- ✓ Effective agnostic ventilatory stimulant for multiple drug classes
- ✓ Fast onset, adequate duration of action
- ✓ No precipitated withdrawal or reversal of analgesia
- ✓ Favorable safety profile across patient types

"I just need to make sure the patient is breathing and then I can focus on treatment."

Emergency Medicine Physician

Approved products	Indication	Product Issues
Naloxone (Narcan) approved 1971	Opioid overdose	<ul style="list-style-type: none">• Opioid withdrawal symptoms• Removes pain relief• Potential agitation• Short duration
Flumazenil (Romazicon) approved 1991	Benzodiazepine overdose	<ul style="list-style-type: none">• Contraindications and the possibility of it causing severe adverse effects including seizures, adverse cardiac effects, and death
Doxapram (Dopram) approved 1965	Respiratory and CNS depression due to drug overdosage	<ul style="list-style-type: none">• Side effects include high blood pressure, panic attacks, rapid heart rate, tremor, sweating, and vomiting. Convulsions reported.• Contraindicated in people with coronary heart disease, epilepsy, and high blood pressure.

Opioids: fentanyl, hydrocodone, oxycodone, morphine, etc.

Benzodiazepines: diazepam (Valium), alprazolam (Xanax), clonazepam (Klonopin), etc.



Post Surgery Respiratory Depression - Risk for Patients and Driving \$Billions in Healthcare Costs

Up to 36% of patients are high risk of respiratory depression following surgery¹

Respiratory depression occurs across the hospital setting

- Operating Room (OR)
- Post Anesthesia Care Unit (PACU)
- General Floor
- Intensive Care Unit (ICU)



Current treatment options are limited

- Oxygen supplementation
- Reduce analgesia/ administer naloxone
- Positive pressure ventilation (CPAP)
- Re-Intubation/ventilation



Impacting patient outcomes and cost of care

- Higher rate of mortality
- Longer hospital stays
- Increased ICU admissions
- Poor pain management
- High cost of treatment

Need for a new standard of care: ENA-001 agnostic respiratory stimulant

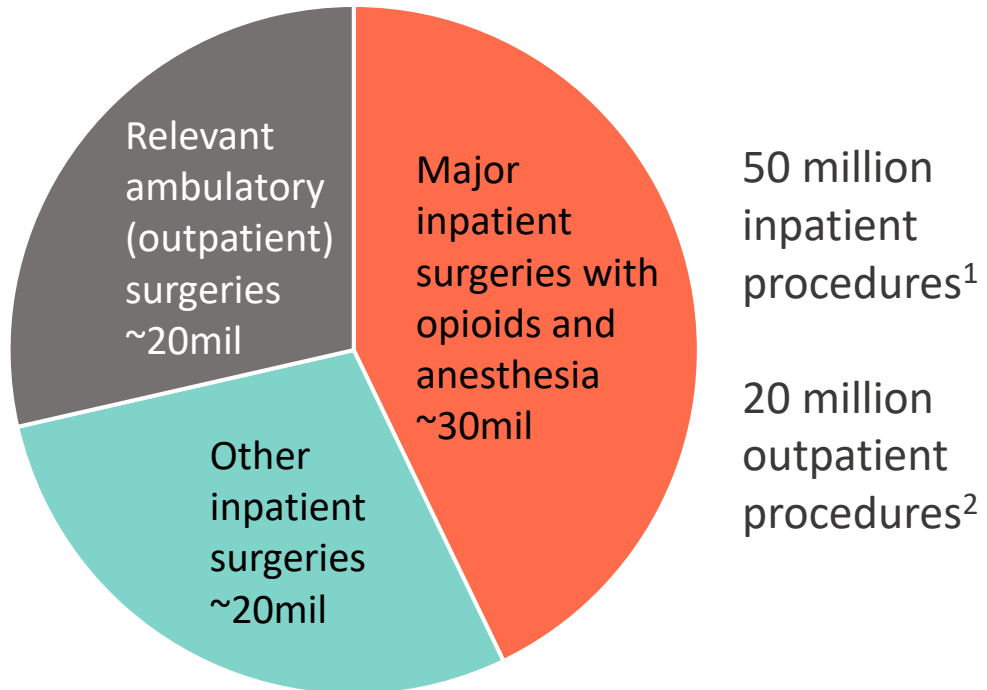
✓ Improves respiration ✓ Fast onset ✓ Safe & tolerable ✓ Does not impact analgesia



¹ Prediction of Opioid-Induced Respiratory Depression on Inpatient Wards, A. Khanna, et al. Anesthesia & Analgesia: October 2020

Large Post Surgery Market Opportunity with Compelling Health Economics

70+ million procedures performed annually in the US



Respiratory Distress presents a major cost burden on hospitals^{3,4,5,6}

Incremental hospital stay with a respiratory event	<ul style="list-style-type: none">• 5-9 days• 2-3X multiple
Incremental costs with a respiratory event	<ul style="list-style-type: none">• Avg. \$50-60K/hospitalization• 4X+ multiple
ICU Admissions (unplanned)	<ul style="list-style-type: none">• 17-47% have a respiratory indication
Mechanical ventilation costs	<ul style="list-style-type: none">• \$27 billion annually (1/3 of ICU costs)

¹ Chronic Opioid Use After Surgery: Implications for Perioperative Management in the Face of the Opioid Epidemic, *Anesth Analg*. 2017 November ; 125(5): 1733–174

² Ambulatory Surgery Data From Hospitals and Ambulatory Surgery Centers: United States, National Health Statistics Reports, Number 102, February 28, 2017

³ Characterisation and monitoring of postoperative respiratory depression: current approaches and future considerations, S. Ayad, *et al*. *British Journal of Anaesthesia*, 123 (3): 378e391, 2019

⁴ Association of Opioids and Sedatives with Increased Risk of In-Hospital Cardiopulmonary Arrest from an Administrative Database, February 25, 2016

⁵ Premier Market Research Hospital Database Study, Galleon Pharmaceuticals, 2012

⁶ Rao, et al. "Postoperative Respiratory Impairment Is a Real Risk for Our Patients: The Intensivist's Perspective," *Anesthesiology Research and Practice*, vol. 2018



Apnea of Prematurity - a Life Threatening and Debilitating Condition for Neonates

Apnea of Prematurity

- A developmental disorder characterized by cessation of breathing for > 20 seconds or <20 seconds accompanied by a bradycardia or hypoxemia
- Can lead to respiratory failure and the need for mechanical ventilation
- AoP may increase the risk of impaired neurological development and/or retinopathy of prematurity
- Significant cost burden associated with treatment and an apnea-free period of 5-8 days generally required for NICU discharge¹



Large global market opportunity

- US preterm birth rate remains steady at ~10%², globally ~ 15 million babies born prematurely on an annual basis
- High incidence of breathing disorders in premature infants:
 - Approximately 25% of infants born preterm experience AoP³
 - All infants experience periodic breathing with brief apneas⁴



Unmet medical need

- International guidelines favor non-invasive respiratory support, ventilating preterm infants can be associated with severe negative pulmonary and extrapulmonary outcomes
- Caffeine citrate is the standard of care, though efficacy of approximately 60% for treatment of AoP⁵



Potential eligibility for development incentive programs

- Orphan Drug Designation – tax credits on development costs, 7-year market exclusivity period, FDA assistance on protocols
- Rare Pediatric Disease – Priority Review Voucher (PRV)

¹ Eric C. Eichenwald, Committee on Fetus and Newborn Pediatrics Jan 2016, 137 (1) e20153757; DOI: 10.1542/peds.2015-3757

² Hamilton, B., et. al., U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System Report 012, May 2021

³ Merck Manual, Arcangela Lattari Balest, 2019, Pediatrics, Respiratory Problems in Neonates, Overview of Perinatal Respiratory Disorders

⁴ Martin R., et al., Apnea of Prematurity, Pediatric Respiratory Reviews, 2004, 5 (Supplement A), S377-382

⁵ CAFICIT Prescribing Information, Nov 2009.



Enalare's Proposed Capital Plan with Key Milestones

Key Business Milestones	Drug Supply			BARDA Partnership			Initiate Clinical Study			Significant Value Inflection		
	2021						2022					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Capital Round	Seed Round			Follow-on Round			Series A/ Crossover			Initial Public Offering (IPO)		
Target Amount	\$10mil*			\$5-10mil			\$20-30mil+			\$100mil+		
Key Capital Expenditures	<ul style="list-style-type: none"> FDA reengagement API production Clinical supply Clinical protocol development Formulation development 			<ul style="list-style-type: none"> Clinical study 108 IM formulation testing Bolus and IV GLP Tox/PD studies Post-Op development plan AoP filings (Orphan, IND) Additional patent filings 			<ul style="list-style-type: none"> R&D expansion Drug Overdose Phase II Post-op Phase II AoP preclinical study Ex-US development Pipeline expansion 					

*Exceeded original target of \$3-5mil

Key Catalysts (1H 2022)

- **Clinical Study 108 results** – breakthrough study addressing propofol inhibition of respiratory drive
- **IM Formulation development** – 1st phase of BARDA partnership completion
- **Additional Preclinical GLP Tox Studies**
 - Bolus dosing study
 - Continuous Infusion study
- **Post operative development plan** – alignment with FDA
- **Apnea of Prematurity** – Orphan Drug request, proof-of-concept preclinical study
- **Additional patents filed**



Enalare Therapeutics - Positioned to Change Standard of Care and Create Significant Enterprise Value

- ✓ **Proven top-tier team**
 - Demonstrated ability to develop and launch blockbuster products with consistent value creation
 - Industry leading scientists and advisors
- ✓ **Significant medical need**
 - Convergence of health emergencies with commonality of respiratory depression
 - Critical need for a safe, agnostic respiratory stimulant in multiple treatment settings
- ✓ **Breakthrough Science**
 - First-in-class NCE compounds with a novel mechanism-of-action
 - Composition-of-matter patents with exclusivity into the 2030s, additional patents pending
- ✓ **Robust proof-of-concept**
 - Positive safety and efficacy results across four human trials
 - Strong pre-clinical platform including extensive toxicology studies across multiple animal species
- ✓ **Large market opportunities**
 - Broad medical and health economic benefits driving \$1.5B+ sales potential*
 - Global rights for all products and indications



*Enalare internal analysis



For more information:
www.enalare.com

