Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 (PSLRA) and other federal securities laws. Any statements contained herein which do not describe historical facts, including, among others, AMAG’s 2017-2022 strategic plan and expectations of progress on such plan; the potential for AMAG’s commercial platforms; expectations for AMAG’s product development timeline, including the timing for commercial launches, clinical trial enrollment and results and regulatory meetings and submissions; beliefs about the commercial opportunities, and the assumptions underlying such beliefs, for Vyleesi, ciraparantag and AMAG-423, including as to pricing, volume, patient population, including demographics and trends, and the prevalence of indications; beliefs about the data, science, addressable market for AMAG’s product candidates, including the marketing strategy for Vyleesi; expectations for patient sentiments and behaviors and the manner in which the proposed indications for AMAG’s product candidates present; beliefs about and expectations for clinical trial results; beliefs that new products will drive future growth and that commercial product opportunities can be maximized; beliefs about revenue, adjusted EBITDA opportunities and trajectories; 2019 financial guidance, including forecasted GAAP operating loss and non-GAAP adjusted EBITDA, and key inputs and drivers thereof; AMAG’s business development goals and initiatives, including potential partnering opportunities and the availability of non-dilutive capital; AMAG’s 2019 development goals and statements regarding the anticipated regulatory timeline for AMAG’s products and product candidates and expectations for AMAG’s product portfolio are forward-looking statements which involve risks and uncertainties that could cause actual results to differ materially from those discussed in such forward-looking statements.

Such risks and uncertainties include, among others, the risk that sales of Makena will continue to be negatively impacted by the supply disruption and recent and future generic entries in the market; the risk that AMAG may be unable to gain approval of its product candidates, including Vyleesi, AMAG-423 and ciraparantag, on a timely basis, or at all, including as a result of delays or set-backs in clinical trial enrollment, design or results; the potential for such approvals, if obtained, to include unanticipated restrictions or warnings and the risk that the costs and time investments for AMAG’s development efforts will be higher than anticipated, or that AMAG has over-estimated the market and potential revenues for its products and product candidates, if approved, including AMAG’s beliefs about the market opportunity for Vyleesi, AMAG-423 and ciraparantag; and those risks identified in AMAG’s filings with the U.S. Securities and Exchange Commission (the “SEC”), including its Annual Report on Form 10-K for the year ended December 31, 2018, its Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 and subsequent filings with the SEC, which are available at the SEC’s website at www.sec.gov. Any such risks and uncertainties could materially and adversely affect AMAG’s results of operations, its profitability and its cash flows, which would, in turn, have a significant and adverse impact on AMAG’s stock price. AMAG cautions you not to place undue reliance on any forward-looking statements, which speak only as of the date they are made.

AMAG disclaims any obligation to publicly update or revise any such statements to reflect any change in expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

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Cautionary Disclosure Regard AMAG’s Long-Term Outlook

Slides 4, 13, 21, 28, 29, and 30 contain forward-looking estimates of AMAG’s growth trajectory in revenue and adjusted EBITDA on a multi-year timeframe based on a strategy of maximizing commercial product opportunities to fund investments in new products, with various assumptions, including certain assumptions about the progression and approval of AMAG’s product candidates. In addition to the risk factors and forward-looking statements disclosed above, these estimates involve risks and uncertainties related to: (i) the success of AMAG’s development pipeline; (ii) an increased focus on durable assets; (iii) ongoing efforts to leverage clinical development capabilities against later-stage, lower-risk development opportunities which are themselves subject to considerable risk; (iv) the cash-flows required to fund AMAG’s evolving business model, including its development efforts; (v) the uncertain and highly speculative commercial potential of therapeutic areas of interest; and (vi) external pricing / reimbursement. The purpose of these long-term revenue and adjusted EBITDA estimates is not to provide financial guidance or forecasts, but rather to illustrate AMAG’s current growth model based on current plans for the advancement of Vyleesi, ciraparantag and AMAG-423 and potential future portfolio expansion. These estimates include assumptions based on current circumstances with respect to, among other things, (A) design, enrollment, timing and successful execution of clinical trials, (B) anticipated timetables for regulatory filings and related reviews and potential approvals of products, and approved indications, (C) cost and timing for development efforts and commercial launches, (D) forecasted volumes and pricing and (E) the performance of AMAG’s commercialized products. Additional risk factors include, among others, (i) the risk that AMAG’s commercial products will not achieve the level of revenues needed to support AMAG’s research and development efforts, including because such efforts require greater costs than anticipated or because such revenues fall short of expectations, (ii) the speculative nature of the addressable market for the indications being pursued for AMAG’s product candidates, (iii) the risk that the FDA will not approve AMAG’s product candidates for commercial use on the expected timeframe, for the anticipated indications, uses and label, or at all, and (iv) the risk that AMAG will not be able to continue to execute on its business plan. There can be no assurance that all or any of the assumptions and estimates built into our long-term models will prove correct, and we caution you not to place undue reliance on such statements and the overall progression of revenue or adjusted EBITDA for our products, as the timing of regulatory approvals, clinical study results, commercial launch, supply availability, competition, volume and pricing may turn out to be significantly different from our current estimates. You are strongly encouraged to read those risks and uncertainties identified above and in AMAG’s filings with the SEC.
Significant progress from 2017 to today

- Expanded product portfolio from 2 products to 6 products
- Strong and proven commercial track record
- Successful drug development capabilities

Valuable product portfolio today

- Commercial products growing
- Development-stage products address significant unmet medical needs and represent substantial commercial opportunities

View to 2022 is bright

- Current commercial products will continue to perform well
- Development-stage products represent new & durable revenue opportunities
- Return to cash flow positive
AMAG: Diversified Product Portfolio

Leveraging Two Strong Commercial Platforms

**Commercial**

- **Hematology**
  - 48 Sales Representatives => Heme Clinics & Hospitals

- **Women’s Health**
  - 124 Sales Representatives => OB/GYNS

**Coming Soon**

- **ciraparantag**
- **Feraheme**
- **vyleesi**
- **AMAG-423**
- **Intrarosa**
- **Makena**

**STRONG COMMERCIAL PLATFORM**
Continued Strong Physician Support of the SC Auto-injector

All FDA-approved hydroxyprogesterone caproate (HPC) TRxs

Q4-2018

SC AI: 47%
Branded IM: 22%
AGx IM: 9%
Other IM Generics: 22%

Q1-2019

SC AI: 54%
Branded IM: 34%
AGx IM: 1%
Other IM Generics: 11%

SC Auto-injector Q1-2019 vs. Q4-2018

• Grew market share by 7 percentage points
• Achieved 40% volume growth over Q4-2018
• Continued favorable payer and prescriber support
  – Broad payer coverage
• 66% of prescriptions state ‘dispense as written’
• Value of Makena Care Connection®

MATERNAL HEALTH: MAKENA

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1 Specialty Pharmacy Demand Data; Valuecentric 867 Data; IQVIA SMART US Edition Integrated View – NSP.
2 Makena Care Connection enrollment data.
Intrarosa Revenue and Market Share Trending Upward

Intrarosa market share data based on IQVIA Xponent Plantrak data.

- Rx market volume impacted by deductible resets at start of new year
- Modified patient copay savings program
- Combination of women's health and maternal health sales forces in February 2019
- Strong salesforce promotion and DTC campaign expected to drive growth in 2019

1 Intrarosa market share data based on IQVIA Xponent Plantrak data.
Feraheme Continues to Grow with Expanded Label

- Strong execution with expanded IDA label
  - Performance-based contracting drove volume, with stable price
- Q1-2019 market share of 16.1% (vs. 11.2% in Q1-2018)
  - Greater than 30% share in hematology/oncology segment
- Strong +9% IV iron market growth year over year\(^1\)
  - Opportunity for further growth with educational initiatives with gastroenterologists and OB/GYNs

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\(^1\) AMAG estimates average market share and market growth using IQVIA data and internal analytics.
Strong Progress on Strategic Evolution 2017-2022

Historical value drivers fund future value drivers

AMAG-423 ciraparantag
vyleesi

Funding

FUTURE Value of AMAG

HISTORICAL Value of AMAG
Unmet Medical Needs Representing Significant Commercial Opportunities

Net Revenues Per Year For Every 1% of Market Penetration?

**AMAG-423**

- Affects 5.8 million U.S. premenopausal women
- 98% (5.7M) of affected premenopausal women not on therapy

**Ciraparantag**

- "~6 million patients on NOAC / LMWH therapy
- "~150,000" estimated NOAC / LMWH patients per year requiring a reversal agent

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5. AMAG Phase 2b/3a clinical trial population is a subset of the severe preeclampsia population.

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Additional Sources:

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The HSDD Market Provides a Substantial Untapped Opportunity

June 23, 2019 Vyleesi PDUFA date

1/10

Number of premenopausal women who have low desire with associated distress

95%

Percentage of women who are not yet aware of HSDD and that their distressing lack of desire is a medical condition

91%

Percentage of HCPs not satisfied with current treatment options


3 Palatin supported research that was performed by Burke, Inc., an ISO 20252-certified company, in compliance with the established standard for market, opinion, and social research.
Focused Strategy to Penetrate the HSDD Market

Focus on Digital Channels
Focus paid media on social and digital channels where women already are.

Destigmatize the Conversation

Create an online community where women with HSDD can get a wealth of accurate resources, check their symptoms, and get support.

Accelerate Path to Treatment
Create a line-up experience program to allow early adopters to get an advanced prescription through telemedicine.
Focused Strategy to Penetrate the HSDD Market

Ensure Provider Readiness

Activate a sales force and **HCP campaign** that will ensure our grant rate allows us to capitalize on consumer interest.

Initial Metrics Speak for Themselves

Leading indicators of campaign performance continue to instill our confidence in our approach...

- Close to 50% open rate on email to providers, more than double industry benchmark
- In just week one, 2.82M impressions, 80k clicks to our community, and over 700 engagements with only one promoted post
- 485% increase in daily click-through’s from HSDD search terms YoY

Experience, Experience, Experience

Vyleesi is all about experience. From the experience of engaging with our brand to the meaningful impact we believe Vyleesi will have on women’s lives. And this gives us reason to believe that the experience will reverberate via word of mouth and earned media.
Severe Preeclampsia: Significant Unmet Medical Need Globally

AMAG-423 (Digoxin Immune Fab: DIF) in development for the treatment of severe preeclampsia

- **Preeclampsia** is the leading cause of:
  - Maternal morbidity and mortality
  - Adverse neonatal outcomes

- **No effective treatments** for preeclampsia
  - Only “treatment” is delivery of the baby, often times very preterm

- FDA granted AMAG-423 **orphan status** (7-years exclusivity expected at approval) and **fast track** review

- Significant **$2.2 billion annual burden** to U.S. healthcare system\(^1\)

- **Topline data** expected 1H-2020; **FDA approval** and **commercial launch** anticipated 1H-2021

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Strong Scientific Rationale

Reverses effect of EDLFs on sodium pump activity

• **Mechanism of action**

  – Endogenous digitalis-like factors (EDLFs) are circulating inhibitors of the Na⁺ K⁺ ATPase pump ("sodium pump") and when elevated can lead to vasoconstriction, elevated blood pressure, and decreased blood flow¹

  – Elevations in EDLFs have been implicated in a number of diseases including hypertension and preeclampsia¹

  – DIF binds to and reverses effects of EDLFs restoring sodium pump activity and has the potential to improve vascular blood flow²,³

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² DigiFab™ Prescribing Information, 12.1 Mechanism of Action.

³ Wang Y et al, Digoxin Immune Fab Protects Endothelial Cells from Ouabain-Induced barrier Injury. *Am J Reprod Immunol.* Author manuscript; available in PMC 2016 December 07.

Primary composite endpoint in current Phase 2b/3a study

Intraventricular Hemorrhage (IVH)
Severe (grades 3 and 4)

- DIF n=24
- Placebo n=27

% of neonates with IVH

Necrotizing Enterocolitis (NEC)

- DIF n=24
- Placebo n=27

% of neonates with NEC

Deaths

- DIF n=24
- Placebo n=27

% of neonatal Deaths

Unmet Medical Needs Representing Significant Commercial Opportunities

Net Revenues Per Year For Every 1% of Market Penetration?

AMAG-423

- Affects 5.8 million U.S. premenopausal women (1 in 10 premenopausal women)²,³
- 98% (5.7M) of affected premenopausal women not on therapy¹

Every 1% of affected patients treated = $35M⁴ / year

Ciraparantag

- ~6 million patients on NOAC / LMWH therapy²
- Xarelto®, Eliquis®, Savaysa®, Pradaxa®, Lovenox®

Every 1% equals $36M¹ / year

Annual U.S. incidence of pre eclampsia:
~140,000 pregnant women¹

Annual U.S. incidence of severe pre eclampsia:
~50,000 pregnant women¹,²

Every 1% of patients with severe pre eclampsia = $70M³ / Year

⁴ Price reference: The currently approved product for treatment of HSDD (flibanserin) WAC (assume 50% gross to net discount) x 3 months of therapy.

4. Price reference: The currently approved product for treatment of HSDD (flibanserin) WAC (assume 50% gross to net discount) x 3 months of therapy.

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Novel Oral Anticoagulant (NOAC) Use Growing

Improved reversal agents could lead to even broader NOAC use

Anticoagulants
(often referred to as blood thinners) reduce the ability of the blood to form clots

- Prevention of stroke in patients with nonvalvular atrial fibrillation
- Prevention and treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE)

2010
Introduction of Novel Oral Anticoagulants (NOACs)

Xarelto® (rivaroxaban) | Eliquis® (apixaban) | Savaysa® (edoxaban) | Pradaxa® (dabigatran)

Anticipate broader future use of NOACs

- October 2018 approval of expanded label for Xarelto® to reduce the risk of major cardiovascular events in patients with chronic coronary artery disease or peripheral artery disease
- American Heart Association recently wrote guidelines suggesting patients be taken off Coumadin and switched to NOACs

• Use of NOACs and low molecular weight heparin (LMWH) increase risk of serious bleeding complications (1.5%-2% of patients per year)$^1$

• To manage bleeding, a reversal agent may be critical in cases such as:

- Emergency/urgent surgery or invasive procedures
- Serious/Life-threatening bleeding (e.g., GI, intra-abdominal, intracranial)
- Major trauma
- Anticoagulant overdose

• Reversal agents approved by FDA:
  – Praxbind$^*$ for Pradaxa® (dabigatran) – initially approved October 2015; full approval April 2018
  – AndexXa$^*$ for Xarelto® and Eliquis® – approved May 2018

Phase 2b Study: Reversal of Xarelto®

Ongoing study in healthy subjects; high dose group demonstrates 100% response rate

Mean Whole Blood Clotting Time (WBCT) by Timepoint

Individual Responder Analysis

(n=12 per dose)

1 Doses previously presented as ciraparantag acetate doses: 300 mg acetate = 180 mg; 200 mg acetate = 120 mg; 100 mg acetate = 60 mg.

*WBCT reversed to within 10% of baseline within 30 minutes and sustained for 24 hours

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Whole Blood Clotting Time (WBCT) is a Good Measure of Anticoagulation

• WBCT is a measure of the time it takes for blood to clot – clinically relevant physiologic outcome
  – WBCT is currently manually measured, which is labor intensive and not suitable for routine use in today’s hospitals
  – Ciraparantag reversal of anticoagulant activity is best measured by WBCT
  – WBCT (manually measured) was the clinical endpoint measured in the Phase 2b clinical trials

• Perosphere Technologies has developed an automated coagulometer to measure WBCT at the bedside, with results within minutes¹
  – Progressing through validation for Investigative Device Exemption (IDE) approval by FDA
  – AMAG plans to utilize the automated coagulometer in its Phase 3 clinical development program

¹ AMAG has entered into an agreement with Perosphere Technologies for rights to the automated coagulometer, which the company plans to utilize in the Phase 3 clinical program.
End of Phase 2 meeting with FDA in 2H-2019 • Endpoints for Phase 3b clinical trials to be agreed upon

Phase 3a Clinical Trials

STUDY DESIGN/OBJECTIVE:
• Placebo-controlled dose ranging study in ~60-90 healthy subjects (per NOAC cohort)
• Establish lowest effective dose of ciraparantag required to restore subjects baseline WBCT after reaching peak steady state blood concentrations of:

<table>
<thead>
<tr>
<th>NOAC</th>
<th>NOAC</th>
<th>NOAC</th>
<th>LMWH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xarelto®</td>
<td>Eliquis®</td>
<td>Savaysa®</td>
<td>Lovenox®</td>
</tr>
<tr>
<td>(rivaroxaban)</td>
<td>(apixaban)</td>
<td>(edoxaban)</td>
<td>(enoxaparin)</td>
</tr>
</tbody>
</table>

ENDPOINTS:
• Proportion of subjects returning to within 10% of baseline WBCT
• Safety

Phase 3b/4 Clinical Trials

STUDY DESIGN/OBJECTIVE:
• Open label study in ~250 patients currently taking a NOAC or LMWH who develop severe bleeding or require an urgent procedure/surgery that necessitate reversal of their anticoagulation

Based on precedent, only 50-100 patients need to be completed by the time of NDA submission; remainder submitted post approval

ENDPOINTS:
• Proportion of patients returning to normal WBCT and have evidence of hemostasis
• Safety

2 Provided certain clinical milestones are met, the Phase 3 program will be partially funded by an existing development agreement with Daiichi Sankyo (manufacturer of Savaysa®).

2 AMAG has entered into an agreement with Perosphere Technologies for rights to a bedside coagulometer, which would be utilized in the Phase 3 clinical program.
Unmet Medical Needs Representing Significant Commercial Opportunities

Net Revenues Per Year For Every 1% of Market Penetration?

### Ciraparantag

- **“~6 million patients on NOAC / LMWH therapy”**
- Xarelto®, Eliquis®, Savaysa®, Pradaxa®, Lovenox®

### AMAG-423

- **“~150,000” estimated NOAC / LMWH patients per year requiring a reversal agent**

### WOMEN’S HEALTH: VYLEESI


4. *AMAG Phase 2b/3a clinical trial population is a subset of the severe preeclampsia population.*


6. *Price reference: The currently approved reversal agent (coagulation factor Xa recombinant, inactivated-zhzo) price of ~$24,000.*

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4. *Price reference: The currently approved product for treatment of HSDD (flibanserin) WAC (assume 50% gross to net discount) x 3 months of therapy.*

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Acquisition of Ciraparantag and AMAG-423 Provide Global Opportunities

- Acquisition of ciraparantag and AMAG-423 provide AMAG with global opportunities
- Opportunity for ex-U.S. out-licensing
  - Potential source of non-dilutive capital
  - Initiation of ex-U.S. development
Strategic Evolution: New Products Drive Future Growth

Current Commercial Products Provide Stable Cash Flows

Projected U.S. Revenues

<table>
<thead>
<tr>
<th>Year</th>
<th>Adjusted EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>$0</td>
</tr>
<tr>
<td>2019</td>
<td>$500</td>
</tr>
<tr>
<td>2020</td>
<td>$1,000</td>
</tr>
<tr>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td></td>
</tr>
</tbody>
</table>

Current Commercial Portfolio

Current Development Portfolio

Adjusted EBITDA

Potential Vyleesi

AMAG-423 ciraparantag
Key inputs and drivers of financial guidance

- Revenues driven by
  - Continued growth of Feraheme, Makena SC AI and Intrarosa
  - $20M in expected ciraparantag development milestone payments from a global pharma partner

- Spending includes increase in R&D
  - Completion of Phase 2 trial of ciraparantag, initiation of Phase 3a trial
  - Continuing enrollment of AMAG-423 Phase 2b/3a trial

- SG&A
  - Impact of consolidation of women’s health and maternal health sales forces
  - Anticipated launch of Vyleesi in Q3-2019
  - Modest expansion of hematology/oncology sales team

### 2019 Financial Guidance

<table>
<thead>
<tr>
<th>($M)</th>
<th>2019 Financial Guidance¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total revenue</td>
<td>$365 - $415</td>
</tr>
<tr>
<td>Operating loss²</td>
<td>($206) - ($176)</td>
</tr>
<tr>
<td>Adjusted EBITDA</td>
<td>($65) - ($35)</td>
</tr>
</tbody>
</table>

¹ See slide 35 for a reconciliation of GAAP to non-GAAP financial guidance.
² As previously reported, the 2019 operating loss guidance range issued in January 2019 excluded the potential accounting impact for the acquisition of Perosphere, which had not closed at that time. The operating loss guidance range has now been adjusted to incorporate the $74.9 million accounting impact of the Perosphere acquisition, which was recorded in the first quarter of 2019.
<table>
<thead>
<tr>
<th><strong>HEMATOLOGY</strong></th>
<th><strong>Phase 1</strong></th>
<th><strong>Phase 2</strong></th>
<th><strong>Phase 3</strong></th>
<th><strong>Regulatory Review</strong></th>
<th><strong>Approved/Marketed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Feraheme ferumoxytrol injection</td>
<td>Treatment of iron deficiency anemia CKD</td>
<td>Broad label all iron deficiency anemia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cirparantag</td>
<td>Anticoagulant reversal agent <em>(potential for orphan drug designation)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WO MEN’ S HEALTHCARE</strong></td>
<td><strong>Phase 1</strong></td>
<td><strong>Phase 2</strong></td>
<td><strong>Phase 3</strong></td>
<td><strong>Regulatory Review</strong></td>
<td><strong>Approved/Marketed</strong></td>
</tr>
<tr>
<td>Makena hydroxyprogesterone caproate injection</td>
<td>Treatment to reduce recurrent preterm birth in certain at-risk women</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrarosa Prasterone</td>
<td>Treatment for moderate to severe dyspareunia (pain during sex) in postmenopausal women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMAG-423 Digoxin Immune Fab (ovine)</td>
<td>Treatment of severe preeclampsia <em>(orphan drug designation)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vyleesi™ bremelanotide injection</td>
<td>Treatment of low desire or libido with associated distress (HSDD*) in premenopausal women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* HSDD: Hypoactive Sexual Desire Disorder
Appendix
Reconciliation of GAAP to Non-GAAP 2019 Financial Guidance

As previously reported, the 2019 operating loss guidance originally issued in January 2019 excluded the potential accounting impact for the acquisition of Perosphere Pharmaceuticals Inc., which closed later in January 2019. The $74.9 million accounting impact has been added to the 2019 operating loss guidance in the table above.

<table>
<thead>
<tr>
<th>2019 Financial Guidance</th>
<th>($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating loss</strong>¹</td>
<td>($206) – ($176)</td>
</tr>
<tr>
<td>Depreciation &amp; intangible asset amortization</td>
<td>36</td>
</tr>
<tr>
<td>Stock-based compensation</td>
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<td>Non-cash inventory step up and adjustments to contingent consideration</td>
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<td>Acquired IPR&amp;D</td>
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</tr>
<tr>
<td>Restructuring</td>
<td>7</td>
</tr>
<tr>
<td><strong>Adjusted EBITDA</strong></td>
<td>($65) – ($35)</td>
</tr>
</tbody>
</table>

¹ As previously reported, the 2019 operating loss guidance originally issued in January 2019 excluded the potential accounting impact for the acquisition of Perosphere Pharmaceuticals Inc., which closed later in January 2019. The $74.9 million accounting impact has been added to the 2019 operating loss guidance in the table above.