



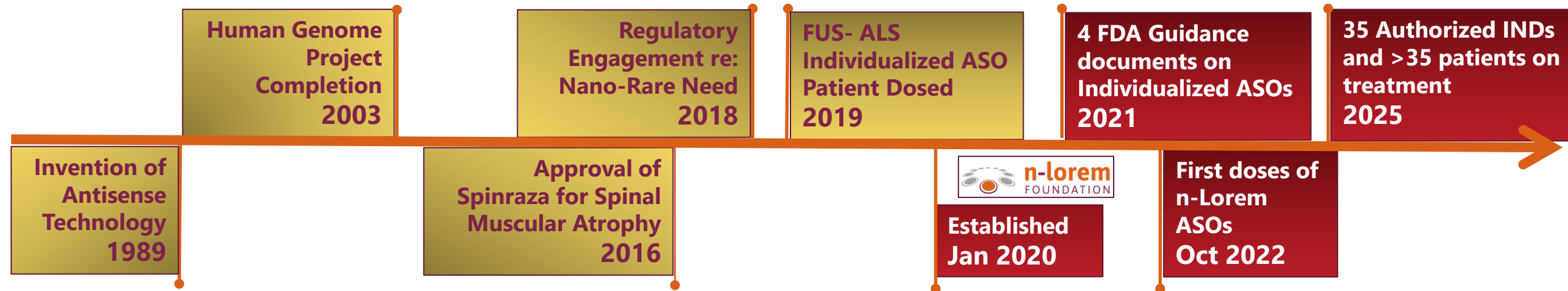
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## Nano-rare Patient Colloquium 2025

# The Future of Nano-rare: A Global Vision Rooted in Proven Impact

Sarah Glass, PhD  
Chief Operating Officer

# Reflecting on our History to Shape the Future



- By creating and scaling n-Lorem's industrialized ASO discovery and development process, we've touched many lives
- Yet.. many nano-rare patients remain untreated and without hope

# What We Have Accomplished – Together – is Extraordinary

- **Transformed many patients' and families' lives**
- Submitted >35 INDs covering >50 patients with **>30 patients** treated to date
- Within n-Lorem, we've built **a mission-driven team** from the ground up who has **developed systems and processes** to enable the discovery and development of individualized ASOs for patients with nano-rare diseases
  - Created a **scalable platform** for rapid therapy discovery and development
- Pioneered individualized ASO **regulatory and clinical achievements**
- Built **collaborations** across all sectors
- Established a **nano-rare community**

# The Future of Nano-Rare at n-Lorem

- I. Becoming Sustainable
- II. The Pursuit of Global Partnerships
- III. Long-term Commitment to the Nano-Rare







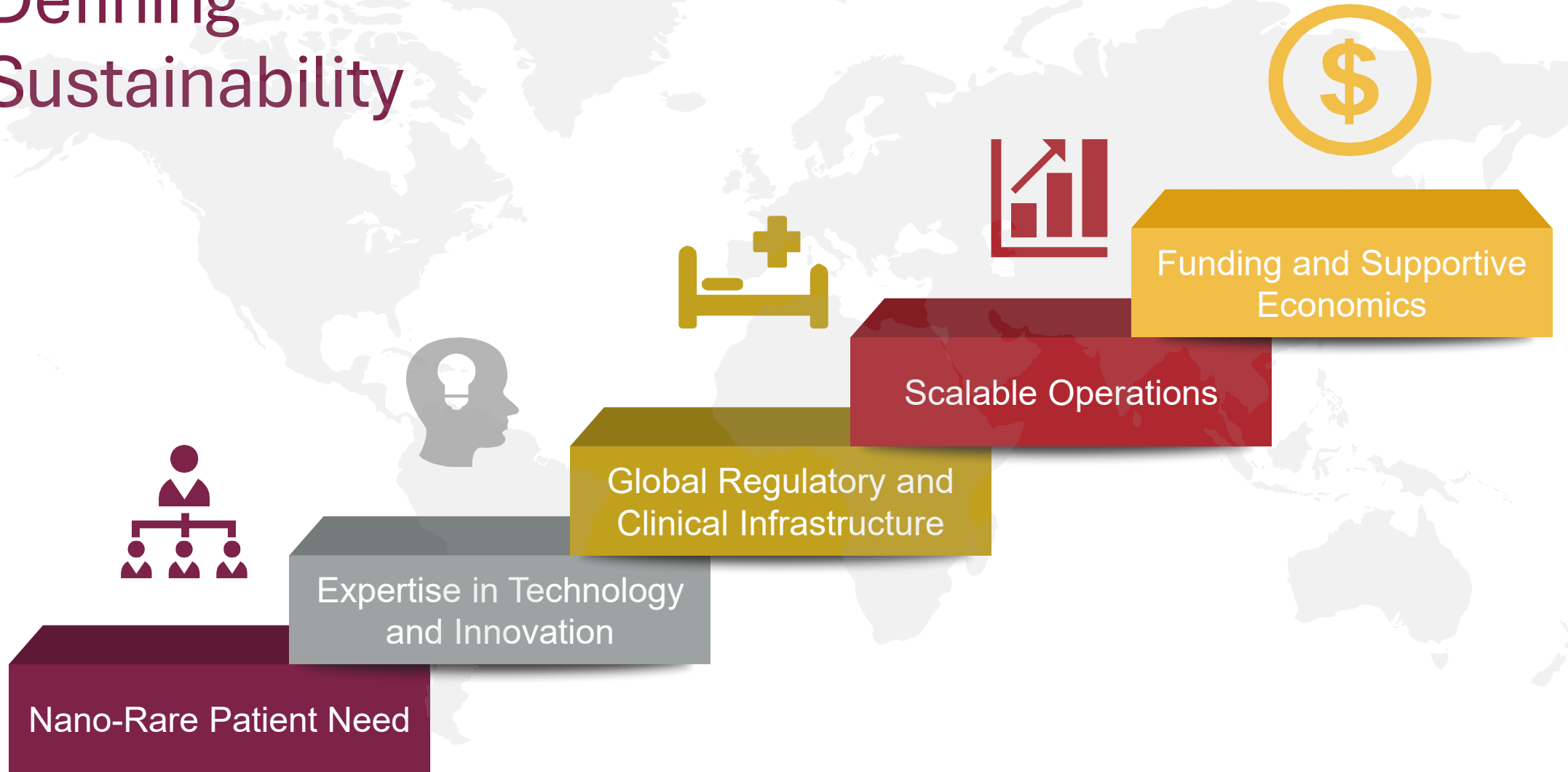
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## I. Becoming Sustainable

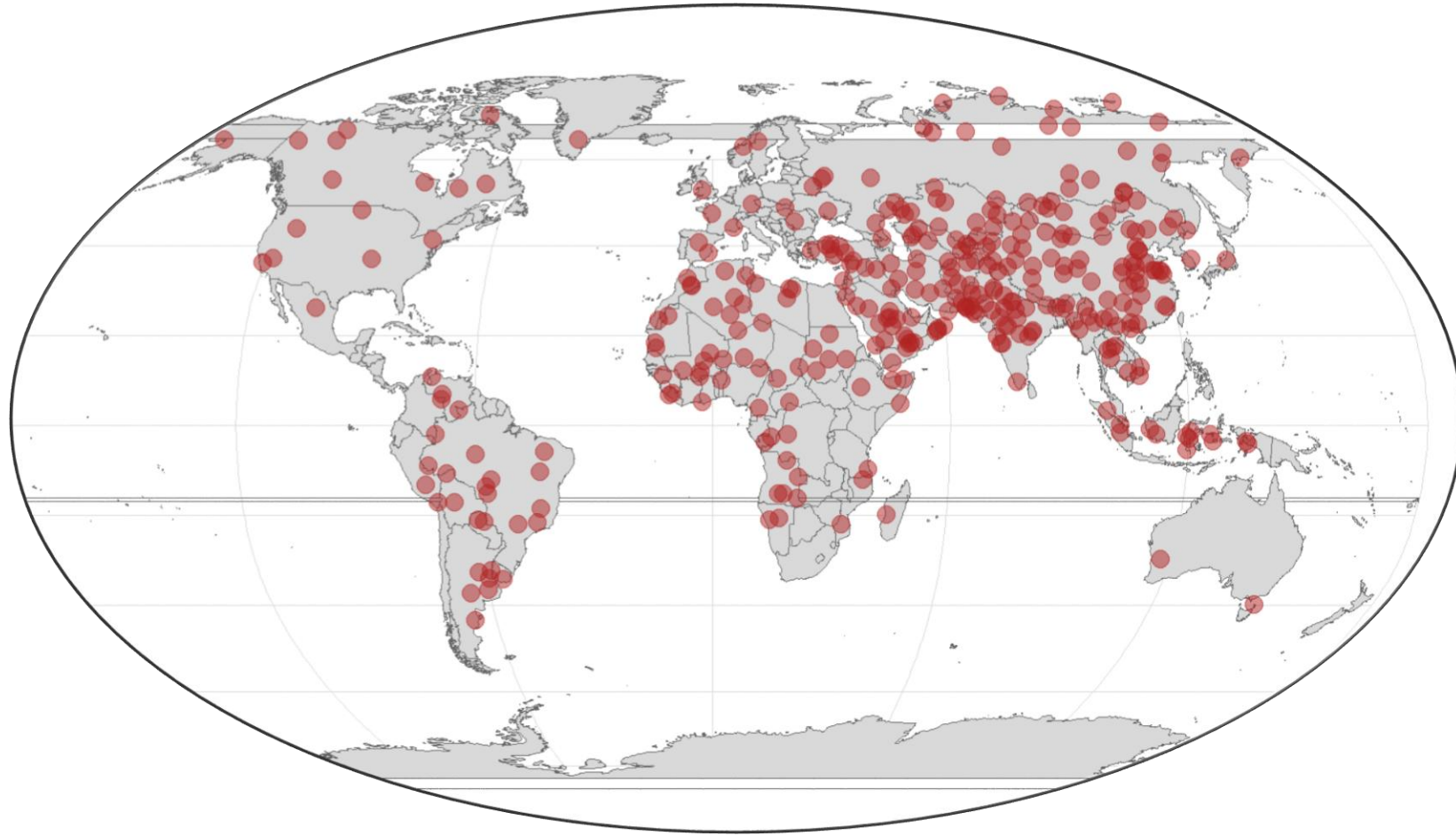
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# Defining Sustainability



# 350 million Affected Globally by Rare Diseases

- ~ Millions of the total rare disease population could be amenable to treatment with individualized ASOs



● 1 red dot = 1 M Affected individuals

# 350 million Affected Globally by Rare Diseases

- ~ Millions of the rare disease population could be amenable to treatment with individualized ASOs
- n-Lorem's 35 patients on treatment are **only the tip of the iceberg**



● 1 orange dot = 1 Treated Nano-rare patient



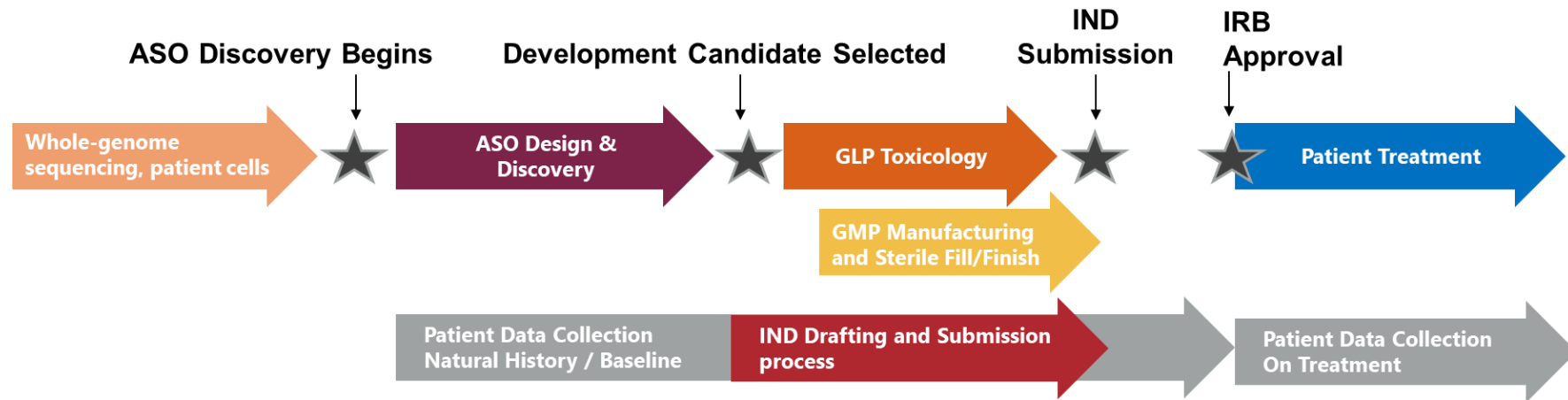
# Leaders in Antisense Technology, Drug Discovery and Clinical Development

- Pioneer of antisense oligonucleotides
- Decades of experience learning about and optimizing the technology
- Thousands of patients treated with this technology to date
- Built a team of >30 experts across all necessary functional areas:
  - ASO discovery and development
  - RNA biology
  - Bioinformatics
  - Clinical operations and development
  - Regulatory strategy
  - Toxicology
  - Communications and patient engagement
  - Biotech finances, HR, operations

# Clinical and Regulatory Infrastructure

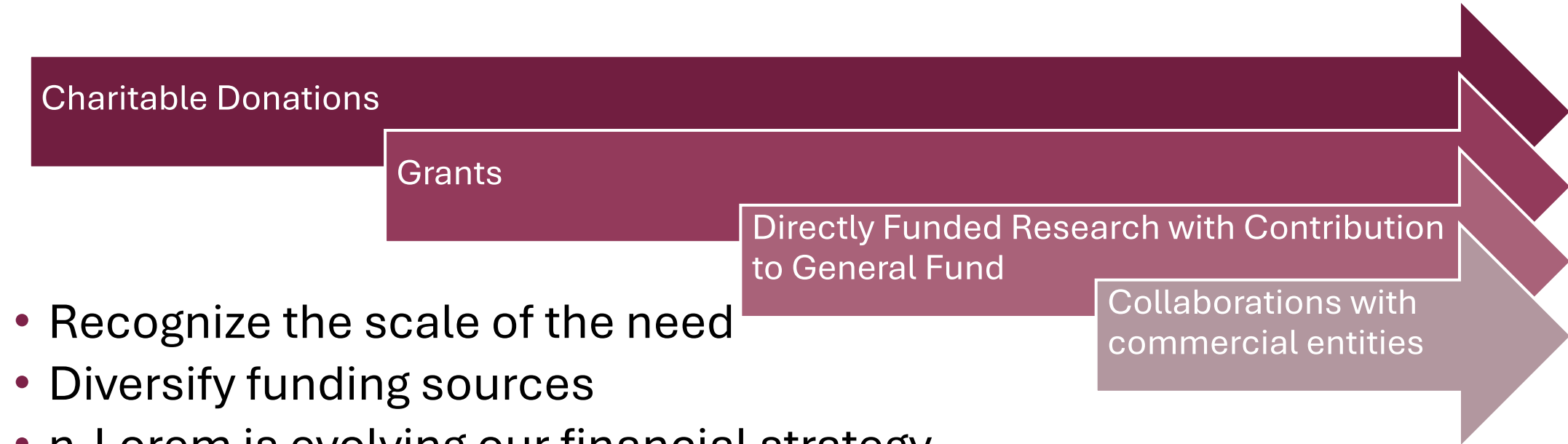
- In the United States:
  - Regulatory Infrastructure
    - FDA 2021 Guidance Documents for Individualized Treatments
    - Supportive and timely responses to 35 IND submissions
  - Clinical Sites
    - 12 Institutions actively treating patients today
    - ~10 Institutions in final stages to treat a patient
    - >20 more have expressed interest
- Beyond the United States:
  - Many institutions and physicians passionate about pursuing treatment for their patients and understanding the necessary components to be successful

# Scalable Operations to Discover and Develop Individualized Treatments



- n-Lorem has created and industrialized a scalable process from patient mutation to commercial-quality long-term clinical dosing
- All processes and systems created in an industrialized, quality-driven and scalable manner
- Intricate interplay between finances and operations enable movement of patient ASO programs forward at various paces according to available funding

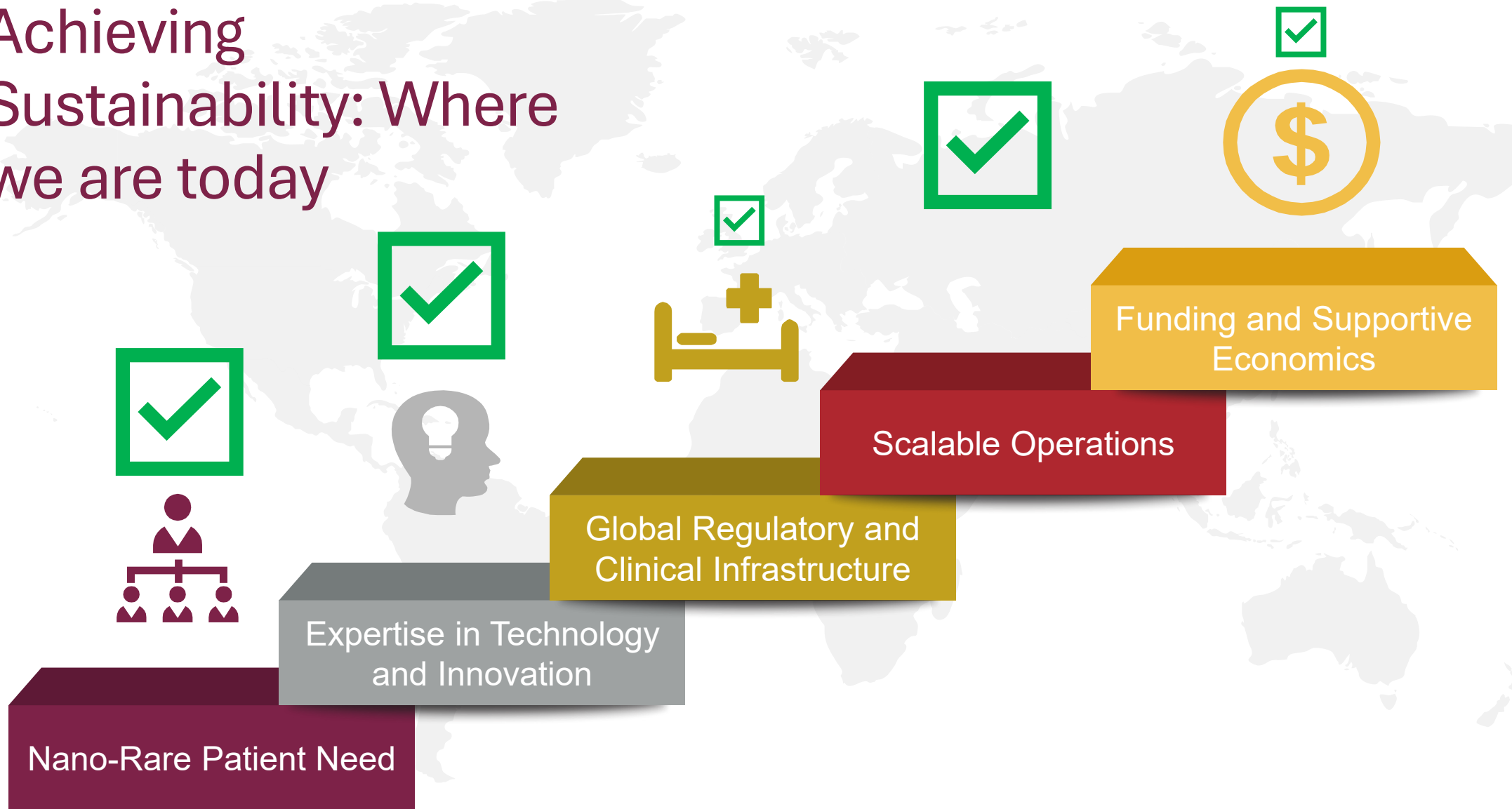
# Economics: The Scale of the Need Far Exceeds the Ability to Cover Costs with Charitable Funds



- Recognize the scale of the need
- Diversify funding sources
- n-Lorem is evolving our financial strategy to better leverage our sellable assets to accommodate the growing needs of the nano-rare



# Achieving Sustainability: Where we are today





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## II. The Pursuit of Global Partnerships

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# The Challenges of Moving Outside of the US



1

There is **no defined regulatory path** for individualized treatments **outside of the US**.

2

A **lack of alignment** between Physicians / Institutions / Patients / Advocacy groups.

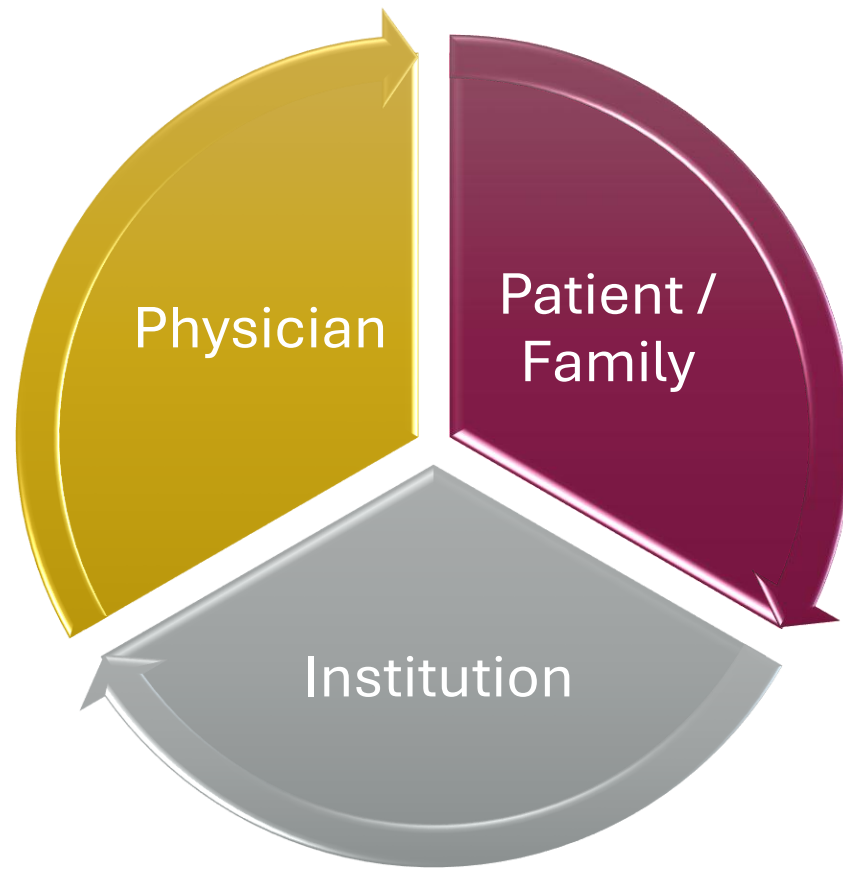
3

n-Lorem is **resource-limited** and does not have a dedicated team yet.

4

Institutions interested in treating **do not have financial support or clinical infrastructure**.

# All Three Entities Must be Committed Participants in the Journey to Treat a Nano-rare Patient



- Experience to date suggests most situations have one or two but not all three

## **Examples of Requests n-Lorem Receives:**

- Institution/ researchers
  - Find physician then they need to ID a patient
- Patient family
  - Must find an institution/ physician
- Advocacy groups
  - Want to help patients outside of the US but not exactly who or at what institution
- Physicians with a patient
  - Do not have institutional support or knowledge of regulatory pathway



# Additional Requirements to Enable Global Expansion

- ✓ Patient amenability to treatment with one of the existing (authorized by FDA) n-Lorem ASOs
- ✓ A defined a local champion with whom to collaborate
- ✓ The ability of the institution to administer treatment
  - ✓ Operational infrastructure to treat and willingness to cover costs
- ✓ A defined the regulatory path
- ✓ The ability and willingness to apply the clinical development and operations processes that are used in with n-Lorem ASOs in the US (i.e. protocol)

# Breadth of n-Lorem's Pursuit of Global Collaborations

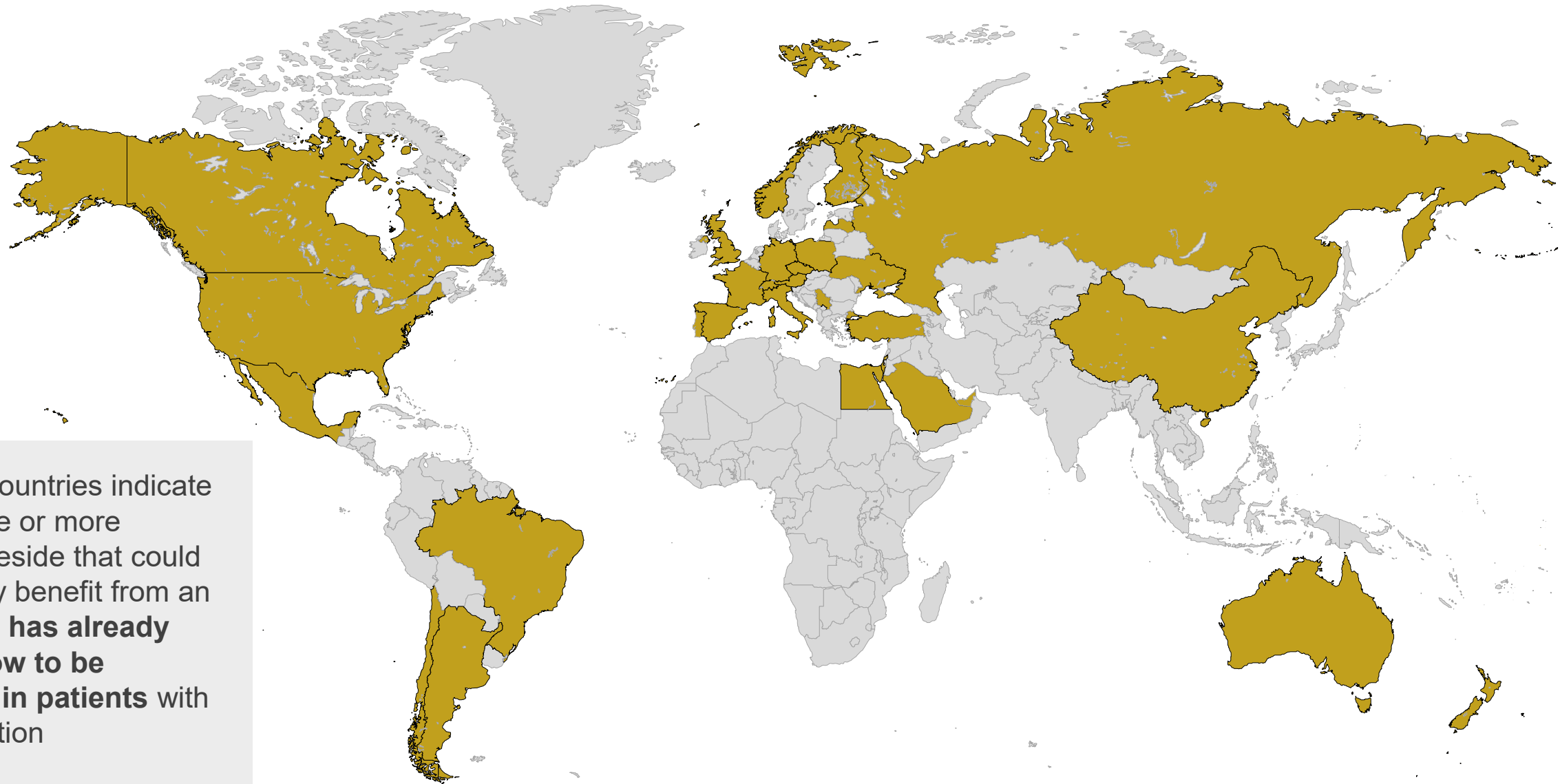
- Spans > 100 patients across >20 countries
- Meaningful ongoing engagement with a **key strategic organization** in the EU with expertise / experience in regulatory affairs and clinical development in the EU.
  - May serve as n-Lorem's preferred partner to enable substantial ex-US treatment across the globe with goals of treating local patients with existing n-Lorem ASOs
- **The n-Lorem team is working diligently** to help patients outside of the US despite limited resources to pursue meaningful collaborations.
  - Engaged with several patient advocacy groups who have contacted n-Lorem with interest in collaborating to try to meet their global patient needs

# Breadth of n-Lorem's Pursuit of Global Collaborations: Initial Success

- **Regulatory submission to Health Canada and approval** of the CTA for a single patient in Canada to be treated with an existing ASO with an already authorized US IND
- Each new country is uncharted territory that has its own challenges... but represents a **new opportunity** as well.



# Global Nano-rare Patient Opportunities for Existing n-Lorem ASOs



Shaded countries indicate where one or more patients reside that could potentially benefit from an **ASO that has already been shown to be effective in patients** with that mutation



# Where we are Today: n-Lorem's Approach to Global Partnerships

- Maintain **openness and flexibility to all possibilities** while being mindful of n-Lorem team bandwidth
- Acknowledge and go with the **uncertain pace** of each patient's / country's effort
- **Ensure high-level of rigor** even in the absence of explicit requirements by regulatory or other review bodies
- Collaborate with individuals or groups with **complimentary experience and expertise**
  - Regulatory facilitation across EU; connections to leading local hospital systems
- Proactively recognize the importance of **Tertiary Care Centers / Institutions**



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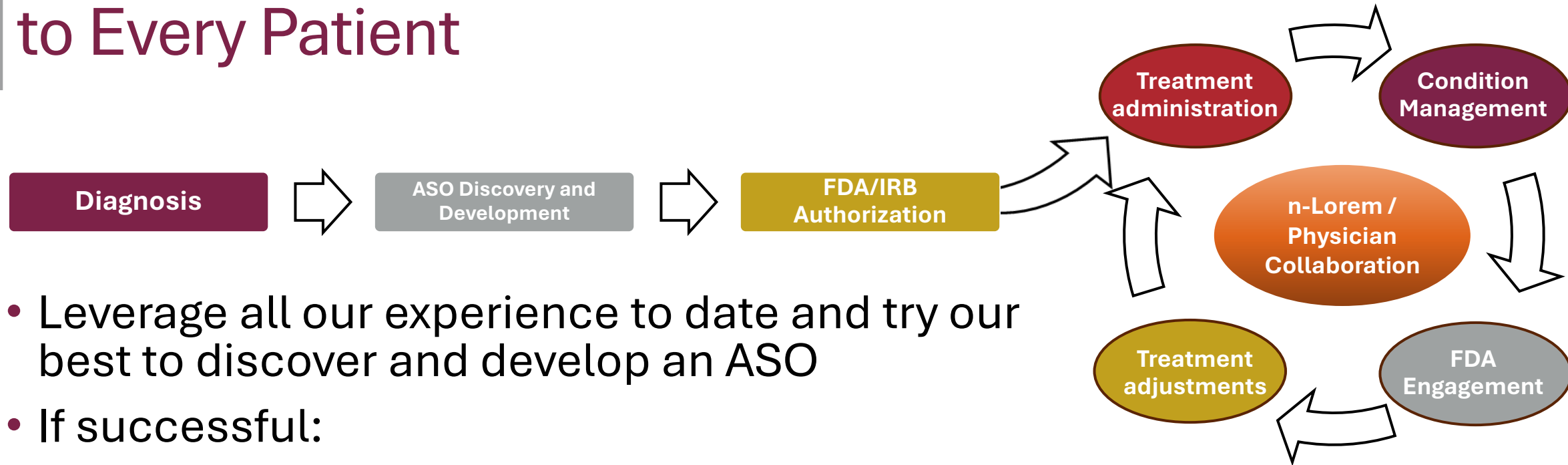
## III. A Steadfast Commitment to Long-term Treatment

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# The Demand is Overwhelming

- Even with all the success to date by n-Lorem in the US, the demand outweighs n-Lorem's abilities to *stay ahead of* the nano-rare patient needs
- To *respond to the demand*, n-Lorem has:
  - Sought expert input from economists, former regulators, leaders in drug development
  - Doubled down on fundraising and pursued alternative sources of funds
  - Operationally responded to the growing need through:
    - Adding to internal team
    - Increasing number of CROs at each step

# n-Lorem's Long-Term Commitment to Every Patient



- Leverage all our experience to date and try our best to discover and develop an ASO
- If successful:
  - Establish a connection with your physician and institution to enable long-term treatment
  - Provide drug supply to that physician as long as the benefit : risk is favorable
  - Meet ongoing regulatory reporting requirements

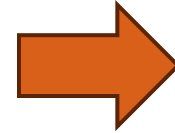


# Requirements to Enable Long-term Care

- Finances to maintain n-Lorem operations
- Open-ended regulatory reporting and engagement commitment for every patient on treatment due to nature of Research INDs
  - Annual reports, standard safety reporting, protocol modifications,
- Long-term data collection, will decrease upon reaching maintenance
- Ensuring access to drug supply so long as benefit : risk ratio is favorable
- Supporting families beyond initial year of treatment

# 2025: The Year of Acceleration and Impact

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35 approved INDs for 50+ patients  
in ~3 years

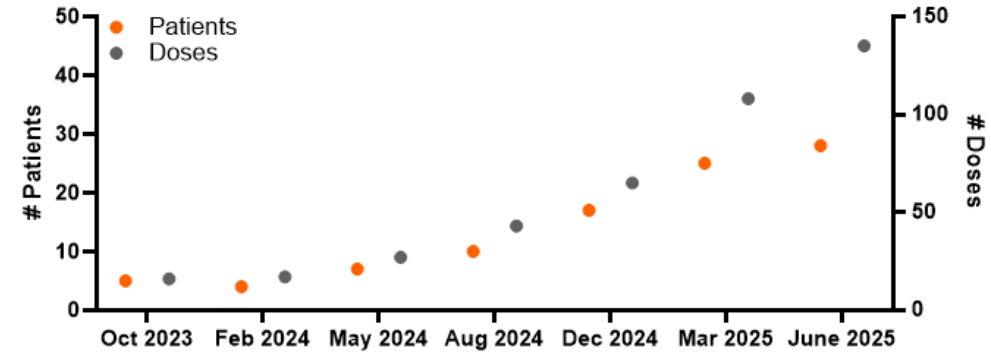
Favorable safety and tolerability  
profile

Majority showing clinical benefit

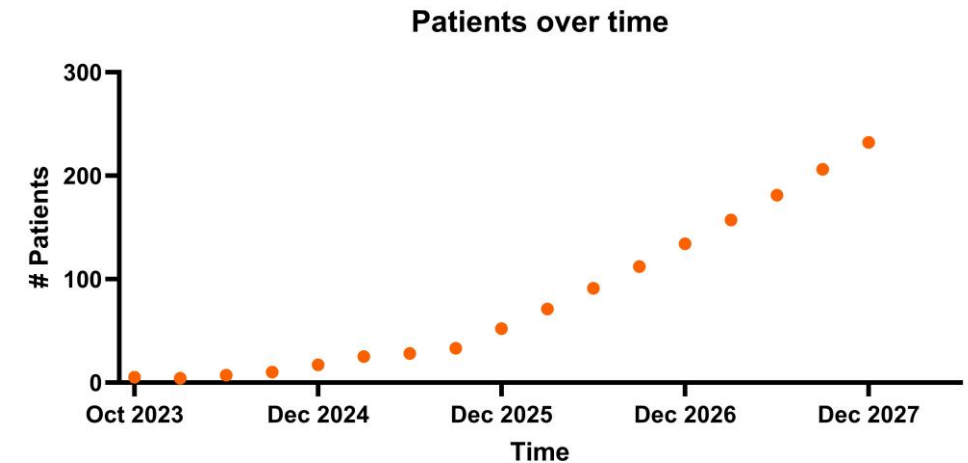
# Looking to the Future for the Nano-Rare

- Continue to pursue the vision of equitable access to individualized treatments worldwide with supportive funding for each
- Industrialized and scalable processes underpinned by leading expertise is the solution for nano-rare
- Maintain commitment to innovation and collaboration
- Funding is the only remaining barrier
- If funding were unlimited, we could be pursuing many more INDs per year with our existing team
- **Moving from hope to reality for countless families**

Where we are today:



Where unlimited resource could take us:



# Reflecting on our History to Shape the Future



- Success to date suggests **endless possibilities**
- In the coming year, we will continue to pursue individual patient treatments while focusing on **sustainability and expansion**

# Conclusions

- We have made great progress towards sustainability- and need your help!
- Global Expansion progressing as we navigate and overcome challenges to date
  - The framework to treat patients outside of the US is in place to be successful in 2026 and beyond
- n-Lorem remains committed to and plans for each patient's long-term care.





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# Thank you

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