

NASDAQ: OTLK outlooktherapeutics.com



Enhancing the standard of care for retinal disorders by working to achieve the first FDA approval for bevacizumab in ophthalmology



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# Leadership Team: Global Ophthalmic Development and Commercial Launch Excellence



C. RUSSELL TRENARY III
President, CEO and Director











**LAWRENCE KENYON**Chief Financial Officer and Director









**JEFF EVANSON**Chief Commercial Officer







NAVIGANT



**TERRY DAGNON**Chief Operations Officer









**RANDY THURMAN**Executive Chairman of the Board



MARK HUMAYUN, MD, PhD
Medical Advisor





### **Investment Highlights**

### Targeting \$13.1 Billion Global Ophthalmic Anti-VEGF Market<sup>2</sup>

#### Differentiated Drug Product

- Designed to meet stringent standards required for FDA ophthalmic approval
- Potential to eliminate risks associated with off-label repackaged bevacizumab, including potential impurities and particulates from legacy re-packaging processes
- Delivery through a convenient pre-filled syringe

## Potential for 1<sup>st</sup> FDA Approved Bevacizumab

- Compelling pivotal data support U.S. FDA BLA submission targeted September 2022
- Launch anticipated Q4 2023, if approved
- Provide an economically elegant anti-VEGF solution for patients, payers and doctors

## Attractive Market Opportunity

- Over 50% of the U.S. market available for conversion to ONS-5010 representing billions in yearly sales
- 12-years US regulatory exclusivity expected
- Label expansion opportunity into DME and BRVO



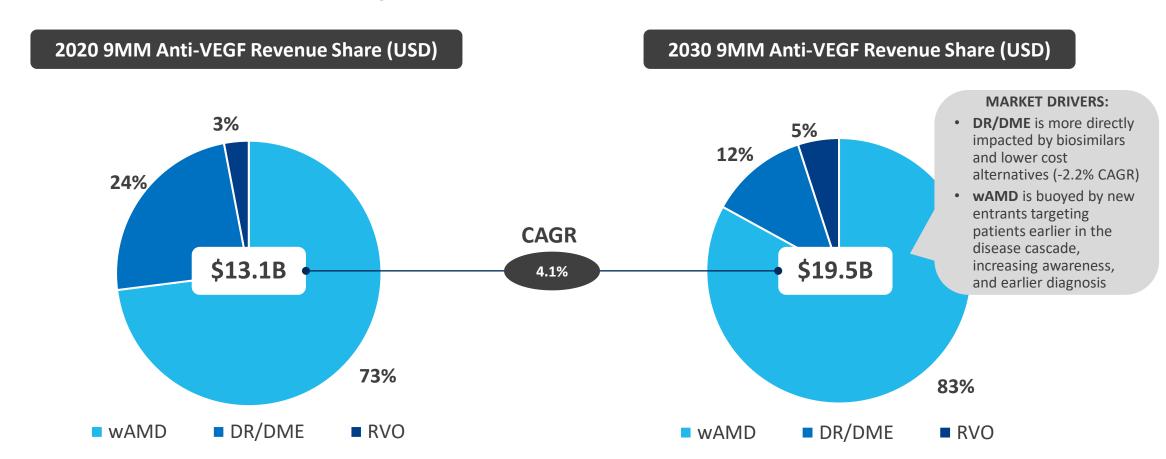
<sup>1.</sup> ONS-5010 / LYTENAVA™ (bevacizumab-vikg) is an investigational ophthalmic formulation of bevacizumab

# Wet AMD Landscape Current and Future



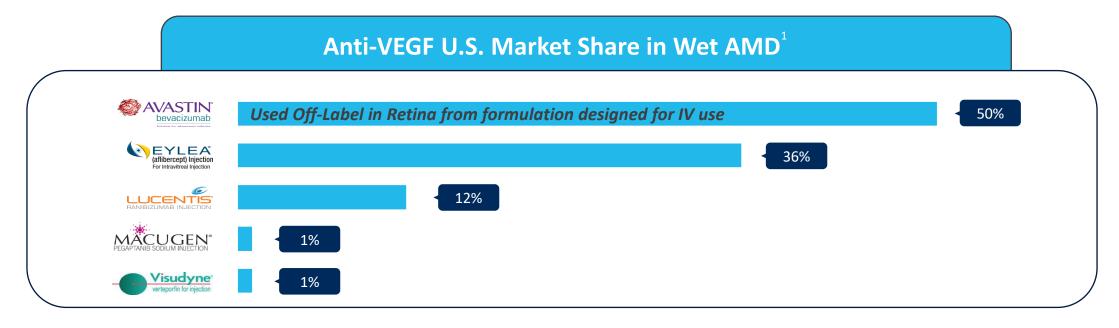
## **Targeting Large and Growing Ophthalmic Markets**

ONS-5010, If Approved, Will Be a Significant Therapy In the Retinal Anti-VEGF Market, Currently Estimated To Be In Excess of \$13.1 Billion Worldwide





# Unapproved Bevacizumab Represents 50% of U.S. Wet AMD Market Injections



Expected Drivers to Compete Across All Ophthalmic Anti-VEGF Therapeutics, if Approved by FDA

- Provide cost-effective FDA approved ophthalmic bevacizumab
- Become first-line "step-edit" drug of choice

- 3 12 years market exclusivity
- 4 Penetrate EU and developing markets



# Public Health Concern Due To Repackaged and Off-Label Use of Bevacizumab Designed for Other Specialties and Delivery Systems

#### Variability in Potency<sup>1</sup>

#### JAMA Ophthalmology

- 81% of samples had lower protein concentrations than required
- Samples had statistically significant variations in protein concentration among samples

#### Safety and Sterility Adverse Events<sup>2</sup>



- Unvalidated hold times in syringes
- Patients have lost eyesight due to infections
- Multiple unapproved repackaged IV bevacizumab recalls due to unsterile compounding practices

#### **Syringe Adverse Events**<sup>3</sup>



- Variability in repackaging can lower quality of syringe products, resulting in adverse events
- Silicone oil droplets may be released from the syringe into the eye

## Not Held to FDA Ophthalmic Quality Standards When Repackaged



400 mg/16 mL, single-use vial; 100 mg/4 mL, single-use vial





### U.S. Law and FDA Regulations for Compounding and Repackaging

- The Food Drug and Cosmetic Act (FD&CA) and Drug Quality and Security Act of 2013 define what is legal for 503A and 503B Compounding Pharmacies.<sup>1</sup>
  - Once a drug or biologic is FDA approved and commercially available compounding is no longer authorized. 2,3,4,5
    - 503A Compounding pharmacies are regulated by federal regulations and state laws and can only compound or repackage for individual prescriptions in limited quantities and cannot distribute across state lines for > 5% of business.
    - 503B Compounding pharmacies / outsourcing facilities must comply with CGMP regulations, are inspected by FDA and must adhere to reporting requirements.
    - Neither 503A nor 503B pharmacies can compound or repackage commercially available drugs unless they appear on the official FDA drug shortage list.
- "Compounded drug products are not FDA-approved, which means they have not undergone FDA premarket review for safety, effectiveness, and quality." FDA<sup>6</sup>
- "The restrictions on making drugs that are essentially copies ensure that pharmacists and physicians do not compound drug products under the exemptions for patients who could use a commercially available drug product." FDA<sup>6</sup>
- "Such a practice would create significant public health risks because patients would be unnecessarily exposed to drug products that
  have not been shown to be safe and effective and that may have been prepared under substandard manufacturing conditions." FDA<sup>6</sup>
- <u>"Under the statutory scheme, only very rarely should a compounded drug product that is essentially a copy of a commercially available drug product be offered to a patient." FDA<sup>6</sup></u>



## ONS-5010

Target submission of U.S. FDA BLA for the treatment of wet AMD by September 2022



## **ONS-5010 Ophthalmic Bevacizumab Target Product Profile**

ONS-5010 (bevacizumab-vikg) Investigational Therapy				
Patient Population	Patients diagnosed with wet AMD, DME, or BRVO			
Description	<ul> <li>Anti-VEGF bevacizumab designed for ophthalmic indications wet AMD, DME, and BRVO</li> <li>Known high affinity to bind to all isoforms of VEGF A</li> </ul>			
Dosing and Administration	<ul> <li>Supplied either as pre-filled ophthalmic syringe for intravitreal 1.25 mg injection administered once monthly, or in a glass vial</li> </ul>			
Efficacy, Safety, and AEs	<ul> <li>NORSE TWO demonstrated significant efficacy and safety, and when combined with NORSE ONE and NORSE THREE provides the necessary registration database. These ONS-5010 data when taken as a whole continue to be consistent with previously published results for bevacizumab.</li> </ul>			



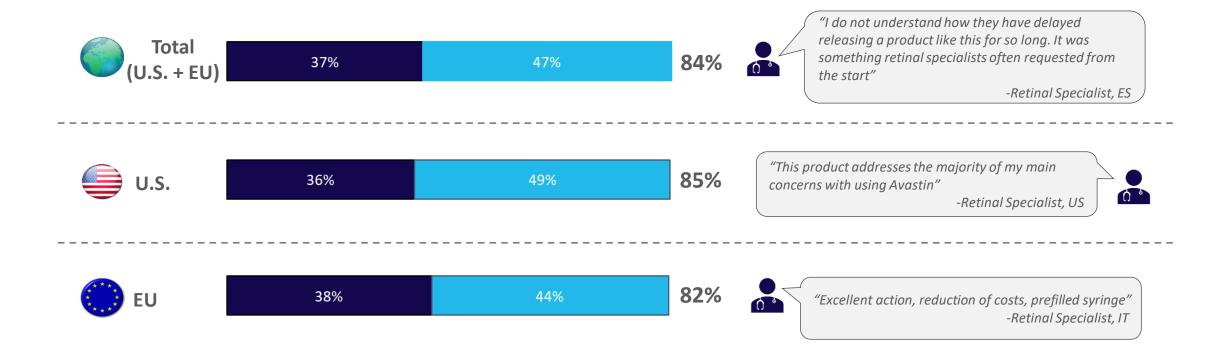
## FDA Approval Requirements vs Compounded Bevacizumab

Ophthalmic Solution Requirement	Off-Label Compounded Repackaged IV Solution	FDA Approved Ophthalmic Solution for Intravitreal Injection
Sterile USP <71>1	?	Yes
FDA approved ophthalmic package consistent with USP <771>1	No	Yes
FDA reviewed stability data supporting shelf life <sup>2,3</sup>	No	Yes
Particulates per USP <789> for ophthalmic solutions <sup>1</sup>	?	Yes
pH FDA approved and consistent with USP <771>1,2,3	No	Yes
Potency FDA approved specifications for shelf life <sup>2,3</sup>	No	Yes
Osmolarity specification for ophthalmic solution <sup>2,3</sup>	No	Yes
Bacterial endotoxins USP <85>1	?	Yes
GMP <sup>2,3</sup>	?	Yes



### Do Physicians Want an Ophthalmic Approved Bevacizumab?

## >80% of Retinal Specialists Express Interest/High Interest In an FDA-Approved Ophthalmic Bevacizumab to Treat Wet AMD, DME and BRVO

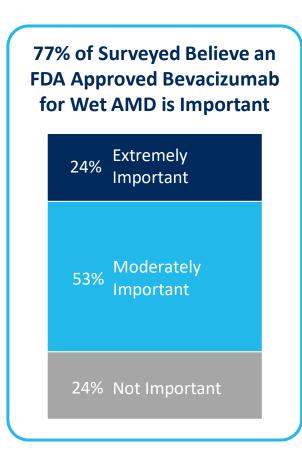


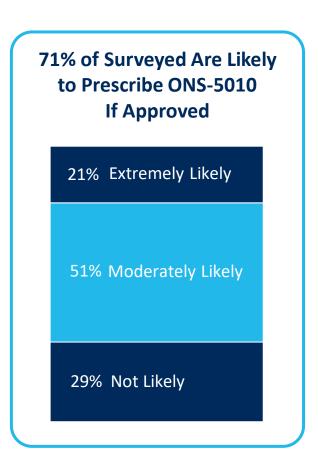


## **Investigational Therapy ONS-5010 Ophthalmologists Survey**



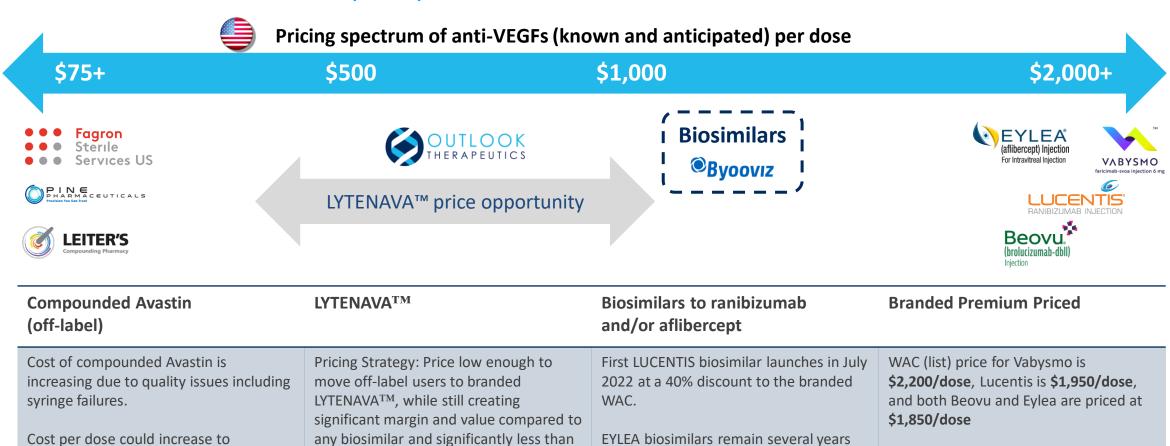






### **LYTENAVA™** Pricing Opportunity

If Approved Optimize Uptake: Compounding product prescribers while creating separation from biosimilars and other branded price points



from approval and launch.

the premium branded products.



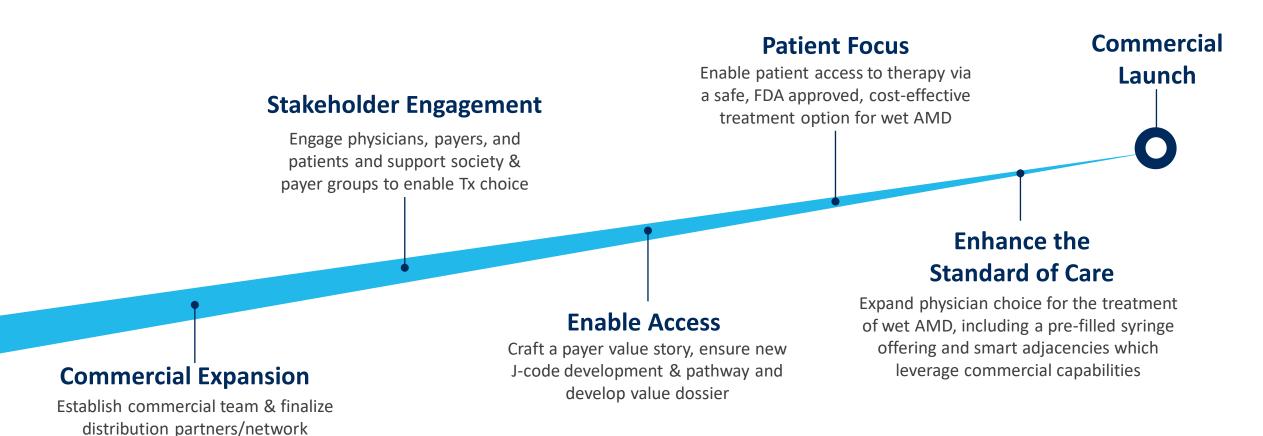
\$100/dose+

Practice rebates based on volume

expected to continue.

### **Charting a Path To a Successful Launch**

#### Focus on Shaping the Market by Creating Awareness and Educating Physicians





## **Pathway Towards Potential FDA Approval in Wet AMD**

**✓ Positive Signals** 



Clinical Experience Trial

1st Registration Trial

**✓ Positive Top-Line Data** 



**Pivotal Trial** 

**2<sup>nd</sup> Registration Trial** 

**✓** Completed



**Open-Label Safety Study** 

**Supports BLA Requirements** 



### **NORSE ONE and NORSE THREE Results**



#### **Clinical Experience Trial**

Demonstrated anticipated safety and efficacy signals consistent with previously published results for ophthalmic use of bevacizumab

#### **Trial Highlights:**

- Desired proportion of 3-line visual acuity gainers achieved
- Desired mean gain in visual acuity achieved
- Zero ocular inflammation observed
- Safety was comparable to published bevacizumab studies, such as CATT



#### **Open-Label Safety Study**

Positive safety profile reinforces previously reported safety data for ONS-5010 (bevacizumab-vikg)

#### **Trial Highlights:**

- Provided adequate number of patient exposure required for BLA submission
- No unexpected safety trends
- Zero cases of ocular inflammation





## **Pivotal Trial**

**2<sup>nd</sup> Registration Trial** 



#### **Trial Highlights:**

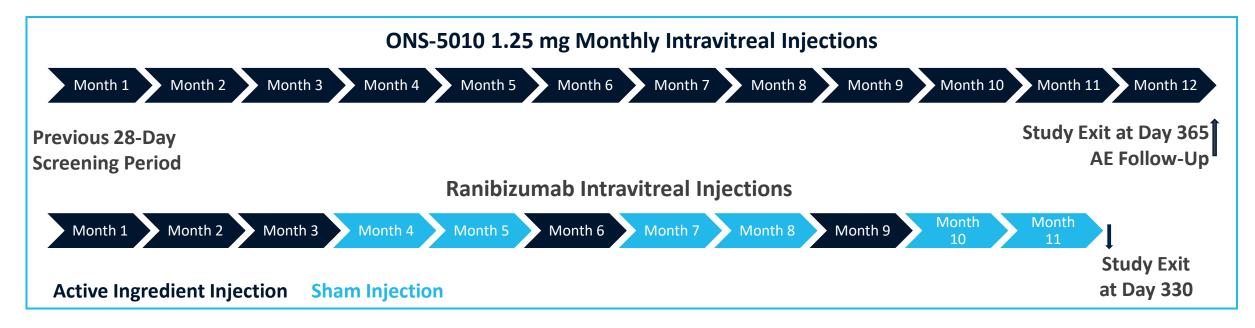
- Randomized masked controlled trial
- ONS-5010 (bevacizumab-vikg) vs LUCENTIS® (ranibizumab)
- 228 patients enrolled
- Trial conducted in the United States
- Trial arms included >95% treatment-naïve patients





### Phase 3 Pivotal Study Design – Registration Strategy

## 12-Month Study of Safety and Efficacy of ONS-5010 in Subjects with Wet AMD Study Design and Statistical Analysis Plan Agreed to by U.S. FDA



#### **Study Eye Characteristics**

- Active, primary CNV due to wet AMD
- Treatment-naïve
- BCVA: 20/50 20/320

#### **Key Study Outcomes**

- Proportion of subjects who gain ≥15 letters in BCVA
- Mean change in BCVA from baseline to Month 11
- Frequency and incidence of AEs

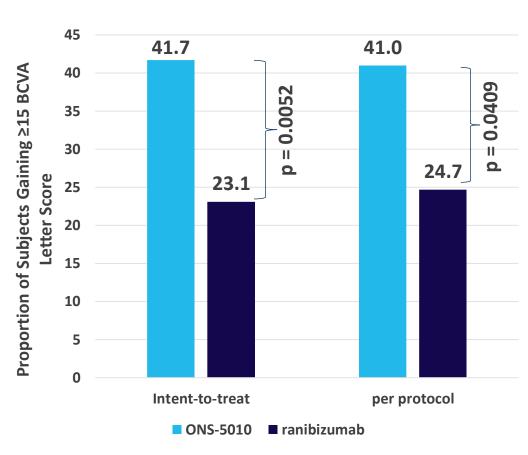




# Primary Endpoint Met with Statistically Significant, Clinically Relevant Results<sup>1</sup>

Characteristic	Statistic	ONS-5010 (n=113)	Ranibizumab (n=115)	
Intent-to-Treat Pop.				
Number of Subjects	n/N (%)	45/108 (41.7)	24/104 (23.1)	
Risk Difference		0.1859		
95% CI		(0.0442,0.3086)		
p-value		0.0	052	
Per Protocol Pop.				
Number of Subjects	n/N (%)	34/83 (41.0)	18/73 (24.7)	
Number of Subjects Risk Difference	n/N (%)	. , ,	18/73 (24.7) .631	
	n/N (%)	0.1	· · · · ·	

## Difference in % Subjects Gaining 3 Lines Vision



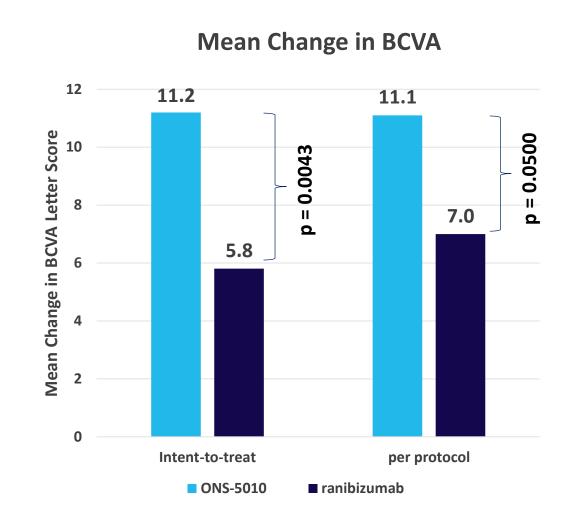


1. Primary endpoint at Month 11



# **Key Secondary Endpoints Met with Highly Statistically Significant, Clinically Relevant Results**

Characteristic	Statistic	ONS-5010 (n=113)	Ranibizumab (n=115)
BCVA Score Change from Baseline to Month 11 (ITT)	n	104	96
	Mean (SD)	11.2 (12.19)	5.8 (14.80)
p-value		0.00	043
p-value  BCVA Score Change from  Baseline to Month 11 (PP)	n	0.00	<b>043</b> 68
BCVA Score Change from	n Mean (SD)		



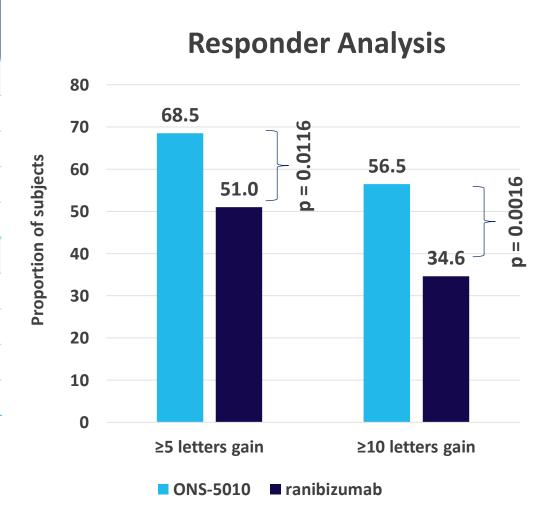




## Statistically Significant, Clinically Relevant Secondary Endpoints

Characteristic	Statistic	ONS-5010 (n=113)	Ranibizumab (n=115)	
Subjects Gaining ≥5 letters				
Number of Subjects	n/N (%)	74/108 (68.5)	53/104 (51.0)	
Risk Difference		0.1756		
95% CI		(0.0315,0.3052)		
p-value		0.0	116	
Subjects Gaining ≥10 letters				
Number of Subjects	n/N (%)	61/108 (56.5)	36/104 (34.6)	
Risk Difference	0.2187			
95% CI		(0.0726,0.3487)		
p-value		0.0	016	

68.5% (p = 0.0116) ONS-5010 subjects gained ≥ 5 letters of vision 56.5% (p = 0.0016) ONS-5010 subjects gained ≥ 10 letters of vision 41.7% (p = 0.0052) ONS-5010 subjects gained ≥ **15 letters of vision** 





1. Primary endpoint at Month 11



# Safety Results: Consistent with Previously Reported Results from NORSE ONE and NORSE THREE

### Only One ONS-5010 Ocular Inflammation AE Reported in NORSE TWO (Iritis)

Characteristic	Statistic	ONS-5010 (n=113)	Ranibizumab (n=115)	Overall (n=228)
≥ 1 Adverse Event	n (%)	85 (75.2)	85 (73.9)	170 (74.6)
≥ 1 ocular Adverse Event	n (%)	59 (52.2)	61 (53.0)	120 (52.6)
≥ 1 non-ocular Adverse Event	n (%)	56 (49.6)	52 (45.2)	108 (47.4)
≥ 1 Serious Adverse Event	n (%)	14 (12.4)	16 (13.9)	30 (13.2)
≥ 1 ocular Serious Adverse Event	n (%)	1 (0.9)	0	1 (0.4)
≥ 1 non-ocular Serious Adverse Event	n (%)	13 (11.5)	16 (13.9)	29 (12.7)



1. Primary endpoint at Month 11

## NORSE SEVEN

## **Pre-Filled Syringe**

Vials Versus Pre-Filled Syringe



#### **Trial Highlights:**

- 3-month study to compare the safety of ONS-5010 in vials versus Outlook Therapeutics investigational pre-filled syringe
  - Vial arm (n= has been fully enrolled and is now complete)
- Enrolling ~120 subjects with visual impairment due to retinal disorders
  - Wet AMD
  - BRVO
  - DME
- Data expected to support BLA submission in 2023



# Financial Highlights NASDAQ: OTLK

Sufficient capital to support pre-launch activities for ONS-5010 and a pathway to potentially support launch if approved<sup>1</sup>

\$26.0M

Cash Balance<sup>2</sup>

~\$278M

Market Cap<sup>3</sup>

~226M

Shares Outstanding<sup>4</sup>

~944K

Average Volume<sup>3</sup>





• Initial U.S. target segment worth potentially billions in yearly revenue are served by compounding pharmacies which by law should be converted to Outlook Therapeutics' LYTENAVA, if FDA approved

Potential for first FDA approved ophthalmic formulation of bevacizumab

 U.S. FDA BLA submission targeted September 2022 with anticipated approval to follow 8-12 months later

Sufficient capital for pre-launch activities and potentially through launch

Management team with proven ophthalmic commercial launch expertise

# **Company Summary**

