INOVIO

Fourth Quarter & Full Year 2023 Financial Results

March 6, 2024

Nasdaq:INO

Fourth Quarter & Full Year 2023 Financial Results

Welcome, Fourth Quarter Highlights & Pipeline Review

- Jacqueline Shea, PhD, President and CEO

Regulatory & Medical Affairs Update

- Michael Sumner, MBBS, MBA, Chief Medical Officer

Commercial Update

- Mark Twyman, MBA, Chief Commercial Officer

Financial Update

- Peter Kies, Chief Financial Officer

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Forward-Looking Statements

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Welcome:
Review of 2023 & Recent Progress

Progress Over Last Twelve Months

- **Prioritized pipeline, reshaped organization** to focus on candidates with greatest clinical promise, achievable pathways to market and strong commercial potential
- **Reduced operating expenses** nearly in half over the past year
- Substantial **progress with lead candidate INO-3107** for RRP with a target BLA filing date of 2H2024
- **Announced clinical supply collaboration with Coherus for INO-3112** development in HPV-related throat cancer
- **Announced positive Phase 1 data for INO-4201** a preventative Ebola booster vaccine candidate
- Continued to advance other clinical-stage candidates

2024 Key Catalysts

1H2024

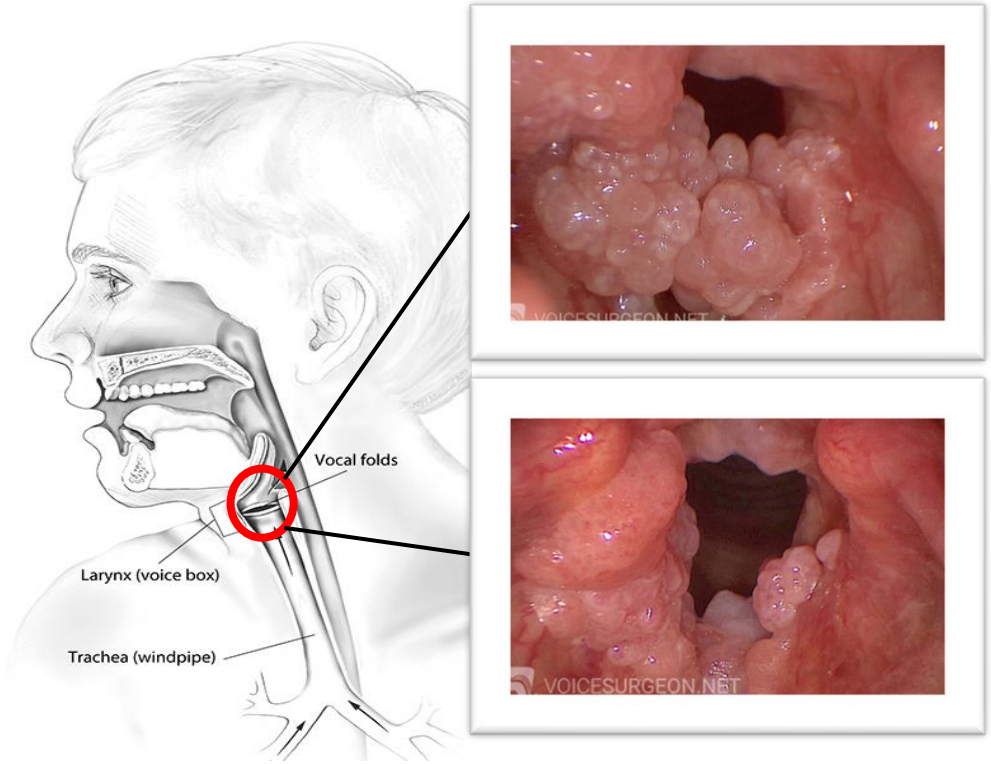
- Finalize trial design for INO-3112 in throat cancer
- Determine next steps for INO-5401 in GBM
- Finalize plans for INO-4201 Ebola booster based on FDA feedback, discuss with collaborators and potential partners

2H2024

- INO-3107: Submit BLA, initiate confirmatory trial
- First clinical data from Phase 1 dMAb trial (anti-SARS-CoV-2)

Regulatory & Medical Affairs Update

Recurrent Respiratory Papillomatosis (RRP)



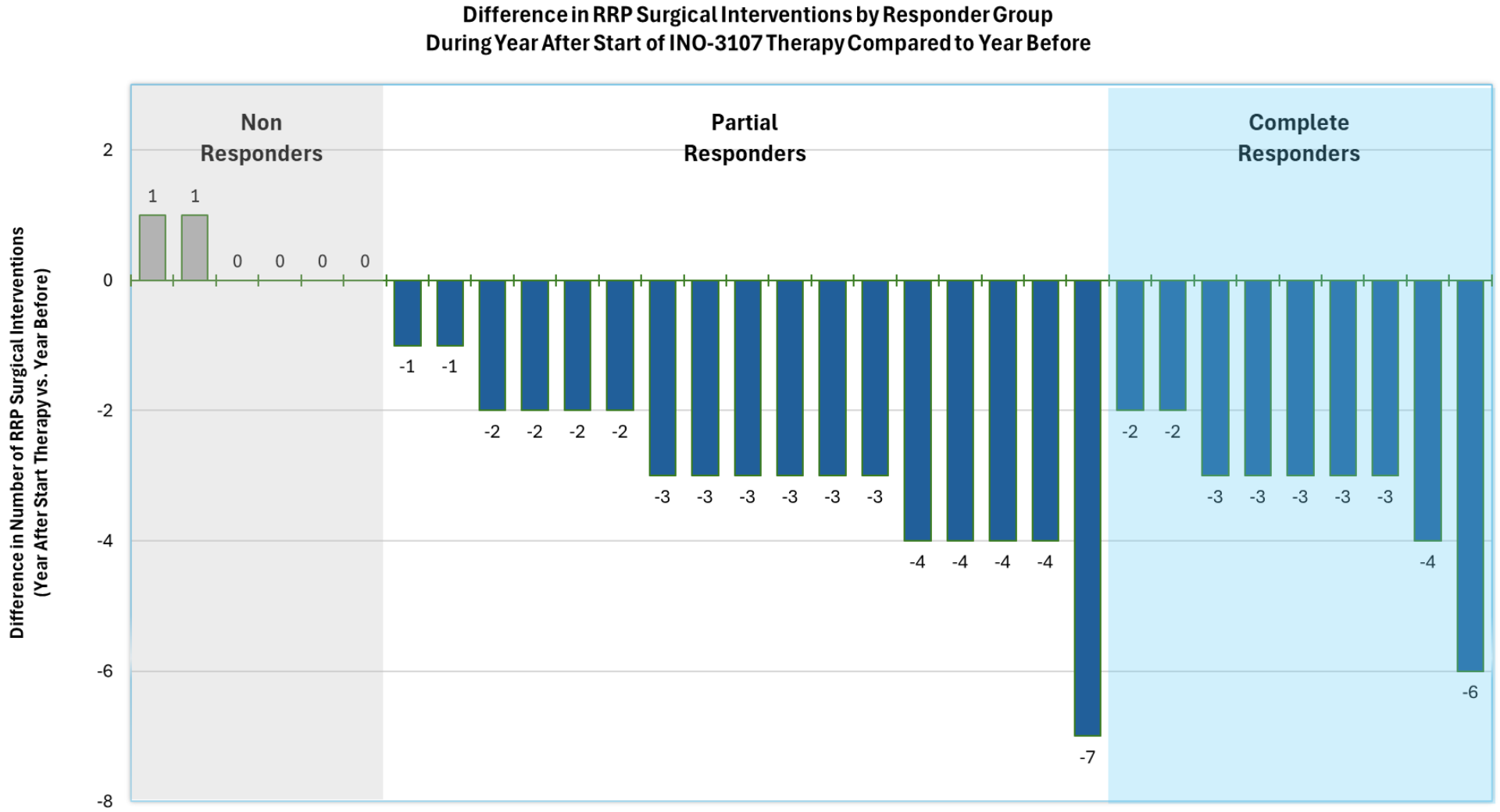
- **Rare disease characterized by small, wart-like growths (papillomas) in the respiratory tract**
  - Can form anywhere but primarily affect larynx & vocal cords
  - Can cause difficulty speaking or complete voice loss, difficulty swallowing, shortness of breath and choking episodes
  - In rare cases, can spread to lungs or become malignant
- **Caused by HPV-6 & HPV-11**, affects adults & children
- **Annual estimated U.S. prevalence/incidence**
  - ~14k active cases (juveniles and adults)
  - ~1.8 per 100,000 adults
- **Surgery is current standard of care**
  - Papillomas grow back since underlying infection remains
  - Average 4 surgeries per year
  - Severe RRP may require frequent medical intervention involving 100s of surgeries over a lifetime

Image Source: National Institute on Deafness and Other Communication Disorders; Available at www.nidcd.nih.gov/health/recurrent-respiratory-papillomatosis; accessed July 27, 2022;
Photographs courtesy Aaron Friedman MD, University of Cincinnati College of Medicine (https://voicesurgeon.net/voice-disorders/recurrent-respiratory-papillomatosis-rrp/). Used with permission.

“RRP patients will tell you that even one reduction in the number of disruptive, invasive surgeries they face would be life-changing. The potential impact of this treatment gives me great hope for the future and I'm happy to see that RRP is finally getting the attention it deserves.”

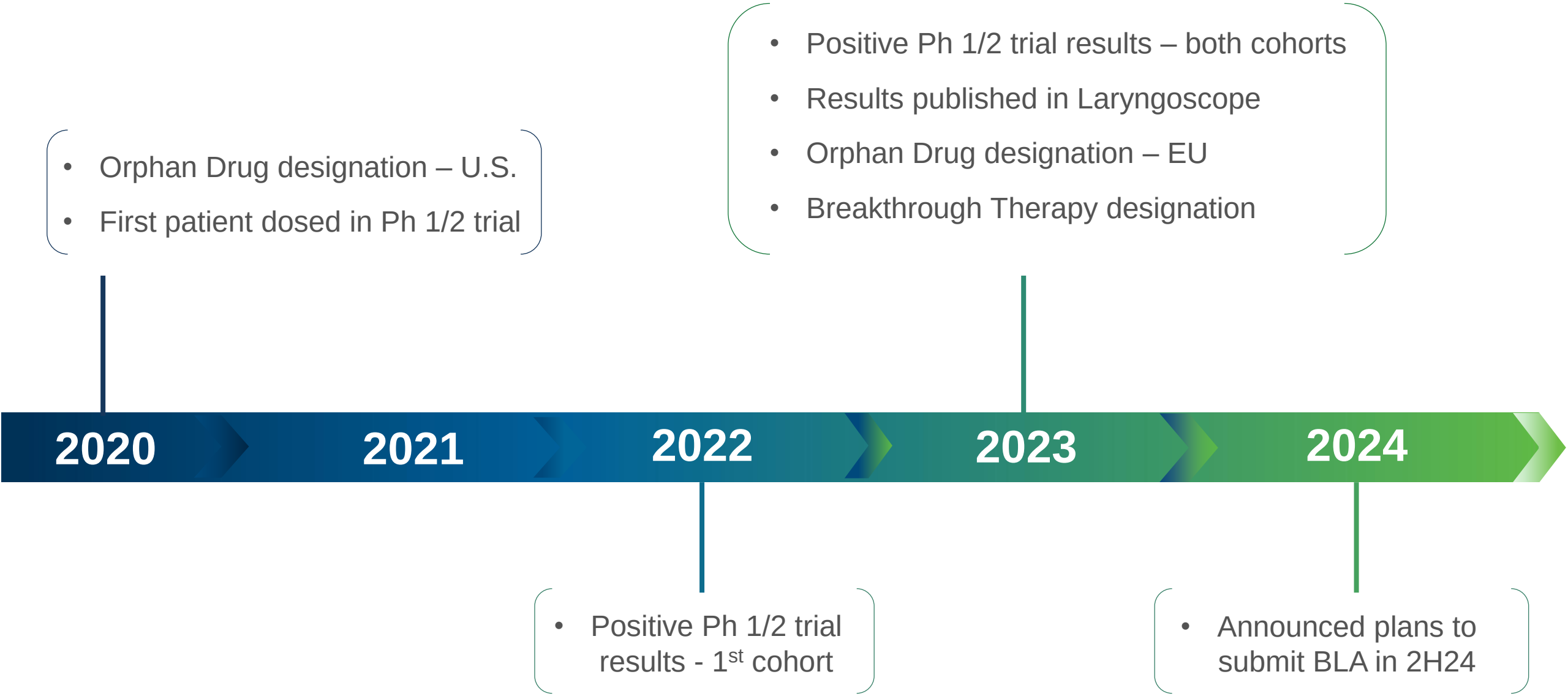
– Kim McClellan, President of RRP Foundation

INO-3107: In Phase 1/2 trial 81.3% of participants had a decrease in surgeries



Source: RRP-01 Trial Data Set. Includes surgeries performed during the dosing window.

INO-3107: Accelerated Progress



Key Catalysts for INO-3107 in 2024

- Completing submission of BLA under accelerated approval program 2H24
- Initiating confirmatory trial prior to BLA submission
- Requesting rolling submission and Priority Review – possible action on application within ~6 months (compared to usual ~10 month review)
- Publish immunological data supporting mechanism of action of INO-3107
- Commercial launch in 2025 if FDA approval received

INO-3112: Clinical Collaboration and Supply Agreement with Coherus BioSciences

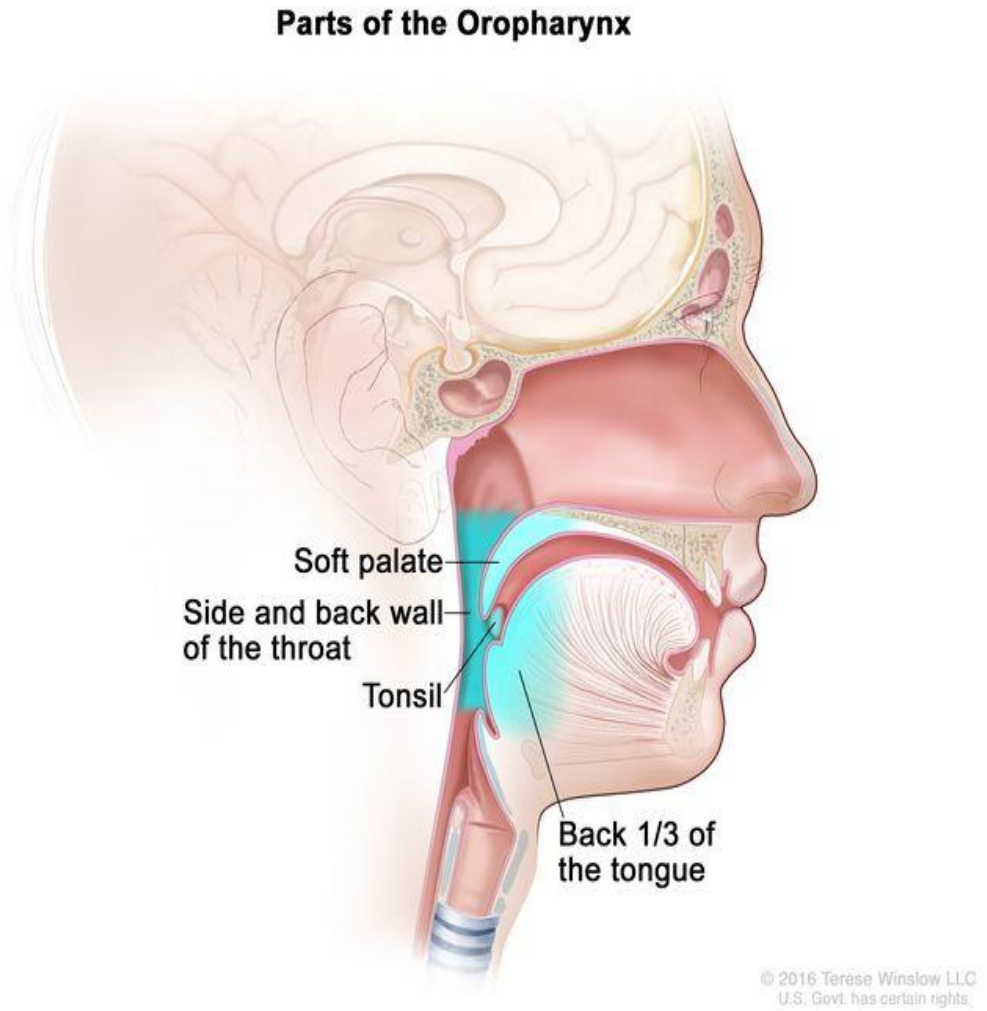
INO-3112: DNA medicine candidate targeting HPV-16/18, combined with interleukin-12 (immune activator)

LOQTORZI: Proven anti-PD-1 monoclonal antibody

Will evaluate combination therapy as treatment for locoregionally advanced, high-risk, HPV-16/18+ oropharyngeal squamous cell carcinoma (OPSCC/throat cancer)

What is Oropharyngeal Squamous Cell Carcinoma?

- Type of head and neck cancer commonly known as throat cancer
- Occurs in the base of the tongue, tonsils and/or soft palate
- Typically causally related to high-risk subtypes of HPV, some cases are carcinogen-driven
- HPV+ throat cancer rapidly increasing in incidence among patients in high-income countries
  - Surpassed cervical cancer as most common HPV-related cancer diagnosed in the U.S. (~ 20,000 new cases/yr)
- HPV estimated to cause 70%-80% of all oropharyngeal cancers diagnosed in the U.S.



https://www.cancer.gov/types/head-and-neck/patient/adult/oropharyngeal-treatment-pdq

HPV-Related Locoregionally Advanced Throat Cancer

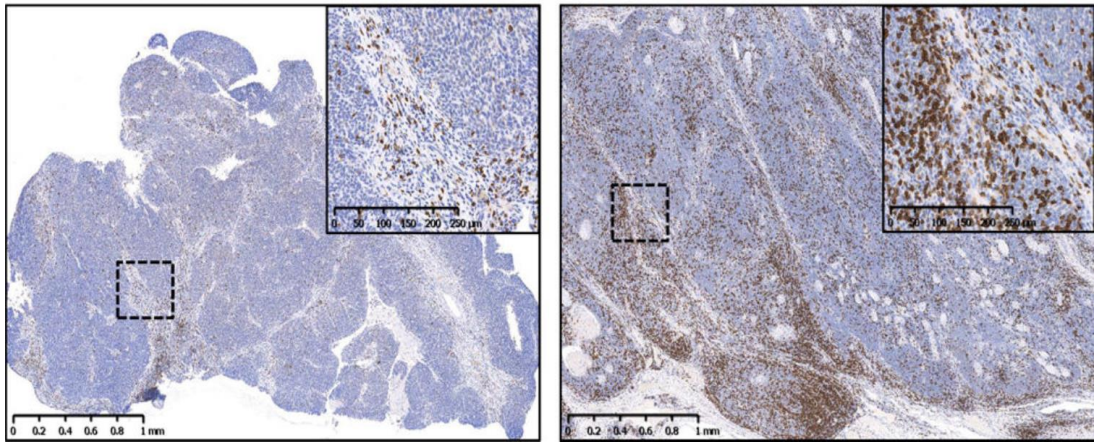
Unmet need exists in preventing relapse in high-risk patients

- Most throat cancer patients diagnosed with locoregionally advanced (LA) disease
- Current treatment:
  - Curative intent through use of multi-modal therapy, including surgery & CRT
- Outcomes:
  - 3-year probability of PFS is good (70-75%)
  - Patients who progress: clinical outcomes poor, even with addition of immune-checkpoint blockade therapy
  - Survival of patients who progress is under a year on average
- Trial target high-risk patients with HPV-related LA throat cancer
  - Estimate 3k - 4k new patients per year in US

INO-3112: Previously Completed Trials

Monotherapy: Phase 1/2a in pre-surgery or post CRT patient

Published in Clinical Cancer Research, 2019



CD8 staining prior to dosing

CD8 staining after dosing

Combination Therapy: Phase 1b/2a in recurrent/metastatic patients

- Combined with AstraZeneca's PD-L1 checkpoint inhibitor, durvalumab
- ORR: 27.6% (4 CR, 4 PR) in 29 evaluable patients
  - Median OS was 29.2 months (15.2–not calculable)
  - Peripheral HPV-specific T cells and tumoral CD8+ T cells were increased
- Updated results and published in *Clinical Cancer Research,* 2023

Existing trial data highlights strong rationale & potential benefit of combining INO-3112 to generate T cells targeting the HPV E6 & E7 oncogenes with a PD-1 inhibitor in HPV-16/18 related OPSCC

Commercial Update

INO-3107: On Track to Launch in 2025

- **Dedicated to understanding patients and their experiences**
  - Continuing to build insights into patient journey
  - Advisory board panels held in Q4
- **Mapping the HCP landscape**
  - Initiated comprehensive market analysis of RRP HCPs
  - Will allow us to focus field deployment, make smart investment decisions
- **Experienced commercial team**
  - Well versed in every aspect of commercialization process
  - Experience in rare disease and innovative products
  - Expertise in putting essential systems in place for a successful launch
- **Clinical and commercial advantages**
  - Critical foundation for commercial efforts
  - Underpins commercial launch strategy

Key Characteristics for INO-3107

Clinical Advantages

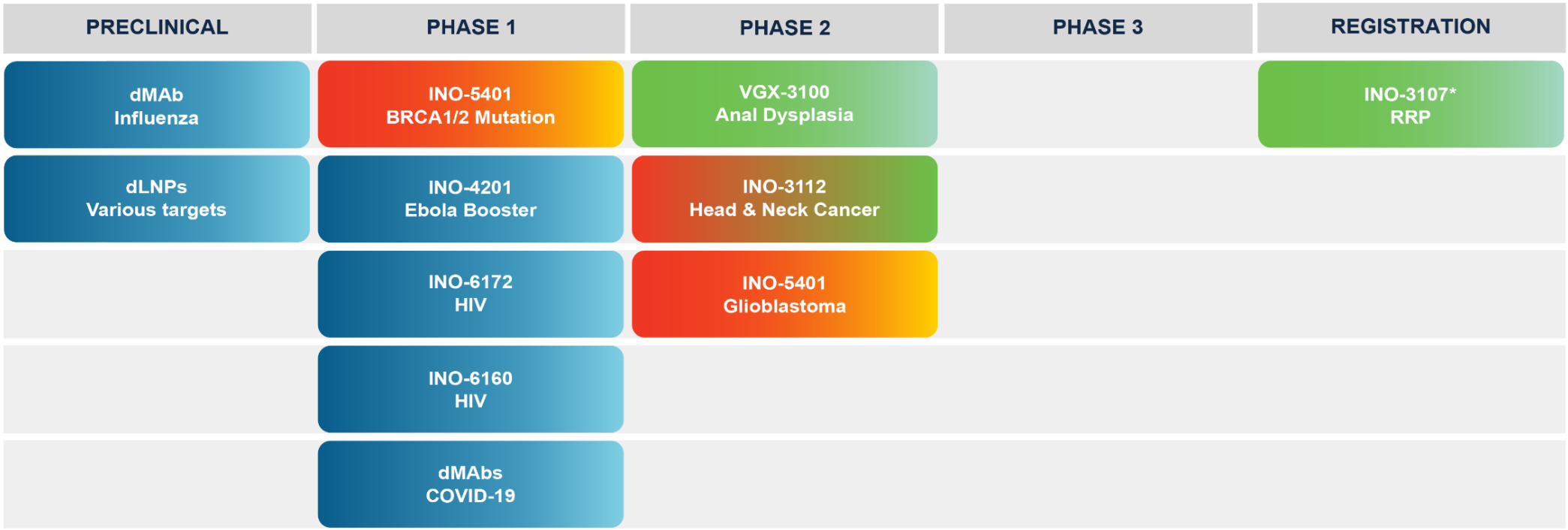
- Completed Phase 1/2 trial
  - Can be used to file BLA under accelerated approval program
- Significant efficacy data & well tolerated
  - 81.3% of patients saw a reduction in surgeries; including 28.1% with CR
  - Trial counted all surgeries during treatment window
  - Median reduction of 3 surgeries
  - Durability of response for CR throughout trial period; 52 weeks
  - Favorable tolerability profile
  - Efficacy across disease spectrum
- Breakthrough Therapy Designation in U.S.

Commercial Advantages

- Targets/similar efficacy against both HPV-6 and HPV-11 (strains that cause RRP)
- Potential for redosing
- Refrigerator stable for up to 3 years
- Electroporation device well-tolerated by patients & easy to use by HCPs
- Well-defined manufacturing process
- Orphan Drug Designation in U.S. and EU

Pipeline Update

INOVIO Pipeline



OUT-LICENSED**

HPV-RELATED DISEASES IMMUNO-ONCOLOGY INFECTIOUS DISEASES

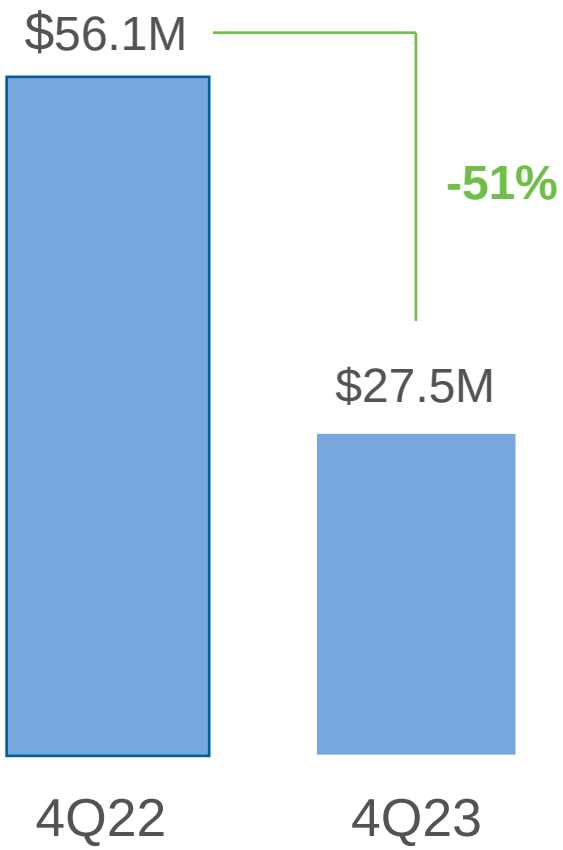
* Preparing BLA submission under accelerated approval program ** VGX-3100 to ApolloBio for China; INO-4800 to Advaccine for China

Financial Update

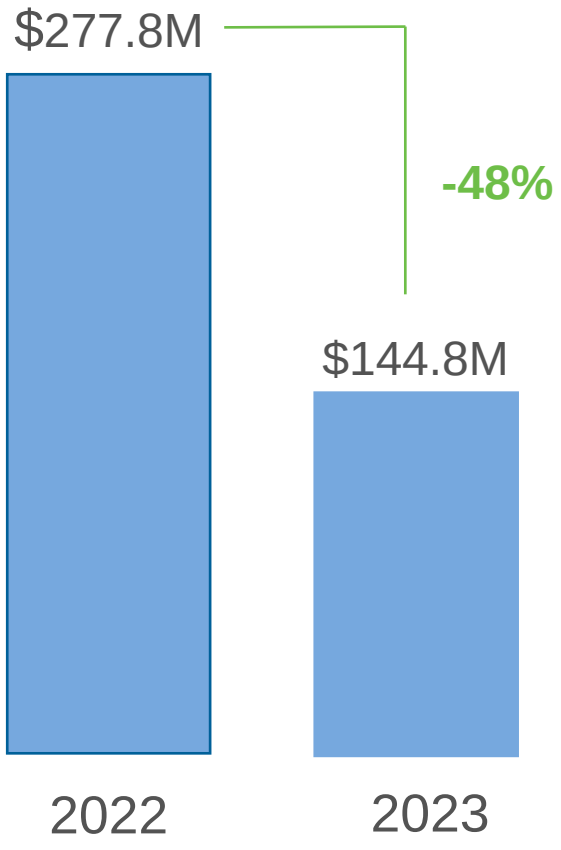
Commitment to Financial Discipline Key to Strategy

Total Operating Expense

4th Quarter 2022 vs. 2023



Year End 2022 vs. 2023



Financial Strengths

- $145.3M in cash, cash equivalents, short-term investments as of 12/31/23
- Cash runway into 2Q 2025
- Operational cash burn of $26M for 1Q24 plus repayment of $17M on convertible senior notes

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Q&A

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Thank you.