Gardens by the Bay & Marina Bay Sands, Singapore

Singapore snapshot

Total land area ~730 km²
(~half the size of London)
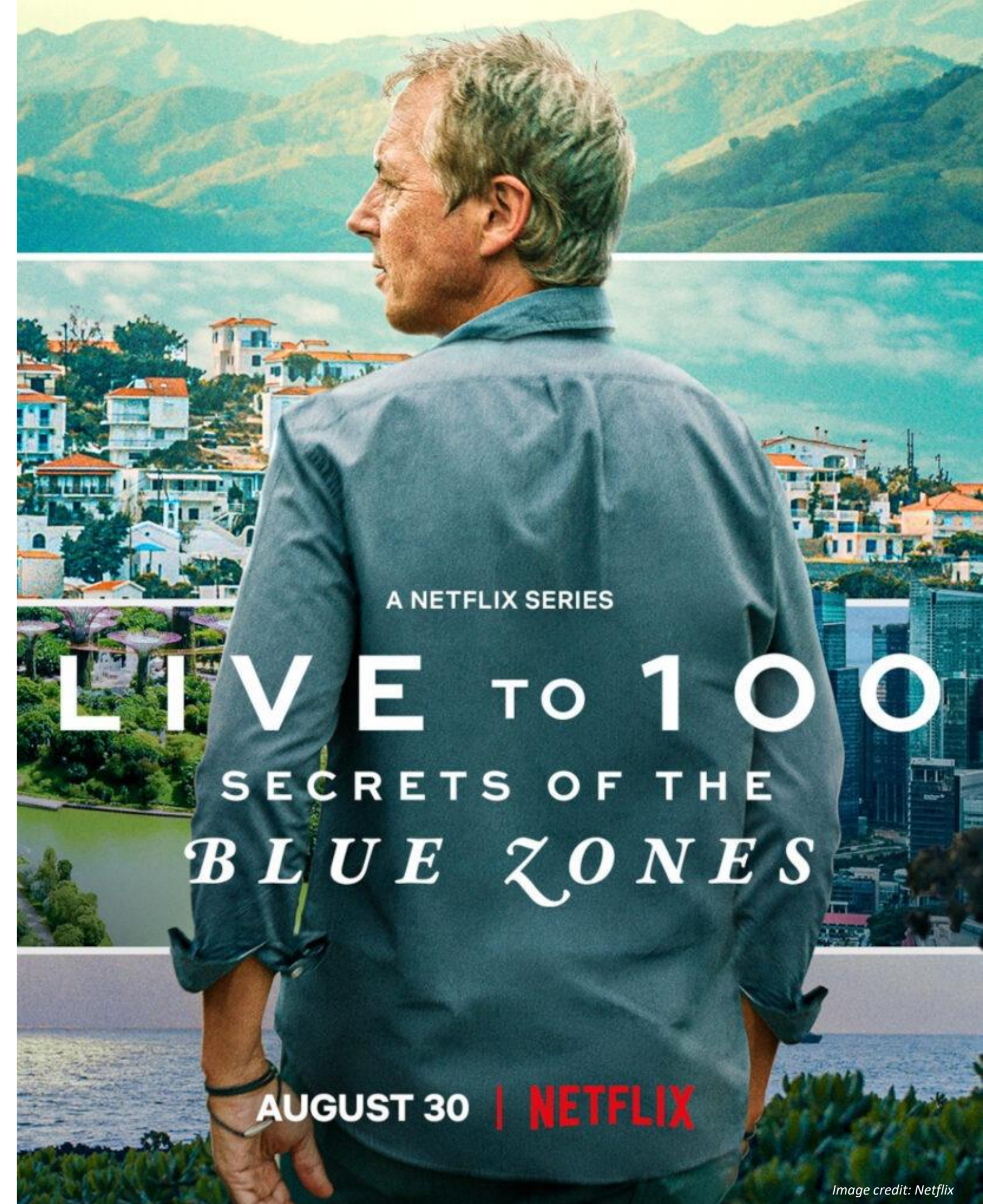
Total population ~5.9m

Image credit: https://www.visitsingapore.com

Blue Zone 2.0

"In 1960, the average newborn in Singapore could expect to live only 65 years. Now, one lifetime later, life expectancy has grown by almost 20 years."

Excerpt from the Blue Zone

Image credit: Netflix

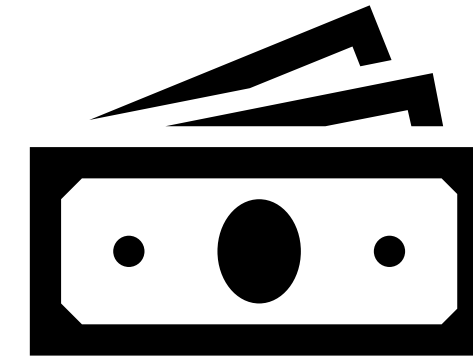# Our life expectancy gains are accompanied by new challenges
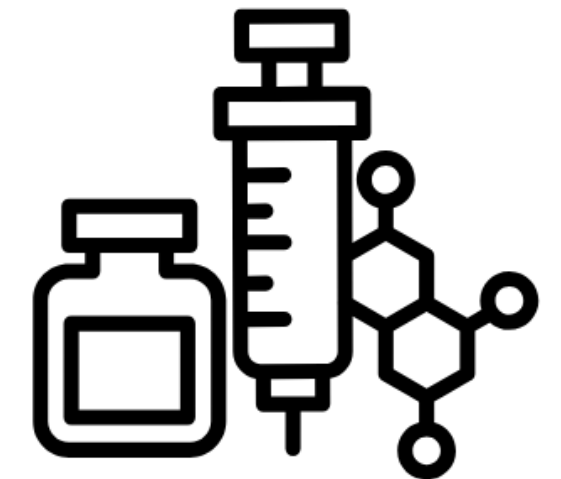

More citizens entering old age

More chronic diseases

Increasing age-specific utilization rates

Price inflation

Real unit cost growth

Our national healthcare expenditure is rising rapidly

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Singapore dollars (S$)

1 SGD converts to ~ USD 0.78

S$5.9b

S$10.1b

S$16.6b
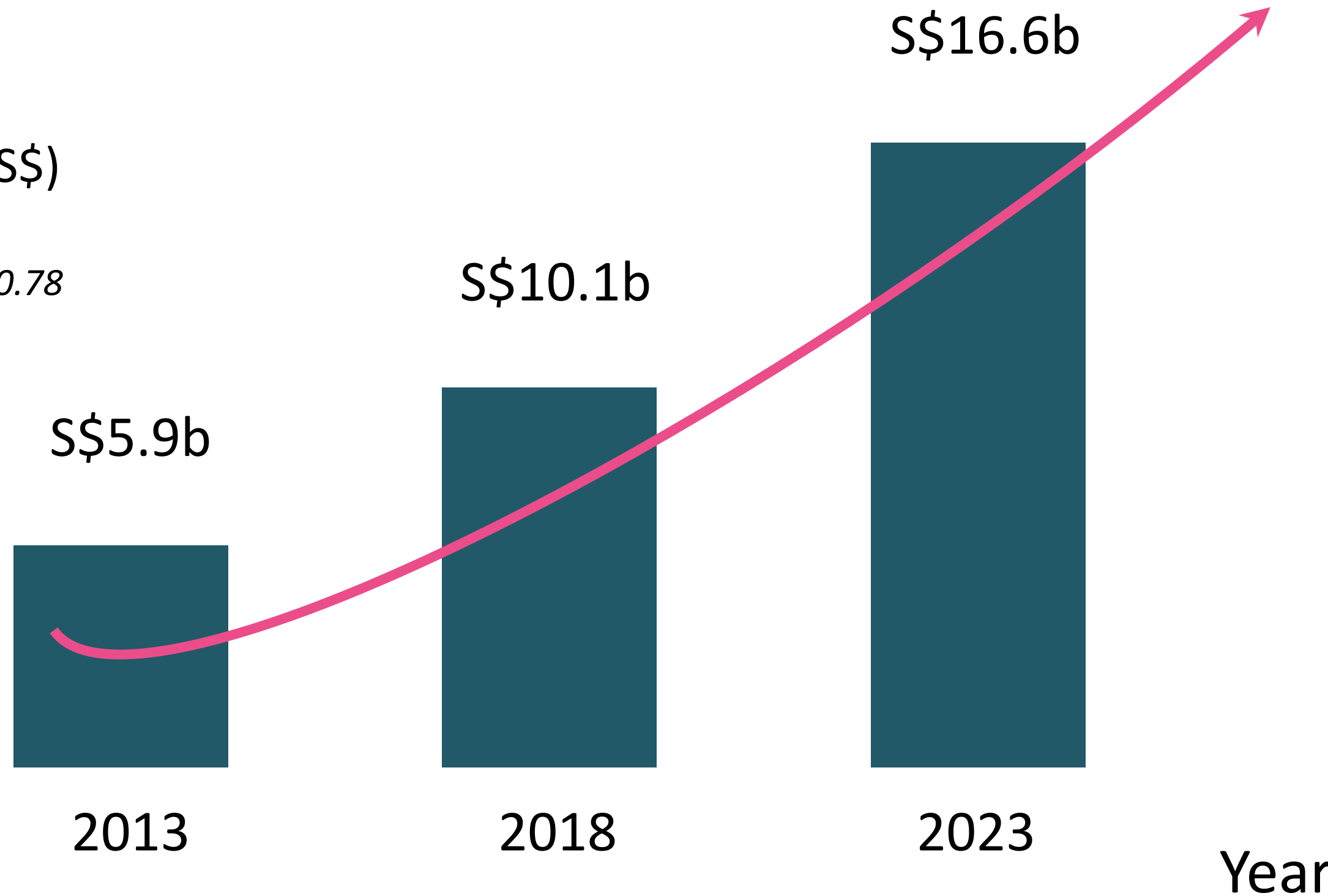
CAGR of ~**10%** in the past decade

2013

2018

2023

Year
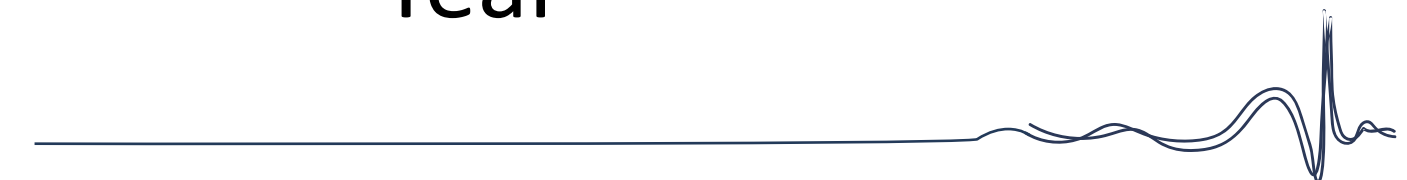
Best health outcomes, sustainably delivered

$$\text{Value} = \frac{\text{Patient Health Outcomes}}{\text{Cost}}$$

AVBC

Appropriate and Value-Based Care

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Focus on 3 issues:

1. How do we decide on guideline topics?

2. How should we implement them?

3. What would success look like?

1. Deciding on guideline topics

Night market street red lanterns, Chinatown, Singapore

The funnel framework

① **The funnel framework**

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22 groups (GBD framework):
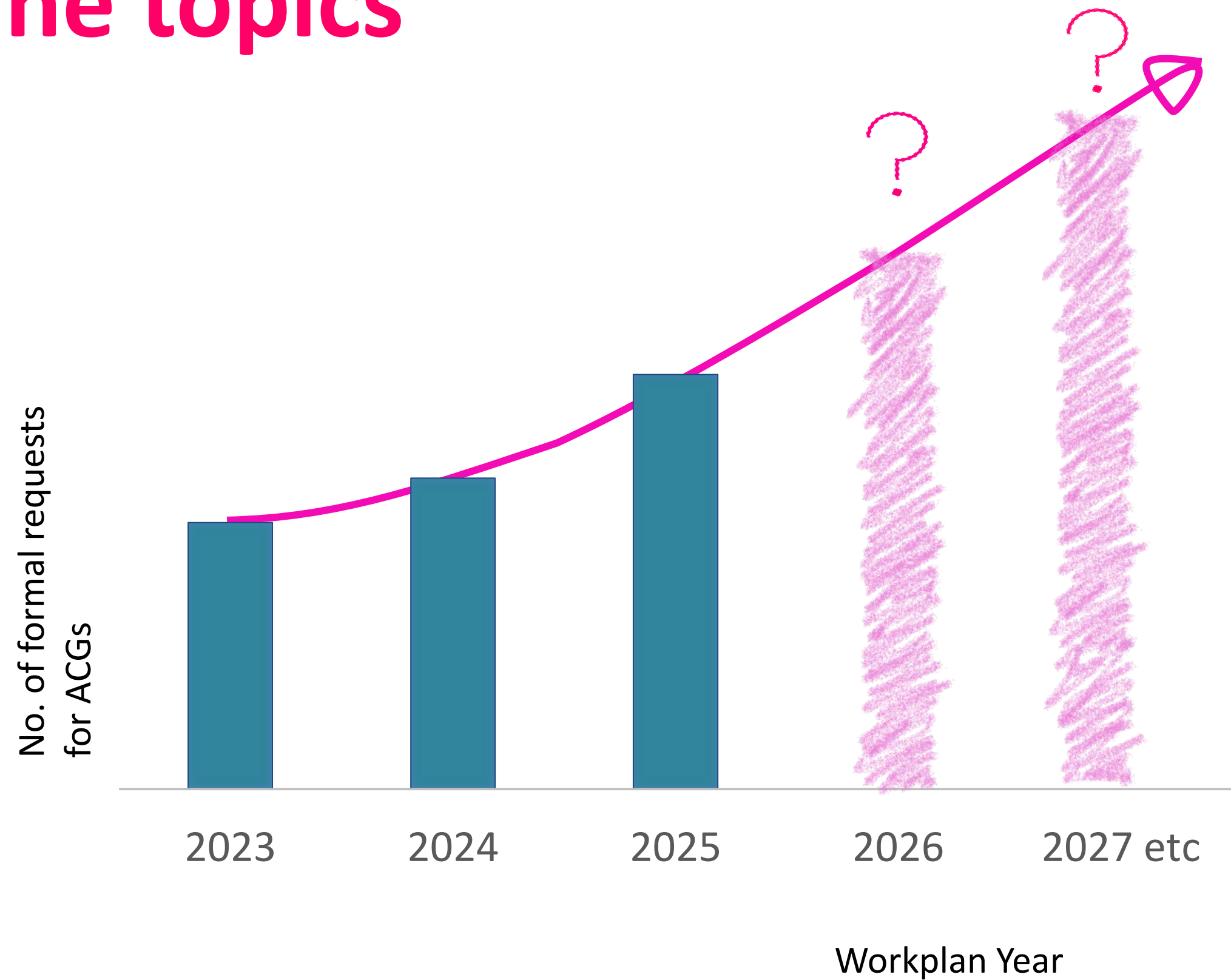HIV/AIDS/STIs, Respiratory infections & Tuberculosis, Enteric infections, Neglected tropical diseases & Malaria, Maternal & Neonatal disorders, Nutritional deficiencies, Neoplasms, Cardiovascular diseases, Chronic respiratory diseases, Digestive diseases, Neurological disorders, Mental disorders, Substance use disorders, Diabetes & kidney diseases, Skin and subcutaneous diseases, Sense organ diseases, Musculoskeletal disorders, Transport injuries, Unintentional injuries, Self-harm & interpersonal violence

Inpatient data
- GBD DALYs
- Utilisation (inpatient bill sizes)

Primary care data
- Doctor visits
- Attributable cost from the doctor visits

Shortlisted 7 groups:
Neoplasms, Cardiovascular diseases, Chronic respiratory diseases, Neurological disorders, Mental disorders, Diabetes & kidney diseases, Musculoskeletal disorders

② **Emerging insights**
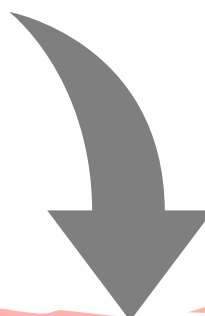
③ **Updates of published ACGs**
(5-yearly)

Ranking & prioritization by the Evidence to Practice Advisory Committee (ETPAC)

GBD – Global Burden of Disease
DALYs – Disability Adjusted Life Years

ACG topic selection

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Submissions

Topics for re-ranking from 2024

Within priority disease areas

Not within priority disease areas

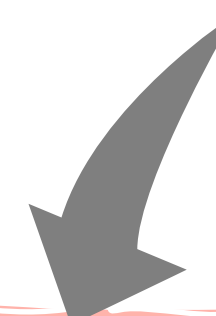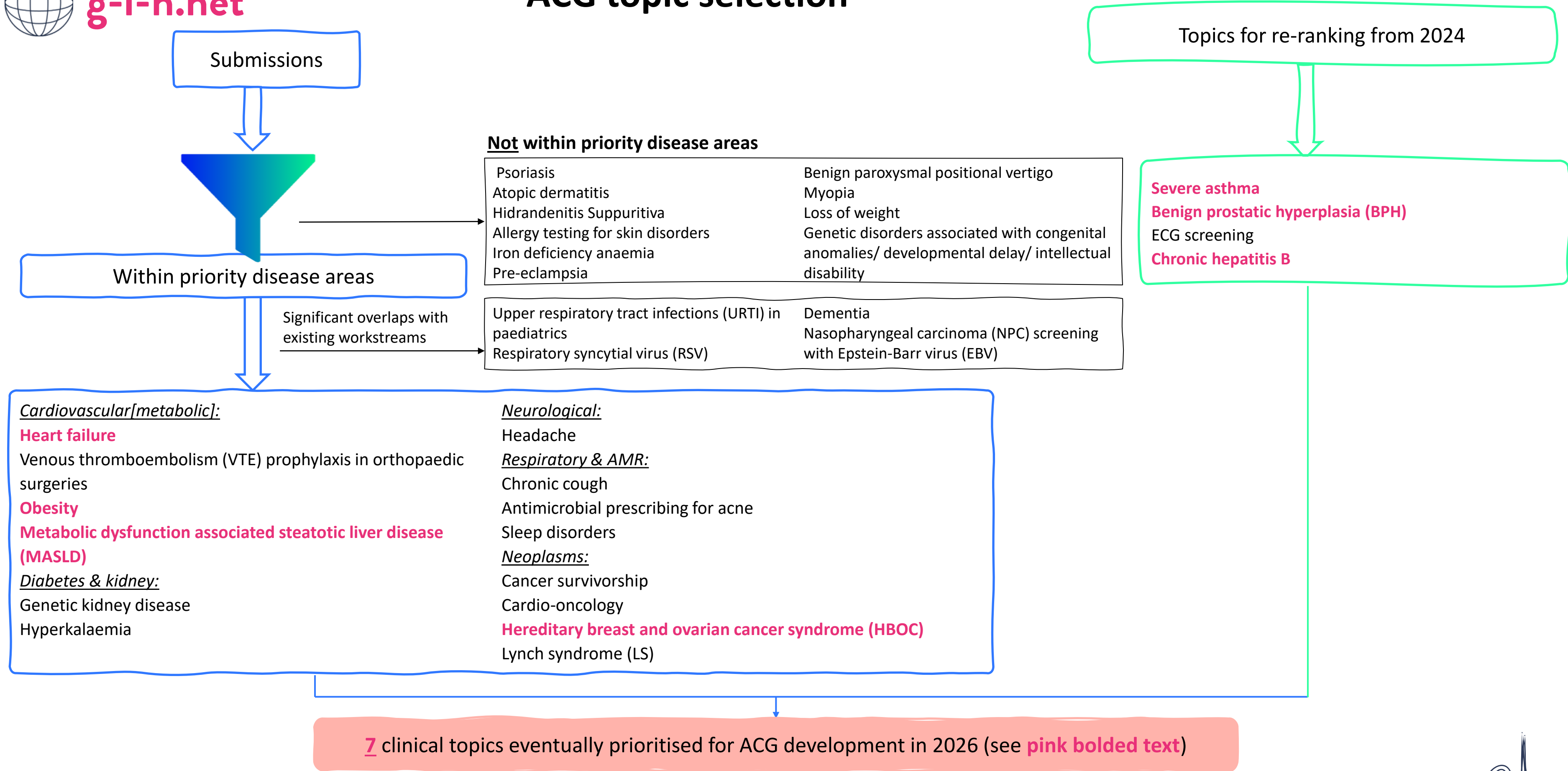|	
Psoriasis	Benign paroxysmal positional vertigo
Atopic dermatitis	Myopia
Hidrandenitis Suppuritiva	Loss of weight
Allergy testing for skin disorders	Genetic disorders associated with congenital anomalies/ developmental delay/ intellectual disability
Iron deficiency anaemia	
Pre-eclampsia	

Severe asthma
Benign prostatic hyperplasia (BPH)
ECG screening
Chronic hepatitis B

Significant overlaps with existing workstreams

Upper respiratory tract infections (URTI) in paediatrics	Dementia
Respiratory syncytial virus (RSV)	Nasopharyngeal carcinoma (NPC) screening with Epstein-Barr virus (EBV)

Cardiovascular[metabolic]:
Heart failure
Venous thromboembolism (VTE) prophylaxis in orthopaedic surgeries
Obesity
Metabolic dysfunction associated steatotic liver disease (MASLD)
Diabetes & kidney:
Genetic kidney disease
Hyperkalaemia

Neurological:
Headache
Respiratory & AMR:
Chronic cough
Antimicrobial prescribing for acne
Sleep disorders
Neoplasms:
Cancer survivorship
Cardio-oncology
Hereditary breast and ovarian cancer syndrome (HBOC)
Lynch syndrome (LS)

7 clinical topics eventually prioritised for ACG development in 2026 (see **pink bolded text**)

2. A guideline unadopted is a parachute unused

Work at the Evidence to Practice Office (ETPO)

1 Topic Prioritisation

2 Formative Research

3 ACE Clinical Guideline (ACGs) Development

4 Evidence Implementation

5 Evaluation
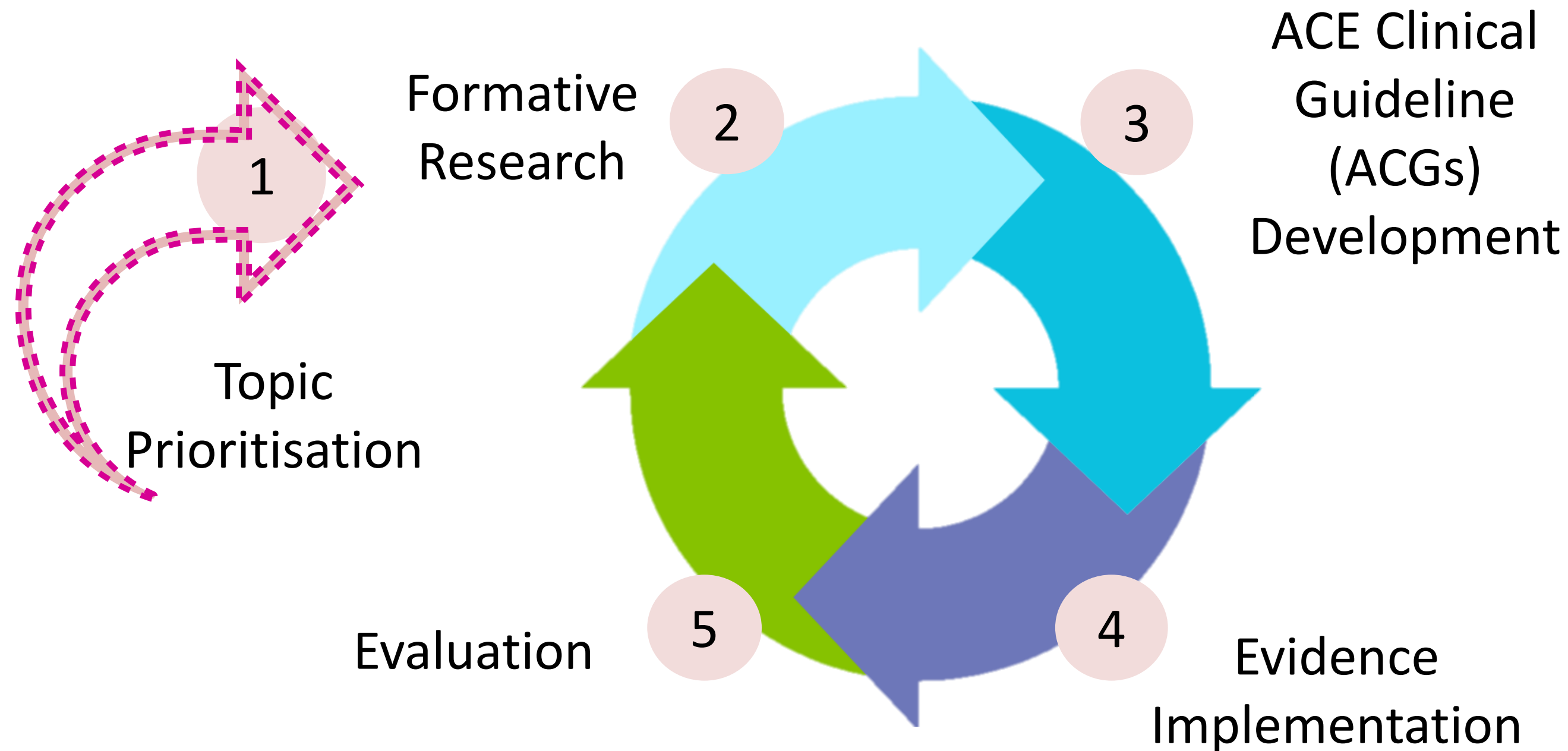
ETPO's key stakeholder group is the **providers** (i.e. healthcare professionals)
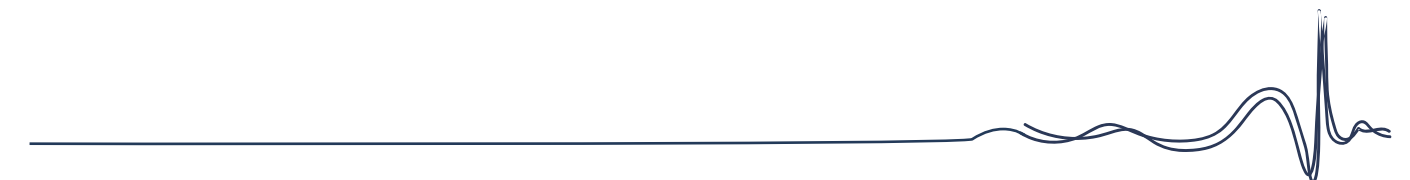
Goal of the evidence implementation team

To get people to "pull the parachute cord"

**Implementation strategies
at the individual clinician level**

Educational
visits

Clinician
collaterals

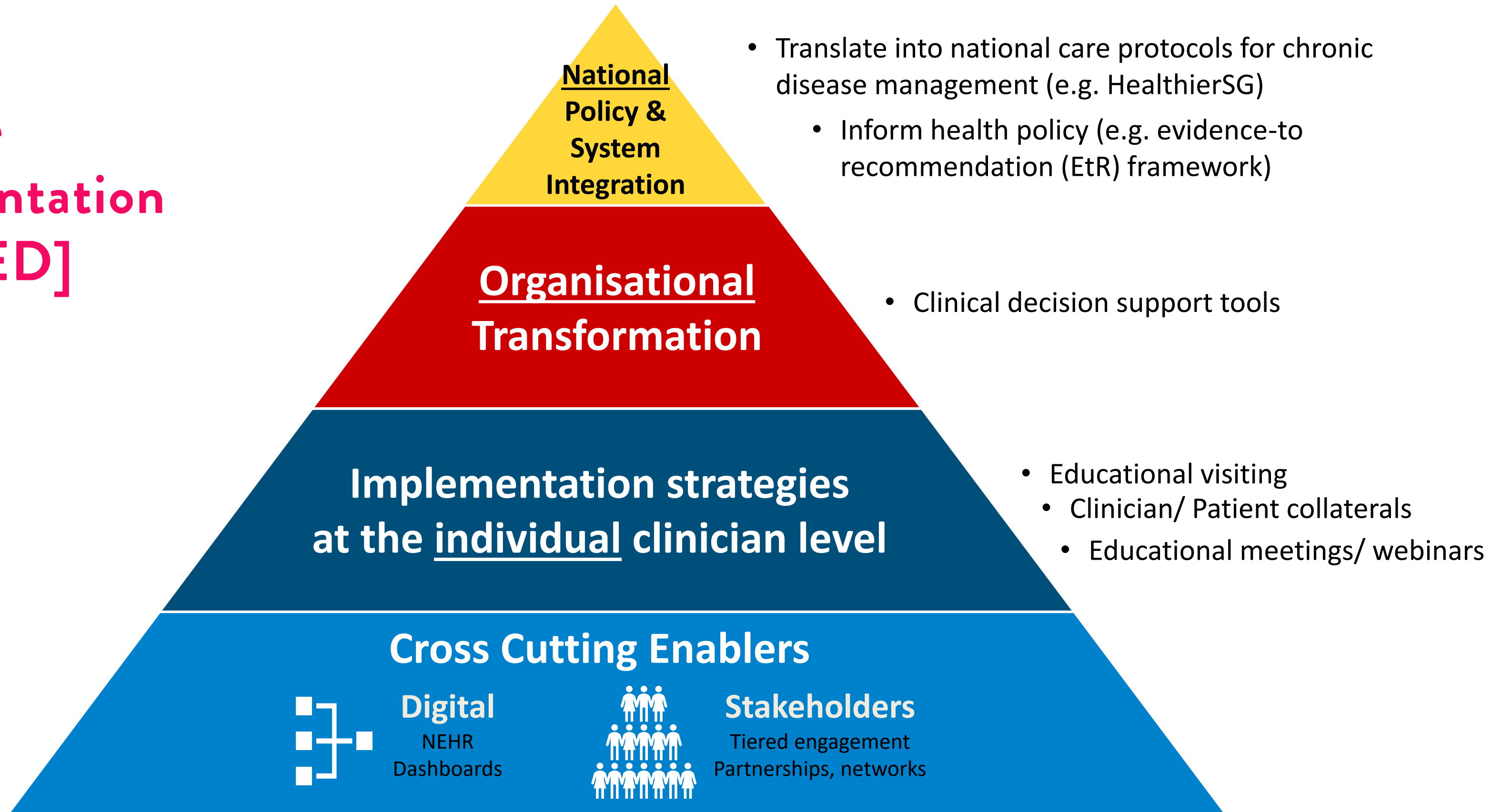Patient
resources

Educational
meetings/
Webinars

E-direct
mailers

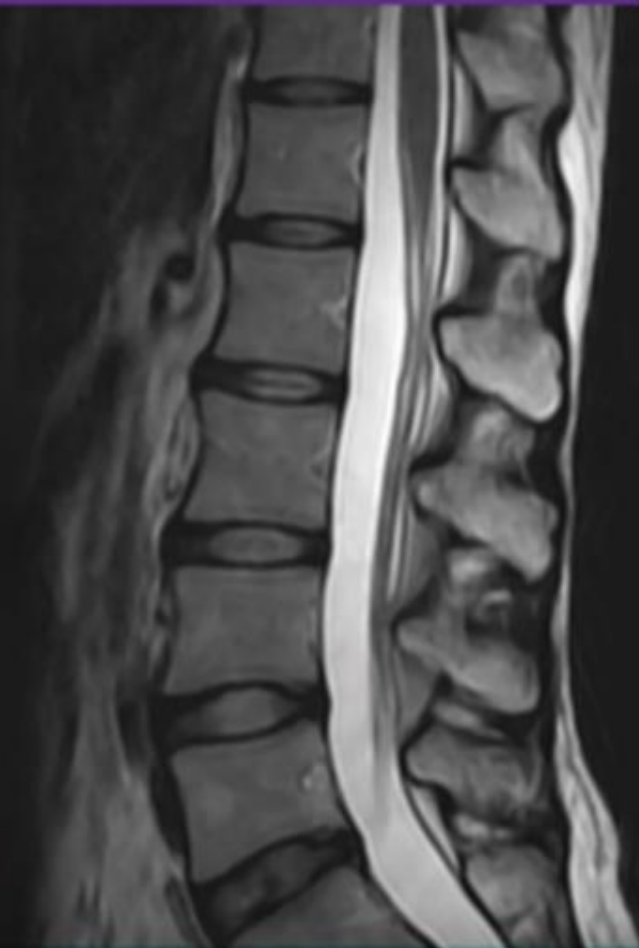**An example of guidelines effecting institutional transformation**

ACE CLINICAL GUIDANCE

Published: 1 October 2020
www.ace-hta.gov.sg

When to order MRI for low back pain

Objective	Scope	Target audience
To enhance appropriate use of magnetic resonance imaging (MRI)	MRI of the lumbar spine for diagnostic investigation of low back pain	This clinical guidance is relevant to all healthcare professionals ordering MRI of the lumbar spine

4%

Reduction in inappropriate orders

Original Article

Implementing appropriateness criteria for use of imaging technology (Project ACUITY) in magnetic resonance imaging of the lumbar spine: a Singapore experience

Hiok Yang Chan[1], MRCS, FRCR, Gita Yashwantrao Karande[1], MBBS, FRCR, Cher Heng Tan[2], MBBS, FRCR, Yeong Huei Ng[3], MBBS, FRCS, Meng Ai Png[1], MBBS, FRCR, Valentina Ricci[4], Adelina Young[4], MPH, Lai Peng Chan[1], MBBS, FRCR

[1]Department of Diagnostic Radiology, Singapore General Hospital, [2]Department of Diagnostic Radiology, Tan Tock Seng Hospital, [3]Department of Orthopaedic Surgery, Singapore General Hospital, [4]Agency of Care Effectiveness, Ministry of Health, Singapore

Botanic Gardens, Singapore

3. What does success look like?

"If a tree falls in the forest & no one is around to hear it, does it make a sound?"

Promising indicators

Integration into care protocols

12 **HealthierSG Care Protocols** reviewed & enhanced based on ACG contents

461 healthcare professionals

49% higher vs 2023

received **427 continuing professional education (CPE) hours** via T2DM educational visiting & UTI webinar

Increased ACG website traffic

164,231 ACG page views

Increased ACG downloads

58,426 ACG downloads

Stakeholder consultations

26 **healthcare professionals** Interviewed as part of identifying practice gaps and facilitators
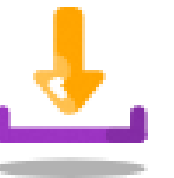
Increased engagement rates

972 **total engagement** on Linkedin

49% higher vs 2023

ACG publicity

48 **publicity pieces** (electronic Direct Mailers, LinkedIn posts & newsletter articles)

Testimonials from Stakeholders

Barriers and enablers for primary care doctors in optimising ACEi/ARBs and using SGLT2i in patients with early-stage CKD: Summary of findings and associated potential strategies

Dr Sky Koh
NUP

"Fantastic work by yourself and your team! Thanks so much for that important piece *(CKD report)*, for which I will be sharing further at our clinic heads meeting. Will this piece be available on ACE website?"

Dr Christopher Chong
Central North PCN

"I really enjoyed and benefitted from the ***educational visiting session***. It was pitched at the right level, timing and duration. 40min well spent and GPs involved were all well engaged. Keen to offer it our other subgroups in our PCN."

ACE Clinical Guidances (ACGs)

Home > Healthcare Professionals > ACE Clinical Guidances (ACGs)

Policy colleagues in MOH

"…ACGs are the "gospel of truth" and we struggle where there is none…if we are unsure, we just ask ETPO!"

"…ACGs lead to changes in polyclinic guidelines and any publication is seen as a significant event…the moment the ACG dropped, the WhatsApp group [chat] lit up"
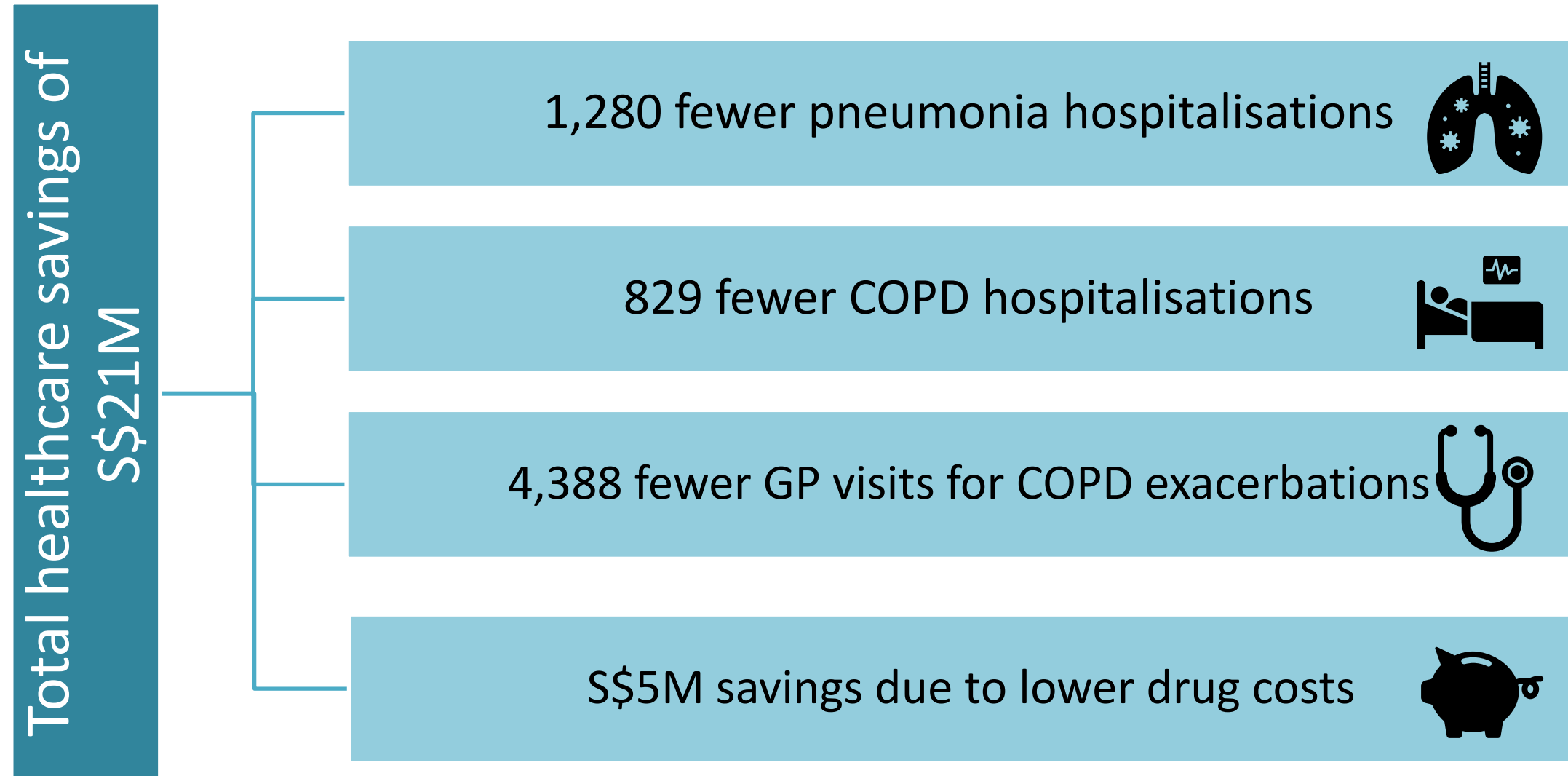
Saving costs, Improving health outcomes: COPD example

Subsidy listing of a LAMA (umeclidium), and a LAMA/LABA (umeclidinium/vilanterol) to address high clinical need and affordability

+

Issuance of **ACG** to encourage appropriate prescribing of COPD maintenance therapies

Using data from 2019 to 2021 and projected for 5 years:

Total healthcare savings of S$21M

1,280 fewer pneumonia hospitalisations

829 fewer COPD hospitalisations

4,388 fewer GP visits for COPD exacerbations

S$5M savings due to lower drug costs

COPD – chronic obstructive pulmonary disease
LAMA – long-acting muscarinic antagonist
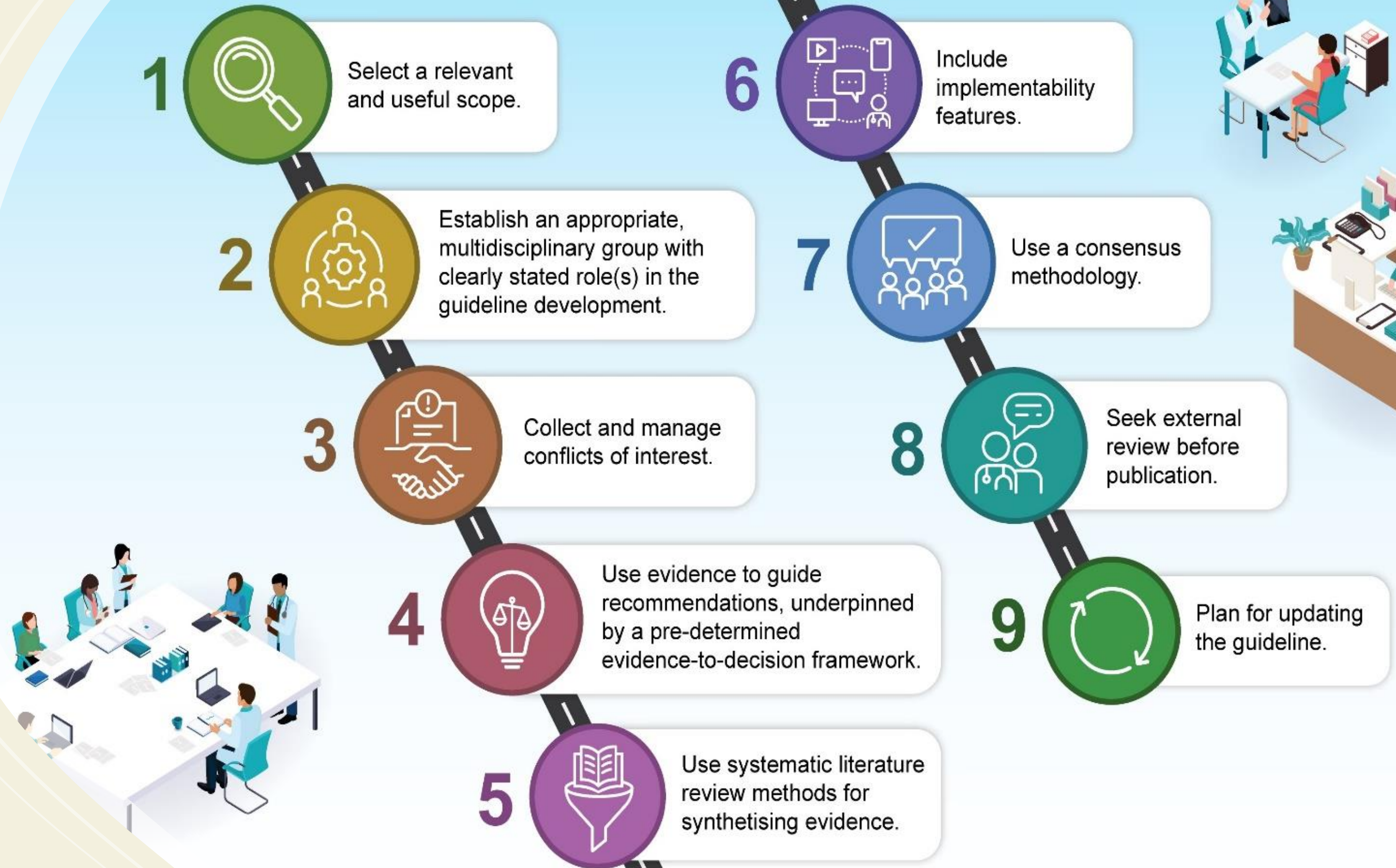LABA – long-acting beta agonist
ICS – inhaled corticosteroids

Next steps?

ACE's Guidelines for Guidelines (G4G)

1. Select a relevant and useful scope.

2. Establish an appropriate, multidisciplinary group with clearly stated role(s) in the guideline development.

3. Collect and manage conflicts of interest.

4. Use evidence to guide recommendations, underpinned by a pre-determined evidence-to-decision framework.

5. Use systematic literature review methods for synthetising evidence.

6. Include implementability features.

7. Use a consensus methodology.

8. Seek external review before publication.

9. Plan for updating the guideline.

ACE
agency for care effectiveness

MINISTRY OF HEALTH
SINGAPORE

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Building up the right fundamentals for local external guideline developers

> "The workshop was great...it helped to **crystallise our conceptual understanding of ACE and how to apply the principles.** Should be a regular workshop so that more can benefit from it. I enjoyed it thoroughly."
> **- A/Prof Dennis Seow,** Sr Cons, Head of Geri Med, SGH

**Value Based Healthcare Pre-conference workshop:
Best Practices for Guidelines Development**

by Prof Zachary Munn

CONNECTION

for respective & collective implementation success and real impact