WHITE PAPER | JULY 2026

Decoding Metabolic Clinical Trial Landscape

A Blueprint for Future Clinical trials in Malaysia and Thailand from Metabolic Space

Geographic Focus
Malaysia • Thailand

Date
July 2026

Contents

Executive Summary

Southeast Asia is facing a rising metabolic disease burden, with obesity, type 2 diabetes, cardiovascular disease, and chronic kidney disease increasingly shaping healthcare demand, patient outcomes, and long-term system costs. Malaysia and Thailand reflect this broader regional challenge, with large and clinically relevant populations affected by diabetes, overweight and obesity, and cardiometabolic risk that may emerge even at lower BMI thresholds. At the same time, access to advanced metabolic therapies remains uneven, creating a widening gap between clinical need, treatment availability, and real-world implementation.

This landscape makes the region not only a priority for better prevention and care, but also a scientifically important setting for generating locally relevant evidence. As the global metabolic pipeline moves beyond GLP-1 monotherapy toward multi-agonist and phenotype-specific approaches, Malaysia and Thailand have the potential to become strategic contributors to future metabolic evidence generation. Malaysia brings structured national coordination through Clinical Research Malaysia, maturing regulatory and ethics pathways, multilingual patient engagement, and emerging early-phase capability, while Thailand contributes patient scale, broad tertiary and service-hospital networks, public-sector research partnerships, and growing digital and decentralised trial readiness. Together, both countries can offer a differentiated Southeast Asian platform for future metabolic clinical trials, particularly where Asian representation, patient diversity, and real-world care-pathway relevance are essential.

However, disease burden alone will not be enough to strengthen global confidence in the region as a future trial destination; it must be converted into predictable recruitment, stronger referral pathways, broader site ownership, improved patient identification, and enhanced patient experience throughout the clinical trial journey. The next phase will depend on coordinated action across the broader clinical research ecosystem, including sponsors and CROs, trial sites and investigators, regulators and health authorities, research management organisations, healthcare systems, policymakers, and medical societies. Their collective role will be critical in strengthening site partnerships, embedding local expertise into global development planning, improving regulatory and operational predictability, expanding patient access, and ensuring that clinical research growth ultimately translates into earlier access to innovative metabolic therapies for patients in Malaysia, Thailand, and the wider region.

1. Introduction

The Metabolic Disease Landscape in Malaysia and Thailand: Burden, Access, and Trial Relevance

Asia bears a substantial and growing metabolic disease burden. In 2024, 589 million adults globally had diabetes, projected to rise to 853 million by 2050. Asia accounts for a disproportionate share, including four of the six countries with the largest diabetes populations [1].

Malaysia and Thailand reflect this regional challenge, with high diabetes prevalence, increasing overweight and obesity, and patient profiles relevant to regional metabolic trial design.

1.1 Malaysia: Metabolic Disease Landscape

Malaysia shows high metabolic burden in adults: 54.4% overweight/obese, 23.1% obese, 15.6% diabetes (NHMS 2023), and 21.1% age-standardised diabetes (IDF 2024).

1.2 Thailand: Metabolic Disease Landscape

Thailand has 10.2% diabetes prevalence, affecting 6.36 million adults (IDF 2024); NHES VII 2024–2025 should inform obesity, hypertension, and broader NCD indicators.

Table 1: Key Metabolic Disease Indicators — Malaysia vs. Thailand (2024 Data)

Indicator	Malaysia	Thailand
Adult population (20–79 years)	23.9 million	54.4 million
Adults with diabetes	4.75 million (2024, IDF); 15.6% (NHMS 2023)	6.36 million (10.2%) (2024, IDF) 11.5% (HbA1c > 6.5%)
Adults overweight or obese	54.4% (NHMS 2023); (21.8% obesity)	Substantial and rising (NHES VII, 2024–2025) - 45% (>15 years)
Children overweight (<5 years)	6.1% (2019)	9.2% (2022)
Annual NCD spend on diabetes	RM4.38B direct diabetes costs (2017)	Significant and rising
Undiagnosed diabetes	Significant — varies by source	Not formally reported
Global diabetes ranking	13th globally; 1st in SE Asia (IDF 2024)	Regional moderate–high burden
Annual NCD spend on obesity-related healthcare costs	RM4.2 billion per year	THB5.58 billion

Sources: IDF Diabetes Atlas 11th ed.; NHMS 2023; Thailand NHES VII 2024-2025; WHO (2024); MOH/WHO NCD Cost Report; Pitayatienanan et al., BMC Health Serv Res. 2014;14:146; Yap, CodeBlue 2024.

1.3 Current treatment landscape and market access dynamics

Malaysia and Thailand face a growing obesity and diabetes burden, yet access to advanced metabolic therapies remains uneven. Newer incretin-based treatments are not broadly available across the obesity–diabetes spectrum, leaving a gap between clinical need and real-world treatment access.

Barriers differ by market. In Malaysia, access is shaped by public-sector formulary priorities, affordability, and uneven specialist availability across public, private, and tertiary care. In Thailand, access appears more closely tied to diabetes reimbursement pathways, while pharmacological obesity treatment remains more limited; diabetes-related use may therefore advance earlier than obesity-focused coverage.

These constraints create a practical opening for clinical trial involvement. Slow reimbursement, high out-of-pocket costs, and specialist-care concentration may support recruitment of GLP-1/advanced incretin-naïve participants. Trials can offer structured access to innovation while generating local evidence on efficacy, safety, adherence, and implementation in Southeast Asian populations [1].

1.3.1 Patient journey and trial-enabling pathways

The metabolic patient journey in Malaysia and Thailand spans identification and referral, treatment initiation, and long-term follow-up. In Malaysia, patients may be reached through public primary care, Klinik Kesihatan, family medicine specialists, general practitioners, community screening initiatives such as KOSPEN and the National Health Screening Initiative, and tertiary or private specialist centres. These multiple touchpoints create entry points for trial awareness and referral.

Treatment initiation is often concentrated in specialist or tertiary care, especially for complex obesity, diabetes, cardiovascular, renal, or multimorbidity risk. Thailand's public–private pathways, specialist networks, and trial frameworks may further support coordinated identification and decentralised study conduct.

For trials, the opportunity is to connect fragmented care touchpoints into clearer recruitment and retention pathways. Referral networks, patient navigation, site-awareness activities, hybrid follow-up, and decentralised approaches can widen reach beyond traditional sites and support sustained participation in long-term metabolic trials.

Table 2: Patient Characteristics and Care Pathways

Differentiator	Malaysia	Thailand
Metabolic patient profile	High diabetes burden; substantial overweight and obesity; Asian BMI-risk phenotype	Substantial diabetes and NCD burden; rising overweight, obesity, and hypertension
Care-pathway diversity	Public primary care, tertiary centres, private sector, community health clinics	Mixed public-private and specialist pathways with regional NCD burden

Patient engagement remains a critical cross-cutting enabler for trial readiness. Evidence from Malaysia suggests that willingness to participate in clinical trials is shaped by trial knowledge, perceived benefits and risks, confidence in trial conduct, and healthcare professional recommendation [2,3]. This underscores that infrastructure and treatment access alone are insufficient; they must be supported by culturally appropriate communication, patient-centred

engagement strategies, multilingual materials, and investigator-led explanations of randomisation, comparator design, and participant safeguards.

1.3.1 Patient Health-Seeking and Treatment-Seeking Behaviour: Implications for Future Metabolic Clinical Research

Findings from the ACTION Malaysia and ACTION Thailand studies suggest a clear behavioural gap: many patients recognise obesity as a chronic disease, yet do not seek timely medical support. Weight management is still often viewed as a personal responsibility, leading many individuals to attempt repeated self-directed weight-loss efforts before engaging healthcare professionals. This delay increases the risk of progression to type 2 diabetes, cardiovascular disease, and other metabolic complications.

The evidence also challenges the assumption that patients are unwilling to discuss obesity. When healthcare professionals initiate supportive, non-judgemental conversations, patients feel heard, motivated, and empowered. This suggests the barrier is not patient resistance, but delayed diagnosis, limited treatment awareness, and inconsistent clinical conversations.

Patients are increasingly open to innovative treatments. While lifestyle modification remains the preferred first step, many recognize the challenges of sustaining long-term weight loss and are receptive to pharmacotherapy when recommended by trusted healthcare professionals. However, affordability, access, and limited awareness continue to hinder uptake.

For future metabolic clinical trials, this creates an important opportunity. Malaysia and Thailand have patients with high unmet need who may be increasingly ready to engage, if trial communication is culturally appropriate, clinician-led and clearly explains treatment options, randomisation, safeguards, and long-term value. Strengthening patient education, earlier HCP engagement, and referral pathways can improve recruitment, retention, and evidence generation for obesity and diabetes trials in Southeast Asian populations.

Key implication

Patient behaviour should not be seen as a barrier to trial participation, but as an activation opportunity — if awareness, trust, access, and clinician-led engagement are built into the trial pathway.

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2. Turning Metabolic Burden into Trial Opportunity: Malaysia and Thailand's Readiness

The metabolic pipeline has moved beyond GLP-1 monotherapy, with a high volume of obesity and diabetes R&D programs from multiple companies, increasing focus on specialized patient phenotypes and multi-target agents raising efficacy expectations and intensifying competition for similar patients, investigators, and sites. Tirzepatide (~15–20% weight loss) [4] and retatrutide (~24% at 48 weeks) [5] have expanded the efficacy ceiling, while amylin-based therapies such as cagrilintide [6,7] and the GLP-1/amylin co-agonist amycretin (zenagamtide) [8-10] further broaden the development landscape.

For Asia, particularly Malaysia and Thailand, this creates both opportunity and urgency. Both countries carry a high metabolic disease burden across obesity, type 2 diabetes, cardiovascular disease, and chronic

kidney disease, and include Asian populations in whom cardiometabolic risk may emerge at lower BMI thresholds than in Western populations. This makes them clinically relevant allocation geographies for future metabolic trials, provided disease burden is translated into predictable recruitment systems. [1,11,12,13–15,16,17]

2.1 Global Execution Strategy by Sponsor Companies

Obesity has emerged as a strategic priority for both pharmaceutical and non-pharmaceutical stakeholders, driven by the substantial and growing global unmet medical need. Across the industry, organisations are adopting differentiated approaches to build competitive advantage within this rapidly evolving landscape. While some pharmaceutical companies are investing in broad and comprehensive obesity portfolios, others are focusing on breakthrough therapies with superior efficacy profiles or positioning themselves as scale accelerators through targeted capabilities and partnerships. Beyond the pharmaceutical sector, major technology companies are developing digital health platforms and integrated solutions to support obesity prevention, management, and long-term patient outcomes.

In this highly competitive environment, speed has become a critical differentiator, making time the most valuable currency in the race to deliver innovative therapies and solutions to patients. Accelerated planning and execution of clinical development programmes are therefore essential to maintaining competitiveness. To strengthen and expand their obesity portfolios, many organisations are pursuing strategic acquisitions, partnerships, and selective licensing opportunities. Additionally, the adoption of Functional Service Organisation (FSO) and Functional Service Provider (FSP) delivery models has become an important strategy for increasing operational agility and execution speed.

Equally important is the ability to execute clinical development programmes intelligently and efficiently. Addressing the obesity burden requires innovative approaches to evidence generation and trial execution, including integrated evidence strategies that leverage real-world data, advanced study designs such as synthetic control arms and mosaic data collection methodologies, digital innovations incorporating Patient-Generated Data (PGD), the integration of Software as a Medical Device (SaMD), and decentralised clinical trial models that reduce participation burden for both sites and patients. Together, these approaches have the potential to accelerate evidence generation, enhance patient-centricity, and improve the efficiency of clinical development in an increasingly competitive obesity landscape.

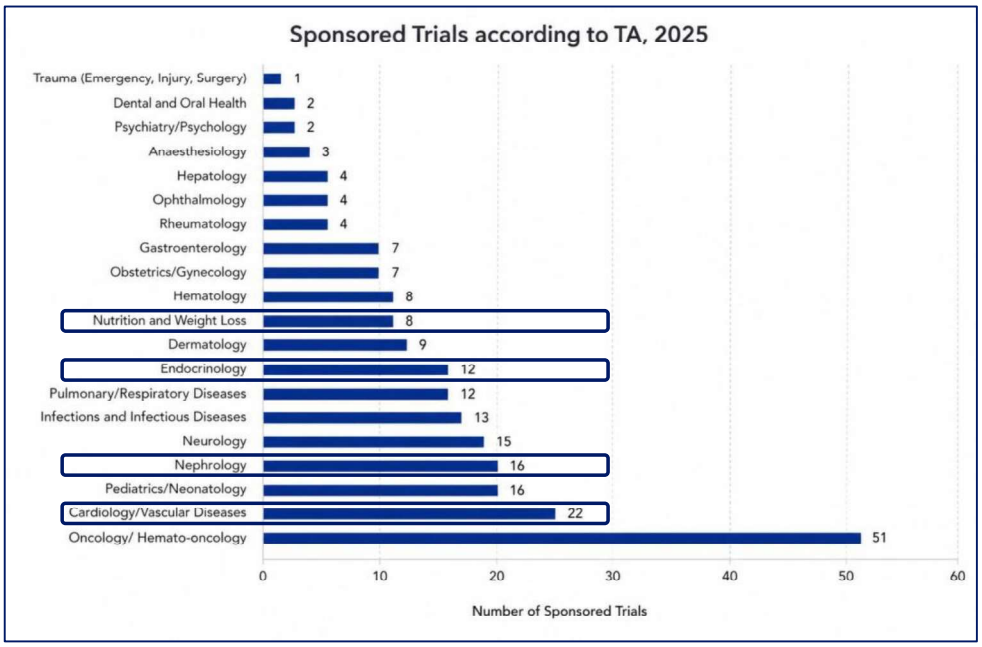
2.2 Metabolic Clinical Trial Readiness in Malaysia & Thailand

2.2.1 Malaysia

Malaysia can act as a regional capability anchor for complex metabolic programmes. Its value lies in CRM-enabled national coordination, an experienced investigator base, multilingual patient engagement, expanding clinical research facilities, and emerging early-phase infrastructure, including the Phase 1 Realisation Project. These capabilities align with wider national priorities under NIMP 2030, which position clinical research as part of Malaysia's industrial and healthcare development agenda. [13–15,18,19,20]

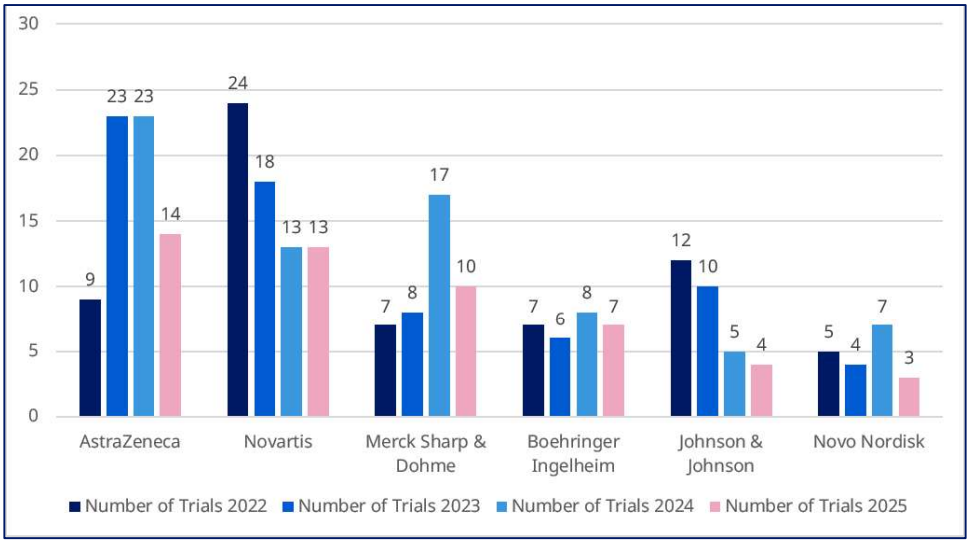
Operationally, Malaysia's case is strengthened by local performance evidence, including regulatory and ethics timelines, site activation performance, contract and budget cycle times, first-patient-in delivery, recruitment acceleration examples, retention practices, screen-failure learnings, and data-quality indicators. This will help convert the strategic argument into practical feasibility evidence for GTP/GTA country allocation discussions.

Figure 1: Number of sponsored clinical trials in Malaysia by therapeutic area (2025).



Source: CRM Annual Report, 2025

Figure 2: Leading clinical trial sponsors in Malaysia by number of sponsored trials (2022-2025)



Source: CRM Annual Report, 2022 – 2025

Malaysia key enablers

- Mature ecosystem
- Conducive environment
- Willingness and openness for future readiness

2.2.2 Thailand

Complementing Malaysia's nationally coordinated infrastructure, Thailand's strategic value lies in patient scale, established tertiary and service-hospital networks, and operational capacity for enrolment-intensive metabolic studies. It is therefore well suited to support regional programmes where recruitment throughput, broader site reach, and larger eligible patient pools are critical. However, Thailand-specific claims should be validated with local stakeholders, and trial extrapolation should remain therapeutic-area and protocol specific. [16,17,21,22]

This complementary role may be strengthened through broader site-network models. Evidence from oncology suggests that service-based hospitals can improve enrolment without compromising trial quality; this principle is worth testing in metabolic trials where identification, referral, screening conversion, and follow-up capacity are critical. [23]

Figure 3: Number of sponsored clinical trials in Thailand by therapeutic area (2022-2025).

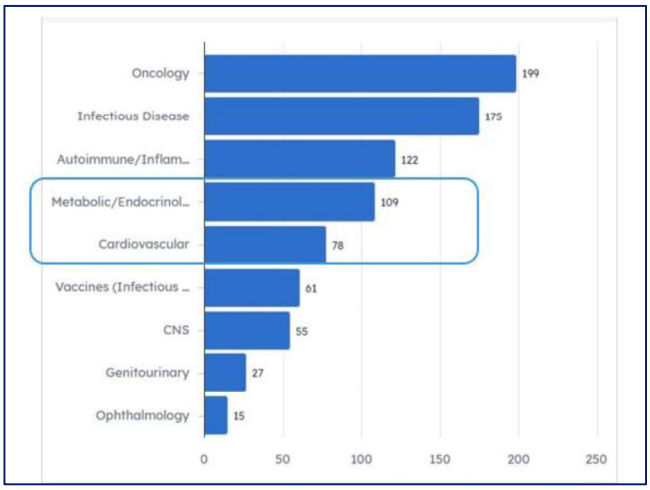
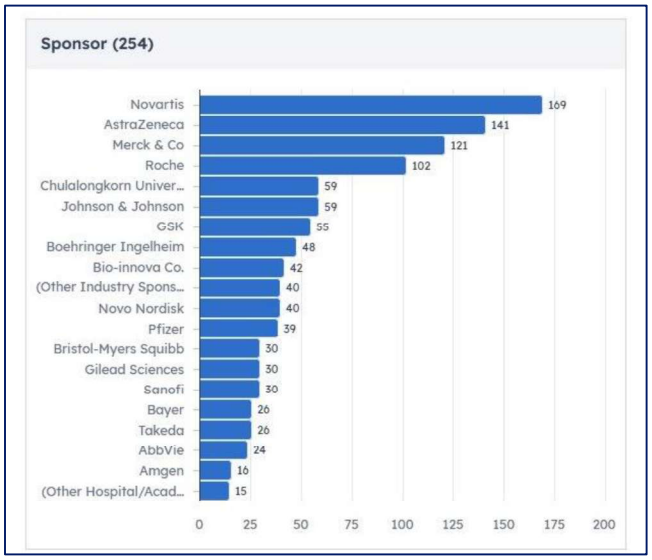


Figure 4: Leading clinical trial sponsors in Thailand by number of sponsored trials (H1 2026)



Thailand key enablers

- Evolving clinical trial ecosystem
- Scalable patient and research infrastructure
- Ongoing capacity expansion

2.3 Strategic Role of Malaysia and Thailand in a Saturated Global Metabolic Trial Landscape

As obesity and diabetes pipelines expand, country allocation must move beyond burden-of-disease narratives and prioritise geographies with differentiated patient access, predictable execution, and relevant population diversity. Malaysia and Thailand can reduce reliance on saturated markets by offering a complementary Southeast Asian platform for future metabolic development. [5,13-17]

Together, Malaysia and Thailand combine coordinated infrastructure, multilingual engagement, population scale, and broader hospital reach. Their strongest opportunity is to link primary care, community screening, service hospitals, private clinics, and tertiary sites into structured referral pathways that convert high metabolic burden into more predictable

identification, pre-screening, enrolment, and retention. Importantly, slower reimbursement and access timelines in both markets may preserve a relatively high proportion of GLP-1-naïve patients, creating a differentiated eligibility advantage for future incretin and multi-agonist metabolic trials. [2,3,13–18,20–27]

3. Shaping the Future: From Potential to Preparedness

3.1 Clinical Trial Roadmap for Malaysia and Thailand

Malaysia and Thailand should be positioned as complementary clinical-trial destinations for global metabolic trial allocation. The roadmap should focus on five practical allocation questions: start-up and recruitment predictability, total clinical-trial volume, metabolic-trial share, country-specific advantages, and barriers that must be addressed to improve future global attractiveness.

The key future direction is to convert patient availability into a deliberate recruitment system. For Malaysia, this means strengthening referral pathways between primary care, screening initiatives, CRM-supported infrastructure, and trial-active sites. For Thailand, this means leveraging national research and regulatory partnerships, MOPH hospital participation, and decentralised trial guidance to broaden patient access and improve execution efficiency. [28-30]

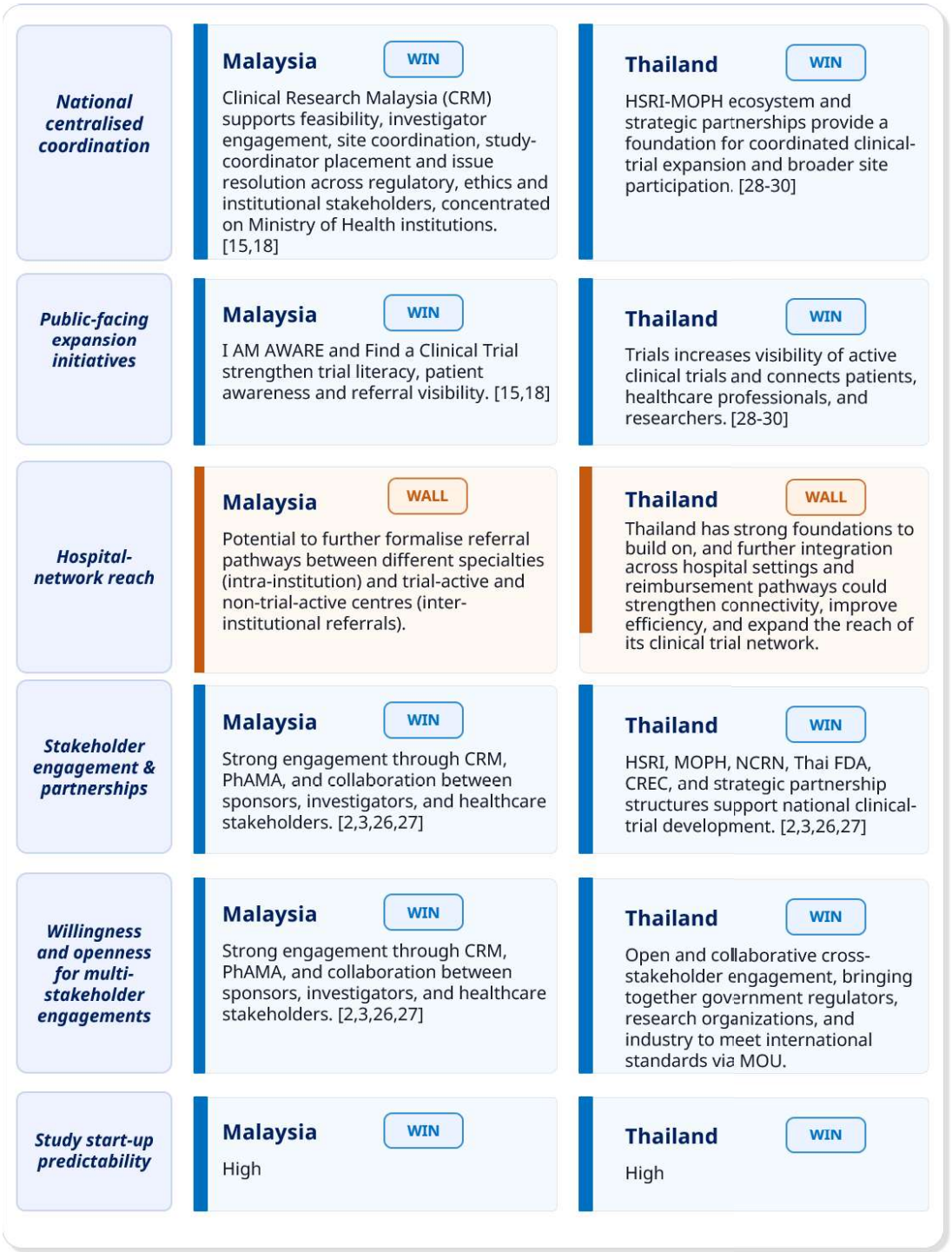
3.2 Start-Up, Recruitment, Volume and Metabolic Trial Share

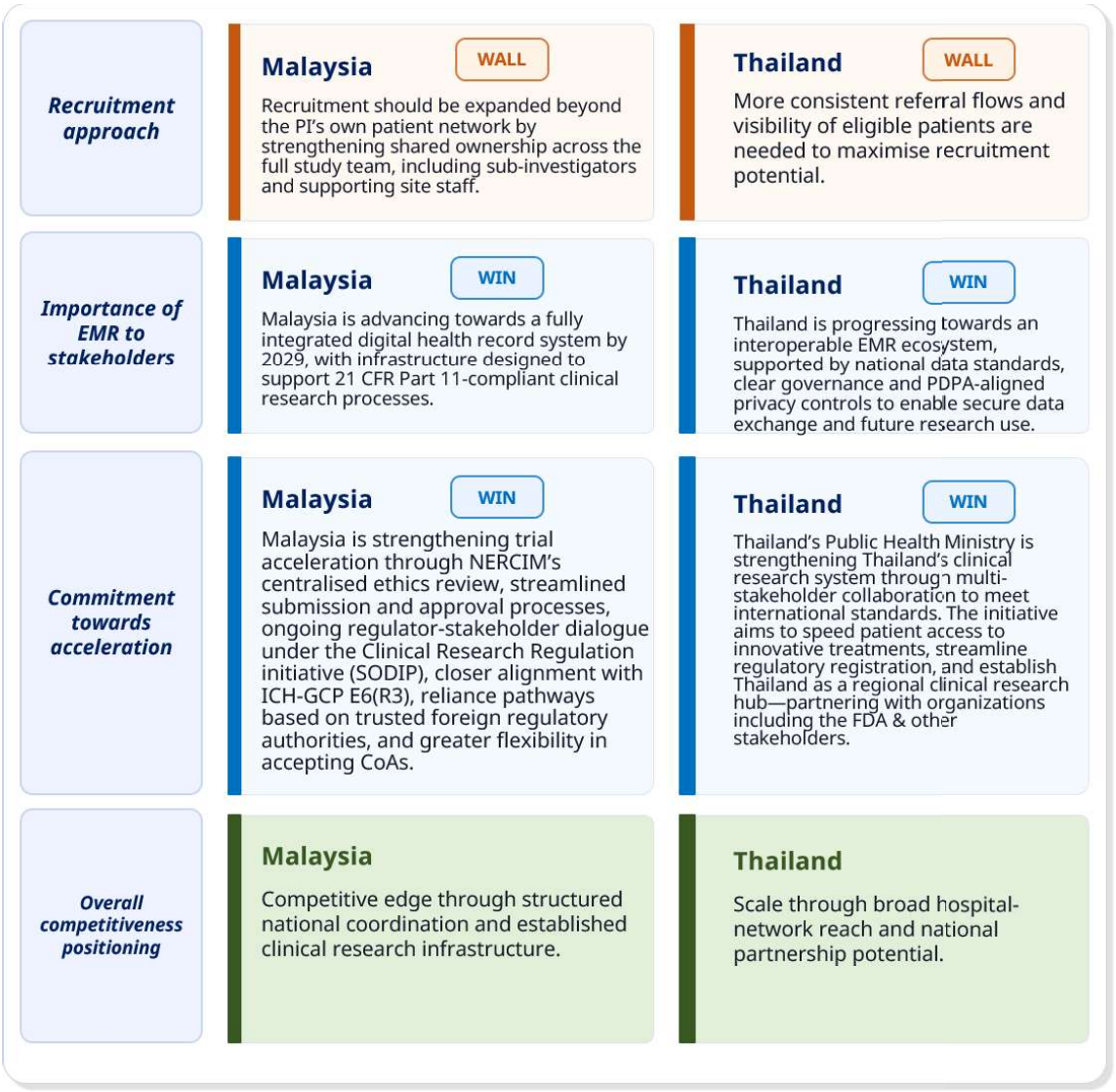
Figure 5: Comparative start-up timelines and operational readiness across selected Asia-Pacific clinical trial markets

Source: Adapted from ClinActis (2024), and Steyn & Davis (Parexel). [clinactis.com], [parexel.com]

3.3 The Wins and Walls: Unique clinical trial strengths and readiness priorities of Malaysia and Thailand

Malaysia and Thailand are mature clinical trial markets with continuously evolving capabilities, and their current strengths provide a strong foundation for future metabolic trial delivery:





Malaysia and Thailand: A Strategic Platform for Metabolic Trial Delivery

Malaysia and Thailand should be framed as strategic partners in global metabolic trial allocation. Together, they offer strong disease relevance, Asian phenotype representation, maturing clinical-trial ecosystems, complementary recruitment models, engaged stakeholders, multilingual and investigator-led engagement, and growing digital-health momentum.

At the same time, both countries must continue strengthening referral pathways, patient identification, broader recruitment ownership, ecosystem connectivity, and execution readiness. These gaps are recognised and increasingly being addressed through stronger partnerships, digital enablement, site-network expansion, and more deliberate recruitment models, positioning both countries to improve competitiveness and expand their role as leading regional research destinations.

4. The Need of The Hour

4.1 Industry – Clinical Trial Sponsors

4.1.1 Broaden clinically meaningful endpoints with dedicated Asian population studies

Sponsors should design metabolic trials around clinically meaningful outcomes beyond weight loss, particularly in Asian populations where visceral adiposity may drive cardiometabolic risk despite lower BMI. Dedicated Asian studies, stronger Asian representation, and broader endpoints spanning body composition, metabolic, organ-specific, functional, and patient-reported outcomes are needed to generate locally relevant evidence for policy and practice. [31-33]

Table 6: Recommended Endpoint Expansion — Rationale and Application

Endpoint Domain	Specific Measures and Clinical Rationale
Body composition & central adiposity	DXA-derived fat/lean mass, waist measures; more predictive of cardiometabolic risk in Asians than weight alone [31,32].
Diabetes remission & modification	HbA1c <6.5% off treatment; increasingly achievable with multi-agonists [1,5].
Nutritional & functional safety	Lean mass, strength, and nutrition status to ensure safe bariatric-scale weight reduction [6,7].

4.1.2 Develop more strategic site partnerships

Sponsors and CROs should build long-term strategic site partnerships that strengthen research capacity, dedicated site personnel, recruitment readiness, and access to innovation. As highlighted by CRM-enabled coordination in Malaysia and HSRI–MOPH/TRAILS partnerships in Thailand, such partnerships can improve site visibility, trial awareness, referral pathways, and broader patient access. These partnerships should also support simpler, patient-centred, and technology-enabled trial execution.

4.1.3 Involvement of more local PIs on the global stage

Industry should provide greater opportunities for Malaysian and Thai experts to contribute to protocol design, feasibility discussions, advisory boards, and global scientific exchange. This helps embed local realities into clinical development planning while strengthening investigator engagement, country credibility, and regional representation in global metabolic trial allocation.

4.1.4 Strategic resource deployment

Sponsors should consider countries' contexts and patient population needs early in protocol design to ensure scientific relevance, operational feasibility, and alignment with local healthcare infrastructure. Fit-for-purpose tools, assessments, visit schedules, and electronic devices that are readily available in the region can reduce site burden, improve participant experience, accelerate start-up, and minimise protocol amendments.

4.1.5 Strategic allocations

Future trial allocation should consider patient availability, epidemiological relevance, execution quality, regulatory predictability, and the need for Asian-specific evidence. Malaysia and Thailand should be positioned as strategic partners in global metabolic development, with early involvement in protocol planning and portfolio discussions to optimise study placement and regional impact.

4.1.6 Enhanced digitalization to reduce burden for sites and patients

Digitalisation can reduce site workload, simplify patient participation, improve data access, and support faster, more patient-centric trial delivery. Continued investment in user-friendly, interoperable digital health technologies, including digital health records, can strengthen clinical research infrastructure and enable more efficient information sharing across facilities.

4.2 Trial Sites and Investigators

4.2.1 Knowledge Transfer: Supporting Patients Through Placebo-Controlled Studies

In placebo-controlled trials, investigators should explain design rationale, safeguards, rescue/crossover pathways, monitoring, counselling, and clinical equipoise in culturally appropriate local languages to sustain trust and participation. Weight loss outcomes should be linked to functional capacity, work productivity, and quality of life, while integrating patient voices throughout trial design and delivery. [34-37]

> **On the Ethics of Listening**
> "There is a profound difference between what a trial measures and what a patient experiences. A 10% weight loss is not just a data point — it is the difference between a patient maintaining their independence or losing it. Building that bridge, through patient voice, co-designed outcomes, and culturally relevant communication, is not optional in Malaysia's diverse healthcare context. It is the foundation upon which sustainable trial success is built." Expert forum consensus, Kuala Lumpur, February 2026

4.2.2 Bridging the Gap from Clinical Practice to Trial

- Multidisciplinary team involvement: Engage teams from multiple specialties with study teams to identify eligible patients earlier, support counselling, and strengthen retention.
- Referral pathway: Establish clear referral routes from primary care, private clinics, community health services, and non-trial-active hospitals to trial-active centres, supported by simple eligibility checklists and pre-screening tools.
- Satellite sites approach: Use hub-and-spoke models where trial-active centres coordinate protocol delivery while satellite sites support patient identification, pre-screening, and selected follow-up, extending recruitment reach and reducing patient burden.

4.3 Regulatory/Health Authorities

4.3.1 Healthcare Systems & Policy Makers

- Partner with industry and research stakeholders to improve approval timelines through earlier scientific dialogue, clearer submission expectations, predictable review milestones, and coordinated regulatory–ethics processes.
- Maintain open, structured dialogue with sponsors, CROs, investigators, and site institutions to identify bottlenecks, accelerate resource deployment, reduce turnaround time, and improve study start-up and execution predictability.
- Incentivise and protect clinical research capacity by recognising research contributions, providing dedicated time for trial-related work, supporting research coordinator roles, and balancing clinical service demands with clinical research delivery.

4.4 Research Management Organizations

Research management organizations should play a more influential role in shaping the regional clinical research agenda by convening sponsors, investigators, healthcare institutions, regulators, and policymakers around shared priorities. Continued structured dialogue with policymakers is needed to identify operational and regulatory gaps, strengthen trial infrastructure, and make Malaysia and Thailand more attractive for future clinical trial allocation. By translating these partnerships into practical improvements in start-up, recruitment, site readiness, and patient access, research management organizations can help ensure that clinical research growth ultimately benefits patients in the region.

4.5 Medical societies

Medical societies should establish dedicated clinical research task forces to align priorities, strengthen investigator networks, and embed patient engagement across trial design, education, recruitment, and retention. By supporting investigator development, research training, disease registries, national databases, and multicentre networks, they can improve national trial readiness, accelerate evidence generation, raise trial awareness, enable

earlier patient referral, and expand access to clinical research opportunities.

Final Thoughts

Clinical research is the bridge between scientific innovation and patient access, and this bridge is urgently needed in Southeast Asia as obesity, type 2 diabetes, cardiovascular disease, chronic kidney disease, and related complications continue to rise. Malaysia and Thailand offer scientifically relevant populations for future metabolic evidence generation, with Malaysia reporting 4.75 million adults with diabetes, 54.4% of adults overweight or obese, and 21.8% with obesity, while Thailand has 6.36 million adults with diabetes and a broad healthcare ecosystem serving a large metabolic-risk population. These epidemiological realities, together with the tendency for Asian populations to develop cardiometabolic complications at lower BMI thresholds than Western populations, reinforce the need for regionally representative evidence to inform future metabolic disease management and policy decisions.

As the treatment landscape evolves beyond first-generation GLP-1 receptor agonists towards multi-target incretin-, amylin-, and precision medicine-based approaches, Malaysia and Thailand can connect therapeutic innovation with populations experiencing high unmet need by leveraging coordinated research infrastructure, experienced investigators, expanding digital-health capabilities, broad hospital networks, and growing regulatory–industry collaboration. By strengthening referral pathways, improving patient identification through digital and community-based approaches, expanding strategic site partnerships, and embedding patient-centred trial models, both countries can transform metabolic disease burden into high-quality evidence generation, predictable trial delivery, and earlier access to innovative therapies for patients most likely to benefit.

Acknowledgements

The primary clinical stakeholder input for this white paper was generated through a multidisciplinary expert forum convened by the Novo Nordisk Malaysia Clinical Development Centre on 7 February 2026 in Kuala Lumpur, with participants including consultant endocrinologists, internal medicine specialists, paediatric endocrinologists and consultants, and family medicine specialists experienced in diabetes, obesity, feasibility studies, and clinical trials. The forum proceedings were documented in: Jacob AS. NNMY-CDC Diabetes and Obesity Clinical Consultancy Forum: Shaping the Future of Incretin-based Treatment — Full Report v1.0. Novo Nordisk Malaysia Clinical Development Centre, 20 February 2026. [Data on file, Novo Nordisk Malaysia]

Thailand-specific contextual inputs were validated through local clinical and stakeholder engagement, not a formal Thailand expert-panel output.

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