

# The Value Proposition of Clinical Trials In Singapore

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ED Singapore Clinical Research Institute

**The Promise of Clinical Trials:  
Transforming Tomorrow's Health**

**SCRI Clinical Trials Symposium 2024**

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# The Consortium for Clinical Research and Innovation Singapore (CRIS)



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# What is the value of Clinical Trials?

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# Clinical Trials

## “Treatise of the Scurvy” – James Lind (1747)

- Used control groups (cider, vinegar, barley water, elixir of vitriol, sea water...)
- 12 seamen with scurvy
- Evaluated 6 treatments (2 subjects/treatment)
- One treatment (oranges and lemons) had two men recover



# Global View of the value of Industry Sponsored Clinical Trials

Independent report

## Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report

Updated 26 May 2023

“Falling Levels of Commercial Research create a significant opportunity cost.....Therapies and Healthcare services that would otherwise have been funded by a pharmaceutical or technology company instead **have to be funded by the taxpayer**”

“...the total direct cost of the near halving of patients recruited to commercial research....over the last 5 years is in the region of £360 million.”

“Commercial research associated with the NIHR Clinical Research Network generated £1.8 Billion is gross value add to the UK economy in 2018 to 2019.”

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# Global View of the value of Industry Sponsored Clinical Trials

Independent report

## Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report

Updated 26 May 2023

Consequences of reduced commercial clinical trials –

“....it reduces the opportunities of British patients to have early access to innovative treatments that could improve, extend or even save their lives.”

“NHS bodies that carry out research tend, on average, to provide better health outcomes for their patients”

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# Global View of the value of Industry Sponsored Clinical Trials



## 2024 Report on Australia's Clinical Trials Sector

 Metric	2015	2019	2022	CAGR % (2019-22)
 Expenditure	\$1.1 billion	\$1.4 billion	\$1.6 billion	4.1
 Employment	6,900 employees	8,000 employees	7,700 employees	(1.5)
 Patient participation	Not reported	95,000	90,000	(1.8)
 Number of trials started	1,460	1,877	1,850	(0.5)
 Share of global industry-sponsored trials	c.5%	c.5%	c.5%	N/A

Source: ANZCTR; Clinicaltrials.gov; L.E.K. research and analysis

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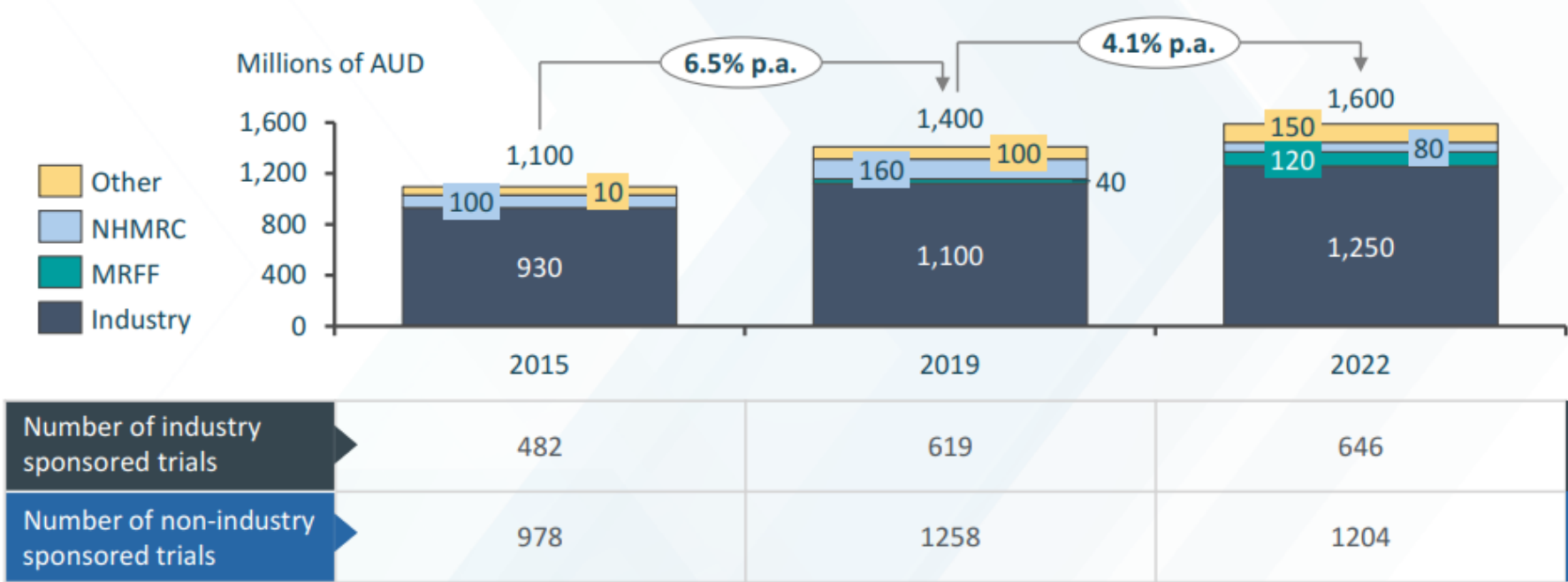
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# Global View of the value of Industry Sponsored Clinical Trials



## 2024 Report on Australia's Clinical Trials Sector

Value of clinical trials activity in Australia, by source of funding (CY2015, 2019, 2022)



Source: MRFF; AAMRI; NHMRC; PBS; ANZCTR; Clinicaltrials.gov; L.E.K. research and analysis



# Global View of the value of Industry Sponsored Clinical Trials



CLINICAL RESEARCH MALAYSIA

*Your Global Solutions in One Place*

Clinical Research Malaysia (CRM) is a Global Trusted Research Management Organisation established by the Ministry of Health Malaysia in 2012.

CRM delivers sponsored clinical trials with Speed, Reliability and Quality through operational excellence and working with stakeholders by providing end-to-end clinical research support services.

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# Global View of the value of Industry Sponsored Clinical Trials



## New Industrial Master Plan (NIMP) 2030

Vision – To make Malaysia the preferred hub for clinical research in Asia

### MALAYSIA'S CLINICAL RESEARCH VALUE PROPOSITION

**ECOSYSTEM**  
TO CONDUCT FIRST-IN-HUMAN TRIALS

GENETIC DIVERSITY FROM ITS  
**HETEROGEONOUS  
POPULATION**



**>1,000**  
EXPERIENCE INVESTIGATORS  
IN MULTI-THERAPEUTIC AREAS

**230  
TRIAL  
SITES**



**>2,000**  
SPONSORED  
RESEARCH  
SINCE 2012



**2,688**  
SKILL JOBS IN CLINICAL  
RESEARCH CREATED

**>RM 1.1 BILLION**  
IN GROSS NATIONAL INCOME  
FROM CLINICAL RESEARCH  
CONTRACT VALUE

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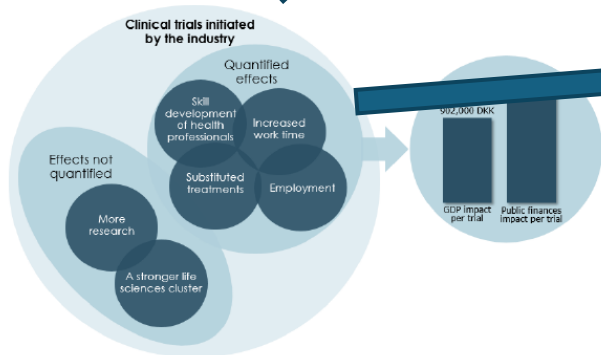
# Global View of the value of Industry Sponsored Clinical Trials

## Quantified Effects

- Skill Development of Health Professionals
- Increased work time
- Employment
- Substituted Treatments

- 902,000 Dkk GDP impact per trial
- 1,169,000 Dkk Public finance impact per trial
- → 175 industry trials in 2015 improved the Danish GDP by 158 million Dkk

Figure 1 The effects of clinical trials initiated by the industry in Denmark



Note: The gains per trial imply that the 175 clinical trials initiated by the industry in 2015 improve Danish GDP by 158 million kroner and public finances by 205 million kroner.

Source: Copenhagen Economics

Ross Kirk

6 July 2017



# Global View of the value of Industry Sponsored Clinical Trials



## MISSION

Trial Nation contributes substantially to Denmark's position as the leading public-private ecosystem for clinical trials in Europe – to the benefit of patients, research and the economy.

- We create the foundation for expansion, and we maintain a position for Denmark among the top three countries in Europe, measured as number of clinical trials per million inhabitants.
- We strengthen frameworks and conditions to attract significantly more clinical trials at the highest international level.
- We lead in state-of-the-art methods and technologies in set-up and execution of clinical trials.

## VISION

**We pave the way to a future where:**

Patients enjoy stronger sustainable health driven by fast access to cutting-edge medicine and medical technology.

Healthcare professionals save more lives and promote stronger health by always having state-of-the-art medical research and the latest discoveries right at their hand.

Clinical research create a better health and wealth for Denmark.

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**LÆGEMIDDELSTYRELSEN**  
DANISH MEDICINES AGENCY

## Denmark must be in the lead in early phase research

We have an eye for the entire pharmaceutical development process, but believe that Denmark has the potential to excel in the development of new trial designs, trials with more complex medicines related to rare diseases or personalised medicines, and early **phase** research, including 'First in Human' (FIH) trials.

This is partly due to Denmark's skilled and specialised researchers and Denmark's many technological opportunities.

Early phase trials give Danish patients access to the latest therapies and builds a crucial knowledge capacity among both authorities and researchers. This is expected to have a knock-on effect in the later phases of pharmaceutical development. We are continuously working on initiatives to support early research. We have strong capabilities to support the transition

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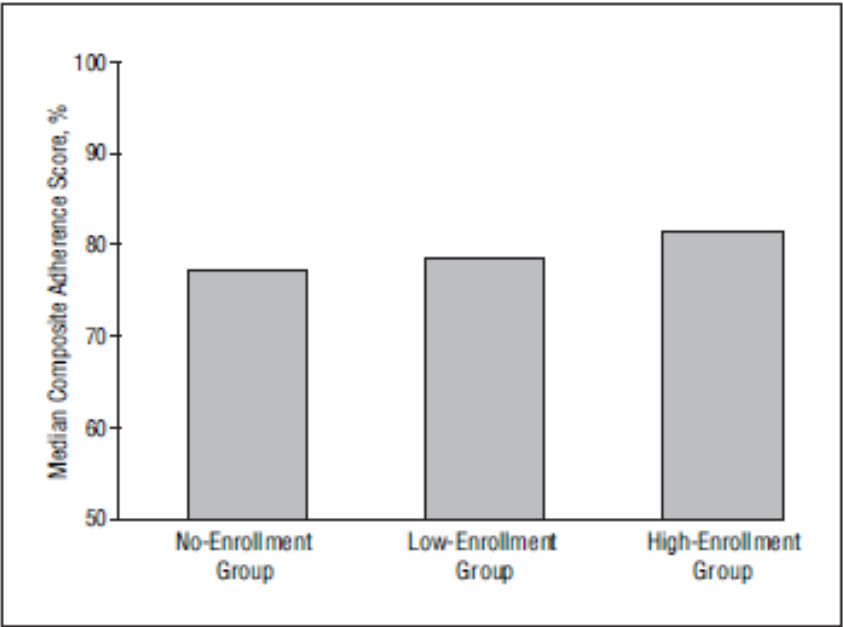
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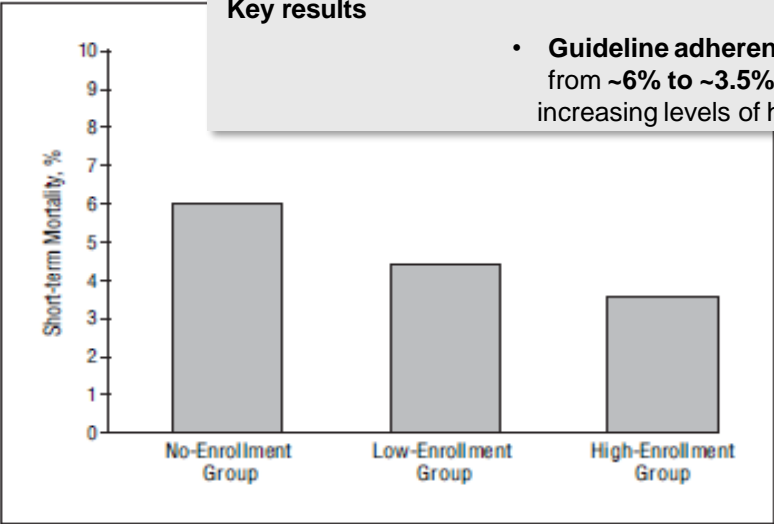
## Better Outcomes for Patients Treated at Hospitals That Participate in Clinical Trials (2008)

Sumit R. Majumdar, MD, MPH; Matthew T. Roe, MD, MHS; Eric D. Peterson, MD, MPH; Anita Y. Chen, MS; W. Brian Gibler, MD; Paul W. Armstrong, MD



**Figure 1.** Adherence to evidence-based guideline recommendations at 494 CRUSADE (Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the American College of Cardiology/American Heart Association Guidelines) hospitals, according to tertiles of hospital-level clinical trial participation. Tertiles of

Hospitals involved in Clinical Trials	
Objective	• Clinical outcomes of patients in hospitals that participated in CTs vs other hospitals (no CTs)
Disease type	• Cardiology (ACS <sup>2</sup> )
Country (Year)	• United States (2008)
Drivers of improved health outcomes	• Opportunities to interact with colleagues and exchange ideas  • CT protocols for standard treatments are highly effective and are integrated into the delivery of usual care after the trial finishes
Key results	• Hospitals that participated in CTs were <b>better in every metric</b> that constituted the treatment adherence guidelines  • <b>Guideline adherence increased by ~5%</b> and <b>mortality rates decreased from ~6% to ~3.5%</b> with increasing levels of hospital trial participation




**Figure 2.** Short-term mortality in 174 062 patients with acute coronary syndrome treated at 494 CRUSADE (Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the American College of Cardiology/American Heart Association Guidelines) hospitals, according to tertiles of hospital-level clinical trial participation. Tertiles of hospital-level trial participation include no participation tertile (0% of patients enrolled in trials) vs low trial participation (1.0% enrolled [interquartile range, 0.5%-1.4%]) vs high trial participation tertile (4.9% enrolled [interquartile range, 3.5%-9.7%]). *P* = .04



# Healthcare Benefits

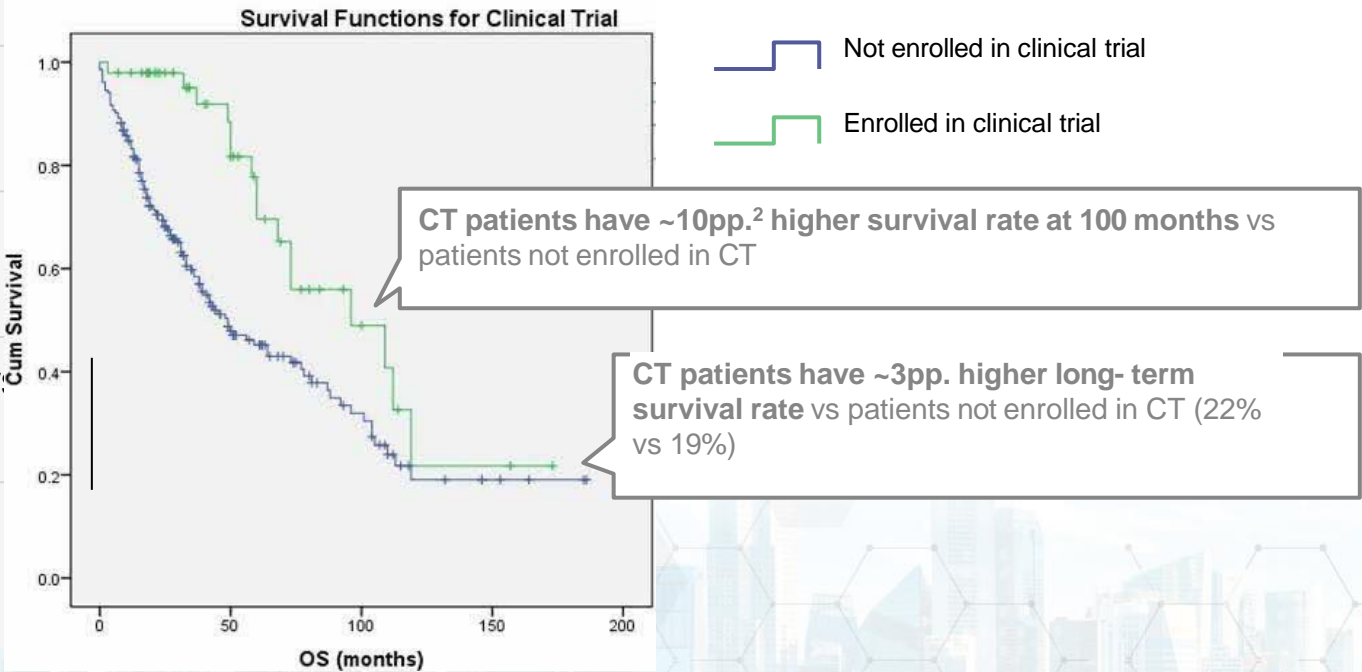
## Cytogenetic Abnormalities and Treatment with New Drugs on Clinical Trials Are Important Prognostic Markers for Myeloma in the Era of ISS and FISH Analysis (2016)

Cinnie Yentia Soekojo, Adeline Lin, Michelle Poon, Liang Piu Koh, Lip Kun Tan, Melissa G. Ooi, Wee Joo Chng, MB ChB, MRCP, PhD

Year	2016
Country of study	Singapore 
Therapeutic area	Oncology (multiple myeloma)
Sample size	213 patients from National University Hospital (NUH)
A Study objective	Impact of participation in CT on multiple myeloma survival rates

1

Overall survival rates for CT patients were **significantly higher than patients not enrolled in CT**



2

CT patients had significantly **better progression-free survival rates** for **both control group and patients exposed to novel treatments**

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# Global View of the value of Industry Sponsored Clinical Trials

## Clinical Trials

- Increases access to novel, potentially transformative medications for patients
- Increases the capabilities, skills and competencies of clinicians and institutions
- Patients on trials fare better, even if they are not on an active treatment

In particular, Industry Sponsored Clinical Trials

- Provide paid medications both investigational and control to patients, defraying costs that otherwise have to be borne by the tax-payers
- Support trial performers directly, coordinators, clinicians, nurses, departments
- Support the biomedical ecosystem at large



# How About Singapore?

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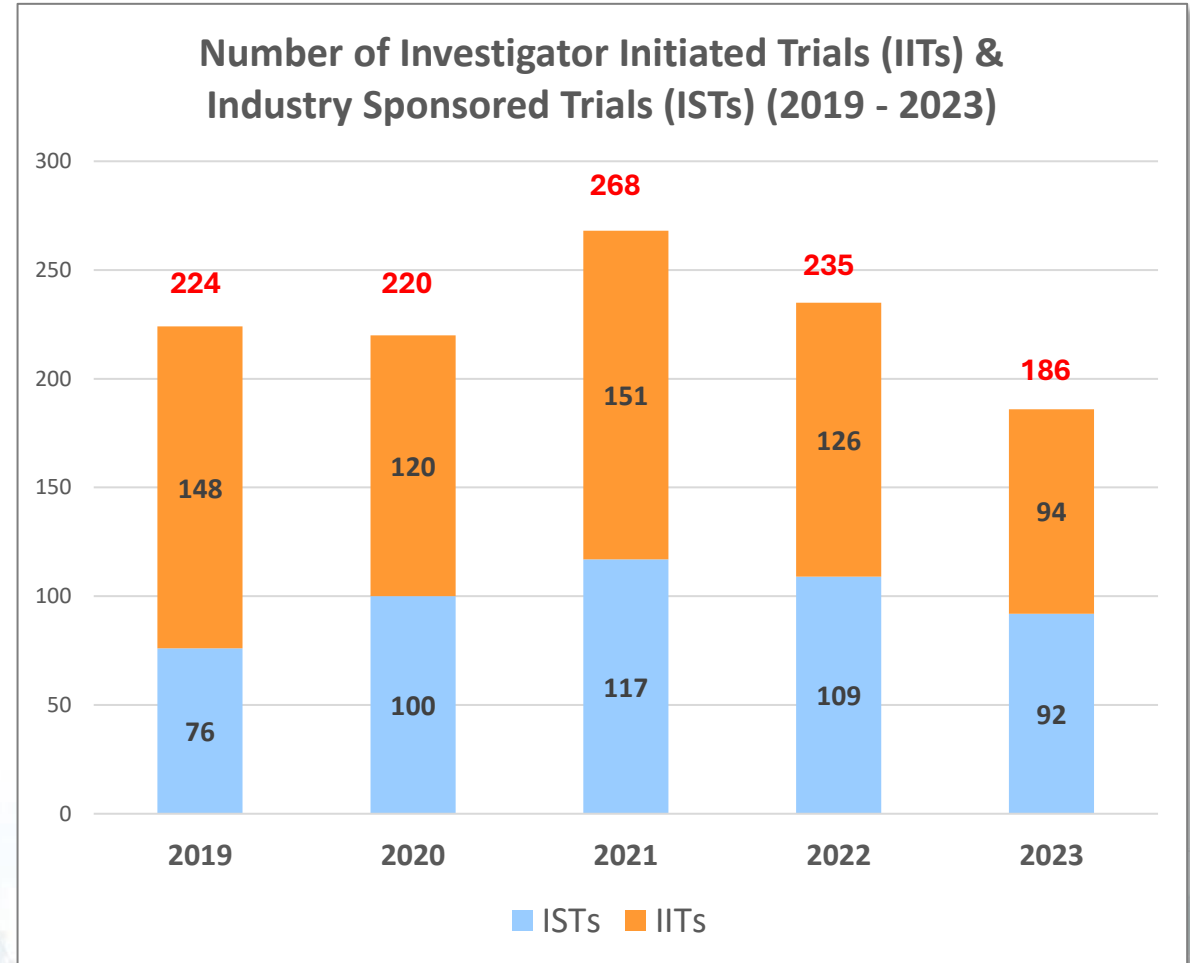
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# Singapore Clinical Trials by the Numbers

- US\$205M direct contribution to the economy/year
- US\$120-180M in cost savings from drugs provided to patients from trials
- 1600 jobs directly supporting clinical trials
- 600 jobs by supporting existing and new biotechs



# What does success look like?

THURSDAY, JULY 25, 2024 | THE STRAITS TIMES |

## SINGAPORE

### Cancer patients may have greater access to latest drugs under trial



Dr Ira Mellman, vice-president of cancer immunology at Genentech, speaking at a panel discussion at SGInnovate on July 24. The Singapore Translational Cancer Consortium is the first South-east Asian member of the immunotherapy Centres Of Research Excellence network, a global alliance of scientific and clinical experts in cancer immunotherapy. ST PHOTO KEVIN LIM

#### Singapore cancer consortium admitted to global network that lets it take part in trials

**Zhaki Abdullah**

A national cancer consortium here has been admitted into an international expert network that will allow it to participate in global cancer trials.

For Singaporeans, it could mean access to new cancer drugs being tested, while the network will gain access to a diverse pool of Asian

patients.

The immunotherapy Centres Of Research Excellence (imCore) network is a global alliance of scientific and clinical experts in cancer immunotherapy, led by Swiss healthcare company Roche and its subsidiary, biotechnology firm Genentech.

On July 24, the Singapore Translational Cancer Consortium (STCC) became its 27th member, joining groups such as Johns Hop-

kins Medicine in the United States, the Asan Medical Centre in South Korea and Germany's University Hospital Essen.

"Singaporean patients will have access to the very latest types of pharmaceuticals that we're developing," said Dr Ira Mellman, vice-president of cancer immunology at Genentech, which is based in the US.

imCore was launched in 2006, with Roche investing more than \$150 million in cancer immunotherapy research at the time.

Among its contributions is helping to fund the development of a pancreatic cancer vaccine candi-

date that is currently in a Phase II trial.

STCC, a programme of the Consortium for Clinical Research and Innovation, Singapore, led a coalition of five public healthcare and research institutions – the National Cancer Centre Singapore, National University Cancer Institute, Singapore, National University Hospital, National University of Singapore (NUS) and Tan Tock Seng Hospital – into the imCore network.

STCC was set up in 2020 to coordinate Singapore's cancer research capabilities at a national level.

It is the first South-east Asian

Chng Wee Joo, and Associate Professor Daniel Tan, head of the division of clinical trials and epidemiological sciences at the National Cancer Centre Singapore.

Immunotherapy is a treatment that harnesses the body's own immune system to fight cancer.

Professor Chng said access to new drugs under clinical trial will allow researchers to better identify new biomarkers, which are a measure of the presence or progress of disease, or the effects of treatment.

In the longer term, this could also lead to a reduction in healthcare treatment costs for patients here, as treatments can be more accurately prescribed for suitable patients, Prof Chng told reporters.

Singapore's membership in the international network will also help raise the country's visibility in the fields of science and medicine, he said, noting that Singapore's ethnic diversity – representing some 80 per cent of Asia's ethnic groups – could also help benefit global cancer research.

"Incorporating these diverse Asian genetic backgrounds into the research ensures that our advancements in healthcare are inclusive and generally globally relevant," he said.

He added that over the next few months, STCC will assess fully the mechanisms of funding available through the partnership.

Prof Chng noted that a number of STCC members had in the past sought unsuccessfully to gain entry into imCore, putting the failure down to the individual institutions being relatively small and limited in their scope.

However, as a consortium, STCC presented a "completely different proposition" to imCore, having greater resources to contribute to the network, he said.

Dr Mellman said that because research on cancer treatments is so new, it feels like "building the plane while we're flying it".

He added that the partnership between imCore and STCC will help advance cancer research here by providing Singapore researchers with access to new drugs – such as those still under clinical trial – that would otherwise be unavailable to them.

"If someone in Singapore has a distinct interest in a particular scientific area that is relevant to any of these drugs, we will make that agent available for study," he said.

The signing event also included a panel discussion on optimising collaborative efforts in cancer research, moderated by Dr Anand Jayasekharan, principal investigator with the Cancer Science Institute of Singapore at NUS.

The discussion involved Dr Mellman, STCC executive director

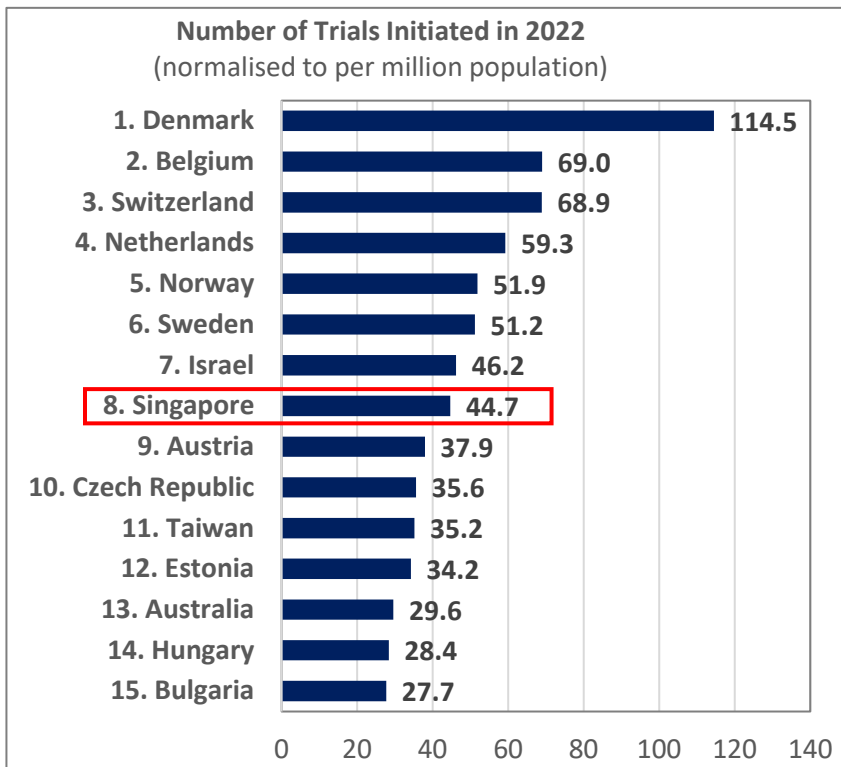


“The immunonotherapy Centres of Research Excellence (imCore) network is a global alliance of scientific and clinical experts in cancer immunotherapy,”

“Singaporean patients will have access to the very latest types of pharmaceuticals that we’re developing.” – *Dr Ira Mellman, VP cancer immunology at Genentech*

“a number of STCC members had in the past sought unsuccessfully to gain entry into imCore.....However as a consortium, STCC presented a completely different proposition....having greater resources to contribute to the network” – *Prof Chng Wee Joo, ED STCC*



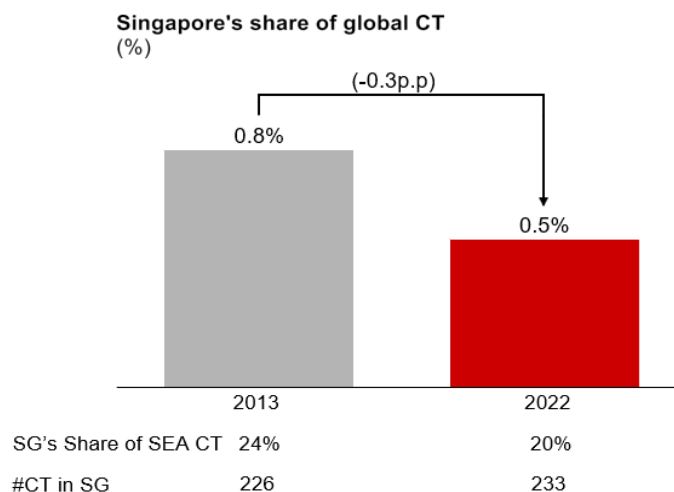


As a benchmark, in 2022, **Denmark initiated 2.5 times** more clinical trials while **Belgium and Switzerland initiated 1.5 times** more clinical trials compared to Singapore.

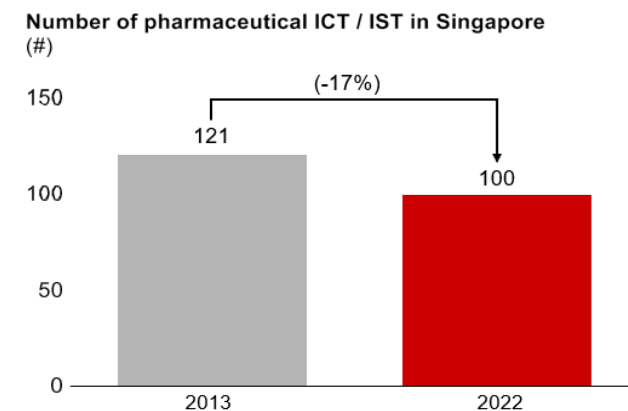
*Data Source –  
Clinicaltrials.gov  
(obtained in July 2024)*

## Falling share of Clinical Trials

Singapore share of CT declined by nearly half over the past 10 years...



... driven by a sharp drop in industry led trials (ICT/IST)



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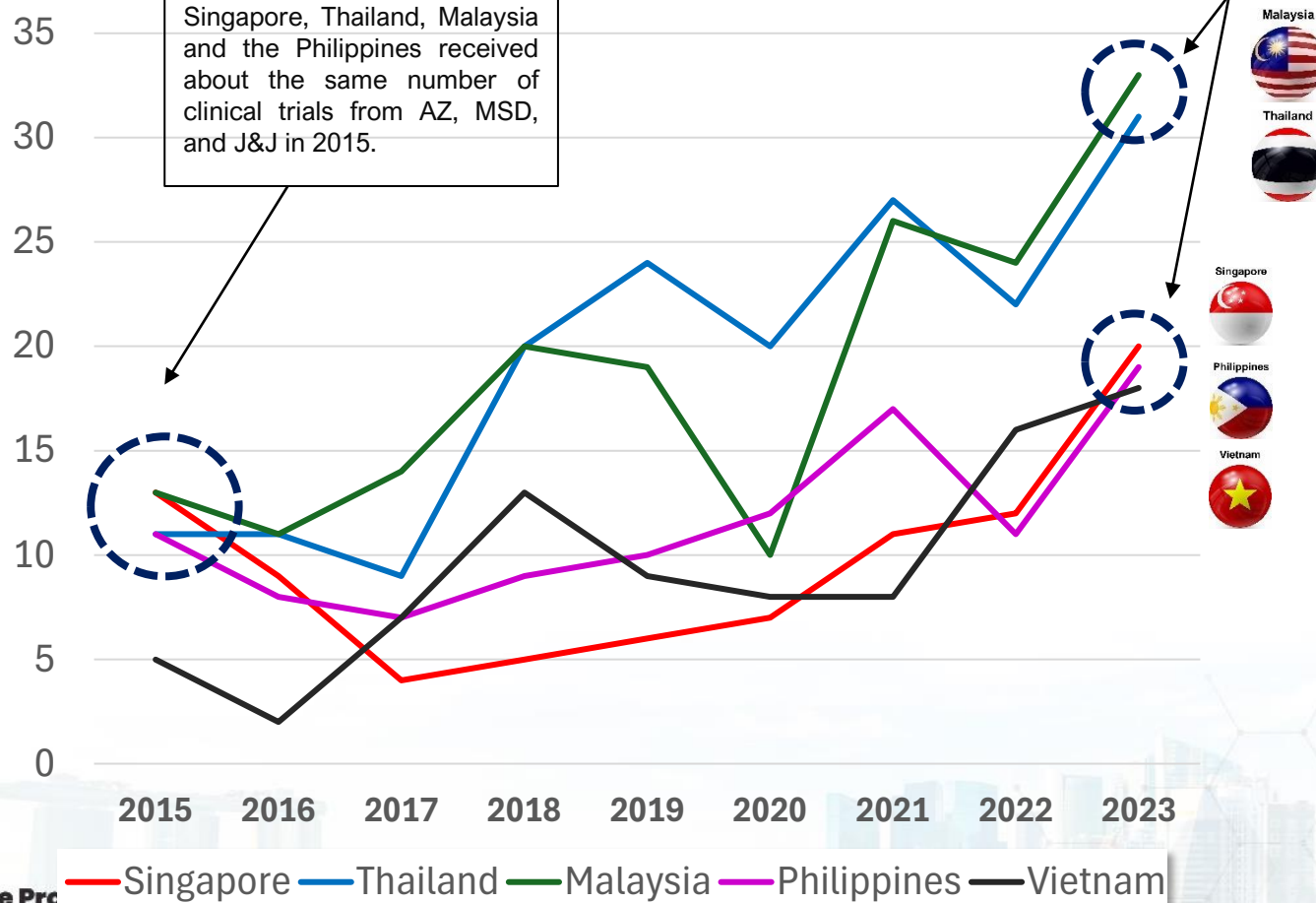
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# Drug Trials by selected Pharma Companies in ASEAN

AZ, MSD and J&J

Number of Clinical Trials Initiated in Selected ASEAN Countries since 2015 (AZ, MSD, J&J)



The Pharma  
Transforming Tomorrow's Health

Note: AZ – AstraZeneca, MSD – Merck Sharp & Dohme, J&J – Johnson & Johnson

Data Source - Globaldata  
(obtained in July 2024)

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## Truqab (Capivasertib) (AZ)

Capivasertib was approved by the US FDA in November 2023 for hormone receptor-positive, HER2-negative breast cancer in combination with Fulvestrant. The oral medication is considered as a **first-in-class** medication.

Phase III clinical trials were conducted in 2021 in many APAC countries including **Thailand, Malaysia and Vietnam**, but **NOT** Singapore.



## Winrevair (Sotatercept) (MSD)

Sotatercept was approved by the US FDA and EMA in March 2024 and June 2024 respectively for the treatment of pulmonary arterial hypertension (PAH).

Phase III clinical trials were conducted in 2022 in APAC countries like **Australia, South Korea and Taiwan**. However, the cardiovascular drug was **never tested** in Singapore.

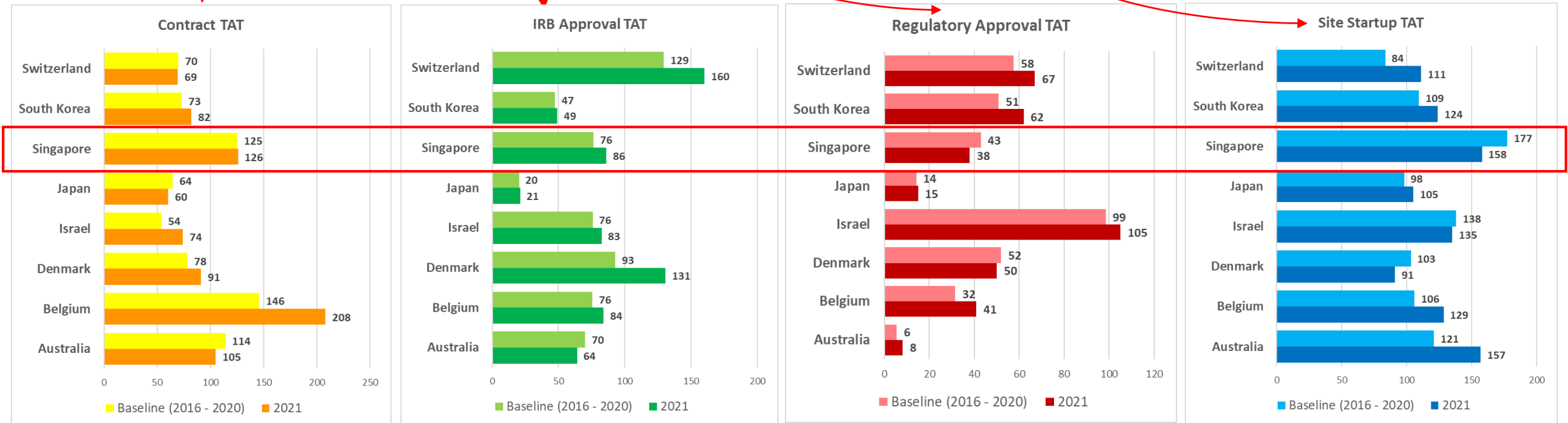


# Benchmarking Singapore Against Competitor Countries in startup processes

Industry Feedback was substantiated by Procured Data from an unbiased survey conducted by data consultants, Clarivate



Comparison of Median Turnaround Time (TAT) for Clinical Trial Startup Processes (Baseline vs 2021)



Calendar Days

Data Source – Clarivate (2023)

# What ails us?

## SCRI Engagement with trial performers and industry partners

- Slow and fragmented contracting and budget negotiations
- Slow feasibility assessments
- Lack of dedicated resources for trial start up and operations

## What are other countries doing?

### TRIAL NATION

TRIAL NATION OFFERS A SINGLE NATIONAL ENTRY POINT FOR LIFE SCIENCE COMPANIES, PATIENT ORGANISATIONS AND CLINICAL RESEARCHERS WISHING TO SPONSOR, PARTICIPATE IN AND CONDUCT CLINICAL TRIALS IN DENMARK.

#### At Trial Nation we offer:

- Identification of relevant specialists and clinical researchers.
- An expedited feasibility process with a collated national response from hospital sites within five days.
- Access to our legal network, offering national contract templates.
- Access to established clinical specialty centres and national networks in dermatology, haematology, infectious diseases, oncology, and respiratory diseases.
- Access a national structure covering clinical trials in medicine.
- A national approach to increasing performance in clinical trials.
- Access to established partnerships with hospitals, scientists and clinicians.

**Trial Nation**  
Clinical Trials Denmark

#### READY TO USE TEMPLATES

The healthcare regions in Denmark have formed a legal network within Trial Nation to ensure that the regions act as a united negotiation party for contract templates in relation to the industry.

The network provides efficient negotiation of contract templates (for CDAs, CTAs and Clinical Investigations) relating to clinical trials and investigations in Denmark. Contract templates can be used as they are or be tailored to your company. Consider using the standard templates below for the fastest possible processing time as they are pre-approved in all regions and no negotiation time is needed. Please note that the Trial Nation network only negotiates contract templates, individual contracts are handled in each region. Please also note that the Trial Nation network does not provide general legal advice.

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# What are other countries doing?



## Clinical Trial Research Agreements

- Clinical Trial Research Agreement – Medicines Australia Standard Form
- Clinical Trial Research Agreement – CTRA: Contract Research Organisation acting as the Local Sponsor
- Clinical Trial Research Agreement – Collaborative or Cooperative Research Group (CRG) Studies
- Clinical Trial Research Agreement – Phase 4 Clinical Trial (Medicines)
- Clinical Trial Research Agreement – Phase 4 Clinical Trial (Medicines) Contract Research Organisation acting as the Local Sponsor

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## Medicines Australia welcomes funding for clinical trials and One Stop Shop

**2 May 2024:** The announcement by the Albanese Government of \$80.8 million in funding for clinical trials and a centralised approach to clinical trials known as One Stop Shop is a significant step towards improving access to medicines for all Australians.

“Australia is recognised globally as a preferred location for companies to conduct clinical trials thanks to our excellent healthcare facilities, researchers, a diverse population, and strong legal frameworks with robust IP protections,” Ms de Somer said.

“Currently there are different processes and systems for clinical trials in each state and territory and within area health services. This creates



# What are other countries doing?



## Complimentary feasibility studies & investigator matching

- ✓ CRM evaluates feasibility studies/request that are forwarded by sponsors/CROs and disseminates them to a large pool of potential investigators.
- ✓ CRM assists investigators who are interested to take-on the trial to complete and submit the feasibility study/request to the sponsor



## Consultation and management of clinical trial budget

- ✓ CRM advises investigators and sponsors/CROs on the clinical trial budget. This service ensures that resources are sufficient in order to complete all obligations of the clinical trial.
- ✓ CRM manages the trial budget with full transparency and schedule reports to



## Review of Clinical Trial Agreement (CTA) & Non-Disclosure Agreement (NDA)

- ✓ CRM assists investigators & sponsors/CROs by reviewing and advising on Clinical Trial Agreements (CTAs) & Non-Disclosure Agreements (NDAs).
- ✓ CRM's experienced team provides assistance to review the CTA/NDA.

**FIND A CLINICAL TRIAL!**



## Development & placement of study coordinators

- ✓ CRM recruits suitably qualified candidates and trains them to become capable Study Coordinators (SCs) who will then be placed at trial sites in order to assist investigators.
- ✓ CRM currently has a pool of close to 130 trained SCs based in major clinical research centres nationwide.

## One-stop centre for the industry

- ✓ CRM assists industry players in resolving issues or delays faced with government agencies and regulators (eg. MREC, MDA, NPRA, IRBs) that may delay the approval or initiation of trials.
- ✓ Access relevant guidelines and resources here

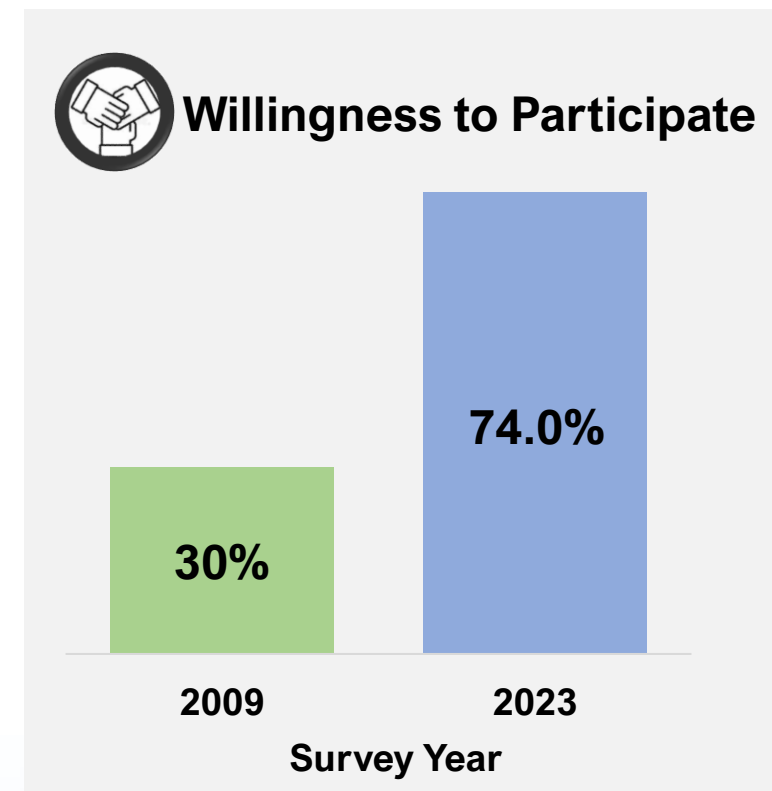
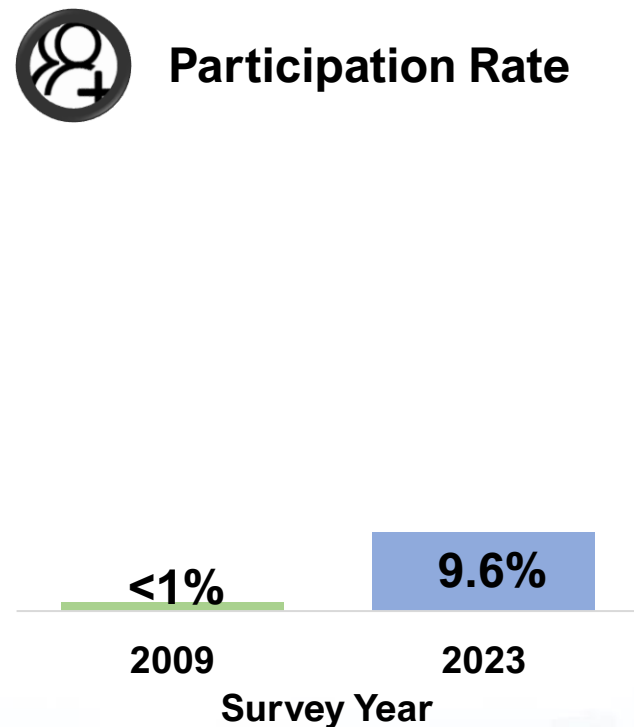
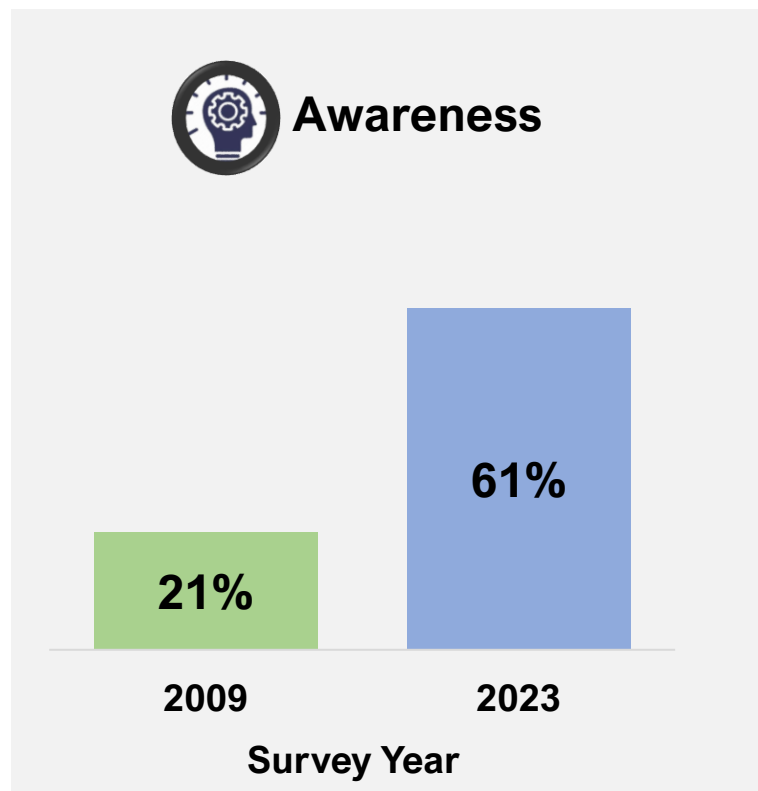
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# Singaporean's Awareness and Perceptions of Clinical Trials



Since 2009, there has been a significant increase in Singapore residents' awareness of clinical trials and willingness to participate in trials.

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**Note:**


- 2009 – Survey by MOH / NMRC (n = 2000 healthy public; telephone interview)
- 2023 – Survey by SCRI (n = 1000 general public; online & street survey)

Both surveys were commissioned to Frost & Sullivan.




Our Public  
may be more  
receptive to  
clinical trials  
than we think

< SINGAPORE ×



Health Check Podcast: All you need to know about Covid-19 clinical trials

 **Joyce Teo**  
Senior Health Correspondent  
The Straits Times


PUBLISHED: Apr 07, 2021, 06:00pm

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Science Talk

*Fast and Furious. Can we trust the speedy development of Covid-19 vaccines?*

**Danny Soon**



PUBLISHED: Dec 28, 2020, 05:00am

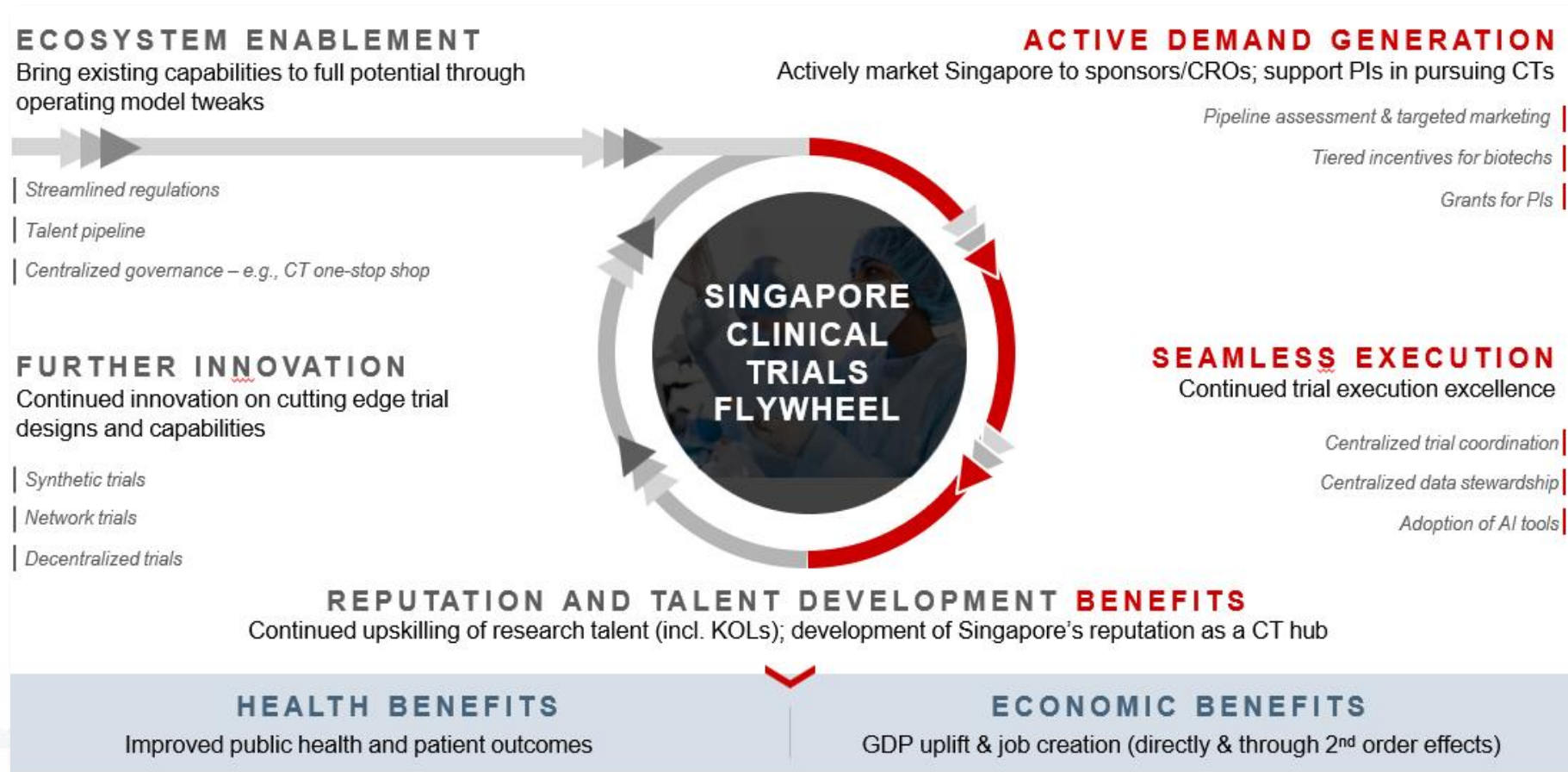
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# Clinical Trials Flywheel, Coupling ISTs and IITs



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## What could the solutions be?

- Centralised and dedicated resources for contracting and budget negotiations
- Better harmonised data platforms and single point of contact for feasibility assessments
- Dedicated talent and resources for trial operations
- “One-Stop Shop”

To be further elaborated in our *Value Proposition of Clinical Trials Report*

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CTSG - Your centralised hub for clinical trial information and resources in Singapore. ([clinicaltrials.sg](https://clinicaltrials.sg))



### Participating in Clinical Trials

Help to shape the future of medical care as a patient, caregiver or a member of the general public through clinical trials

[I Am a Patient or Caregiver ↗](#)



### Sponsoring Clinical Trials

Partner with us as a clinical trial sponsor to pioneer groundbreaking medical advancements together

[I Am a Trial Sponsor ↗](#)



### Conducting Clinical Trials

Step forward as a clinical investigator to redefine the future of medical research

[I Am a Clinical Investigator ↗](#)

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# Ultimately....

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# Clinical Trials offer new hope to Patients



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- Emily Whitehead, diagnosed with blood cancer in 2010, aged 5
- Received experimental CAR-T in 2012, at Penn State University Hershey Children's Hospital
- Enrolled in Penn State University in 2023
- Kymriah™ was approved 2017

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## 'Breakthrough' therapy for the most common type of leukaemia among children approved in Singapore



White blood cells are removed, genetically modified to attack cancer cells and put back into patients, in a treatment that was recently approved in Singapore. (Photo: Novartis)

 **Jalelah Abu Baker**

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SINGAPORE CLINICAL RESEARCH INSTITUTE



# Clinical Trials offer new hope to Patients

- **May 2021**, Mdm Fung was diagnosed with large diffuse B-cell lymphoma.
- She went through a series of conventional treatments that were unsuccessful.
- Not suitable for a stem cell transplant.
- **Jul 2022**, received her first infusion via experimental CAR T-cell therapy.
- **Jul 2024**, Mdm Fung remains in remission from lymphoma

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## Use of living cells to treat cancer offers new hope

### THE STRAITS TIMES

#### Cell therapy: Using living cells to cure disease



Madam Fung Mei Fong is now in remission after receiving experimental chimeric antigen receptor T-cell therapy. ST PHOTO: BRIAN TEO

It was that Madam Fung was diagnosed by her doctors to have large diffuse B-cell lymphoma (CLL), a type of cancer that affects the body's lymphatic system, is less than one year if left untreated.

#### WHAT IS CELL THERAPY?

Cell therapy refers to the harnessing of living cells to treat diseases such as cancer and autoimmune disorders, said Associate Professor Danny Soon, interim executive director of the Advanced Cell Therapy and Research Institute, Singapore (ACTRI).

ACTRI is a programme under the Consortium for Clinical Research and Innovation, Singapore (CRIS), which brings together several research programmes of the Ministry of Health.

For Madam Fung, being in the clinical trial not only meant that she was given a chance to beat her cancer, but also allowed her to contribute to medical research, so that others may benefit some day from cell therapy.

"With today's advanced medical science, we do have hope, provided we don't give up," she said.

As with all medical treatments, there are potential side effects, though these can be managed, said Dr Lim.

They include severe responses such as cytokine release syndromes, where the immune system produces an overly aggressive response to immunotherapy drugs.

#### POTENTIAL LIFELINE

This can be a lifeline to patients who have failed conventional treatments for aggressive leukaemia and lymphoma.

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ASSOCIATE PROFESSOR DANNY SOON, interim executive director for the Advanced Cell Therapy and Research Institute, Singapore.

#### SOMETHING TO BELIEVE IN

With today's advanced medical science, we do have hope, provided we don't give up.

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MADAM FUNG MEI FONG

Cell therapies, Associate Professor Jeremy Lim, who is from the National University of Singapore's Saw Swee Hock School of Public Health, said ensuring the bioscience sector is expensive and fraught with risk.

#### MAKING TREATMENTS MORE AFFORDABLE

As many cell and gene therapies are still experimental in nature, they tend to be very costly, said Associate Professor Dr Lim, pointing to the specialised infrastructure and advanced equipment required.

Kymriah CAR T-cell therapy, which is approved here for the treatment of B-cell acute lymphoblastic leukaemia and diffuse large B-cell lymphoma under specific circumstances, is reported to cost some US\$475,000.

The treatment is not on the Health Ministry's approved Cancer Drug List.

Many here receiving CAR T-cell therapy are part of clinical trials, where the cost of treatment is paid for.

They include Madam Fung, whose treatment was manufactured at a Health Sciences Authority facility.

Health Minister Ong Ye Kung has said that an appropriate financing framework is needed to prevent a rift between those who can afford such treatments and those who cannot.

As cell and gene therapies are relatively infrequent in deployment and costly, the solution is likely to lie in strengthening national healthcare insurance, he said.

NUS' Prof Lim said that while insurance can be expanded to cover such costs in the short term, in the longer term, other financing models will need to be considered as the use of cell and gene therapies becomes more widespread, it is likely to become more affordable.

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# Thank You!

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