



# Technology on a Mission: The Self-Reinforcing Infrastructure that Facilitates Life-Saving Transplant at NMDP

Jim Graham, CIO



**Let me start with a  
simple question**

**If you had the power to step up  
to save someone's life...**

**would you?**

PRESIDENT TRUMP WILL HOST A GROUP OF LATIN AMERICAN AND CARIBBEAN LEADERS IN THE STORY IS

LIVE

CNN

1:10 AM ET

# Imagine being in Max's shoes

**75%**

**of patients**

do not have a fully matched donor in their family and must depend on NMDP to find an unrelated donor or cord blood unit.

**8**

**genetic markers**

may determine Max's chance of finding a life-saving match and potential cure for his rare, serious blood disease.

**14%**

**current chance**

for Max to find a volunteer, unrelated donor match on the NMDP Registry<sup>SM</sup>.



# Who we are

NMDP is a leader in cell therapy, helping find cures and save lives for patients with blood cancers and disorders.

## Our Mission

We save lives through cell therapy.

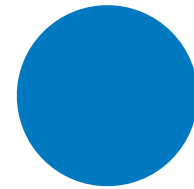
## Our Vision

Create a world where **every** patient can receive their life-saving cell therapy.



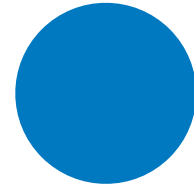
Tiana (left) donated blood stem cells to Donna (100,000th transplant pair)

# NMDP is creating a world where **every patient** can receive their life-saving cell therapy



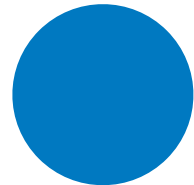
**Every 3-4 minutes,**

someone in the U.S. is diagnosed with a blood cancer.



**75+ blood cancers and diseases**

can be treated with a blood cell transplant.



**Nearly 150,000**

lives have been impacted by NMDP through cell therapy.



# A story born out of the love for a child



**1979**

Laura Graves receives the first unrelated bone marrow transplant for leukemia.

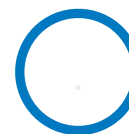
**1987**

With support from Dr. Graves, patient families, doctors, congress, and funding from the U.S. Navy, the national registry of volunteers willing to donate bone marrow was born.

**Today NMDP is:**

- A global leader in cell therapy
- Advancing new cell therapies, transplant processes and post-transplant care
- Pioneering research to help patients live longer, healthier lives

Laura Graves with her dad, Robert Graves, D.V.M.



# NMDP: By the Numbers

**8,879**

Patient lives impacted last fiscal year

**42M+**

Total potential donors physicians can access on international registries

**761K+**

Cord blood units accessed through cooperative registries for patient benefit

**120K+**

High-quality cord blood units collected and available through the NCBI

**195+**

Research studies and clinical trials through our research program, CIBMTR®

**750,000+**

Patient transplant outcomes securely reported by centers to CIBMTR®



# How we reduce barriers

As the world leader in blood stem cell transplants, we deliver quality service so patients cannot only survive but thrive. Our services include:



Resources to help patients prepare and recover afterward



Raise funds for and provide financial assistance to help cover uninsured costs



Research focused on accelerating progress



Help finding and navigating clinical trials



Dedicated resources and guidance for caregivers



Engage in both government and payer advocacy on behalf of our patients



Support cell and gene therapy development beyond transplant

# Technology infrastructure enables NMDP's mission



### REGISTER

Potential donors and cord blood units



### MATCH

donors to transplant center patients in need



### FACILITATE

the donation and patient's path to transplant



### RESEARCH

generates TC knowledge to improve patient outcomes and experience



**230K+**

New potential donors joined last fiscal year

**43M+**

Total potential donors physicians can access globally

**4,945**

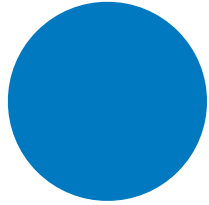
Trips our professionally-trained couriers take annually to deliver cells to transplant centers

**750K+**

Patient transplant outcomes securely reported to CIBMTR® by 320+ centers



Time-sensitive, critical data must be seamlessly orchestrated across a complex ecosystem



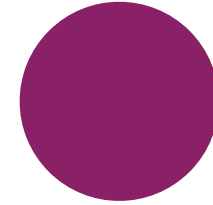
## Speed

Data flow delivers  
lifesaving cells on time,  
every time



## Security

Enabling secure, reliable  
and compliant data-  
sharing is paramount



## Scale

Ability to impact 150K  
***more*** patient lives



# Why does this matter?

# Patients rely on us, each and every time

**NMDP has never missed a delivery of cells**

In FY25, NMDP completed:

- 33,206 total courier flight legs
- 100% domestic grafts delivered in <24 hours
- 0 products delivered in >72 hours globally
- ~2,800 hours of courier training



# Our obligation to patients: Secure, reliable and fast platforms

## Security and Compliance

- **Enforced authentication** for all APIs
- Centralized API lifecycle and access control
- **Consistent policies** across all consumers
- Audit traceability

## Observability and Flexibility

- Full **visibility** into the platforms that our donors, patients, and partners depend on.
- Platforms that we can **build** on, **optimize**, and **extend** to meet our needs.

An **open-source** platform for connecting to the collaborative, **global network** of donor registries.



# Integrations are Core to What We Do

## Continuous Data Flow

- Donor registration and updates
- Patient searches for matching donors
- Lab and HLA typing data exchanges
- Transplant center integrations
- Case management, logistics, tracking

## Managing the Connections

- No integration should be esoteric
- Security posture cannot be fragmented
- Oversight is essential for health data
- Centralization supports rapid development
- Common models allow faster incident recovery

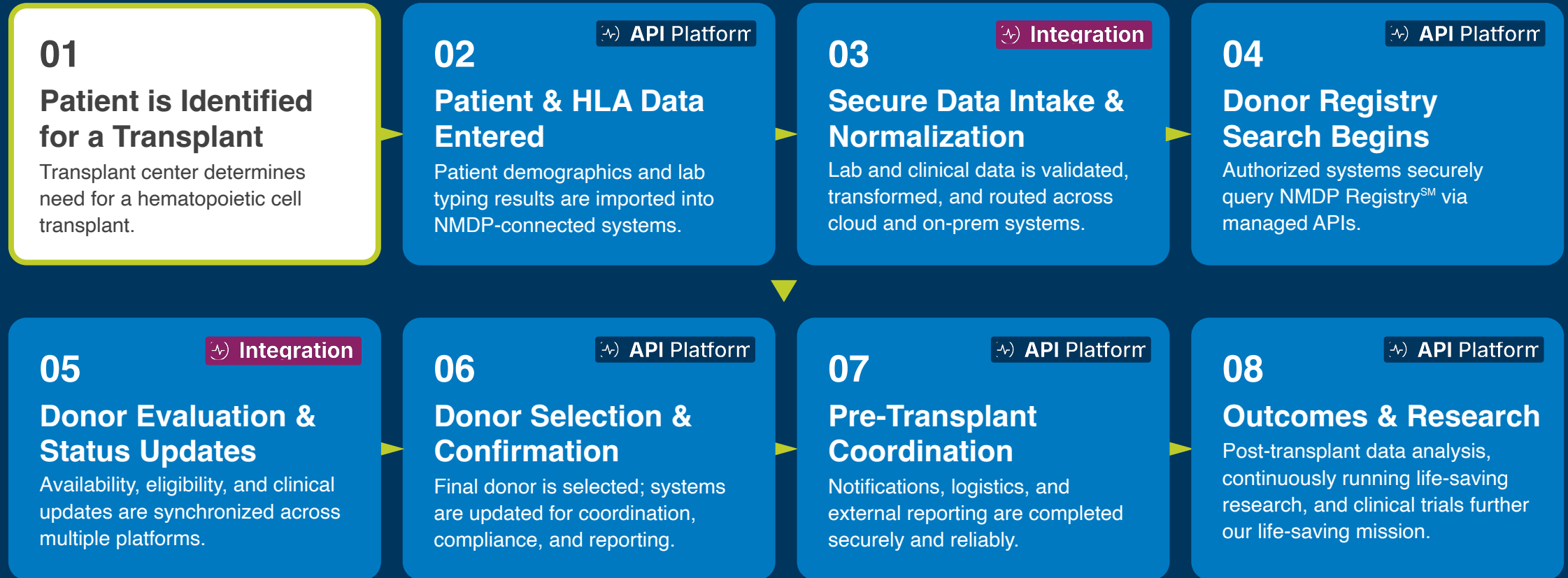
# Where **WSO2** is helping connect **hope** to **opportunity**: **The patient journey**

- **NMDP MatchSource®** — Our search and discovery portal. Provides transplant centers with search and match capabilities for unrelated potential donors and cord blood units located worldwide.
- **NMDP HapLogic™** — Our serverless matching algorithm. Performs high-resolution HLA matches by analyzing haplotypes of millions of donors, accessed through centralized WSO2 APIs.
- **Highly-integrated services and technologies**  
Our entire flow depends on **API governance** and **hybrid integration capabilities** that only an enterprise platform can provide.

- **Patient Identified**  
Transplant center securely creates a patient profile in *MatchSource™* via WSO2 APIM
- **HLA Typing**  
Lab results normalized and routed between platforms by WSO2 MI
- **Registry Search**  
HapLogic™ algorithm accessed through WSO2 APIM-governed APIs to match against millions of donors
- **Donor Evaluation**  
WSO2 MI coordinates data synchronization between on-prem and cloud platforms
- **Selection & Transplant**  
Transplant center uses *MatchSource™* to coordinate final selection and order donor

# How NMDP matches a patient to a donor

End-to-End Workflow: patient to donor | Where WSO2 makes it possible

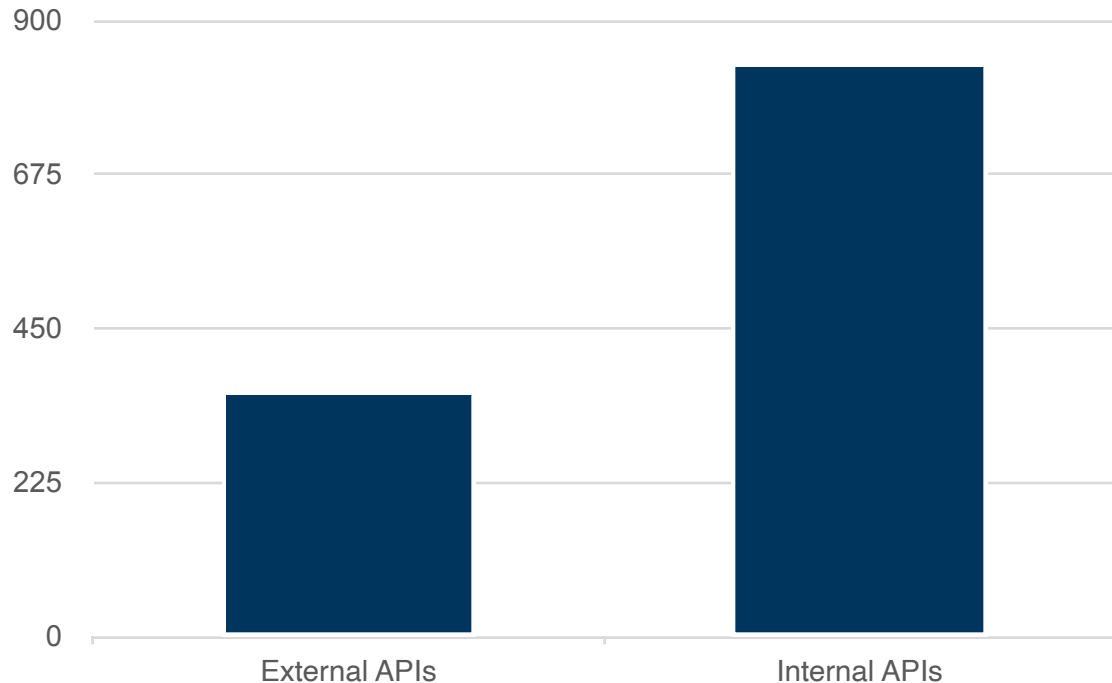


 Clinical Ops

 WSO2 Supported

# WSO2 API manager: The central nervous system

Available APIs by Access Type



- External transplant centers access our products like **HML Gateway™** and **MatchSource®** through secured WSO2 API Gateways.
- Internal apps securely leverage **API endpoints** for frontend and backend integrations, eliminating brittle point-to-point connections.
- **API governance and lifecycle management** a healthy landscape from development through production.
- High-availability deployments avoid downtime for **4-5 million API calls** every day, avoiding disruptions that impact our partners, patients, and donors.

# WSO2 integrations: The bridging of worlds

The WSO2 Integration Platform is the execution engine behind both **business and clinical** workflows from cloud, on-premise, and SaaS integrations across our enterprise.

- Cloud to on-premises orchestration
- Cross-platform data flows
- WSO2 Integrations **eliminate complexity** of managing multiple protocols and authentication methods
- Leveraged across every department and product area, from HR technology to donor management apps

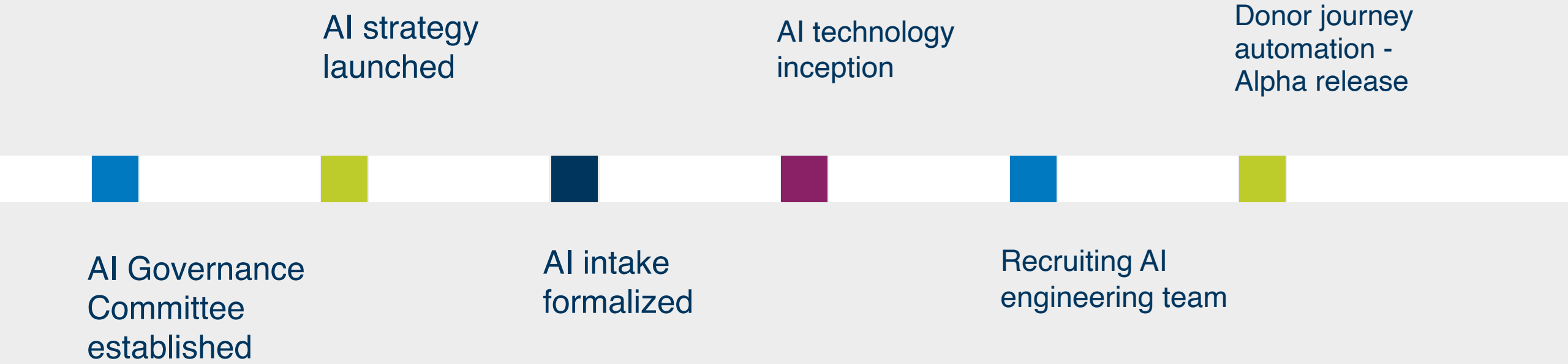
35+

Complex Workflows

700+

Integration Actions

# AI & automation roadmap



## Employee Training & Adoption





**Now let me ask again...**

**Are you ready to join the  
mission to save lives?**



Warren, searching patient

# Join us to impact another **150,000** lives.

Donate. Give. Volunteer. Advocate.





Thank you

