



# MASSIVEBIO

## CAPABILITY OVERVIEW

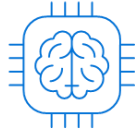
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# MASSIVE BIO OFFERS A COMPREHENSIVE SOLUTION FOR ENROLLMENT ENABLEMENT



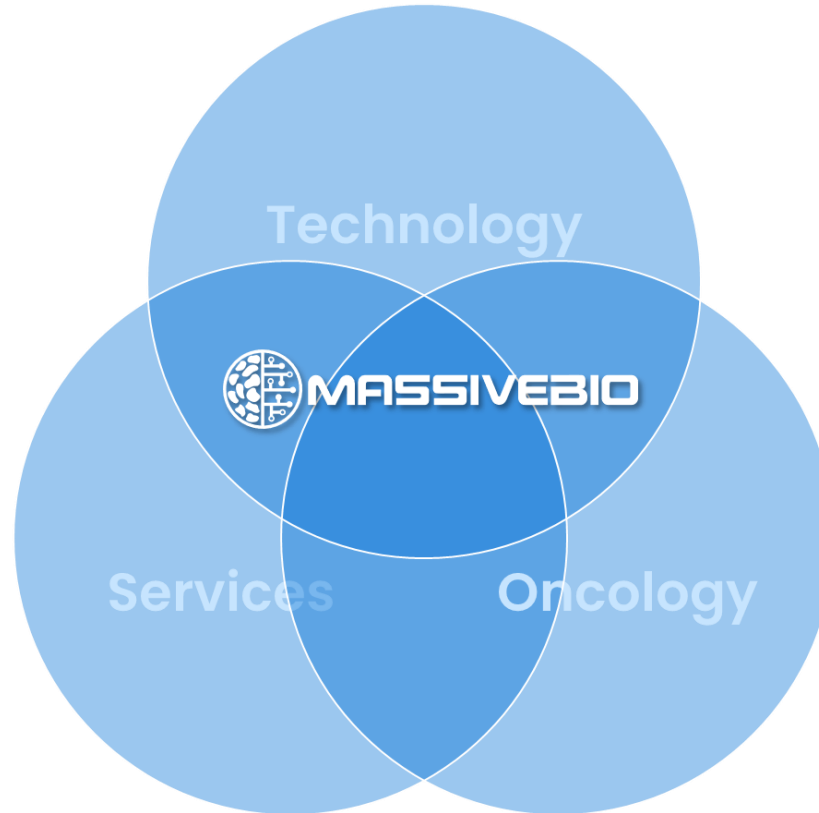
## AI Based Technology

World's first AI-based virtual detailed and scalable pre-screening technology to minimize screen fails.



## Services

Only company that services patients from identification to enrollment enablement to secure trial participation – resolves “last mile” issues.



## Data

Unparalleled ability to aggregate data from a wide variety of sources and in all formats (pdf, image, text, EMR feed).






## Access

Only company with hybrid (direct and indirect) patient acquisition to maximize recruitment success.

# OUR THREE STAGE VISION

## Creating Two-Sided Network (Patients vs. Pharma, Providers, Payers and Specialty Pharma)

Use Cases Defining Our Vision to Build Two-Sided Network

	 <b>TODAY'S FOCUS</b> <b>STAGE 1</b>	 <b>STAGE 2</b>	 <b>STAGE 3</b>
<b>Objective</b>	<b>Fix Trial Enrollment</b>	<b>Fix Drug Selection</b>	<b>Develop Effective Drugs Faster</b>
<b>Platform</b>	Global Oncology Patient Enrollment Powerhouse	Oncology Treatment Selection and Optimization Enabler	Oncology Drug Development Factory
<b>Market Size</b>	<b>\$10-20 Billion</b>	<b>\$10-20 Billion</b>	<b>\$160 Billion</b> (expected \$300 Billion in 2030)
<b>Planned Deployment Start</b>	<b>Active</b>	<b>12-18 Months</b>	<b>24-36 Months</b>

# OUR PRODUCTS COVER ENTIRE PHARMA VALUE CHAIN DRUG UTILIZATION OPTIMIZER PRESS RELEASE

## Massive Bio Announces Plans to Expand AI Use in Oncology, from Clinical Trial Matching to Drug Matching and Beyond

<https://www.businesswire.com/news/home/20230104005314/en/Massive-Bio-Announces-Plans-to-Expand-AI-Use-in-Oncology-from-Clinical-Trial-Matching-to-Drug-Matching-and-Beyond>

### Massive Bio Announces Plans to Expand AI Use in Oncology, from Clinical Trial Matching to Drug Matching and Beyond

January 04, 2023 07:37 AM Eastern Standard Time

NEW YORK--(BUSINESS WIRE)--Massive Bio, a leader in AI-powered cancer treatment, today announced plans to launch a new AI-powered drug matching product in 2023 that will enable oncologists to proactively identify more cancer treatment options for their patients, including recently approved drugs as well as active clinical trials. The new drug matching product will also help biotech and pharmaceutical companies better target which patients and physicians need the latest drugs, improving their go-to-market efficiency. Massive Bio plans to launch its first drug matching product in first half 2023 and will deliver general availability later this year.

@MassiveBio announces plans for new AI-powered drug matching product in 2023 to enable oncologists to identify more #cancertreatment options for patients #oncology #clinicaltrials #AI #drugmatching

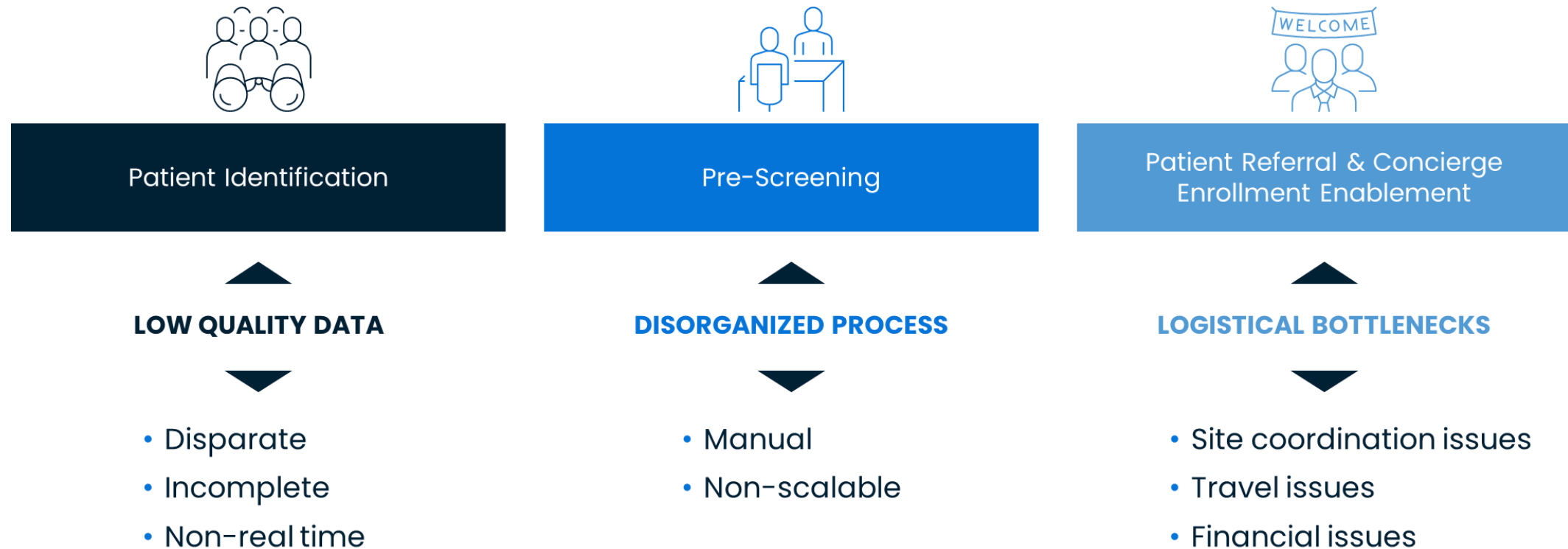
[Tweet this](#)

The new product will expand usage of artificial intelligence in oncology, building on Massive Bio's oncology-focused AI platform, which has onboarded more than 100,000 patients for its clinical trial matching service. The platform currently helps cancer patients identify relevant clinical trials using AI, empowering them to find treatment options faster while enabling life sciences companies to conduct more inclusive population-based recruitment rather than traditional site-specific recruitment. Massive Bio also helps patients remove logistical constraints once they are matched to a specific treatment, improving the patient's success of treatment.

"We believe there's so much more that can be done to advance the field of oncology," said Selin Kurnaz, co-founder and CEO of Massive Bio. "At the end of the day, we want to 'amazonize' the entire patient journey which includes patient identification, clinical decision support and last mile. This allows scale and a data-driven approach to finding the best treatments, including FDA-approved drugs and active clinical trials for patients and oncologists. Right now, there is no universal system that looks at millions of data points in the patient journey to provide instant clinical decision support. We want to reverse engineer the process using real-time clinical data – not outdated financial claims data – to match the right patients with the right treatments at the right time. Moreover, we have 18 pharmaceutical customers, and they spend millions of dollars every year to identify the right patients for their drugs, but success is extremely limited due to significant reliance on claims information. Our new product is like a breath of fresh air for them, and we are



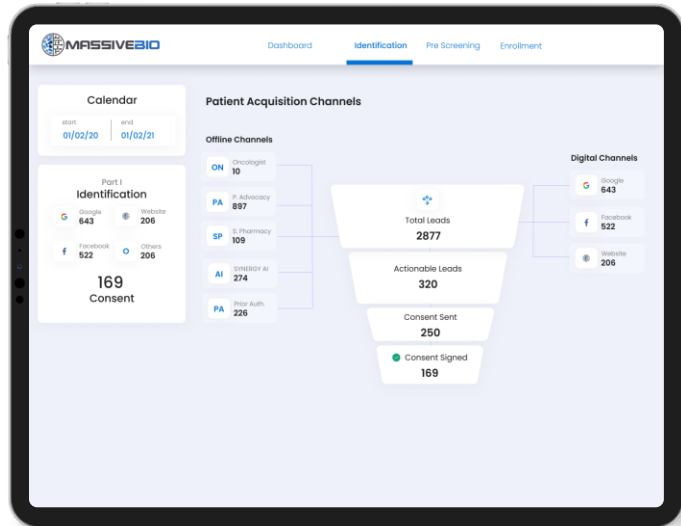
# CLINICAL TRIAL ENROLLMENT VALUE CHAIN IS BROKEN



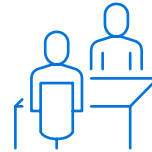
# MASSIVE BIO'S UNIQUE COMPETENCIES ADDRESS INDUSTRY'S KEY ENROLLMENT CHALLENGES



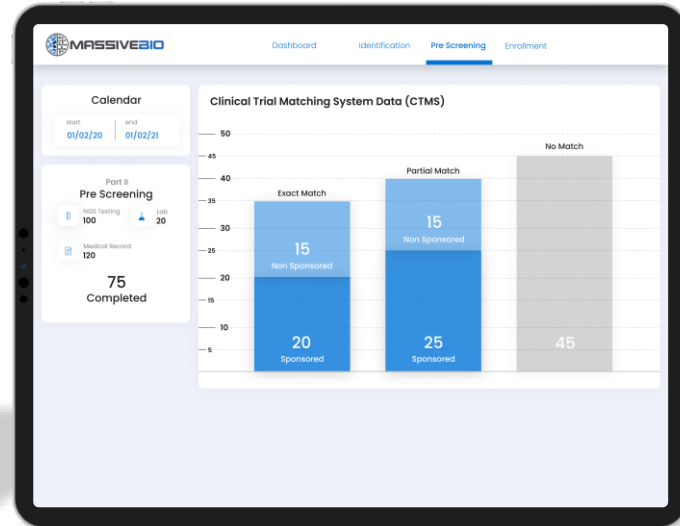
## Patient Identification



**Precision Targeting** via Multi-channel, Real-time Patient Identification



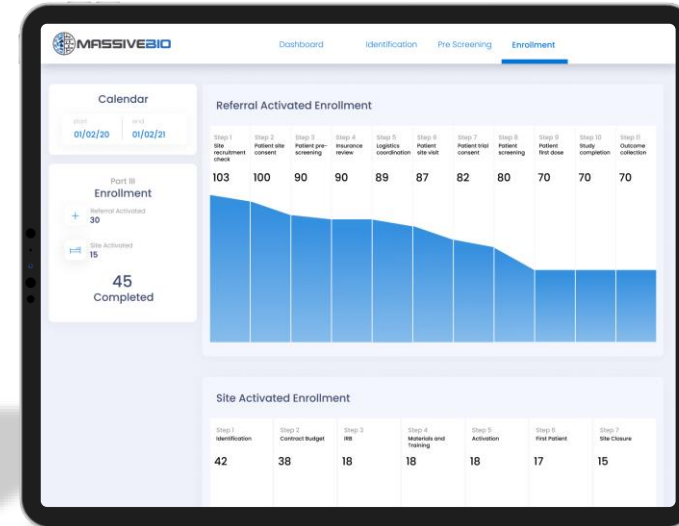
## Pre-Screening



**Automated Patient Matching/Virtual** Pre-screening Across Multiple Networks

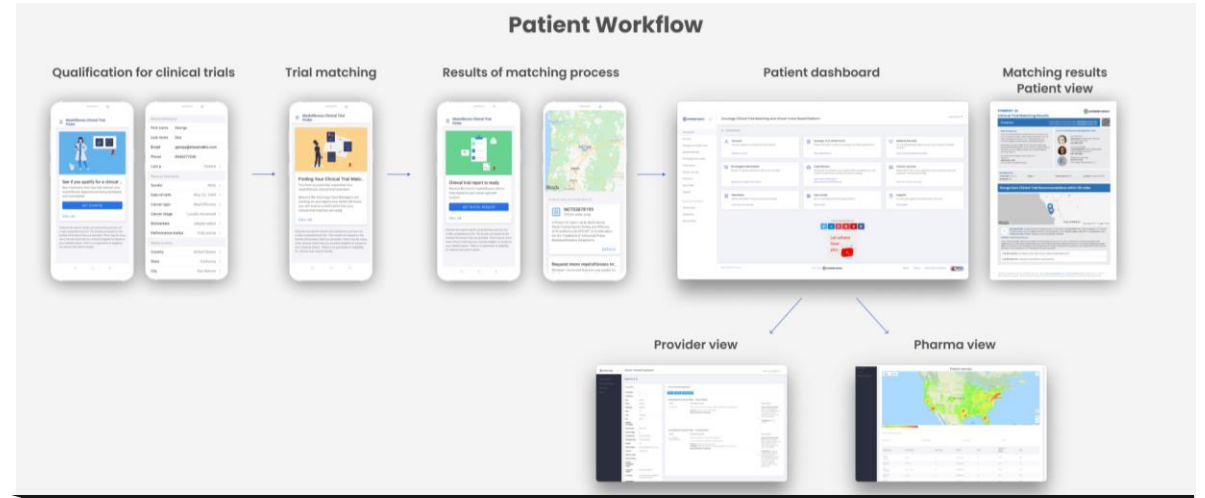


## Patient Referral & Concierge Enrollment Enablement



**Clinical Trial Logistical Coordination:** Finances, Provider Management, etc.

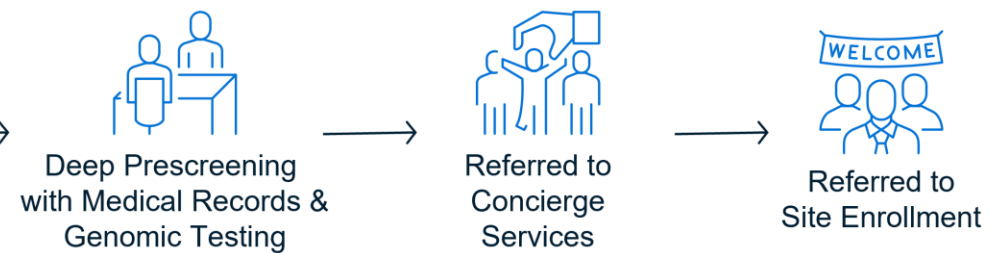
# PATIENT JOURNEY



Purchased by Pharma and Provided to Massive Bio













Purchased and/or Organically Developed by Massive Bio



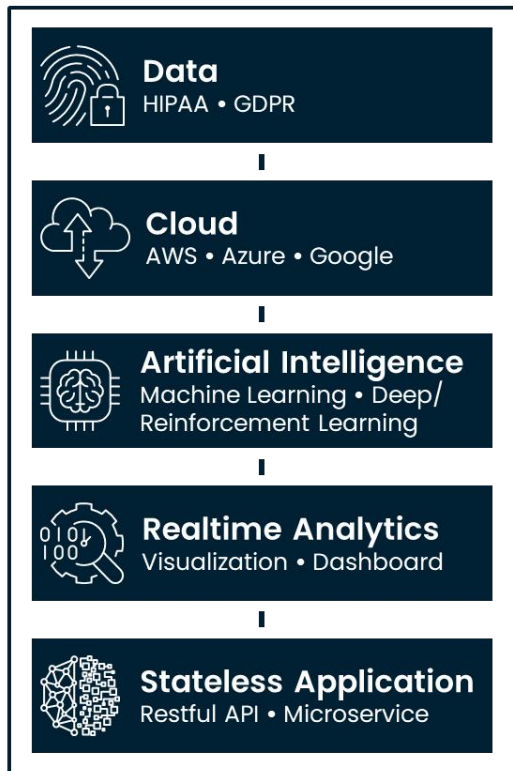
Monthly Patient Funnel		
100%	21%	12%

# CLOUD BASED PLATFORM – A FLEXIBLE, RESPONSIVE AND COMPREHENSIVE PLATFORM

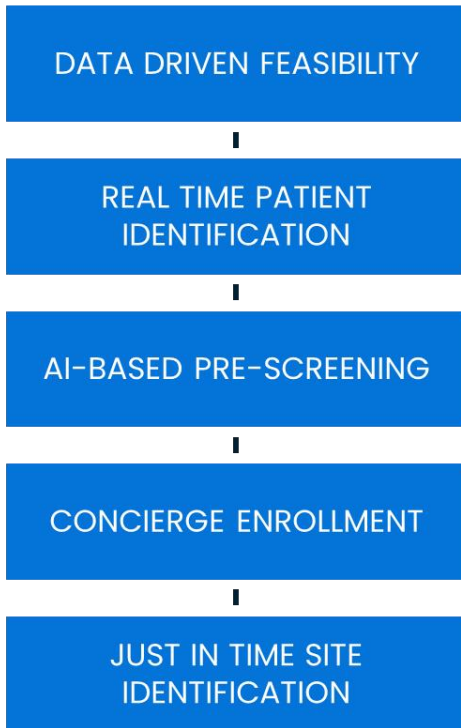
## Input

-  Prescription Data
-  EMR Data
-  Genomic Data
-  Payer Prior Auth. Data
-  Clinicaltrials.gov Data
-  Claims Data
-  Registry Data
-  Patient Community Data
-  Proprietary Patient Database
-  Trial Competition Data

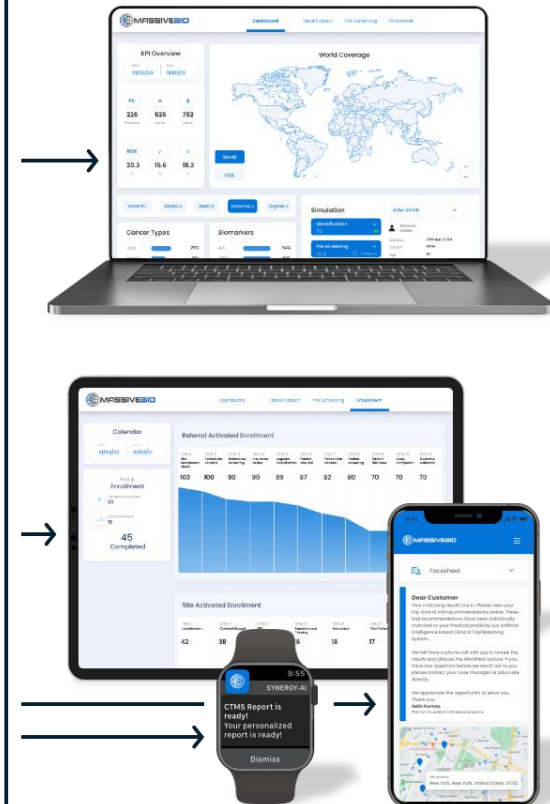
## Application Stack



## Competencies



## Products/Services





# MASSIVE BIO SCALE AND SCOPE (1/2)

## Massive Bio Onboards Over 100,000 Cancer Patients to Find Their Clinical Trial, Powered by Artificial Intelligence

<https://www.businesswire.com/news/home/20221026005381/en/Massive-Bio-Onboards-Over-100000-Cancer-Patients-to-Find-Their-Clinical-Trial-Powered-by-Artificial-Intelligence>

### Massive Bio Onboards Over 100,000 Cancer Patients to Find Their Clinical Trial, Powered by Artificial Intelligence

October 26, 2022 07:37 AM Eastern Daylight Time

NEW YORK--(BUSINESS WIRE)--Massive Bio, a leader in AI-powered cancer clinical trial enrollment, today announced that the company exceeded its goal to onboard 100,000 cancer patients in its platform by the end of 2022 – nine months sooner than expected. The Massive Bio platform matches cancer patients with relevant clinical trials using artificial intelligence (AI), empowering patients to find treatment options faster – while enabling life sciences companies to conduct broader, more inclusive population-based recruitment rather than traditional site-specific recruitment.

Massive Bio onboards over 100,000 cancer patients using artificial intelligence, empowering patients to find treatment options faster. #cancer #artificialintelligence #clinicaltrials

 Tweet this

Currently, there are more than 14,000 active cancer clinical trials globally, with more than 18 million new patients being diagnosed with cancer every year. And yet, a study from the National Cancer Database found that less than 0.1% of cancer patients were enrolled in a clinical trial, based on an analysis of more than 12 million patients who enrolled in clinical trials as their initial course of treatment for 46 cancers from 2004 to 2015.

One of the major barriers to trial participation is the tedious job of manually reviewing patient records and reading trial protocols – a process that contributes to low trial enrollment because it is time-consuming, prone to error, and requires a significant commitment of human resources in an industry that struggles with staffing shortages, especially in the wake of the COVID-19 pandemic. Massive Bio's innovative SYNERGY-AI platform algorithms extract information automatically and accurately from patients' electronic health records (EHR), including biomarker and other test results, previous treatments, and outcomes—then identifies clinical trial matches based on how each patient's cancer and treatment history meets trial protocols and availability. The results are then audited and managed by a Massive Bio certified oncology case manager for accuracy. This use of AI to make trial matching faster and more precise gives patients greater confidence that they are getting into the right trial, while enabling providers to spend more time on patient care.

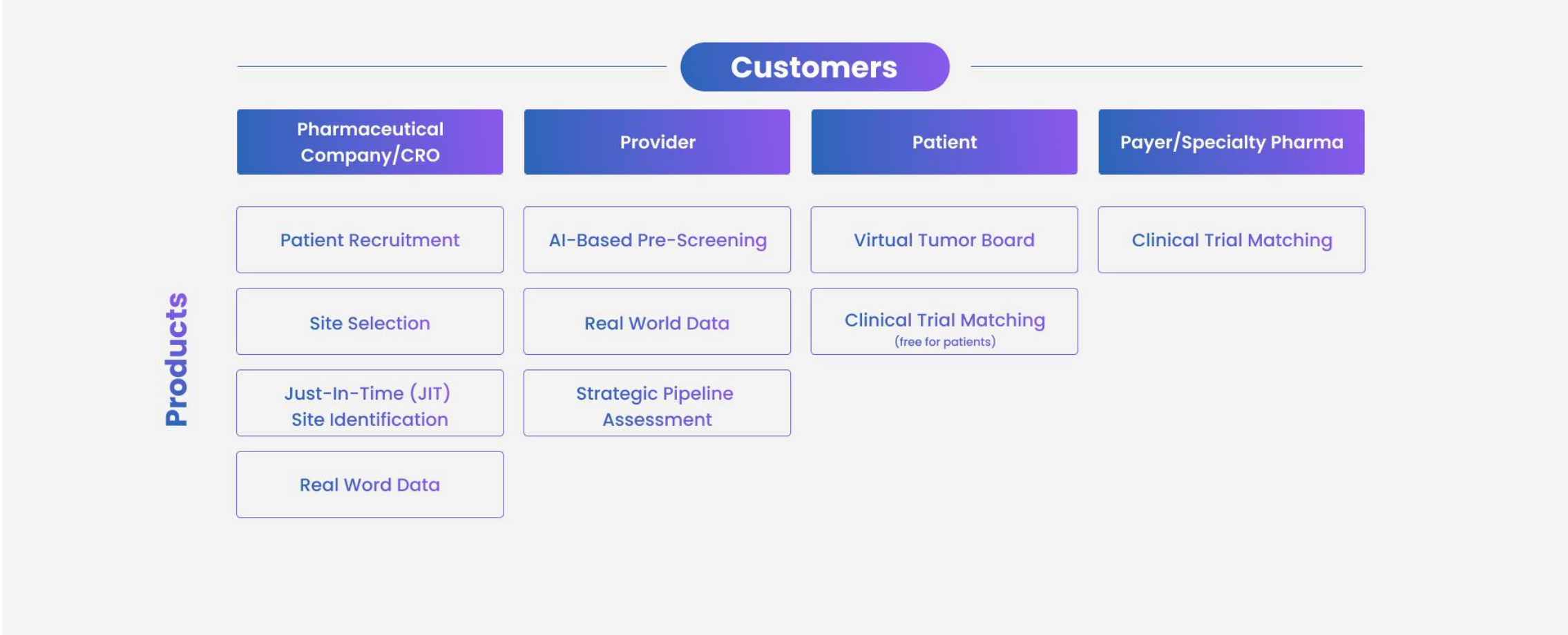
Massive Bio CEO and Co-Founder Selin Kurnaz set the 100,000-patient goal in December 2021. Since then, the company has continued working to transform how cancer patients discover, engage, and enroll in clinical trials. Those efforts have led to the



## MASSIVE BIO SCALE AND SCOPE (2/2)

- We are currently working 23 pharmaceutical companies and 5 CROs; 80% of our pharma customers are Big Pharma; we typically work more than one engagement, and we have 0 customer churn
- We are serving to 1,100 sites/hospitals in US and 650 in Outside US; in US our priority is community practices.
- We acquire patients directly through our contact center or indirectly through enterprises (varies by country).
- We receive 5,000-7,000 leads per month through our patient contact center excluding our provider referrals.
- Our platform pre-screens patients to 14,000 recruiting interventional oncology clinical trials globally.
- We are NCI's AI based pre-screening technology for NCI funded clinical trials after winning nationwide RFP. We provide streamlined referral between community practices and NCI designated cancer centers.
- We are working very closely with major NGS vendors, Foundation Medicine, Caris, Guardant Health, Neogenomics.
- We have launched industry's first NASA-style, Oncology Clinical Trial Command Center to disrupt and accelerate trial enrollment, featuring 72-hour instant enrollment from time of patient identification.
- We have on-boarded more than 100,000 Cancer Patients through our 100K SINGULARITY PROGRAM
- We are building world's largest JIT Hub as current JIT models are broken.
- We are active in 12 countries in the world including US, Canada, EU (France, Germany, Greece, Italy, Poland, Romania, Spain), Israel, Turkey and Brazil, and will reach 19 countries in 12 months.

# MASSIVE BIO SERVICE OFFERINGS



# CAPABILITIES

## Patient Recruitment

1. Patient Identification
  1. Identify patients through Massive Bio's direct and indirect patient acquisition channels
  2. Receive incoming patient calls, provide education and engagement
  3. Consent patients to Massive Bio's records collection, prescreening and concierge enrollment services
  4. Develop NGS order forms for patients that are not Geno-typed
2. Pre-screening
  1. Collection of medical records and diagnostics labs results
  2. Structuring of information and detailed pre-screening with AI
  3. Case management support to review results with patients
3. Patient Referral & Concierge Enrollment Enablement
  1. Identification of best sites closest to the patient
  2. Streamlining communication between treating oncologist and the study team
  3. Raising transportation and lodging issues to the Sponsor
  4. Escalation of financial issues/insurance ineligibility to the Sponsor

## Beyond Patient Recruitment (Trial Traffic Control Unit)

1. NGS Ordering Form Completion for Treating Oncologist to test Under-Genotyped Patients
2. NGS Workflow Design (by Site) for Biomarker Based Trials
3. NGS Assay and Vendor Selection for Biomarker Based Trials
4. Funnel Analysis and Patient Pre-screening Count Design
5. Selection and Validation of Traditional and JIT Sites
6. Patient Advocacy Engagement/Management on Behalf of Sponsor
7. Integration of Lead Generation Channels of Sponsor to Massive Bio's Patient Contact Center and act as Sponsor's Patient Contact Center – integration of marketing activities
8. Analyzing and Using Sponsor's Commercial Data (such as Claims, Specialty Pharmacy, NGS, etc.) and Usage of this Data in the Context of Patient Recruitment; sometimes Sponsor's other Vendor's Reports are used as well such as TrinetX
9. Usage and Integration of Sponsor's MSLs with Massive Bio's Provider Engagement Team to Increase Conversion of Referrals
10. Last Mile Services Integrated with Sponsor's Existing Travel and Reimbursement Vendors
11. Country Specific Integration Efforts for Outside US (such as how to use some data vendors in Poland for patient recruitment)
12. Diversity & Inclusion Specific Analysis on Massive Bio's Consented Patient Data from Patient Contact Center
13. Collection of Outcomes and/or Sponsor Specific Data Needs After Patients Enrolled into a Sponsor Clinical Trial
14. Development of Thought Leadership in Hot Areas such as Diversity & Inclusion, Usage of AI in Oncology Patient Recruitment, etc.

# PATIENT IDENTIFICATION

Massive Bio Patient Acquisition Methodology		
<b>Direct to Patient <u>Patients Onboarded from Contact Center</u></b>	<b>Indirect to Patient <u>Physician to Physician Referral</u></b>	<b>Outside US Specific Initiatives</b>
Provider Call Center Referral	Referral Site Identification, Prioritization / Reach-outs	Direct to Patient – Local Language Speaking Patient Advocacy Support
Non-Trial Specific Marketing, SEO and Content Generation	EMR Mining of Massive Bio's Existing Network	
Online and Offline Community Formation	Online Provider Referral Program	Physician to Physician Referral – Local Language Speaking Provider Engagement Team Support (Local CRO + Local Consulting Physician)
Patient Advocacy Partnerships and Referrals	Virtual Tumor Board Referrals	
SYNERGY AI Mobile Application	Community Oncology Advisory Board	
Oncology Nurse Hour	NGS Vendor Referral	Physician to Physician Referral – Science Club
Patient Ambassador Program	Payer Prior Authorization Referral	
Patient Virtual Pre-screening Sprint	Specialty Pharmacy Referral	

# PRE-SCREENING

## Problem

The current process that matches patients with clinical trials is ineffective.

- Much of the current process is slow and manual – it takes 25 minutes to manually pre-screen patients for a trial.
- Current solutions do not layer the pre-screening process on top of the matching process.
- Patients cannot effectively activate the matching process without the help of the provider.
- Current provider-based pre-screening is only with trials in the provider’s network.

## Our Unique Approach

Massive Bio’s engine ingests a broad and relevant data set to match the patient with all eligible trials across all networks and then pre-screens the patients against each of these trials – this process is automated with supervision from a clinical team.

### Our cutting edge technology streamlines a slow and manual process

- Consolidate data from different sources
- Structure data
- Pre-screen with precision and speed

#### 1 Patient

125 Parameters to pre-screen

#### 6,400 Clinical trials

67 seconds to pre-screen



### We empower the patient by unlocking access to the global clinical trial network



Patients can search across multiple networks



Universal virtual pre-screening: Patients can pre-screen across all trials from their home



Clinical case management and operational navigation support

# CONCIERGE ENROLLMENT

## Problem

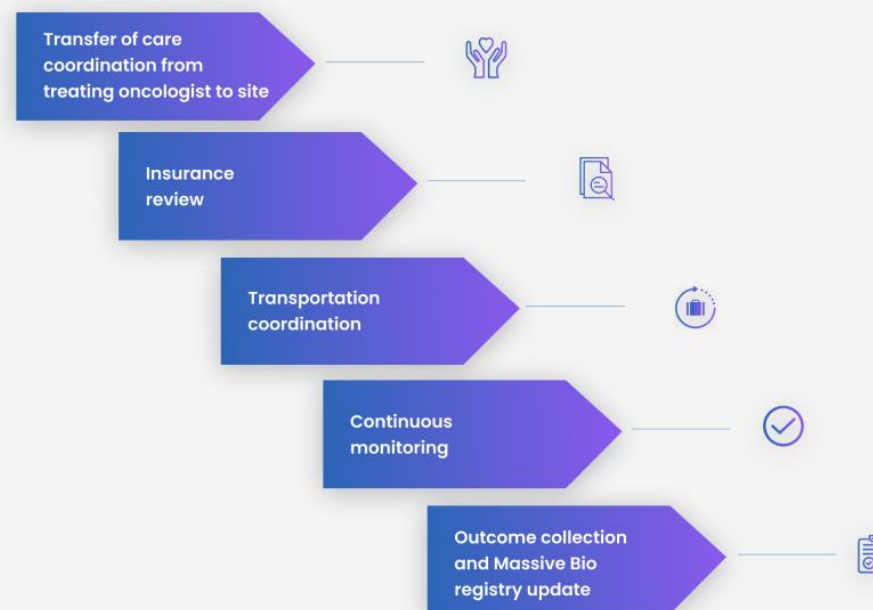
There are significant operational challenges in referring/enrolling a patient into a clinical trial:

- Logistics – the costs of travel associated with the initial evaluation (pre-consent) fall on the patient.
- Provider bottlenecks – Oncologists are incentivized to keep patients on existing drugs (despite the expected efficacy), instead of enrolling them into a new trial.
- Financial issues – there is inconsistency in payer coverage among sites (e.g. the drug is covered but the lab test or MRI or provider care may not be covered).

## Our Unique Approach

Massive Bio uses technology and automation to bring intelligence to the process and to address the challenges.

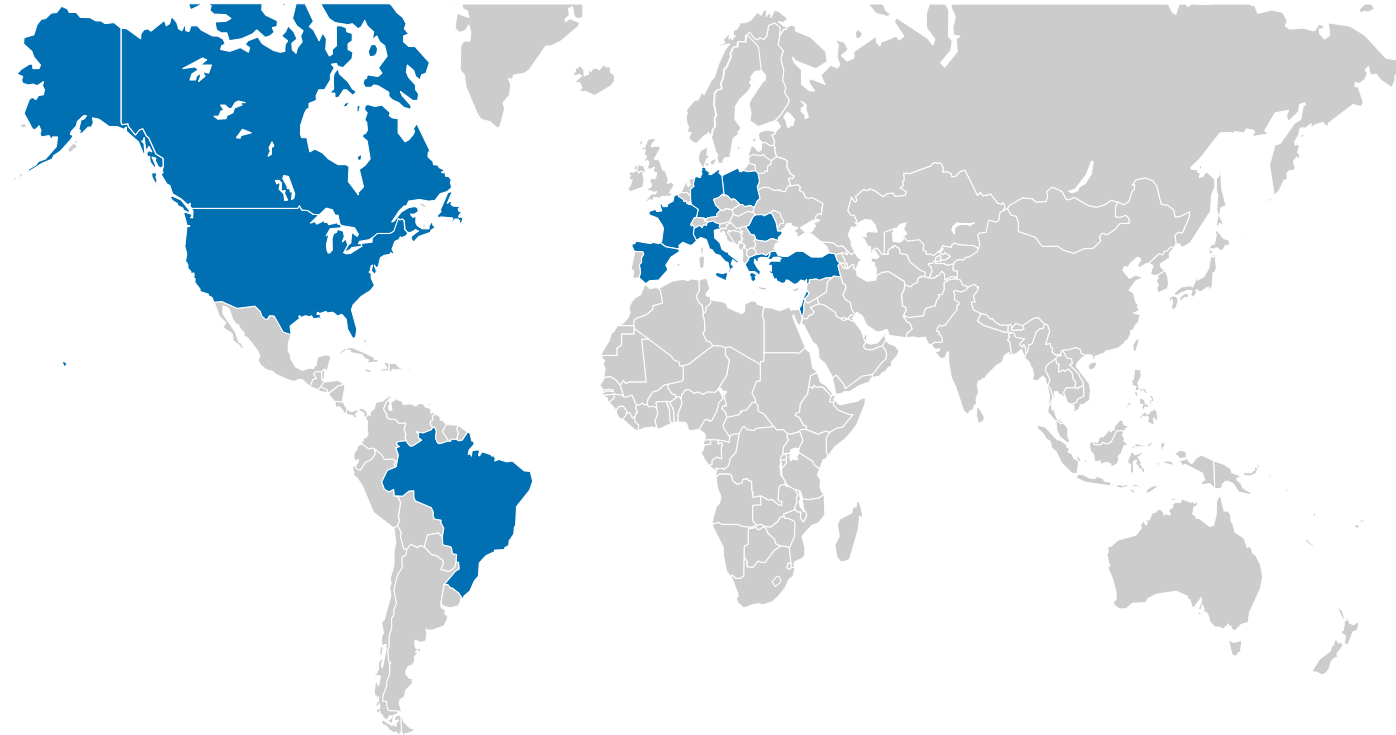
### Concierge Enrollment Enablement



# GEOGRAPHICAL SCOPE – 12 COUNTRIES WITH 92 TEAM MEMBERS

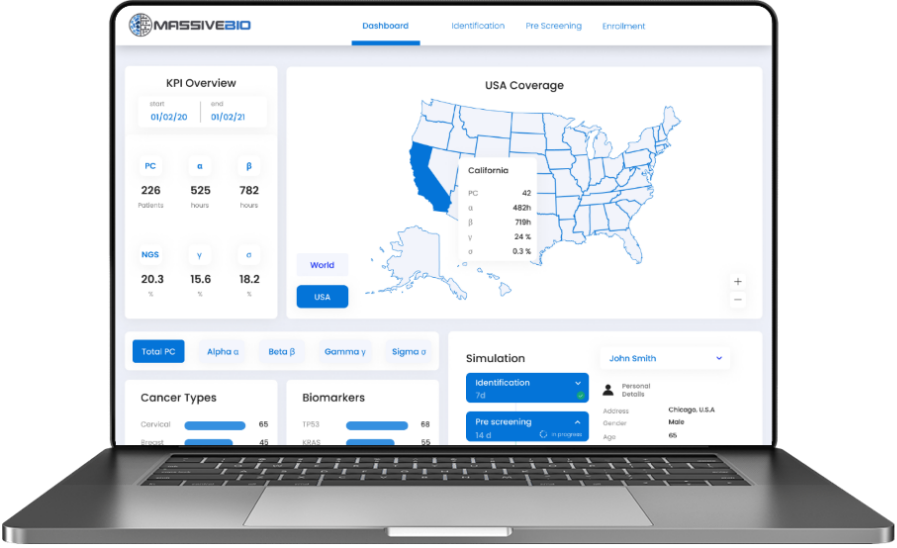
- Global company with country-level success in **12 markets**, over 1,750+ clinical research sites (63% US)

1. US
2. Canada
3. Brazil
4. Turkey
5. Israel
6. Poland
7. Romania
8. France
9. Germany
10. Italy
11. Spain
12. Greece





# MASSIVE BIO OUTPERFORMS RELATIVE TO THE INDUSTRY BY WIDE MARGINS



Redefines the process of recruiting patients for clinical trials

**Pre-Screening Time**

 <b>MASSIVEBIO</b>	<b>67 seconds</b> 14,000 trials
 <b>Industry</b>	<b>25 minutes</b> 1 trials



Develops a customized recruitment strategy based on local dynamics



**End-to-End Enrollment Duration**

 <b>MASSIVEBIO</b>	<b>72 hours</b>
 <b>Industry</b>	<b>Weeks/Unknown</b>



Enables early site activation

**Clinical Trial Enrollment Rate**

 <b>MASSIVEBIO</b>	<b>12.5%</b>
 <b>Industry</b>	<b>3%</b>

# MASSIVE BIO'S UNIQUE VALUE PROPOSITION

Deep Expertise in Oncology and Malignant Hematology, including multiple publications showing its value and ROI

Unique patient acquisition channels (specialty pharmacy, provider networks, payors, digital health companies, mobile app)

End-to-end data-based patient tracking and real-time referral identification, full pre-screening

Funnel transparency based on deep analytics and easy to understand project management and reports

Biomarker based testing navigation, deep relationships with key NGS vendors

Integrated diversity and inclusion-oriented patient volumes

Only platform contracted by the NCI to integrate with NCTN, NCORP and designated comprehensive cancer centers

Only oncology dedicated patient recruitment company in the market with global expertise and fully approved process across US, Canada, Latin America and EU countries

MSAs executed with most CROs for fast startup, contract, and procurement process

Dedicated last mile services to guide patient to successful enrollment

# COMPETITORS “STUCK” TO ONLINE ADVERTISEMENT AND SELF REPORTED DIGITAL PRESCREENING WITH NO VALUE TO ONCOLOGY

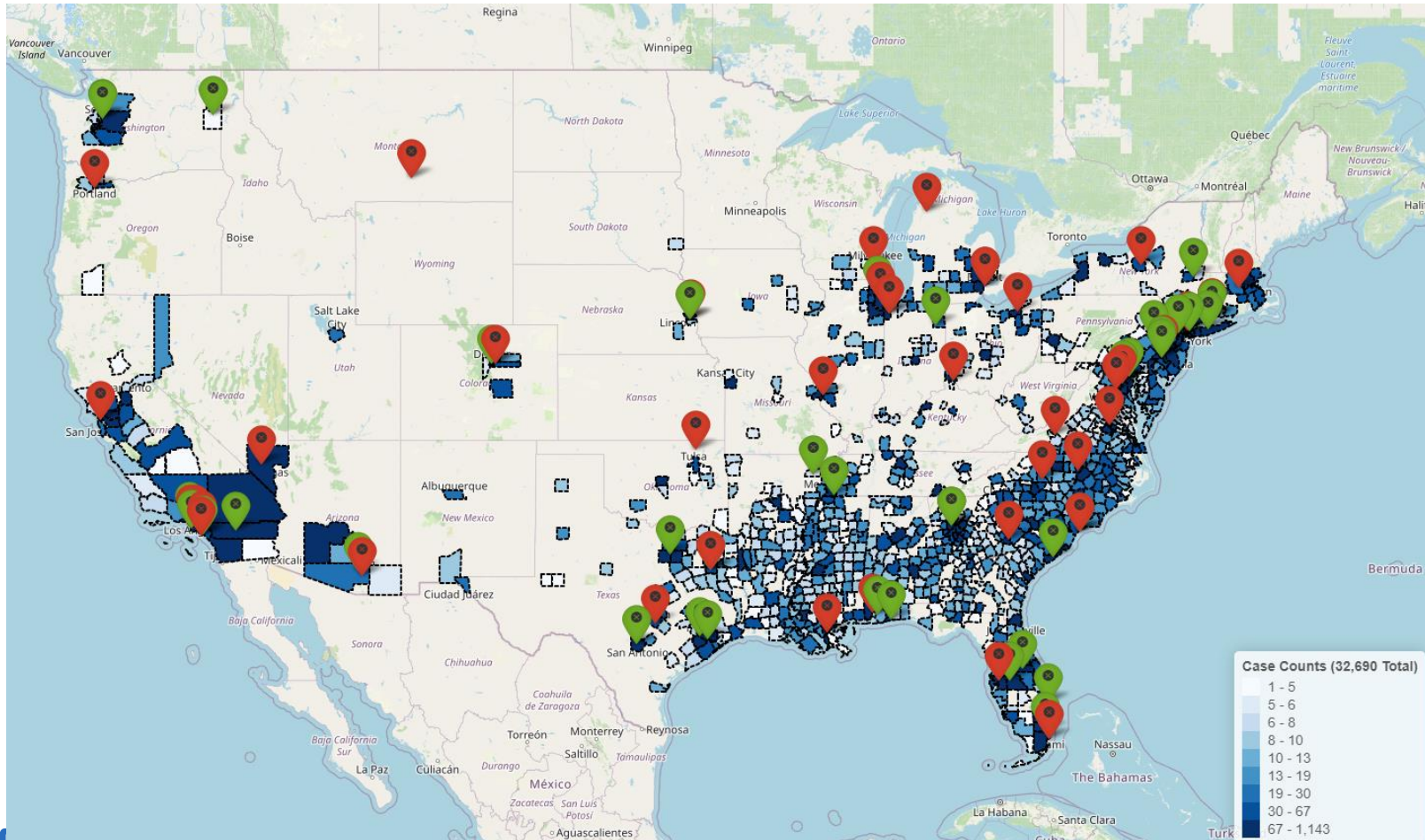
Company	Oncology Focus	Patient Enrollment Value Chain						
		Strategic Growth Outside Patient Recruitment		Patient Identification		Prescreening		Concierge Enrollment
		Drug Matching	Real World Data	Direct to Patient Patient Acquisition through Ads / Organic Patient Acquisition	Indirect to Patient Provider / Payer / Specialty Pharmacy	Self Reported Data Digital Prescreening	MR Collection & Deep AI Prescreening	Referral Management / Logistics / Financial
	✓	✓	✓	✓	✓	✓	✓	✓
	✓			✓		✓		
				✓		✓		
				✓		✓		
				✓		✓		

# MASSIVE BIO DIVERSITY EFFORTS

- Direct to Patient Diversity Baseline
  - Race and ethnicity data acquisition through patient consent, patient advocacy calls and scraping of medical records
  - Community oncology focused US patient acquisition
  - Global outreach with 12 countries
  - Direct and indirect patient acquisition
- Diversity Related Initiatives
  - Utilization of proprietary registry, EMR and claims data to target minorities and community-based practices serving those with unmet needs
  - Demonstrating our understanding of cultural differences and needs through our marketing content
  - Intensify focus on patient advocacy partnerships with groups with primary resources for minorities and unmet needs
  - Increased efforts to partner with physicians and facilities serving those with unmet needs and minority groups
  - Development of educational content demonstrating importance of minorities taking part in clinical research and to build trust and confidence in seeking care
- Enterprise Level Initiatives

# MASSIVE BIO DIVERSITY EFFORTS PRECISION TARGETING OF AFRICAN AMERICAN PATIENT POPULATION

The African American Male Prostate Cancer Density Relative to Sponsor and Competitor Sites  
Green Sites are Sponsor and Red Sites are Competitor Sites



# MAJOR INITIATIVES AND ANNOUNCEMENTS

- NeoGenomics
  - [Massive Bio and NeoGenomics Announce Collaboration to Accelerate Oncology Drug Discovery and Improve Patient Care](#)
- 100K Singularity
  - [Massive Bio Onboards Over 100,000 Cancer Patients to Find Their Clinical Trial, Powered by Artificial Intelligence](#)
  - [Massive Bio Launches the Movement to Match 100,000 Cancer Patients to Clinical Trials: 100K SINGULARITY PROGRAM](#)
- Command Center
  - [Massive Bio Launches Industry's First NASA-Style, Oncology Clinical Trial Command Center to Disrupt and Accelerate Trial Enrollment, Featuring 72-Hour Instant Enrollment from Time of Patient Identification](#)
- NCI
  - [Massive Bio Has Been Awarded a Contract by the NCI to Develop an Oncology Based Artificial Intelligence-Enabled Clinical Trial Recruitment Tool](#)
- JIT
  - [Massive Bio Launches A Hub to Assemble The Largest Artificial Intelligence Enabled Just-In-Time Precision Oncology Clinical Trial Network in The World](#)
- Specialty Pharmacy
  - [Massive Bio and Amber Specialty Pharmacy Announce Nationwide Partnership to Revolutionize Digitally Enabled Oncology Clinical Trial Recruitment through AI Technology Platform](#)