SAFE HARBOR STATEMENT

Statements we make in this presentation may include statements that are not historical facts and are considered forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the “Acts”). We intend these forward-looking statements, including statements regarding our mission, vision, goals, plans, milestones, strategy, positioning and future activities, achievements and impact, the safety, efficacy, mechanism of action, other product characteristics, availability, use, commercialization and commercial and therapeutic potential of Oxbryta® (voxelotor), including the potential to reduce morbidity and mortality, to be a standard of care and disease-modifying therapy, to address top priorities, transforming the treatment paradigm, and the significance of reducing hemolysis and increasing hemoglobin, Oxbryta awareness and education, the impact of the COVID-19 pandemic and our related response and expectations, the commercial supply of Oxbryta, the availability and use of GBT Source™, payer coverage, implementing and completing clinical development plans, generating and reporting data and analyses from past, ongoing and potential future studies, inferences drawn from studies and related analyses, regulatory review, our manufacturing and commercial infrastructure, our R&D pipeline, the attributes, potential and future development of drug candidates, actual and potential partnerships and distribution arrangements, expanding access to Oxbryta for patients in the U.S. and globally, our financial position, guidance and expectations, and intellectual property rights, to be covered by the safe harbor provisions for forward-looking statements contained in the Acts and are making this statement for purposes of complying with those safe harbor provisions. These forward-looking statements reflect our views as of the time made about our plans, intentions, expectations, strategies and prospects, which are based on the information then available to us and on assumptions we have made. We can give no assurance that the plans, intentions, expectations or strategies will be attained or achieved, and, furthermore, actual results may differ materially from those described in the forward-looking statements and will be affected by a variety of risks and factors that are beyond our control, including, without limitation, risks and uncertainties relating to the COVID-19 pandemic, including the extent and duration of the impact on our business, the risks that we are continuing to establish our commercialization capabilities and may not be able to successfully commercialize Oxbryta, risks associated with our dependence on third parties for development, manufacture, distribution and commercialization activities related to Oxbryta, government and third-party payer actions, including relating to reimbursement and pricing, risks and uncertainties relating to competitive products and other changes that may limit demand for Oxbryta, the risks regulatory authorities may require additional studies or data to support continued commercialization of Oxbryta, the risks that drug-related adverse events may be observed during commercialization or clinical development, and that data and results may not meet regulatory requirements or otherwise be sufficient for further development, regulatory review or approval, compliance with obligations under the Pharmakon loan, progress under our distribution agreement for select Middle East countries, and progress of our collaboration with Syros, along with those risks set forth in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, and in our most recent Quarterly Report on Form 10-Q filed with the U.S. Securities and Exchange Commission, as well as discussions of potential risks, uncertainties and other important factors in our subsequent filings with the U.S. Securities and Exchange Commission. Except as required by law, we assume no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

© Global Blood Therapeutics, Inc. 2021
LIVING OUR MISSION

GBT discovers, develops and delivers life-changing treatments for people living with grievous blood-based disorders, starting with sickle cell disease (SCD).
SCD: AN URGENT UNMET NEED

Lifelong inherited blood disorder

Hb polymerization causes / leads to:
Multi-organ morbidity¹
~30 year reduction in life expectancy²

Historically limited treatment options

Drug development focused on pain, which impacts less than 50% of the patients³

Underserved patient population

>350K patients in U.S., Europe, Middle East and Latin America⁴
Millions worldwide

Hb, hemoglobin; GCC, Gulf Cooperation Council region (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates).
MAJOR BURDEN ON U.S. PATIENTS AND SOCIETY

Up to $286,000 annually in cost of medical care\(^1\)

End-organ damage drives major healthcare utilization, average of 30-54 days/year\(^2\)

~$700,000 in lost lifetime income per patient\(^3\)

Major caregiver productivity impact; often devastating financial burden

ENCOURAGING FIRST-YEAR LAUNCH PROGRESS

First FDA-approved medicine that directly inhibits the sickling and destruction of red blood cells in SCD

Launch through Q3 2020¹

- ~4K prescriptions written by ~1,150 prescribers
- Prescriptions across a broad range of patients
- Reduced time to fill to ~2 weeks
- ~90% of covered lives in U.S. – achieved a quarter ahead of goal

LONG-TERM & REAL-WORLD DATA REINFORCE BENEFITS OF OXBRYTA

**Durable Efficacy**
In HOPE trial & real-world experience (RWE), Oxbryta increased Hb by ~1 g/dL
Most patients report very much improved or much improved (PGI-I and CGI-I)

**Well Tolerated**
No new safety signals
Most side effects are manageable

**Other Benefits**
Patients with highest average Hb levels experienced the fewest VOCs
Blood transfusion and VOCs significantly reduced in RWE
RBC health & function improved in RWE – including increased deformability & decreased viscosity

Hb, hemoglobin; PGI-I, Patient Global Impression-Improvement; CGI-I, Clinician Global Impression-Improvement; VOC, vaso-occlusive crisis; RBC, red blood cell.
ASH 2020 poster presentations: https://www.gbt.com/research/publications/recent-medical-meeting-presentations/
© Global Blood Therapeutics, Inc. 2021
NEARLY 90% OF PATIENTS ACHIEVE SIGNIFICANT Hb INCREASE (>1 g/dl)
Hope Study 72-week Data

Hb, hemoglobin.
Source: Long-Term Efficacy and Safety of Voxelotor in Adolescents and Adults with Sickle Cell Disease: HOPE Trial 72-Week Analysis, ASH 2020 Poster #1716

© Global Blood Therapeutics, Inc. 2021
OXBRYTA IMPACTS RBCs RAPIDLY

Source: Patient Perception of Oxbryta Treatment Benefit, ASH 2020 Poster #1723. Typical peripheral blood smear. Before and after Oxbryta treatment

© Global Blood Therapeutics, Inc. 2021
PATIENTS AND HCPs REPORT PATIENT IMPROVEMENT REGARDLESS OF Hb INCREASE

1. The remaining 19% of patients measured rated as a little improved or no change (one patient of 0-1 g/dL improvement and 2 patients with >1 g/dl improvement).

Source: Patient Perception of Oxbryta Treatment Benefit, ASH 2020 Poster #1723

© Global Blood Therapeutics, Inc. 2021
VOCs LOWEST IN PATIENTS ACHIEVING HIGHEST Hb LEVELS

- Placebo (n=91)
- Hb 5.9 to <8 g/dL (n=23)
- Hb 8 to <10 g/dL (n=96)
- Hb 10 to <12 g/dL (n=50)
- Hb 12 to ≤13.3 g/dL (n=10)

VOC, vaso-occlusive crisis; Hb, hemoglobin; HU, hydroxyurea; MCF, mean cumulative function.

Summary excludes VOC events after treatment discontinuation and events after HU initiation post randomization for patients with no HU use at baseline. Summary excludes patients without post-baseline Hb lab assessment.

Hb values are as observed based on assessments collected through the end of the week 72 visit window. Hb values collected after treatment discontinuation (for patients with last dose prior to the week 72 visit window), after withdrawal of consent, after study discontinuation, and after HU initiation post randomization for patients with no HU use at baseline were excluded.

Source: Higher Hemoglobin Levels Achieved with Voxelotor Are Associated with Lower Vaso-Occlusive Crisis Incidence: 72-Week Analysis from the HOPE Study. ASH 2020 Poster #795
OXBRYTA CAN IMPROVE SCD PATIENT LIVES

“I feel like I’m more able to be the parent and the person that I want to be.”
— Lakesha D.

“I feel like I’m more able to help take care of my kids and my family.”
— Muyiwa S.

“I feel like I’m able to do more with my family and friends.”
— Michelle P.

Individual patient responses may vary.
Oxbryta Launch Dynamics
2020: A CHALLENGING YEAR FOR SCD PATIENTS

High Risk for COVID-19 Illness & Death

Care of patients with hemoglobin disorders during the COVID-19 pandemic: An overview of recommendations

Study finds people with sickle cell disease who developed coronavirus disease have high rates of hospitalization, intensive care unit admission, and death

‘They are really afraid’: Fears about Covid-19 are complicating care for patients with sickle cell

Social, Economic & Political Climate

The most lopsided economic event imaginable': Wave of evictions threatens Black, Latino tenants

2020 was the year America embraced Black Lives Matter as a movement, not just a moment

After a Summer of Racial Reckoning, Race Is on the Ballot

Two Americas: A look at systemic racism in the healthcare system
DROP IN HCP VISITS BY SCD PATIENTS DURING COVID-19

Average Quarterly HCP Visits Down\(^1,2\)

Weekly Inpatient VOC Admissions Down\(^1\)

HCP, healthcare provider; VOC, vaso-occlusive crisis.
1. SHA Claims through Oct’20. 2. Only includes SCD related visits between target HCPs and patients who live in target geographies.

© Global Blood Therapeutics, Inc. 2021
NEW Rx’s INCREASED AS COVID-19 CASES DECREASED\(^1\)

<table>
<thead>
<tr>
<th>Month</th>
<th>Oxbryta New Prescriptions</th>
<th>COVID Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rx, prescription.
© Global Blood Therapeutics, Inc. 2021
ENHANCING STRATEGIES TO DRIVE INCREASED ADOPTION

High-touch patient engagement
Nurse Adherence Program
Weekly HCP updates

Reimbursement
Patient follow-up
Education

Schedules refills
Answers questions
Pharmacist access

Engage HCPs
Use new education, marketing materials
Getting Started Guides and Brochures

**Oxbryta Doctor Discussion Guide**
- Why Oxbryta?
- Questions to ask your doctor
- Tips for live and telemedicine appointments
- Access on Oxbryta.com & via field teams

Patient Starter Kits & Adherence Tools

**Treatment Journal**
Set and track personal goals, activities, lab results & more

**Side Effects Management Tip Sheet**
Learn how to manage side effects

**Bottle Cap Sticker (Linked to App)**
Alarms, dosing, and refill reminders, track bottle if misplaced

**Bottle Cap Alarm**
Set to go off at the same time every day
WE BELIEVE OXBRYTA WILL BECOME STANDARD OF CARE

Opportunity to Reach >350K Patients by 2022

U.S.
86K Patients Age 12+
17K Age 4-11

Latin America
100K Patients

Europe
52K Patients

Middle East
100K Patients

= 10K patients


© Global Blood Therapeutics, Inc. 2021
GBT’s PIPELINE
### GBT PIPELINE TARGETS SCD VIA MULTIPLE APPROACHES

<table>
<thead>
<tr>
<th>Program</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HbS Polymerization Inhibitor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oxbryta (voxelotor)</td>
</tr>
<tr>
<td>• HOPE-KIDS 1 study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• HOPE-KIDS 2 TCD post-approval study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ActIVe study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P-Selectin Inhibitor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inclacumab</td>
</tr>
<tr>
<td>• Chronic prevention study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Acute re-admission study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Next-Generation HbS Polymerization Inhibitor</strong></td>
<td>GBT 601</td>
<td></td>
<td></td>
<td></td>
<td>Goal: 1H 2021 Phase 3 initiation (two studies)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HbF Induction (Syros Partnership)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Goals: 1H 2021 enter the clinic, POC data by end of 2021</td>
</tr>
</tbody>
</table>

POC, proof of concept; HbF, fetal hemoglobin.

© Global Blood Therapeutics, Inc. 2021
INCLACUMAB: BEST-IN-CLASS POTENTIAL FOR VOCs

Goal: Dosing via infusion quarterly

Encouraging safety
(>700 patients in non-SCD studies)

VOC, vaso-occlusive crisis.
Source: Inclacumab, a Fully Human Anti-P-selectin Antibody, Directly Binds to PSGL-1 Binding Region and Demonstrates Robust and Durable Inhibition of Cell Adhesion. ASH 2020 Poster #1707

© Global Blood Therapeutics, Inc. 2021
VISION IS TO OPTIMIZE PATIENT OPTIONS AND INCREASE ADDRESSABLE MARKET

Goals:
- Improve health
- Maintain daily activities
- Reduce healthcare utilization & cost

SCD is the leading cause of 30-Day re-admission rates

Quarterly Dosing
- Lower VOC frequency
  - Reduce re-admissions

On-Demand Dosing

1. SCD readmissions / number of index stays: Elixhauser A and Steiner C, HCUP Statistical Brief #153, April 2013.
   Source: Inclacumab, a Fully Human Anti-P-selectin Antibody, Directly Binds to PSGL-1 Binding Region and Demonstrates Robust and Durable Inhibition of Cell Adhesion. ASH 2020 Poster #1707
PHASE 3 PROGRAM WILL STUDY THE VOC CONTINUUM

Chronic Prevention Protocol

N = 240
Primary Endpoint: VOC rate during 48-week treatment period

Open-Label Extension Protocol

Acute Re-Admission Protocol

N = 280
Primary Endpoint: Proportion of participants with at least 1 re-admission for VOC within 90 days of hospitalization for VOC

VOC, vaso-occlusive crisis.
Source: Inclacumab, a Fully Human Anti-P-selectin Antibody, Directly Binds to PSGL-1 Binding Region and Demonstrates Robust and Durable Inhibition of Cell Adhesion. ASH 2020 Poster #1707
© Global Blood Therapeutics, Inc. 2021
GBT 601 HAS THE POTENTIAL TO FUNCTIONALLY CURE SCD

**Potential benefits include:**
- Normalized Hb
- Improved RBC survival, health and organ function
- One pill per day
- Functional cure as single agent

**Rapidly moving into clinic**

---

Hb, hemoglobin; HbS, sickle hemoglobin; RBC, red blood cell.
Source: GBT021601 Inhibits HbS Polymerization, Prevents RBC Sickling and Improves the Pathophysiology of Sickle Cell Disease in a Murine Model. ASH 2020 Poster #1704

© Global Blood Therapeutics, Inc. 2021
## UPCOMING MILESTONES

<table>
<thead>
<tr>
<th>TBD</th>
<th>1H 2021</th>
<th>By Mid 2021</th>
<th>By Mid 2021</th>
<th>Late 2021</th>
<th>TBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>First patients enrolled in HOPE-KIDS 2 &amp; ActIVe Studies</td>
<td>Initiate inclacumab pivotal studies &amp; 601 clinical trial</td>
<td>Submit Oxbryta MAA to EMA</td>
<td>Submit NDA to FDA to expand Oxbryta label to ages 4 and up</td>
<td>Deliver 601 POC data</td>
<td>Oxbryta European and Middle East approvals</td>
</tr>
</tbody>
</table>

MAA, marketing authorization application; EMA, European Medicines Agency; NDA, new drug application; FDA, Food & Drug Administration; POC, proof of concept.
GBT IS POISED TO DELIVER FOR SCD PATIENTS

**Oxbryta**
- Strong fundamentals
- Compelling patient impact

**Pipeline**
- Investing in the future
- Inclacumab & 601 in clinic in 2021

**SCD Leader**
- Supporting patients & community
- Global expansion underway

**Corporate**
- Experienced & expanded management team
- $535.2 million on balance sheet at 9/30/2020

© Global Blood Therapeutics, Inc. 2021