

Mindset, Metrics and Manpower: A Leadership View on AI & Automation in Allied Health

Adj. A/Prof Michael Ong

Chief, Allied Health & Pharmacy, NUH
Asst Group Chief, Allied Health, NUHS
Adjunct Faculty, HSS Cluster, SIT



National University
Hospital

Introduction to NUH

ACADEMIC HEALTH SYSTEM

4

ACUTE HOSPITALS

➤ National University Hospital (flagship hospital of NUHS)

Redevelopment to be completed in phases from 2033

➤ Alexandra Hospital

Redevelopment to be completed in 2029

➤ Ng Teng Fong General Hospital

➤ Tengah General and Community Hospital *Upcoming in 2031*



2

COMMUNITY HOSPITALS

- Jurong Community Hospital
- St Luke's Hospital

3

NATIONAL CENTRES

- National University Cancer Institute, Singapore (NCIS)
- National University Centre for Oral Health, Singapore (NUCOHS)
- National University Heart Centre, Singapore (NUHCS)

3

FAMILY MEDICINE CLINICS

- Frontier Family Medicine Clinic
- Keat Hong Family Medicine Clinic
- Lakeside Family Medicine Clinic

3

PRIMARY CARE NETWORKS (PCN)

- PCN@Bukit Panjang & Choa Chu Kang
- PCN@Jurong & Bukit Batok
- PCN@Queenstown, Clementi & Bukit Timah

3

MEDICAL SCHOOLS

- NUS Yong Loo Lin School of Medicine (including Alice Lee Centre for Nursing Studies)*
- NUS Faculty of Dentistry
- NUS Saw Swee Hock School of Public Health

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POLYCLINICS

- Bukit Batok Polyclinic
- Bukit Panjang Polyclinic
- Choa Chu Kang Polyclinic
- Clementi Polyclinic (*Redevelopment to be completed by 2027*)
- Jurong Polyclinic (*Redevelopment to be completed by 2027*)
- Pioneer Polyclinic
- Queenstown Polyclinic (*Redevelopment to be completed by 2029*)
- Taman Jurong Polyclinic (*Upcoming in 2027*)
- Tengah Polyclinic (*Upcoming in 2026*)
- Yew Tee Polyclinic (*Upcoming in 2027*)

* NUS Yong Loo Lin School of Medicine

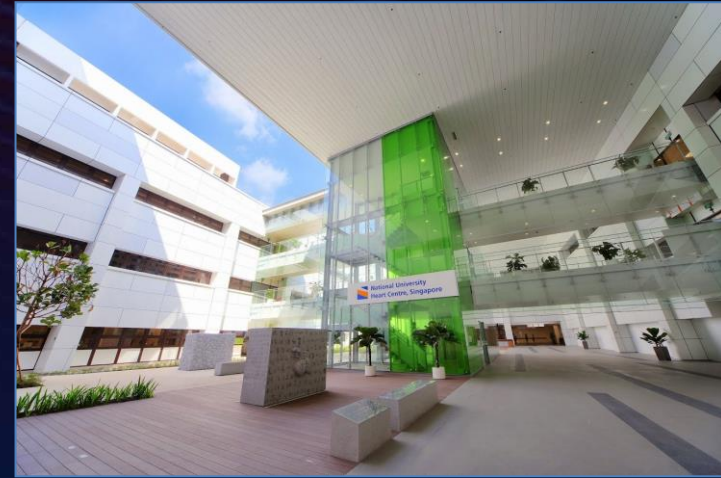
- Ranks 13th in the Times Higher Education (THE) World University Rankings (Medical and Health) 2026 and 1st in Asia
- Ranks 18th in the QS World University Rankings by Subject 2025 and 1st in Asia

* Alice Lee Centre for Nursing Studies

- Ranks 8th in the QS World University Rankings by Subject 2025 and 2nd in Asia

NATIONAL CENTRES

1. National University Heart Centre,
Singapore (NUHCS)
2. National University Cancer Institute,
Singapore (NCIS)
3. National University Centre for Oral Health,
Singapore (NUCOHS)



NATIONAL UNIVERSITY CENTRES

1. National University Centre for Organ Transplantation (NUCOT)
2. National University Centre for Digestive Health (NUCD)
3. National University Centre for Trauma (NUCeT)
4. National University Centre for Women and Children (NUWoC)
5. National University Spine Institute (NUSI)
6. National University Centre for Genomic Medicine (NUGEM)



SINGAPORE'S LEADING UNIVERSITY HOSPITAL



Thrombolysis
Door-to-Needle Time
(2014 - 2023)

CLINICAL EXCELLENCE

All specialists under one roof · 26 departments

World-leading outcomes: Trauma · Stroke · Neonatology, Transplant

Zero mortality in babies born at 24–26 weeks (2024)

5-year ALL survival rate among highest in world

EDUCATION MISSION

Principal teaching Hospital of National University Singapore

Trains majority of Singapore's doctors, nurses, dentists

NUS Yong Loo Lin School of Medicine: Top 13 globally · #1 in Asia (THE 2026)

Alice Lee Centre for Nursing Studies : Top 8 globally · #2 in Asia (QS 2025)

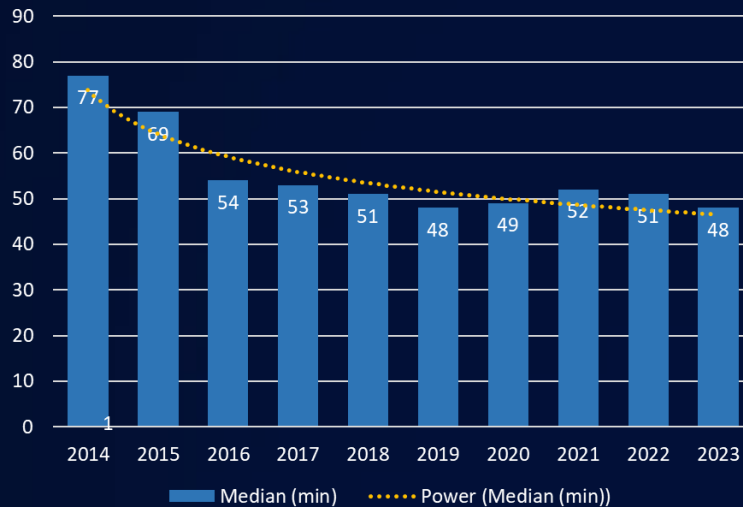
RESEARCH & INNOVATION

Published more than 500 papers in 2024, more than 300 clinical trials

Field-Weighted Citation Impact 2.59

Prescience supercomputer · Endeavour AI and Discovery AI production platform

Median in Min & % < 60 min





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Impetus for Change

SINGAPORE'S PERFECT STORM

1 in 4

citizens 65+ by 2030

20.7% today → 23.9% by 2030
(NPTD Population in Brief 2025)

S\$30B+

healthcare spend by 2030

S\$9b (2015) → S\$21b (2025)
→ S\$30b+ (2030)

6,000

new hires needed annually

82,000 total healthcare workers
required by 2030 (MOH)

Current model cannot scale

"Our workforce itself must **transform**, not just expand." — Minister Ong Ye Kung, Parliament, March 2025

ERA OF DISRUPTION

Workforce and Demand Gap

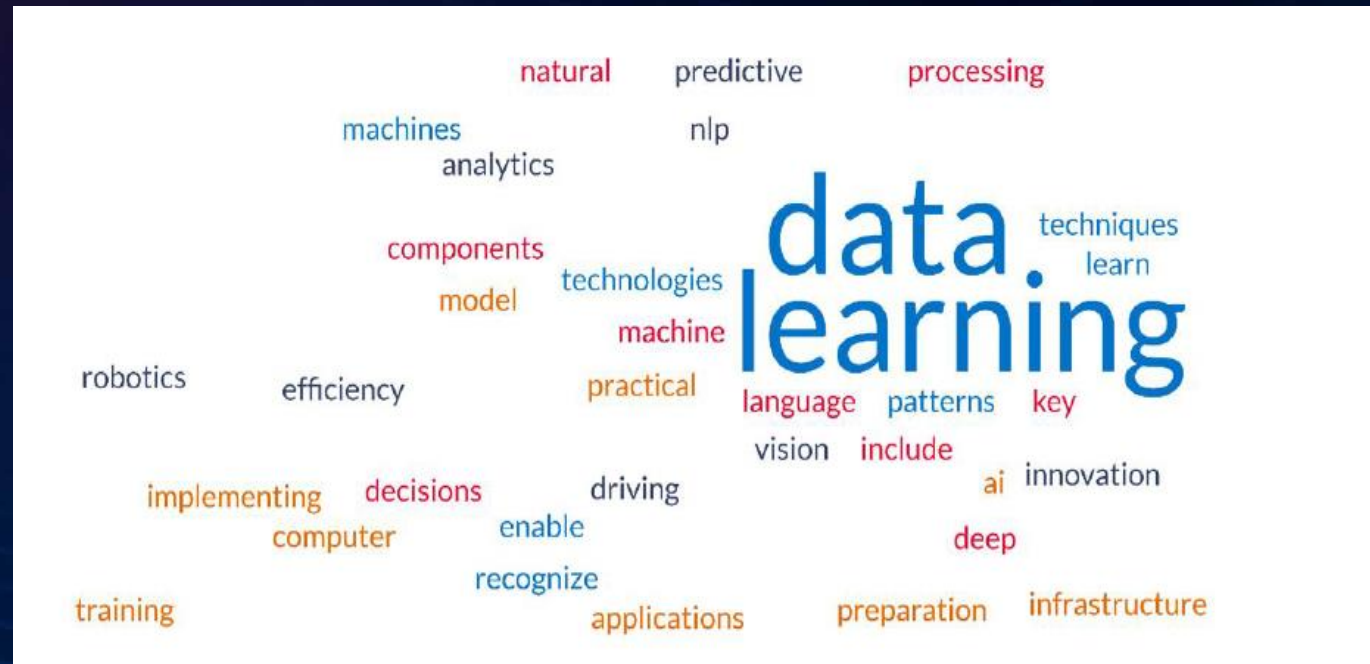
Rising demand while workforce constrained

Rethinking AI and Automation

Redesign work to improve efficiency with augmentation by AI & technology

Strategic Leadership Imperative

Leaders must act deliberately to redesign work, align investments and scale strategies for sustainable productivity



AI TRANSFORMED OTHER INDUSTRIES



FINANCE

- Algorithmic trading - microsecond speed
- Real-time fraud detection
- Instant credit decisioning

RETAIL

- Amazon recommendation engine
- Cashier-free stores
- Dynamic inventory & pricing

TRANSPORT

- AI dispatch & surge pricing (Uber)
- GPS route optimisation at scale
- Autonomous vehicle systems

MANUFACTURING

- Predictive maintenance - zero downtime
- Robotic assembly & QA
- AI-driven supply chains

THE NUH APPROACH: FIVE YEARS OF PREPARATION

NUH did not wait for AI

- We built the conditions for it to work.
- Technology is only as good as the team that uses it.
- We prepare the workforce first.
- We redesigned roles.
- We built cross-functional teams.

MISSION COMANND

Clear intent set at the top. Empowered teams act with autonomy. No micromanagement.
This drives NUH's transformation approach.

THE TRIAD MODEL

Nursing · Allied Health · Clinical Leadership working as unified teams, not silos.
Role redesign built on capability, not tradition. Each profession practising at the top of its licence.

41% STAFF COMPLETED INNOVATION TRAINING

Over 18 months. 9,000 staff. From awareness to capability.
Kent Ridge Office of Innovation (KROI) Programme — Simplify → Automate → Empower. Not a course.
A culture of persistent, daily improvement.

STRATO TRANSFORMATION HUB

Lighthouse: future care model think tank. Greenhouse: real-world testing in actual wards and clinics.
Build → Measure → Learn → Scale. No theory without testing.

Allied Health



Mindset



AH&P 2030

Augmented Service Provision

Digital Native



Practise at top of scope

Sustainable & Engaged

AH&P 2030 5 Key Thrusts



Harness AI & Technology



Streamline Processes



Sustainable Workforce



Reimagine Care



AH&P-Led Services

2025 Initiatives

Completed/ - 88%
In Progress

Not Started - 12%

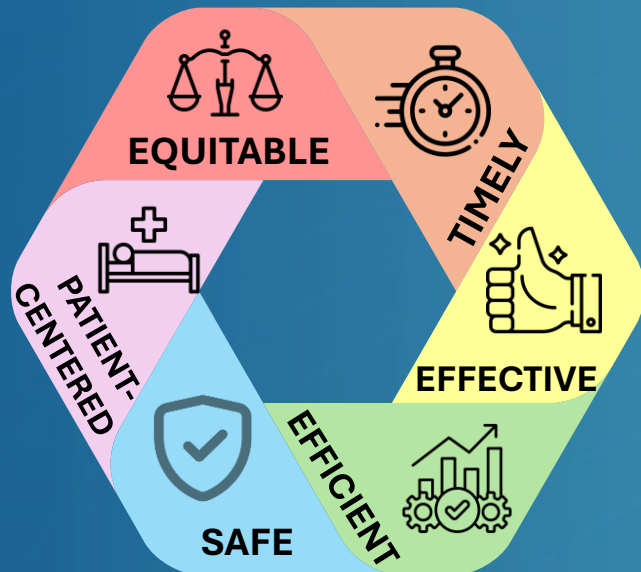


Measurements of Success



Metrics

6 Domains of Healthcare Quality



Operational Efficiency



Manpower Optimization



Cost Savings / Avoidance



Time Savings



Environmental

E-Consent on Care360

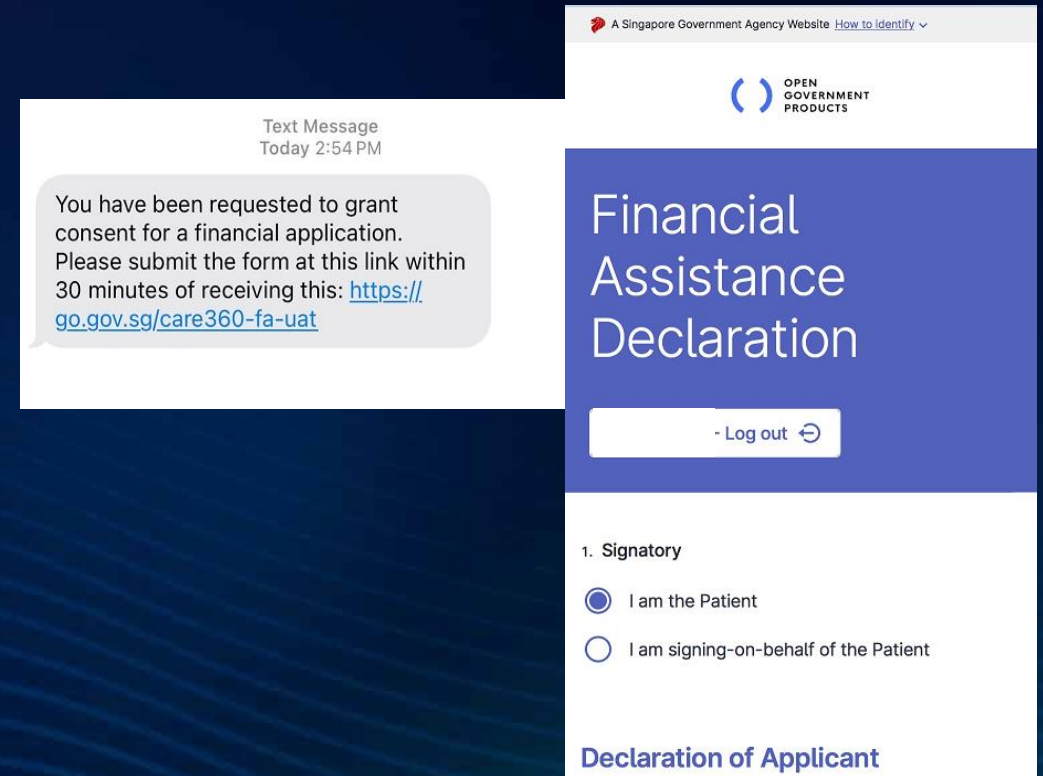


Considerations:

- Patient's consent for submission of financial assistance-system built in regulatory function
- MSWs call to remind patients to sign hardcopy consent at MSW or soft-copy via email
- Today, e-consent is default

Benefits:

- 50 man-hours/week saved (~ 1.1 FTE)
(10min savings/case x 300 financial cases/week)
- Faster turnaround time for patients to receive financial assistance



Replacement of CT Scanner



Considerations:

- 'Workhorse' Scanner @ MB
- Phased payment model over 5 years
- No / Min. site-prep
- Machine downtime from 2 months → 2 weeks
- Aligned with redevelopment timeline

Benefits:

- Cost avoidance of \$1.5M
- 46 days reduction in downtime & service disruption
- Reduced training time due to same scanner platform



Manpower Productivity

Definitions

Productivity = Workload / FTE

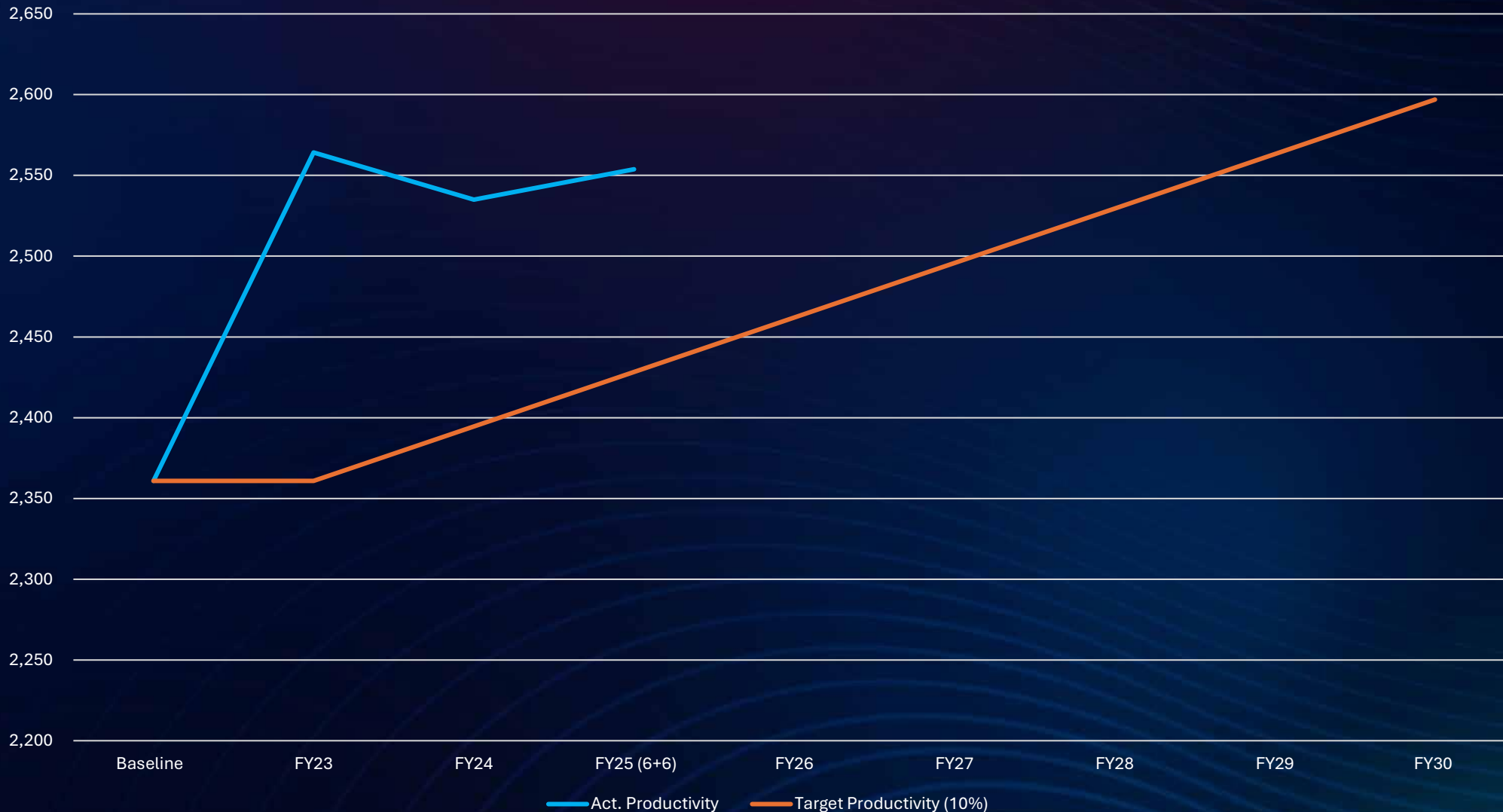
Baseline = FY23 Workload / Approved FTE

Trend = FY Workload / Actual FTE

Comparisons = vs FY23 Baseline

FY30 Target = +10% Efficiency

Diagnostic Radiographers



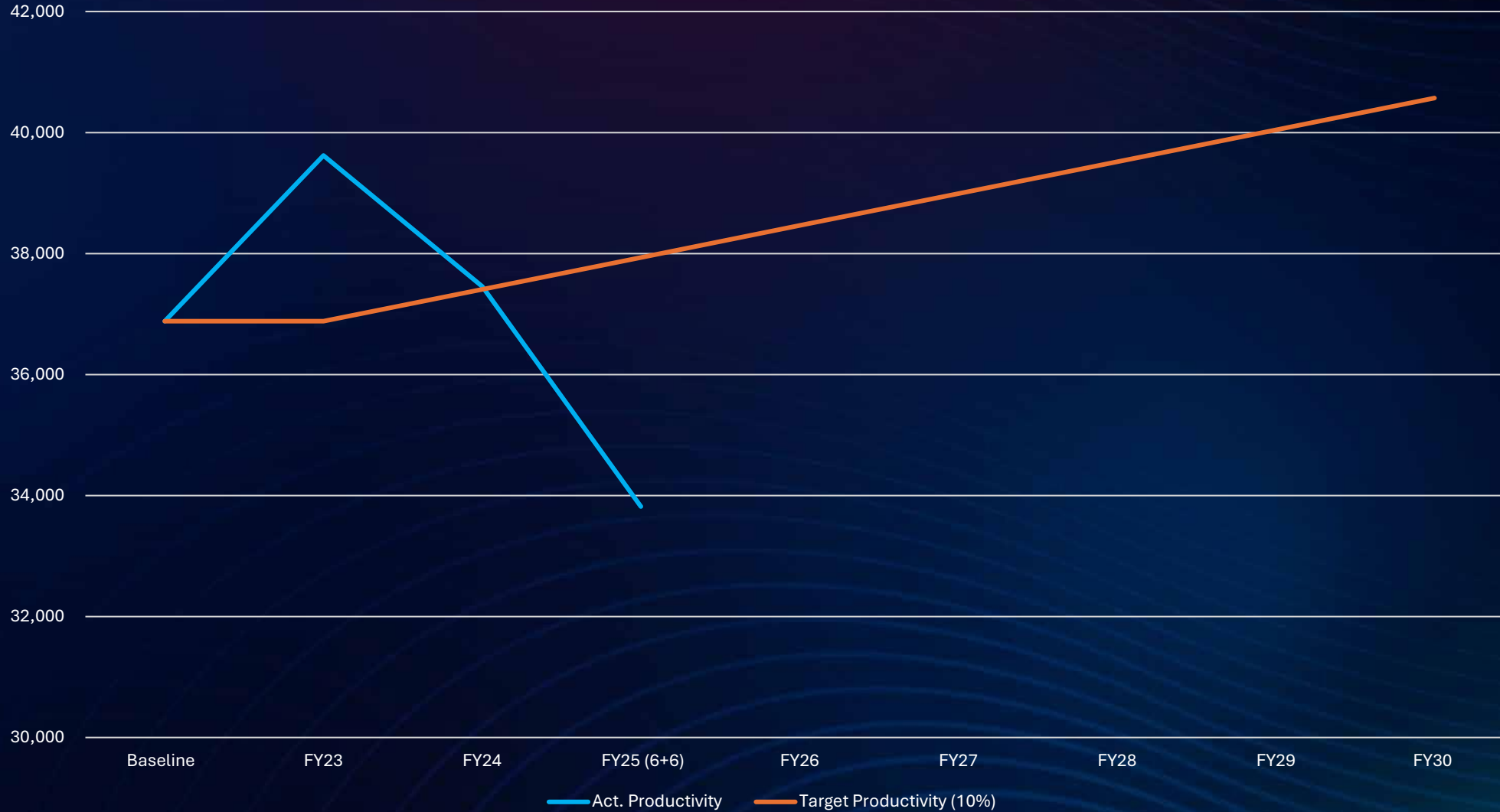
Compared to FY23 Baseline

- Manpower increase [*Variance: -0.7%*]
- Productivity: +6%
- Workload: + 6%

Notes:

- Change in modality mix
 - *Specials (53%)*
 - *General (47%)*

Medical Laboratory Scientists



Compared to FY23 Baseline

- Manpower increase [Variance: -1.4%]
- Productivity: -8%
- Workload: -10%

Notes:

- Workload impact of Appropriate Care initiatives
- Increased lab automation

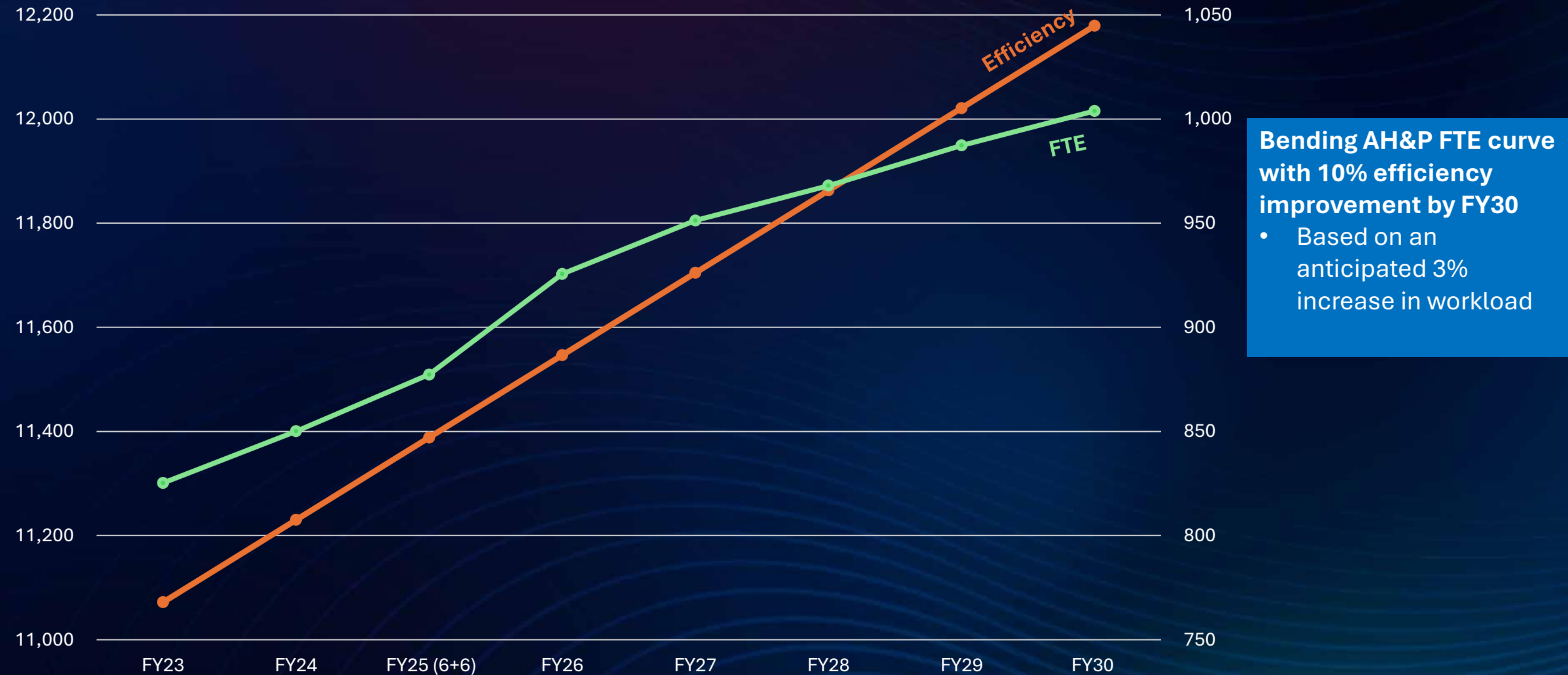


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AH&P Manpower Optimization

Bending the AH&P FTE Curve

Impact of 10% Efficiency on Projected FTE Figures



Projected Incremental FTE



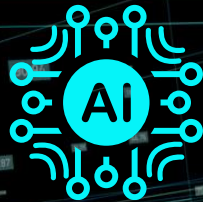
Y-O-Y Incremental FTEs

NUH AS A STRATEGIC PARTNER



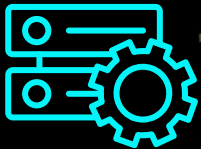
Policy Makers

NUH demonstrates at national scale how AI and workforce redesign can bend the healthcare cost curve — without compromising quality. Our operating models are ready to inform policy on AI governance, shared care pathways, and the future of academic health systems.



Healthcare Leaders

NUH's A.C.E. roadmap offers a peer-tested blueprint: Mission Command leadership, the Triad model, and the StraTO innovation engine. We have done the hard organisational work. Learn from our journey — and compress your own transformation curve.



Innovation

NUH is a living clinical testbed — with the KROI programme, StraTO Greenhouse, and direct pathway to 150+ deployed tools. If your solution has merit, we have the infrastructure, the patient volumes, and the clinical leadership to validate and scale it.



Investment

NUH offers the operational track record and de-risked innovation infrastructure to anchor healthcare investment in Southeast Asia. Our AI platforms, 150+ deployed tools, and clear FY30 targets translate directly into measurable, scalable returns.



Medtech

Our Endeavour AI production platform and Prescience supercomputer are purpose-built for deep technology integration. NUH is Singapore's first real-time AI streaming healthcare cluster — providing vendors a proven, high-throughput environment to deploy, iterate and expand regionally.

2030
is
NOW

Technology alone will not save us
People must be prepared
Leadership must act early
It is a discipline, not a project



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Thank you

Acknowledgments:

Prof Aymeric Lim, CEO, NUH