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**MICROBA<sup>™</sup>**

# Unlocking the diagnostic application of microbiome testing

Bioshares Biotech Summit 2024

**ASX: MAP**  
**12 July 2024**

Authorised for release by the Board of Directors

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# Microba is a medical diagnostic and clinical stage therapeutics company unlocking the human microbiome

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- Microba was founded in late 2017 on world-leading metagenomic microbial genomic and microbiome analysis technology
- A clear vision for routine use of diagnostic metagenomic testing, and novel drugs developed using this technology
- Foundations and initial revenue built through non-diagnostic testing services with over 50,000 tests sold to date
- Microba's Testing business invested to develop 2 diagnostic testing products:

**MetaXplore™** Gastrointestinal disorder test – Launched Feb 2023

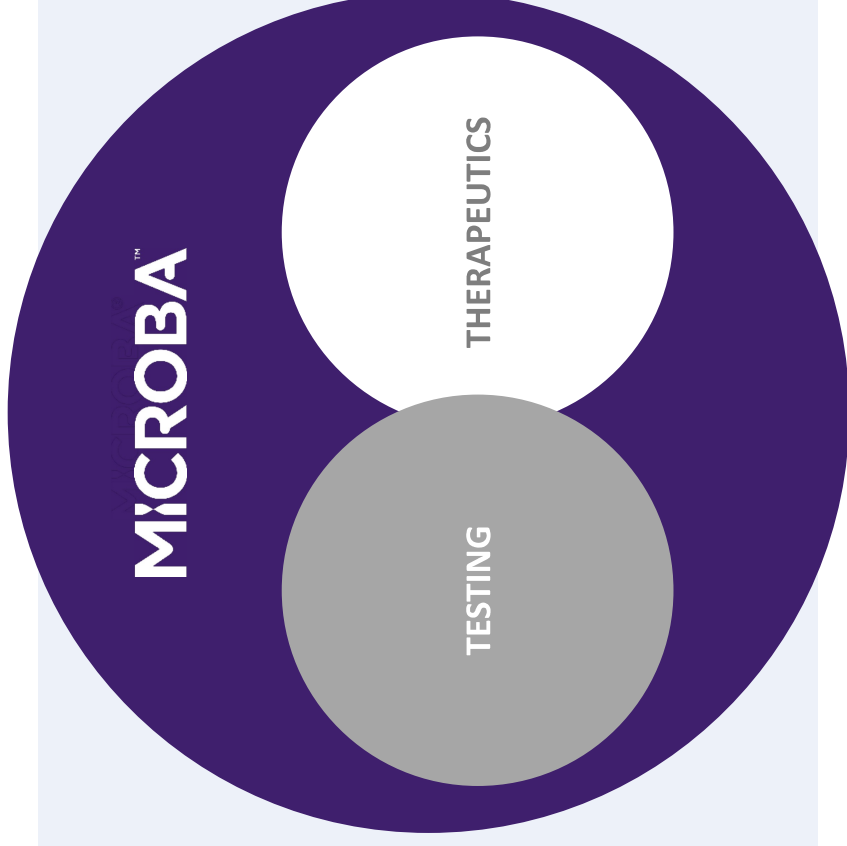
**MetaPanel™** Gastrointestinal pathogen test – Launched March 2024

- Microba's Therapeutics business invested in 3 programs:

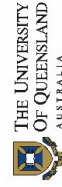
 Inflammatory Bowel Disease – Phase I complete

 Immuno-Oncology – Preclinical lead candidate selection

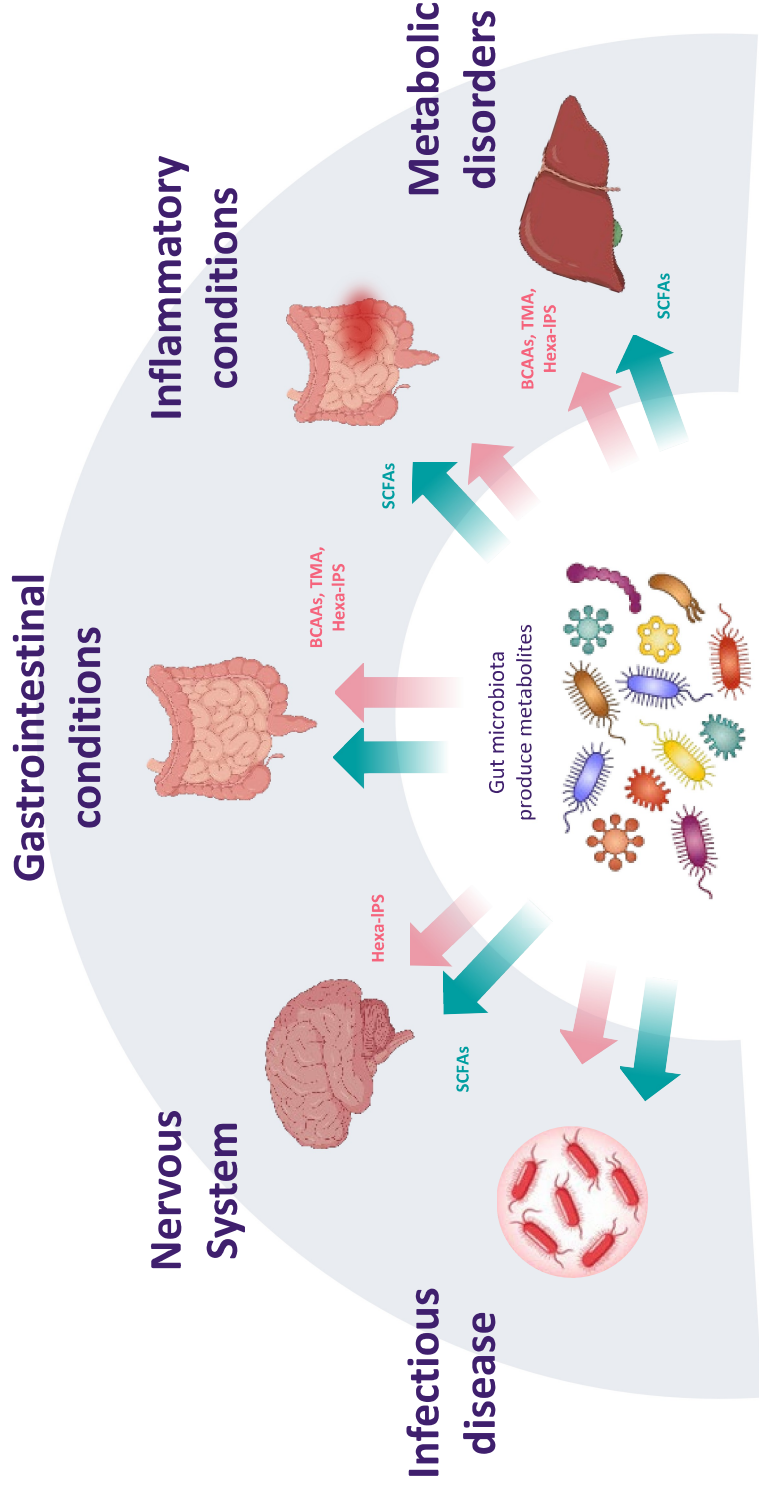
 Autoimmune Disease – Discovery



World-class team



# Unequivocal evidence demonstrates the **human gut microbiome acts systemically** and is a critical component of disease



## >150

Clinical studies demonstrating that **microbiome modulation can influence disease outcomes and symptoms<sup>2</sup>**

<sup>2</sup> PubMed search terms "gut microbiome" and "modulate" and "clinical study" and selecting for clinical trials and randomized controlled clinical trials. Only studies with positive results indicated in the abstracts were selected.

## Our Diagnostics Vision

To combat disease through microbiome health

Since 2023, Microba has executed the next step of its journey into a medical diagnostic company at the forefront of the medical application of microbiome testing.

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# Our Diagnostics Focus

Patients suffering from Gastrointestinal Disease



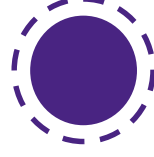
Oncology



Mental



Cardiovascular



**Gastrointestinal**



Longevity



Fertility



# Lower Gastrointestinal Disease

a leading cause of healthcare spend

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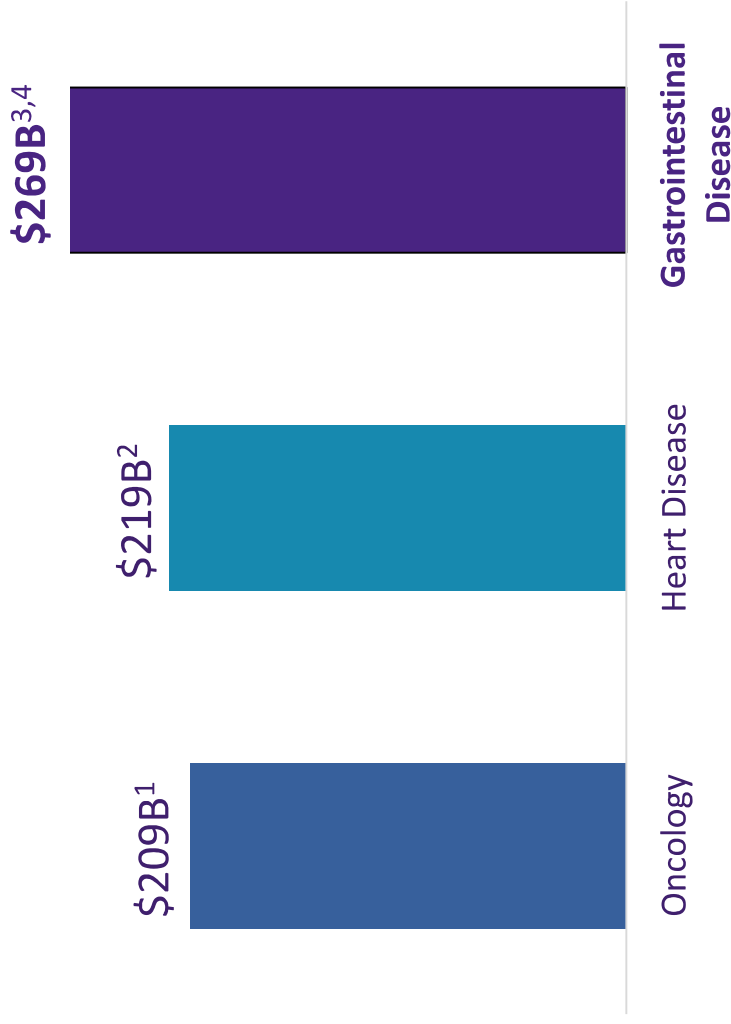
# 37,310,000

Patients presenting annually in the US with lower GI abdominal symptoms\*

21,500,000  
Pain, bloating, other

15,370,000  
Diarrhoea

440,000  
IBD



Annual US Healthcare Spend

<sup>1</sup>National Cancer Institute website: [https://progressreport.cancer.gov/after/economic\\_burden](https://progressreport.cancer.gov/after/economic_burden); <sup>2</sup>CDC website: <https://www.cdc.gov/policy/polaris/healthtopics/heartdisease/index.html>

<sup>3</sup>Nyrop et al. 2007. *Alimentary Pharmacology & Therapeutics*. DOI: 10.1111/j.1365-2036.2007.03370.x. <sup>4</sup>Park et al 2019. *Inflammatory Bowel Diseases*. DOI:10.1093/ibd/izz104.

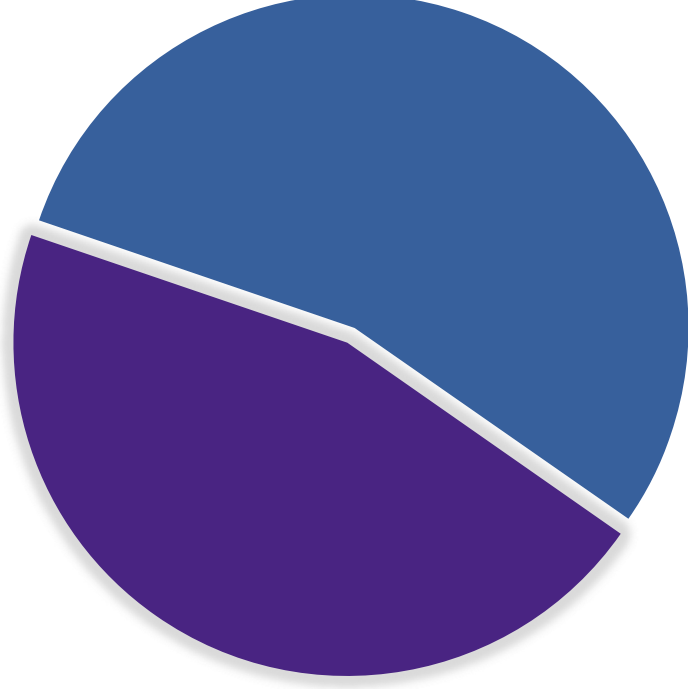
<sup>\*</sup>Assessment of Medicare claims analysis by Veranex including estimated Private and Medicaid numbers extrapolated from the Medicare claims analysis. Combined with IBS diagnosed individual data from Almario et al 2023. *Gastroenterology*. DOI:10.1053/j.gastro.2023.08.010 and IBD individual data from Lewis et al 2023. *Gastroenterology*. DOI:10.1053/j.gastro.2023.07.003 and Weisman et al 2023. *Prev. Med. Rep.* DOI: 10.1016/j.pmedr.2023.102173.

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**Half of patients are not getting a resolution**  
from current standard of care

**47%**

→ Unresolved



**53%**

Resolved



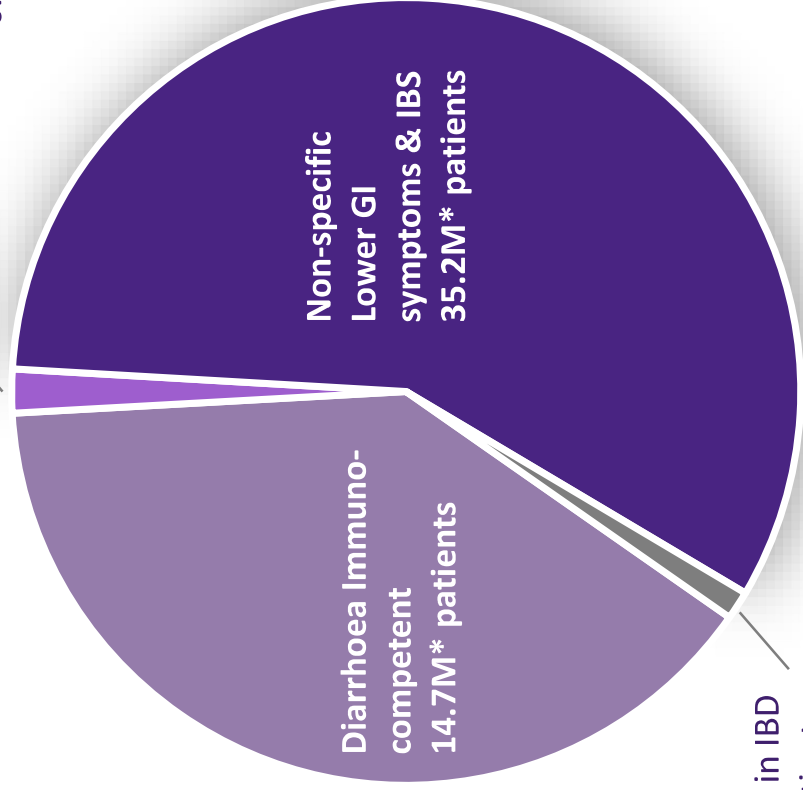
# A multi-billion dollar market opportunity

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## 35M+

US patients\*

Diarrhoea Immuno-compromised  
0.7M\* patients



## > \$15B

US Total Addressable Market\*\*

Symptoms in IBD  
0.4M\* patients



Ongoing market analysis with Veranex

\* Assessment of Medicare claims analysis. Estimated Private and Medicaid numbers extrapolated from Medicare claims analysis.

\*\* Assumes minimum revenue per test of US \$416.78 aligned to CPT code 57507. This is viewed to be the minimum with the top pricing predicate at US \$2126.20

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# Addressing the GI symptom challenge

## Microba's comprehensive diagnostic products

### First line

Diagnosing pathogenic causes of GI symptoms

### MetaPanel™



### Gastrointestinal pathogen test

Launched March 2024

- ✓ Stool DNA test.
- ✓ 175 targets.
- ✓ Expertly curated clinical recommendations for targeted treatment.

Developed with  
 SONIC HEALTHCARE

### Second line

Identifying functional causes and treatment options for non-pathogenic GI symptoms

### MetaXplore™



### Gastrointestinal disorder test

Launched February 2023

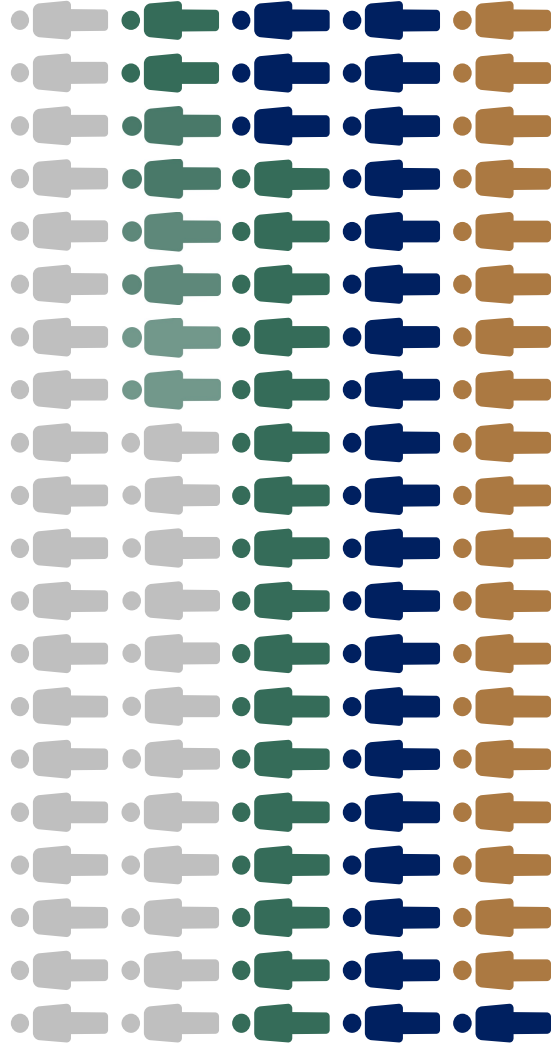
- ✓ Stool DNA + targeted biomarker test.
- ✓ 7 functional GI markers. >28k microbiome markers.
- ✓ Expertly curated clinical recommendations for personalised treatment.

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# Getting answers for patients in need

## Closing the gap on GI symptom diagnosis and treatment

Out of 100 patients presenting with lower GI symptoms



**MetaXplore™**

**24%\*\* more diagnoses with**

**MetaPanel™**

**19%\* diagnosed with**

**Standard of Care (PCR +MCS+OCP)**

\* Large pathology company data from 70,000 tests with 19% positive pathogen detection rate  
\*\* Study of first 4 months of MetaPanel test results in clinical practice in Australia

# Strong diagnostic performance

Highly specific test that enables confident diagnosis

Measure	Diagnostic Performance vs standard of care
<b>Coverage</b> <small>Number of pathogen or gene targets on the test</small>	<b>175 vs &lt;25</b> <small>MetaPanel Standard of care*</small>
<b>Sensitivity</b> <small>Ability of a test to identify the presence of a target correctly; (= TP / (TP + FN))</small>	<b>0.94 +/- 0.07</b>
<b>Specificity</b> <small>Ability of a test to identify the absence of a target correctly; (= TN / (TN + FP))</small>	<b>0.99 +/- 0.01</b>
<b>Positive Predictive Power (PPV)</b> <small>Probability that an individual with a positive test result has the target (= TP / (TP + FP))</small>	<b>0.99 +/- 0.01</b>
<b>Negative Predictive Power (NPV)</b> <small>Probability that an individual with a negative test result does not have the target (= TN / (TN + FN))</small>	<b>0.99 +/- 0.01</b>

**Data from 517 blinded samples. Confidence measures represent median values with 95% confidence interval across pathogen species compared to one or more validated assays.**

# MetaPanel™

\* Including multiplex PCR & MCS testing

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# Transforming standard of care

A paradigm shift

*“After the first 4 months using the MetaPanel test, **24% of patients have been diagnosed** with a pathogen that would have been undiagnosed or experienced delayed time to diagnosis and resolution.*

*This is a breakthrough in infectious disease management”*

## MetaPanel™



### Dr Michael Wehrhahn

BSc (Med) MBBS (Hons) MPH (Hons) FRACP FRCPA

Clinical Microbiologist,  
Infectious Disease Physician & Director  
of Molecular Biology



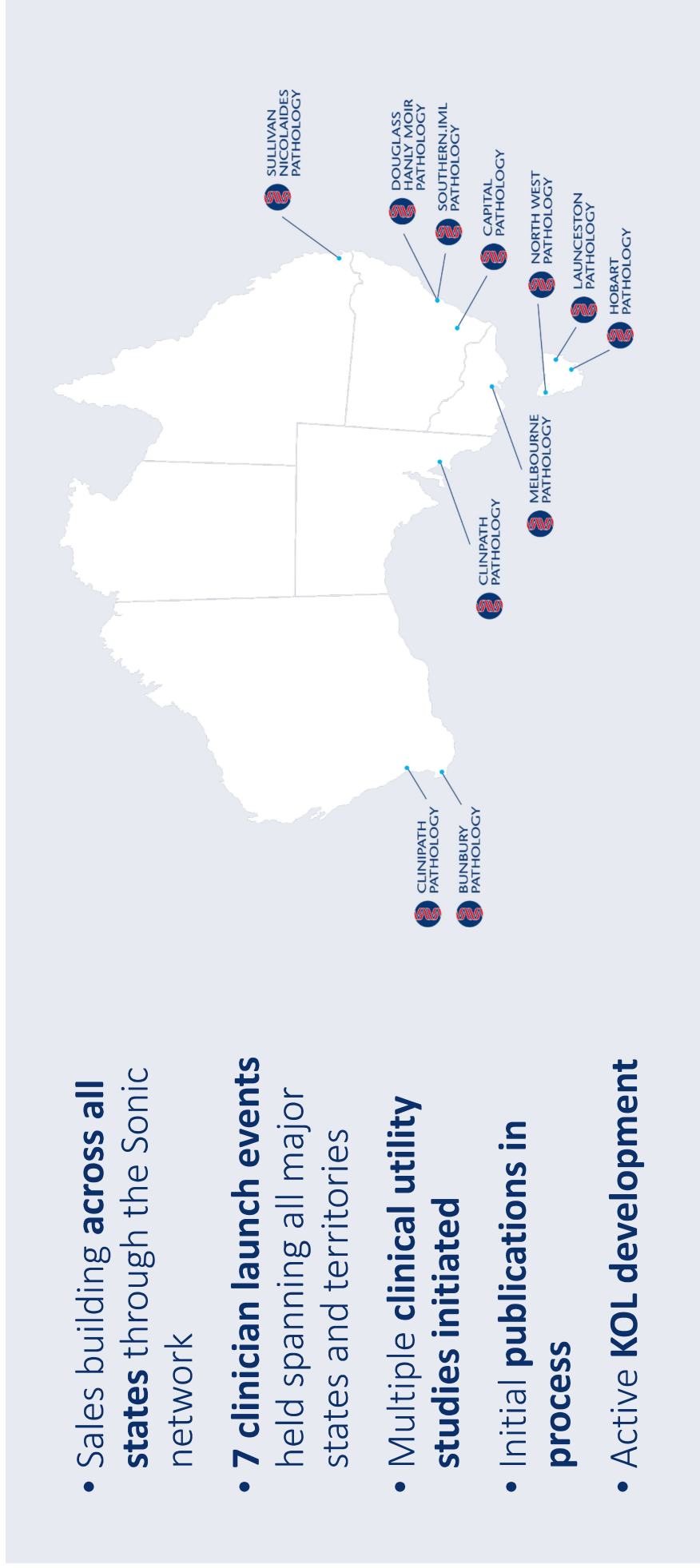
DOUGLASS  
HANLY MOIR  
PATHOLOGY



SONIC  
HEALTHCARE

# Advancing GI pathogen diagnosis in Australia

- Sales building **across all states** through the Sonic network
- **7 clinician launch events** held spanning all major states and territories
- Multiple **clinical utility studies initiated**
- Initial **publications in process**
- Active **KOL development**



## MetaPanel™

# Changing lives every day

*“Before completing the MetaXplore test with my practitioner, my health was in constant distress. I looked and felt bloated all the time, to the point of appearing six months pregnant. My severe constipation led to bowel movements only every 5-6 days with trapped gas causing extreme pain. After completing the MetaXplore test and implementing my treatment plan, I have experienced remarkable improvements. My bowel movements are now regular, averaging every 2-3 days. **The trapped gas and extreme pain are gone, significantly improving my daily life. With adherence to the treatment plan, I no longer suffer from bloating, pain, reflux, or indigestion”***

**MetaXplore  
patient**

**MetaXplore™**

# Changing lives every day

*“I have struggled with gastrointestinal symptoms for over half my life. I have tried resolving with many specialists, restrictive eating plans and natural therapies. My MetaXplore test this year identified clear problems and a personalised treatment plan. I am grateful that through following the treatment plan I have achieved complete resolution to my symptoms and can enjoy eating unrestricted for the first time in 35 years.”*

**MetaXplore  
patient**

**MetaXplore™**



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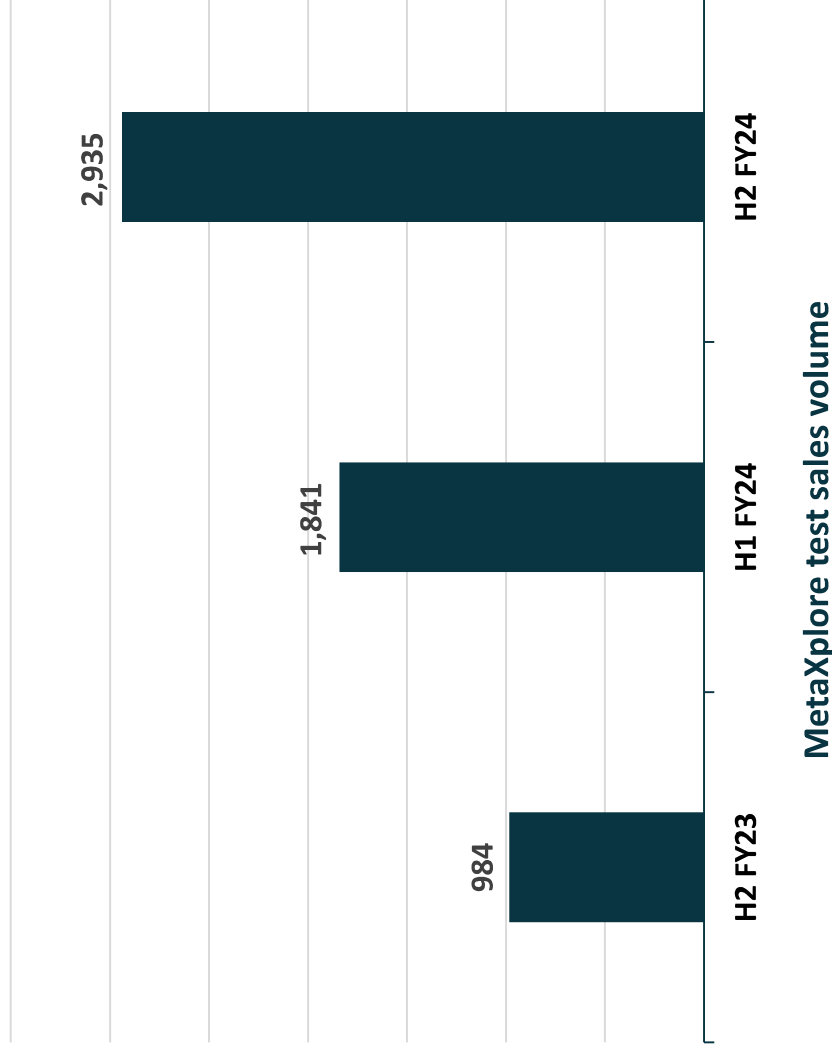
# Growing sales in Australia post launch

**>5,800**

Tests sold since March 2023

**60%**

Growth HoH



**MetaXplore™**

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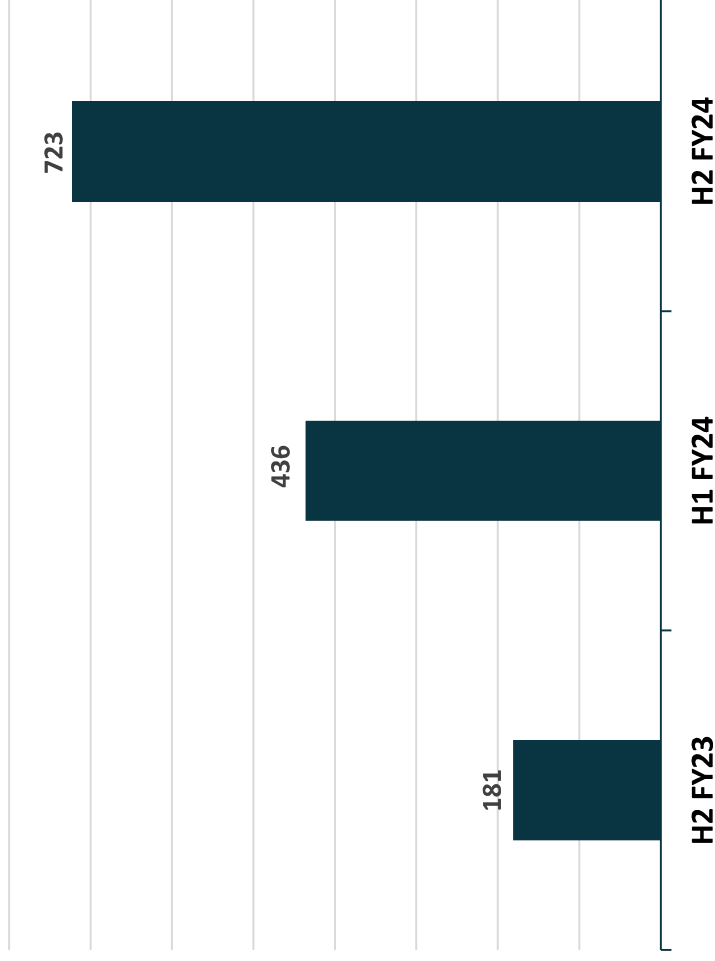
# Growing clinical adoption in Australia post launch

**>700**

Clinicians have ordered at 30 June 2024

**65%**

Growth HoH



MetaXplore ordering clinicians

**MetaXplore™**

# Serving patients today and driving to establish a new reimbursed standard of care

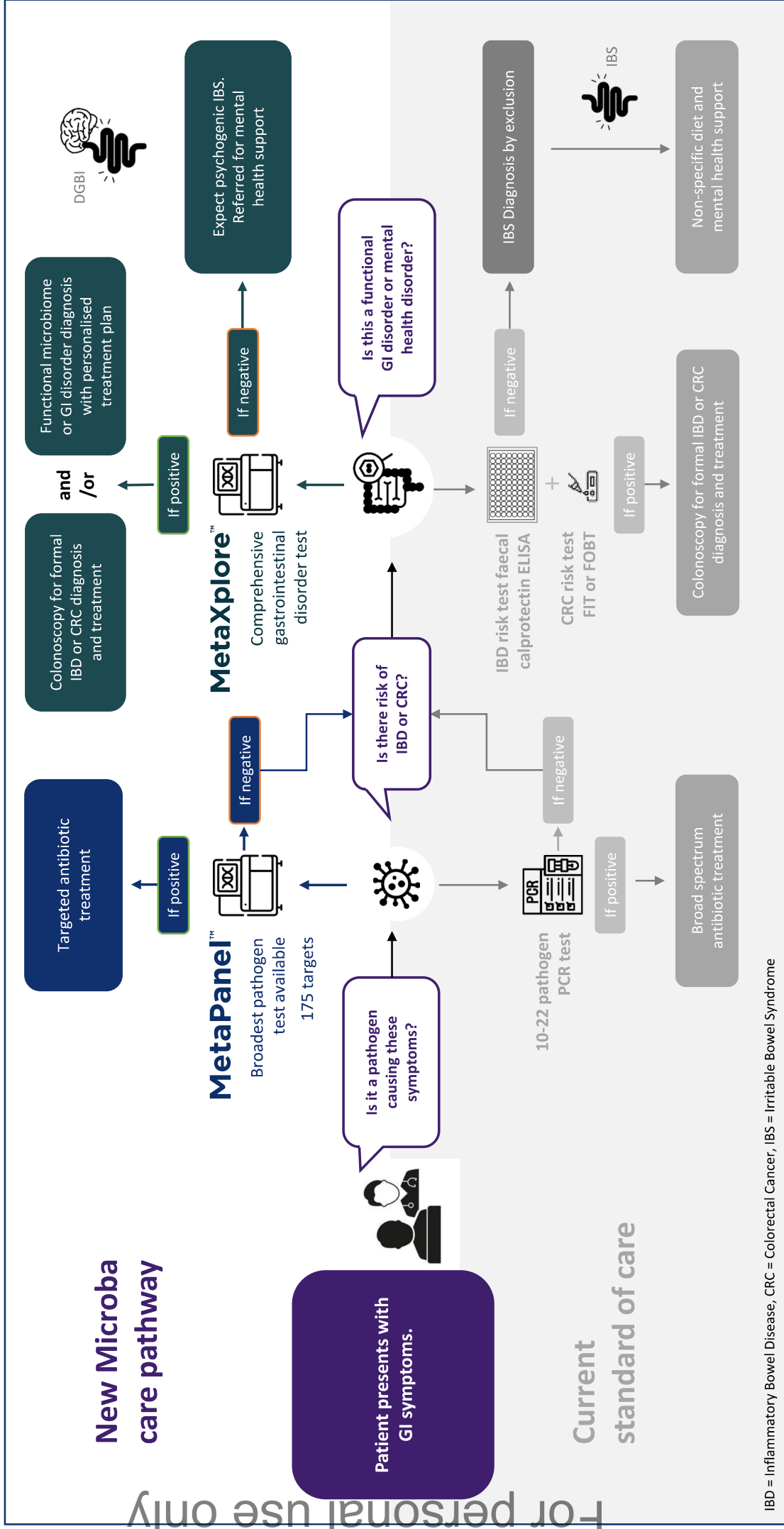
Out of pocket pay access	Regulatory	Evidence	Reimbursement & coverage	Guidelines
<p>Driving access today where standard of care has failed.</p> <p>Full out of pocket pay.</p>	   	<p>Clinical performance validation.</p> <p>Case studies.</p> <p>Registry driving RWE.</p> <p>RCTs vs standard of care demonstrating clinical utility.</p>	    	   

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# Appendix

MiCROBA™

# Patient pathway — Advancing the standard of care for GI symptoms



IBD = Inflammatory Bowel Disease, CRC = Colorectal Cancer, IBS = Irritable Bowel Syndrome

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# Two core business segments driven by a world leading technology

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## MICROBA®

World leading microbiome analysis technology

Proprietary databank

Advanced AI and biostatistics powering a diagnostics and therapeutics platform

## Testing Business

Next generation gastrointestinal diagnostics

2 clinical tests.

GASTROINTESTINAL PATHOGEN TEST

**MetaPanel™**

GASTROINTESTINAL DISORDERS TEST

**MetaXplore™**

2 channels to market.

PATHOLOGY PARTNER CHANNEL



PRIMARY TARGET CLINICIANS

Gastroenterologists  
General Practitioners  
Other Specialists

DIRECT TO PRACTITIONER CHANNEL



PRIMARY TARGET CLINICIANS

Integrative General Practitioners  
Integrative Specialists  
Dieticians  
Nutritionists  
Naturopathic practitioners

## Therapeutics Business

Precision microbiome therapeutics

Data driven therapeutic development platform.

ADVANCED AI/ML APPROACH  
UNDERPINNED BY WORLD LEADING  
TECHNOLOGY

NOVEL PIPELINE OF MICROBIOME  
THERAPIES – POTENT, ORAL DELIVERY,  
SAFE & MANUFACTURABLE

3 therapeutic programs.

INFLAMMATORY BOWEL  
DISEASE PROGRAM

CLINICAL INDICATION  
Mild-moderate Ulcerative  
Colitis

DEVELOPMENT STAGE  
Phase 1 Complete  
Phase 2 Readiness



IMMUNO-ONCOLOGY  
PROGRAM

CLINICAL INDICATION  
Multiple cancers to enhance  
check-point inhibitor treatment  
response

DEVELOPMENT STAGE  
Pre-clinical. Lead  
candidate selection



AUTOIMMUNE DISEASE  
PROGRAM

CLINICAL INDICATION  
Lupus, psoriatic arthritis &  
autoimmune liver disease

DEVELOPMENT STAGE  
Discovery



# MICROBA<sup>TM</sup>



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