

Great Science Deep Compassion Real Impact

Richard Pops Chief Executive Officer

36<sup>th</sup> Annual J.P. Morgan Healthcare Conference

JANUARY 9, 2018

### Forward-Looking Statements and Non-GAAP Financial Information

Certain statements in this presentation constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, but not limited to, statements concerning future financial and operating performance, business plans or prospects of the company; the continued growth of the long-acting injectable antipsychotic market and the company's commercial products; improvements to and modernization of the treatment ecosystem for opioid dependence; the timing, funding, results and feasibility of product development activities; whether the studies conducted for ALKS 5461, ALKS 3831 and ALKS 8700 will meet FDA's requirements for approval and the company's expectations and timelines for regulatory action by the FDA relating to the NDA submissions for AL<sub>NCD</sub> and ALKS 5461; the potential financial benefits that may be achieved under the license and collaboration agreement between the company and Biogen; and the therapeutic value and commercial potential, including blockbuster status, of the company's products. Although the company believes that such forward-looking statements are based on reasonable assumptions within the bounds of its knowledge of its business and operations, the forward-looking statements are neither promises nor guarantees and they are necessarily subject to a high degree of uncertainty and risk. Actual performance and results may differ materially from those expressed or implied in the forward-looking statements due to risks, assumptions and uncertainties. You are cautioned not to place undue reliance on the forwardlooking statements contained herein. The factors that could cause actual results to differ are discussed in the Alkermes plc Annual Report on Form 10-K for the year ended Dec. 31, 2016 and Quarterly Reports on Form 10-Q for the quarters ended Mar. 31, 2017 and Sept. 30, 2017, under the heading "Item 1A. Risk Factors", and in other subsequent filings made by the company with the U.S. Securities and Exchange Commission (SEC), which are available on the SEC's website at www.sec.gov and on the company's website at www.alkermes.com in the "Investors—SEC filings" section. Existing and prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Except as required by law, the company disclaims any intention or responsibility for updating or revising any forward-looking statements contained in this presentation.

#### Non-GAAP Financial Measures

This presentation includes information about certain financial measures that are not prepared in accordance with generally accepted accounting principles in the U.S. (GAAP), including non-GAAP net income and non-GAAP net income per share. These non-GAAP measures are not based on any standardized methodology prescribed by GAAP and are not necessarily comparable to similar measures presented by other companies. Reconciliations of these non-GAAP financial measures to the most directly comparable GAAP financial measures can be found in the Alkermes plc Current Reports on Form 8-K filed with the SEC on Oct. 26, 2017 and Nov. 27, 2017.

#### Note Regarding Trademarks

The company is the owner of various U.S. federal trademark registrations (<sup>®</sup>) and other trademarks (<sup>TM</sup>), including ARISTADA<sup>®</sup> and VIVITROL<sup>®</sup>. Any other trademarks referred to in this presentation are the property of their respective owners. Appearances of such other trademarks herein should not be construed as any indicator that their respective owners will not assert their rights thereto.





**Distinctive CNS focus in psychiatry:** Developing innovative, patient-centered treatment options designed to address large, chronic diseases and major public health priorities



**Growing current commercial business:** Potential to generate >\$2B revenue into the 2020s; VIVITROL® and ARISTADA® growing with long patent lives



Robust late-stage pipeline with transformative catalysts in 2018: Advancing our pipeline of novel potential blockbusters, driven by world-class research & development



**Strong organization built for scale:** Driving value by leveraging solid financial foundation and efficient operating structure



### **ARISTADA®: Next potential FDA approval**

Aripiprazole Lauroxil NanoCrystal<sup>®</sup> Dispersion (AL<sub>NCD</sub>) PDUFA June 30

### ALKS 5461: NDA submission and potential FDA approval

- NDA submission and anticipated NDA filing acceptance (Q1)
- Potential Advisory Committee meeting and FDA action (H2)

### ALKS 3831: Data from second pivotal study

- ENLIGHTEN-2 weight study enrollment completion (Q1)
- Metabolic study data presentation (H1)
- ENLIGHTEN-2 data (Fall)

### **ALKS 8700: NDA submission**

- EVOLVE-MS-2 gastrointestinal head-to-head initial study data (H1)
- □ NDA submission (H2)

### ALKS 4230: Clinical proof-of-concept

Dose escalation data and dose expansion initiation





# Targeting Chronic Psychiatric Disorders Where Significant Unmet Patient Needs Remain







RECEIVE TREATMENT FOR MAJOR DEPRESSIVE DISORDER



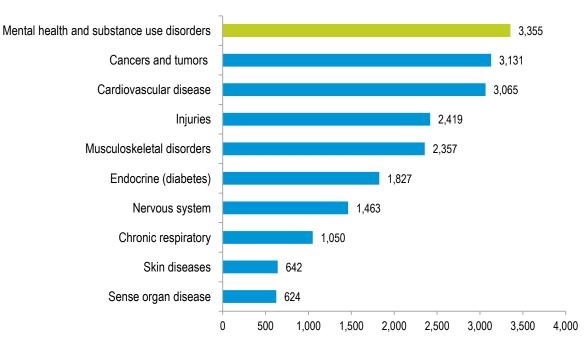
Sources:

Substance Abuse and Mental Health Services Administration (SAMHSA). 2016 National Survey on Drug Use and Health (NSDUH) National Institutes of Health. *Schizophrenia*. Accessed Jan. 2, 2018 from <u>https://report.nih.gov/nihfactsheets/ViewFactSheet.aspx?csid=67</u> Rush AJ, et al. *Am J. Psychiatry*. 2006, 163(11): 1905-1917 (STAR\*D Study). Decision Resources 2016





# Mental health and substance use disorders are the leading cause of disease burden in the U.S.



Age standardized disability adjusted life years (DALYs) rate per 100,000 population, both sexes, 2015

**Source:** Institute for Health Metrics and Evaluation. Global Burden of Disease Study 2015 (GBD 2015). Available at: http://ghdx.healthdata.org/gbd-2015







States









Payers

**First Responders** 



Hospitals



KAISER

FAMILY



Employers





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# Unique Insight and Capabilities Enable New Treatment Approaches for Major CNS Diseases

- World-class science in opioid system modulation
  - Deep biology and chemistry expertise opens new potential opportunities in depression, schizophrenia, addiction and pain
- Advanced formulation and molecular design capabilities intended to address patients' real-world treatment challenges
  - Integrated co-formulations, innovative prodrugs, long-acting injectables
  - Designed for efficacy, ease-of-use and tolerability in chronic conditions
- Expertise in large-scale clinical development in challenging indications and populations
  - Global capabilities focused on high-quality clinical trial sites, investigators, study designs and execution





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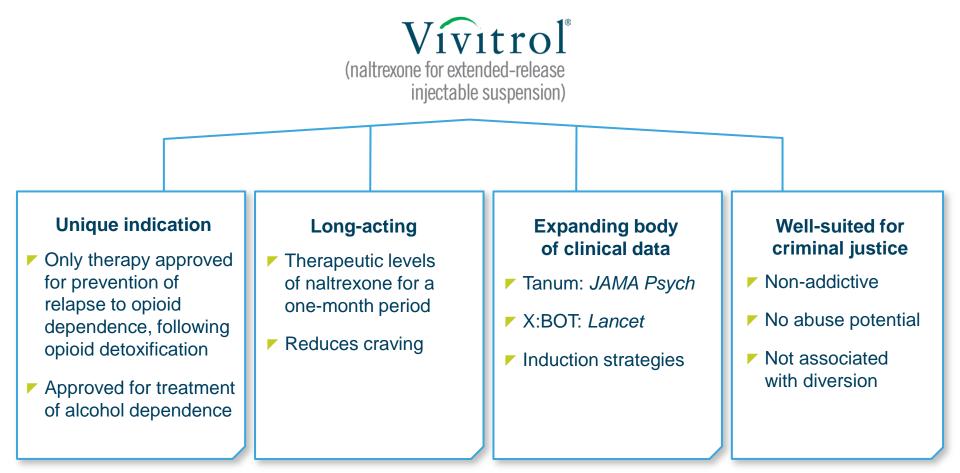
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# Vivitrol<sup>®</sup> (naltrexone for extended-release injectable suspension) 380 mg/vial

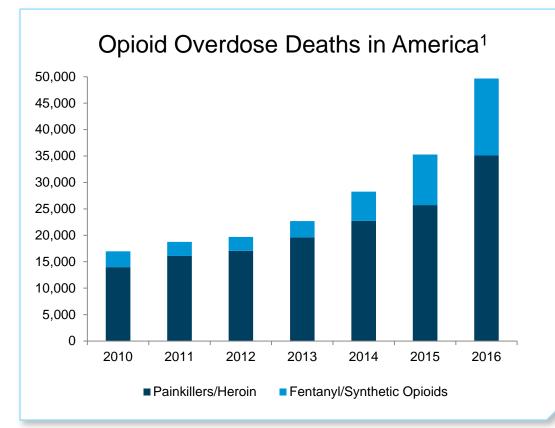


# VIVITROL<sup>®</sup> for Opioid and Alcohol Dependence



VIVITROL is 1 of 3 FDA-approved treatment options for opioid dependence

## Opioid Epidemic Continues to Rage Nationwide



### In 2016...

**11.5M** people misused prescription opioids<sup>2</sup>

**2.0M** people reported having Opioid Use Disorder<sup>2</sup>

**50K** people died from opioid overdose<sup>1</sup>

Fentanyl deaths increased **530%** in three years<sup>1</sup>

Opioid overdose deaths driving down U.S. life expectancy for **2**<sup>nd</sup> year in a row<sup>3</sup>

1. National Institute on Drug Abuse and Centers for Disease Control and Prevention. 2016 numbers are preliminary estimates. Opioids include opioid painkillers,

fentanyl and other synthetic opioids (excl. methadone), and heroin

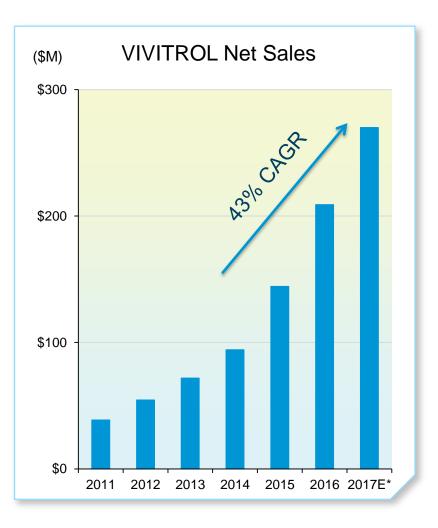
2. Substance Abuse and Mental Health Services Administration (SAMHSA). 2016 National Survey on Drug Use and Health (NSDUH)

3. Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017



## VIVITROL<sup>®</sup>: Expanding Accessibility, Awareness and Use

- Accessibility: Developing state and local ecosystems that encompass access and reimbursement, policy and treatment providers
- Awareness: Educating healthcare providers, public health officials, policymakers and employers:
  - Implementation of CARA<sup>1</sup> and 21st Century Cures funding provide opportunity to modernize treatment system
  - Expanding footprint of state programs:
    >560 programs in 40 states
- Use: Room for growth with <4% market share in opioid dependence
  - Concentrated prescribing: Top 5 states represent ~50% of net sales



1. Comprehensive Addiction and Recovery Act

\* Reflects midpoint of 2017 guidance, provided in the Current Reports on Form 8-K filed with the SEC on Oct. 26, 2017 and Nov. 27, 2017

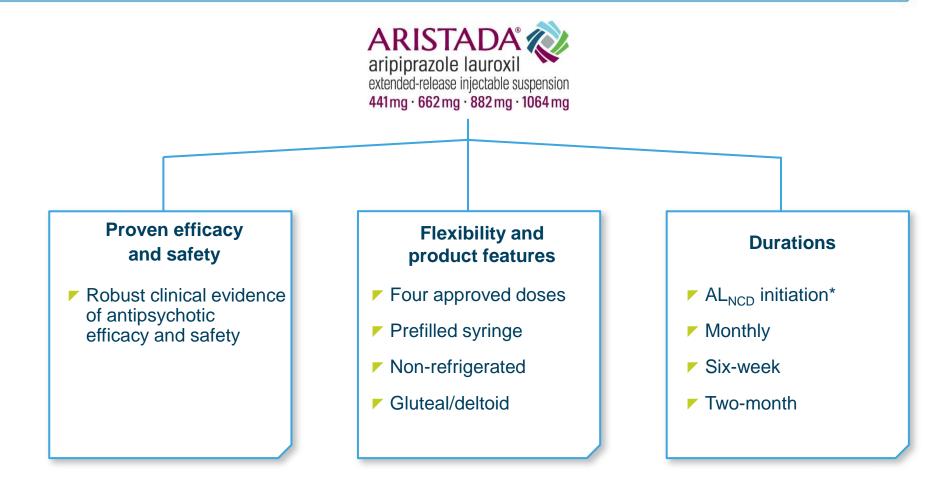








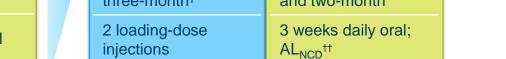
## ARISTADA<sup>®</sup>: Long-Acting Injectable for Treatment of Schizophrenia

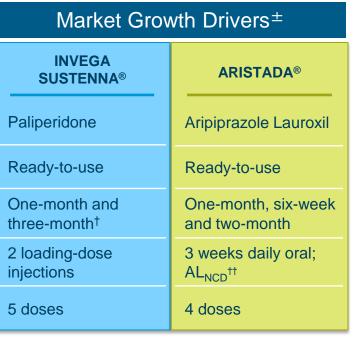


\*Aripiprazole Lauroxil NanoCrystal<sup>®</sup> Dispersion (AL<sub>NCD</sub>) is under FDA review with PDUFA date of June 30, 2018 New treatment regimen designed to replace need for concomitant three weeks of oral aripiprazole for initiation onto ARISTADA

ARISTADA product family is designed to address the real-world needs of patients and providers in the community

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\$2.3B long-acting atypical antipsychotic U.S. market\*

ABILIFY

- Growing ~20% 5-year CAGR\*
- Potential to be \$3-5B+ U.S. market in 2020

First LAI in Category

	CONSTA®	MAINTENA®	
Molecule	Risperidone	Aripiprazole	
Product Presentation	Reconstituted	Reconstituted	
Duration(s)	Two-week	One-month	
Initiation Requirements	2 weeks daily oral	2 weeks daily oral	
Doses	3 main doses**	1 main dose**	

RISPERDAL

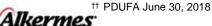
\* Johnson & Johnson, Otsuka, Lundbeck and Alkermes guarterly reports

\*\* Excluding low doses for poor metabolizers

<sup>±</sup> U.S. net sales increased \$171.0M and \$35.4M for INVEGA SUSTENNA/TRINZA® and ARISTADA,

respectively, for the 9-months ended 9/30/17 vs. 9/30/16

<sup>†</sup> INVEGA TRINZA® three-month dose





# date of June 30, 2018 Study comparing ARISTADA study COA SUSTENNA®

ARISTADA®: Gaining Traction in the

Long-Acting Atypical Antipsychotic Market

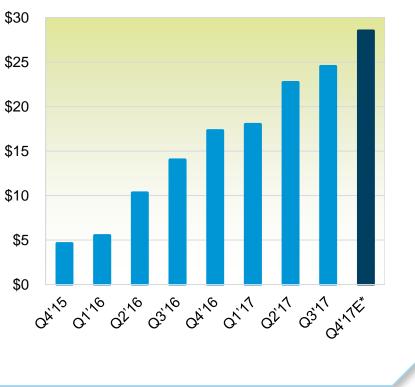
and INVEGA SUSTENNA® initiated Q4 2017

Expanding differentiating features

AL<sub>NCD</sub> initiation product PDUFA

and data to drive broad uptake

- Expanding commercial presence in hospital setting in 2018
- Collaborating with policymakers and industry peers to improve treatment system for serious mental illness
- Annual growth 99%\* compared to 2016



ARISTADA Net Sales (\$M)

Alkermes

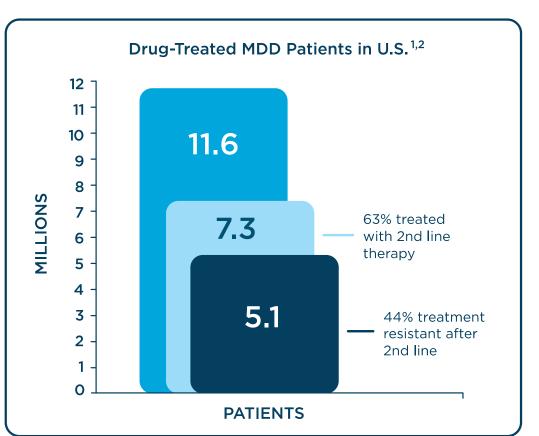


DEVELOPMENT CANDIDATES	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	REGISTRATION
Aripiprazole Lauroxil <sub>NCD</sub> (ARISTADA <sup>®</sup> Initiation Product)					
ALKS 5461 (Major Depressive Disorder)					
ALKS 3831 (Schizophrenia)					
ALKS 8700 (Multiple Sclerosis)					
ALKS 4230 (Immuno-oncology)					



# ALKS 5461 for the Adjunctive Treatment of Major Depressive Disorder (MDD)

- Innovative opioid system modulator
  - Administered once daily as a single, sublingual tablet
  - Initial indication: Adjunctive treatment of MDD in patients with inadequate response to standard antidepressant therapy
- First potential new treatment option with differentiated MOA in 30 years
  - Designed to address compelling unmet needs of patients and clinicians



Rush AJ, et al. Am J. Psychiatry. 2006, 163(11): 1905-1917 (STAR\*D Study)
 Decision Resources 2016

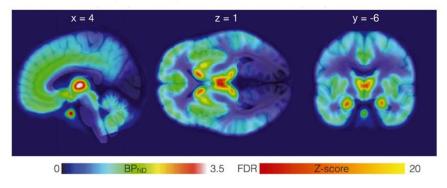


# Endogenous Opioid System Plays Important Role in Mood Regulation<sup>1</sup>

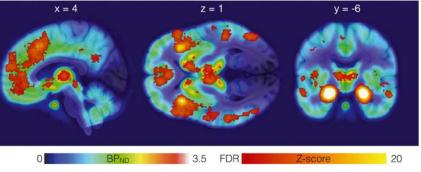
- Dysfunctional signaling in endogenous opioid system occurs in patients with MDD<sup>2</sup>
- Strong scientific rationale supporting opioid pathway as therapeutic target
- Achieving antidepressant effect may involve appropriate modulation of multiple opioid receptors<sup>3</sup>

#### The Location of Opioid Receptors Overlaps With Brain Regions for Emotional Processing

Distribution of opioid receptors in the brain



Overlap between the human emotion circuit and the opioid receptor system in the brain



Nummenmaa L, Tuominen L, Br J Pharmacol 2017. doi:10.1111/bph.13812.

1. Stahl SM. Stahl's Essential Psychopharmacology Online. 2008. http://stahlonline.cambridge.org/essential\_4th.jsf. Accessed Jan. 1, 2018 2. Kennedy SE, Koeppe RA, Young EA, Zubieta J-K. Dysregulation of endogenous opioid emotion regulation circuitry in major depression in women. Arch Gen Psychiatry. 2006;63(11):1199-1208

3. Lutz P-E, Kieffer BL. Opioid receptors: distinct roles in mood disorders. Trends Neurosci. 2013;36(3):195-206



## ALKS 5461: Preparing for Expected Regulatory Approval and Launch

- NDA rolling submission expected to complete January 2018
  - Comprehensive registration package includes data from over 30 clinical studies and more than 1,500 patients
- Consistent efficacy and safety profile
- Publication of data and comprehensive scientific education throughout 2018
- Launch preparations underway
  - Planned hiring of senior sales leadership and field sales force in mid-2018 (~200 reps)
  - Oral solid dose manufacturing capacity established and on-line in Wilmington, OH



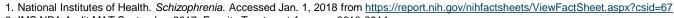


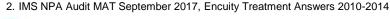
# ALKS 3831 for Schizophrenia

- Novel, oral, investigational antipsychotic designed to offer robust efficacy with a favorable weight and metabolic profile
  - Antipsychotic efficacy proven in phase 3 study
  - Beneficial weight effects demonstrated in phase 2 study

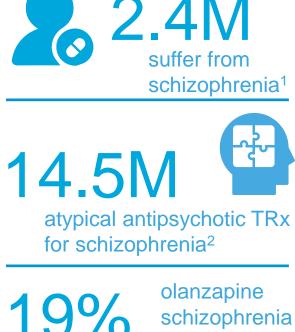
### Differentiated mechanism of action

- ALKS 3831 extends pharmacologic activity of olanzapine to include opioid modulation
- Central and peripheral effects on metabolism and weight gain





Ikermes



schizophrenia market share<sup>2</sup>



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# ALKS 3831: Straightforward Phase 3 Program Completing in 2018

### Four-Week Efficacy Study

- Antipsychotic efficacy vs. placebo
- 403 patients with acute schizophrenia
- ALKS 3831 demonstrated statistically significant reductions from baseline in PANSS scores, compared to placebo (p<0.001)</li>
- Olanzapine achieved similar improvements from baseline PANSS scores, compared to placebo (p=0.004)

### Six-Month Weight Study

- Weight change vs. olanzapine in 540 patients with stable schizophrenia
- Co-primary endpoints
  - Percent change from baseline in body weight
  - Proportion of subjects with >/= 10% weight gain
- Enrollment nearly complete
- Data expected Fall 2018

### NDA submission planned in H1 2019



# ALKS 8700 for Multiple Sclerosis (MS)

- Novel, oral, twice-daily, investigational molecule designed to metabolize into monomethyl fumarate (MMF) with differentiated features vs. TECFIDERA<sup>®</sup>
  - Potential for improved gastrointestinal tolerability
  - Administered in advanced oral, micro pellet, controlledrelease dosage form
  - Composition of matter patent extends into 2033
- Planned NDA submission in H2 2018

### Biogen License and Collaboration Agreement

- Announced Q4 2017
- Granted Biogen an exclusive, worldwide license to commercialize ALKS 8700
- Aligning interests and driving long-term value:
  - Mid-teens percentage royalty to Alkermes on worldwide net sales
  - Clinical and regulatory milestones of up to \$200M
  - Biogen responsible for development expenses (as of 1/1/18)



## ALKS 8700: Clinical Program Designed to Reveal Differentiating Features

- Streamlined regulatory pathway – 505(b)(2)
  - PK bridging studies to confirm bioequivalence to TECFIDERA<sup>®</sup>
  - Long-term safety study exposure requirements
  - Completing clin/pharm studies
- Elective head-to-head GI tolerability study underway
  - Designed to demonstrate differentiated GI tolerability compared to TECFIDERA, initial data in H1 2018

# Initial data from open-label safety study presented at ECTRIMS 2017



Patients, n (%)

Months 0 - 1 after treatment initiation (n=580)				
Discontinuations due to GI AEs	3 (0.5)			
Serious GI AEs	0			
Most common TEAEs (>5% of patients)				
Flushing	184 (31.7)			
Pruritus	43 (7.4)			
Diarrhea	38 (6.6)			
Months 0–3 after treatment initiation (n=574)				
Deaths	0			
Serious AEs	13 (2.3)			
Discontinuations due to AEs	21 (3.7)			
Preliminary data from safety population as of July 27, 2017; study recruitment is ongoing. AE, adverse event; GI, gastrointestinal; TEAE, treatment-emergent AE.				
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Science: World-class R&D at the bench and in the clinic



**People Affected:** Patients, their caregivers, families and communities



**Policy:** To assure access in complex government and private systems



**Economics:** Pricing to deliver value in large chronic markets

Great Science Deep Compassion Real Impact

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# Strong Organization Built for Scale

- Growing business with significant revenues and operational leverage
- Revenue growth driven by proprietary commercial products
  - Base business with potential to grow to >\$2B into 2020s
  - Next phase of growth identified with late-stage pipeline assets
- Strong balance sheet with
  \$560M cash & investments (as of 9/30/17)

(in millions, except per share amounts)	2017 Select Financial Expectations <sup>†</sup>		
Revenues	\$870 — 900		
GAAP Net Loss	\$(140) – (170)		
Non-GAAP Net Income <sup>‡</sup>	\$5 – 35		
GAAP Loss Per Share	\$(0.91) - (1.10)		
Non-GAAP Net Income Per Share (Diluted)	\$0.03 - 0.22		
Per Share (Diluted)			

<sup>†</sup> This financial guidance, provided by Alkermes plc in its Current Report on Form 8-K filed with the SEC on Nov. 27, 2017, is effective only as of such date. The company expressly disclaims any obligation to update or reaffirm guidance, and this presentation is not a reaffirmation or update of previously provided historical guidance. The company only provides guidance in a Regulation FD compliant manner.

\* Non-GAAP net income adjusts for one-time and non-cash charges by excluding from GAAP results: share-based compensation expense; amortization; depreciation; non-cash net interest expense; certain other one-time or non-cash items; and the income tax effect of these reconciling items.

