



# SINGAPORE ACTUARIAL SOCIETY

## Singapore Health System An Exploratory Study

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# Next 30 minutes...





# Agenda

- Overview of Singapore Health System
- How well has the System performed?
- What are key drivers of medical cost inflation?
- What are the emerging practices?
- Take-away



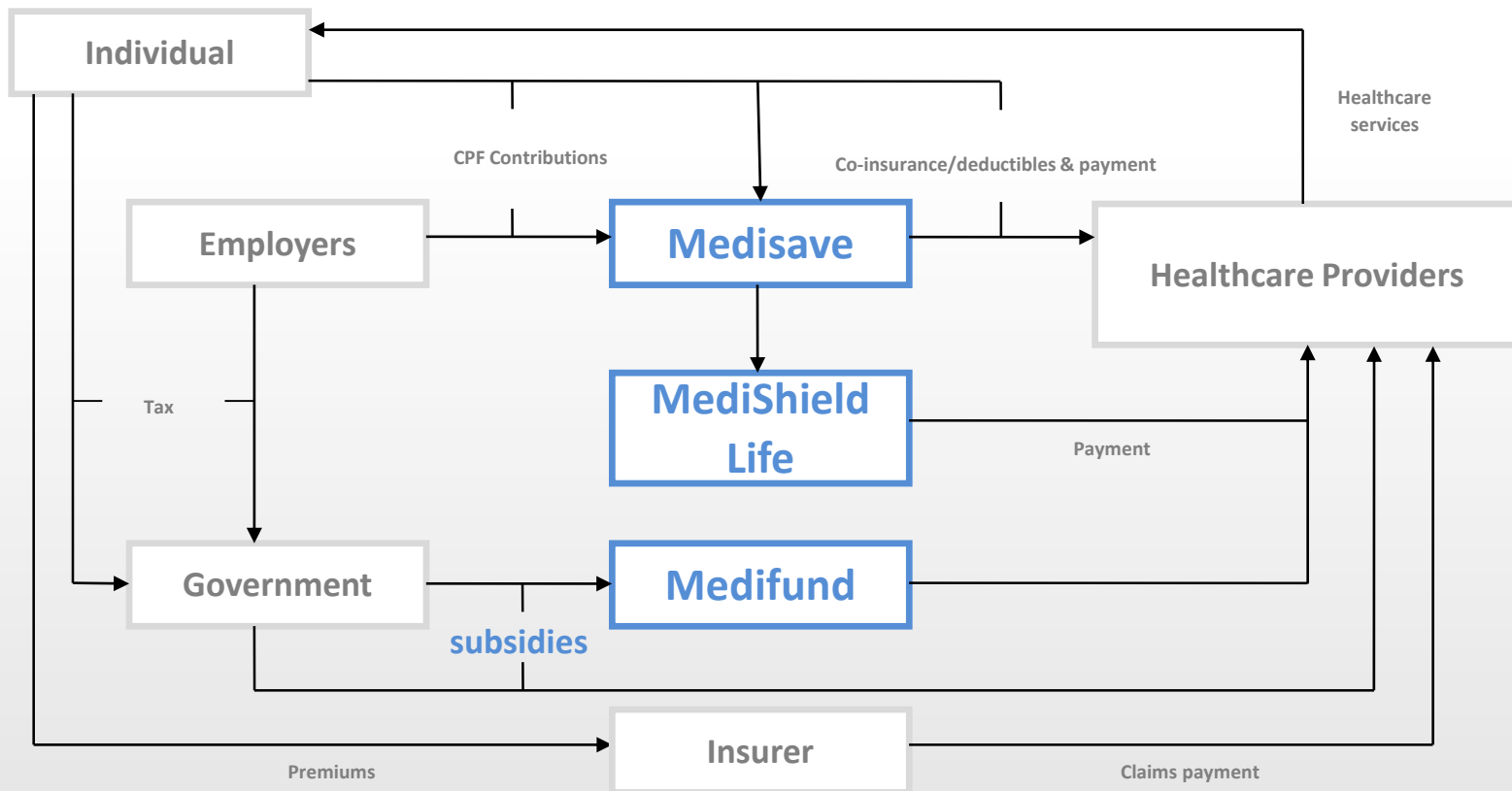
# Overview of Singapore Health System



# Overview of Singapore Health System

Universal healthcare coverage

- **individual responsibility** and **affordable healthcare for citizens**



This is a simplified illustration.



# Overview of Singapore Health System

- S + 3Ms
  - Subsidies
  - Medisave, MediShield and Medifund
- Private health insurance
  - integrated shield plans
  - employee health benefit
- Out-of-Pocket Spending
  - Co-insurance
  - Annual deductible



How well has the System performed?

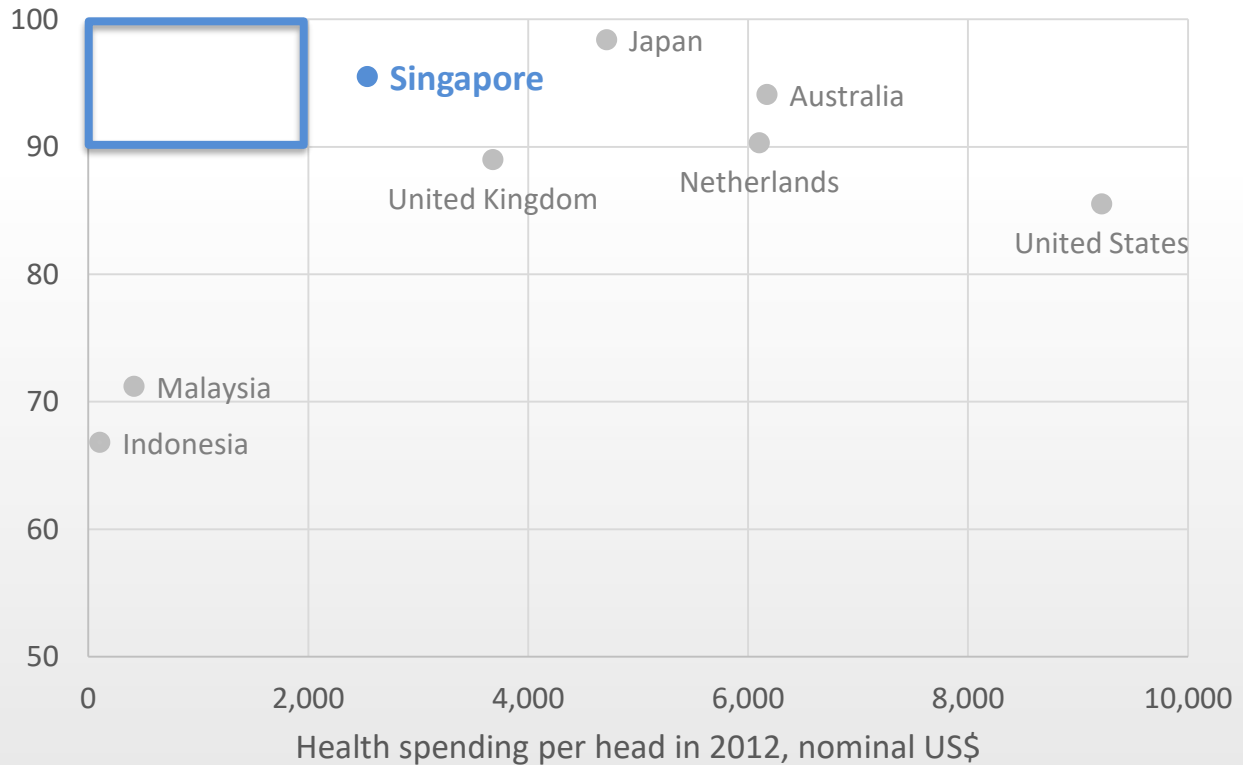


# How well has the System performed?

## Overall

### Outcomes vs Health Spending

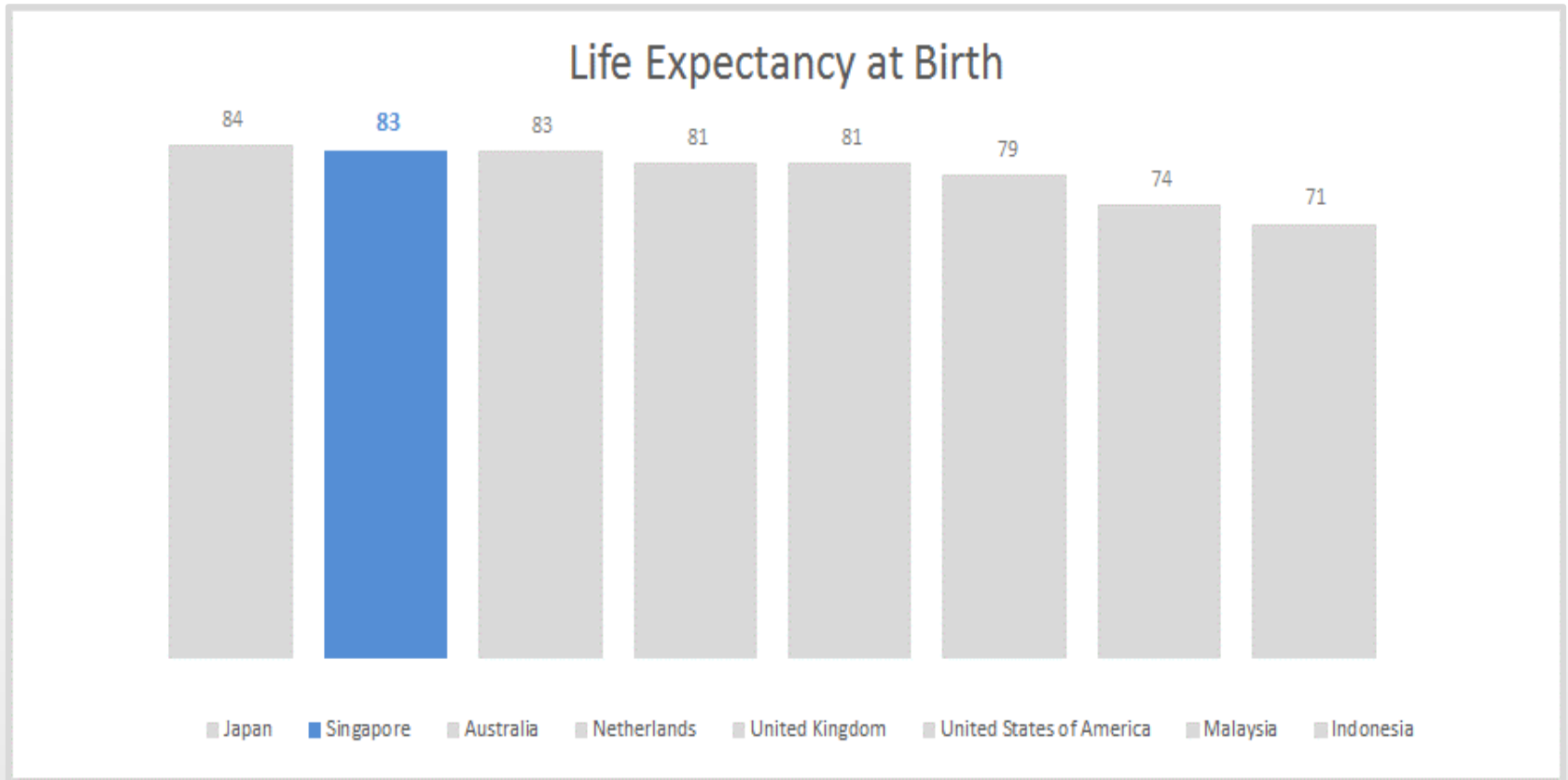
Outcomes index, EIU  
calculation from  
2012 data (100=high)





# How well has the System performed?

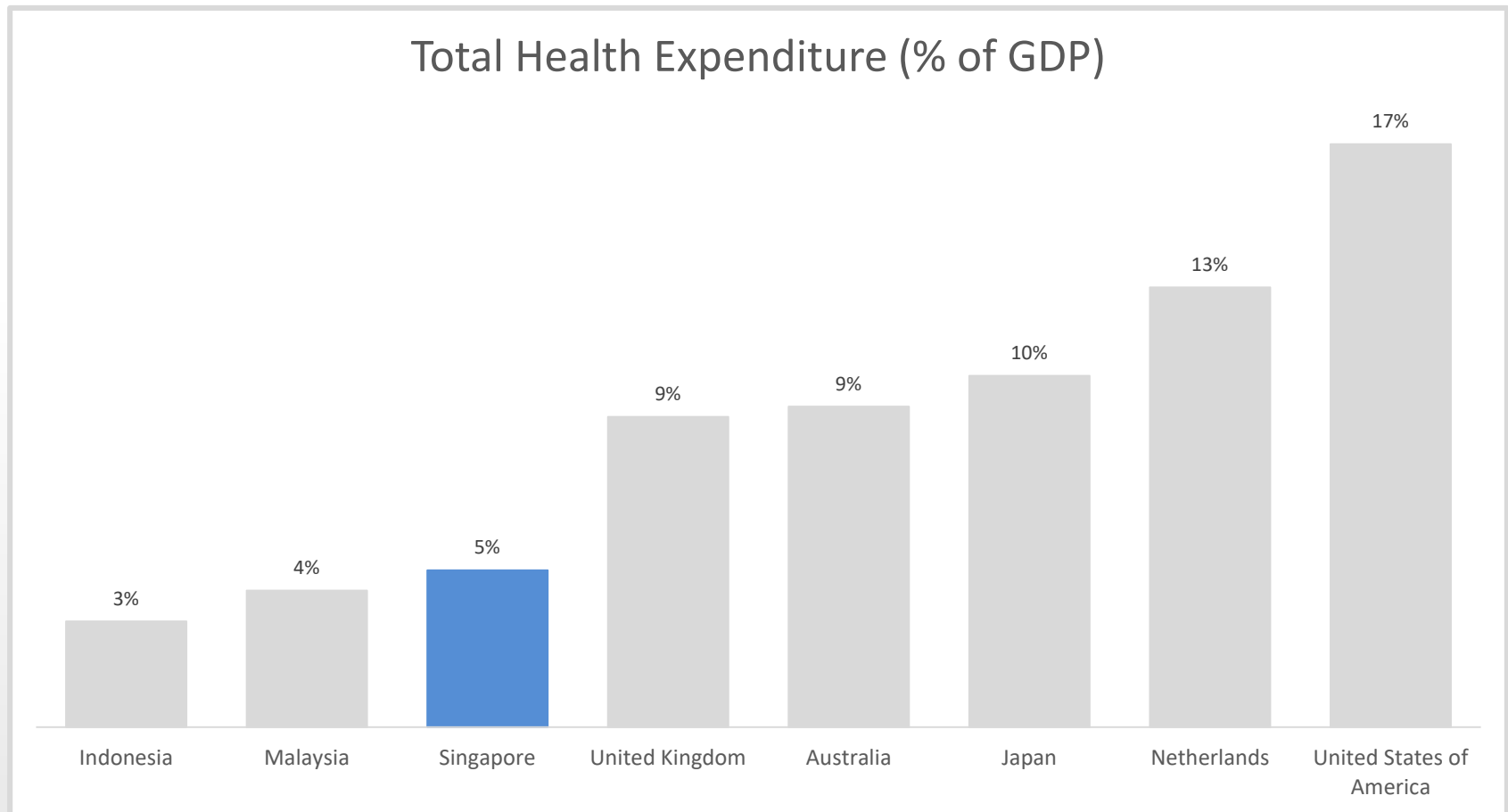
## Health Outcomes





# How well has the System performed?

## Health Spending





# How well has the System performed?

## Medical Cost Inflation

- Three separate sets of data
  - Government Health Operating Expenditure Per Resident
  - MediShield Premiums
  - Claims experience of insurance industry



# How well has the System performed?

## Medical Cost Inflation

Historically,

Government health  
operating expenditure  
grew at

**16%<sub>p.a.</sub>**

between year 2007 and 2014.

This is net of annual resident  
growth of 1%.

Weighted Average  
MediShield premium grew  
at

**13%<sub>p.a.</sub>**

between year 2007 and 2014.

This is weighted by actual  
population in each respective  
year.

Net Medical Claims  
incurred of insurance  
industry grew at

**14%<sub>p.a.</sub>**

between year 2011 and 2014.

This is net of annual  
enrolment growth of 4%.



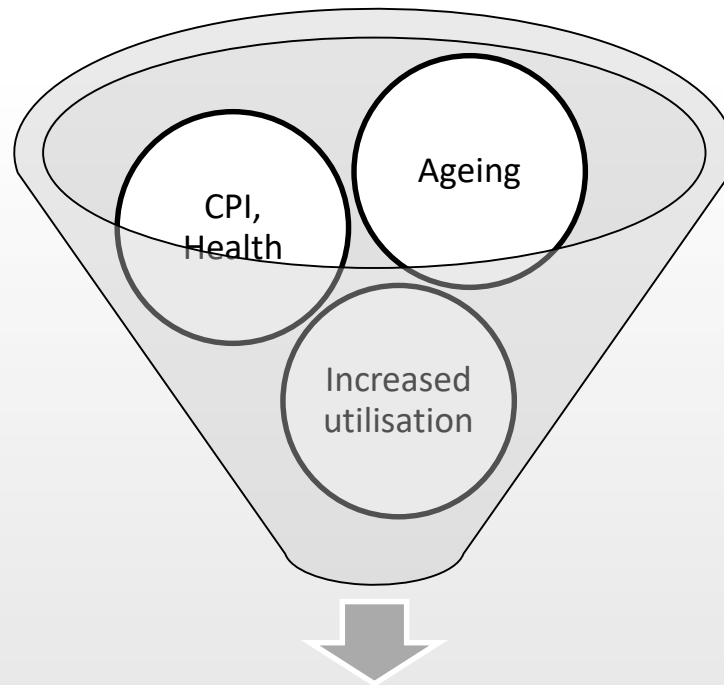
What are key drivers of medical cost inflation?



# Key Drivers of Medical Cost Inflation

## Overview

$$\text{Total Medical Costs} = \text{Incidence} \times \text{Average Medical Costs}$$



Medical Cost Inflation



# Key Drivers of Medical Cost Inflation

## Incidence

Hospital admission rate grew at **2.1% p.a.** between year 2007 and 2014.

### Hospital Admission Rate (per 1,000 residents)

**101**  
Year 2007



**117**  
Year 2014

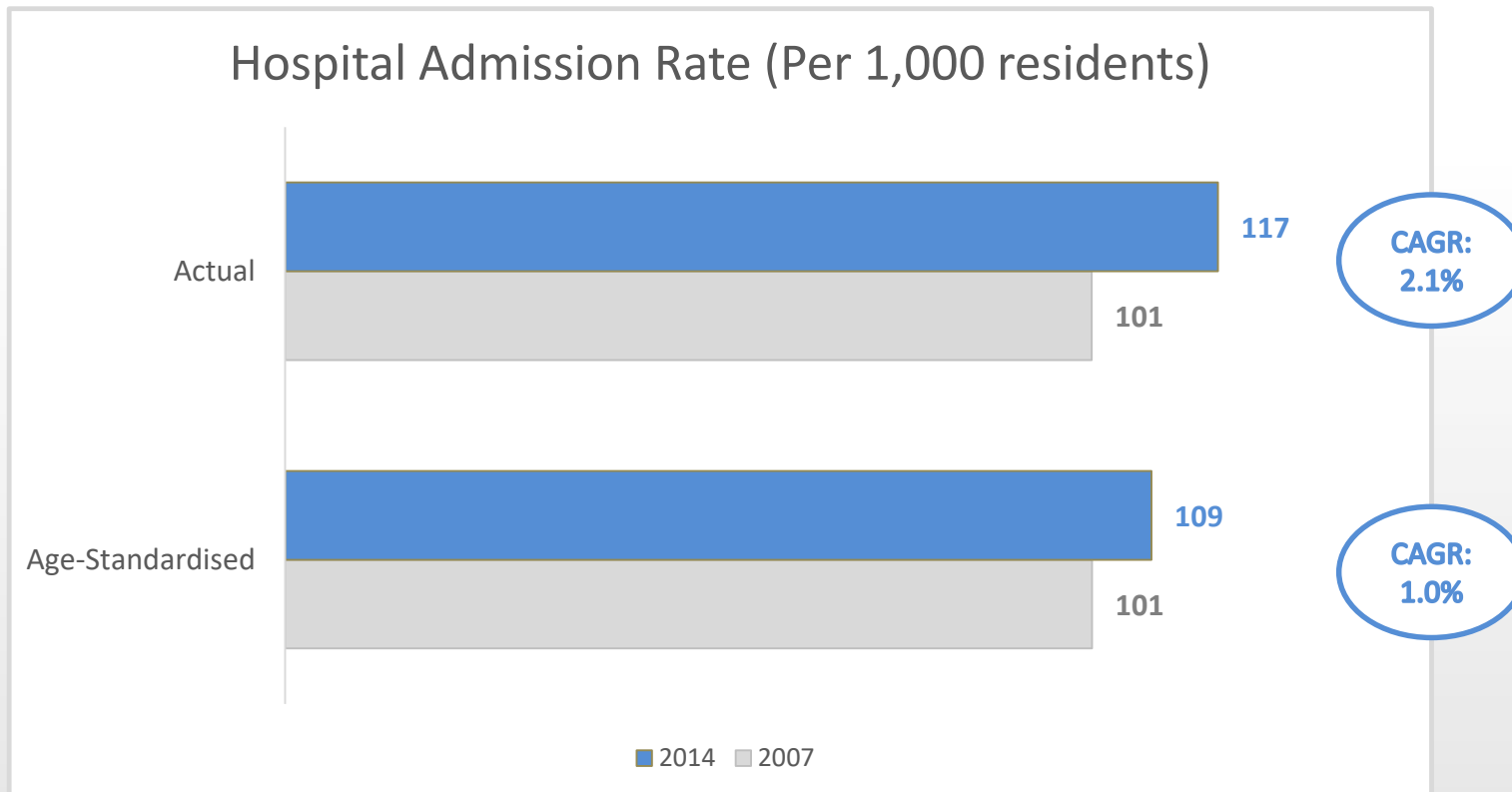




# Key Drivers of Medical Cost Inflation

## Ageing Impact on Incidence

Ageing population has contributed to growth in hospital admission rate, **1.1% p.a.** between year 2007 and 2014.

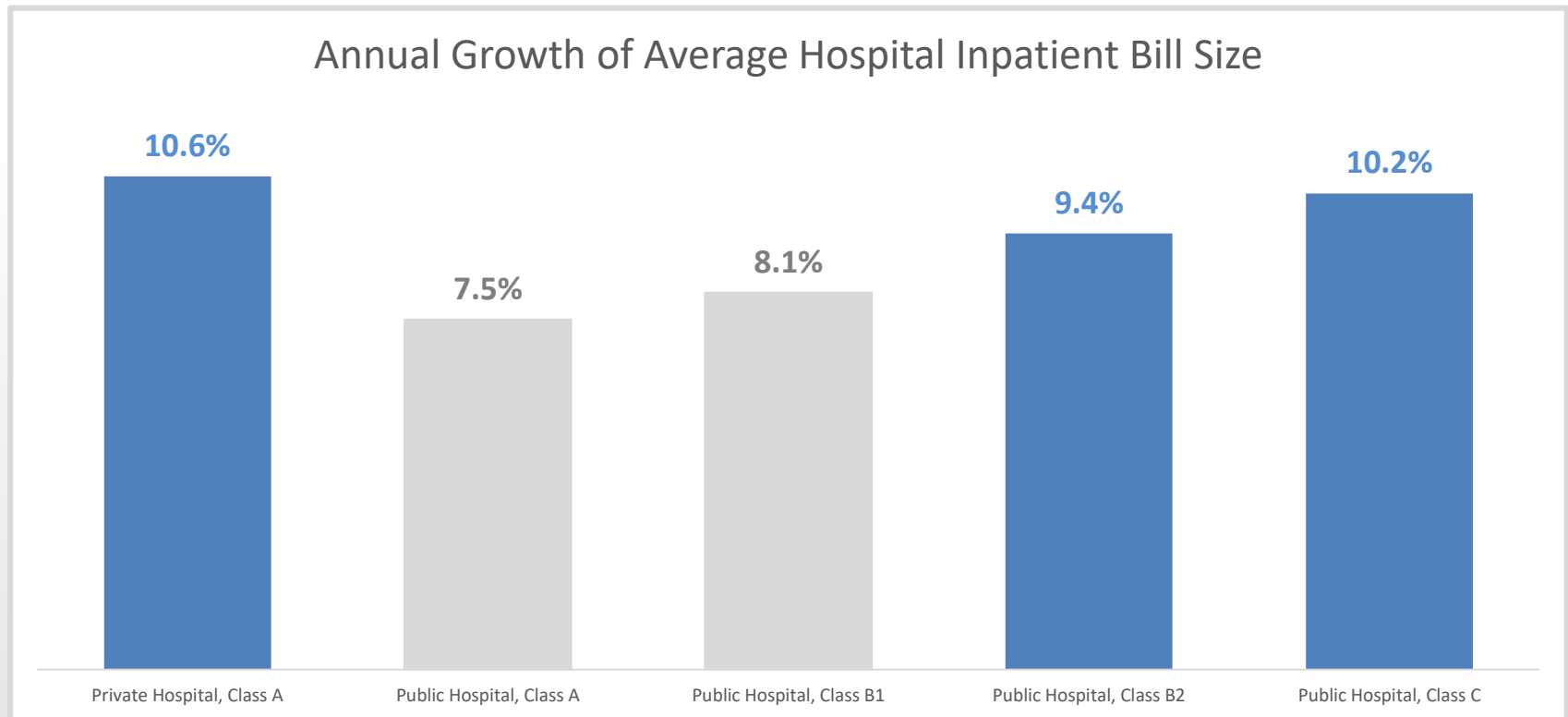




# Key Drivers of Medical Cost Inflation

## Average Medical Costs

Average hospital inpatient bill size grew at **minimum 9.3% p.a.** between year 2007 and 2014.



Based on historical Average Hospital Inpatient Bill Size, Ministry of Health



# Key Drivers of Medical Cost Inflation

## CPI, Health

**Between year 2007 and 2014,**

Consumer Price Index for Healthcare has risen by

**3.2%** p.a.

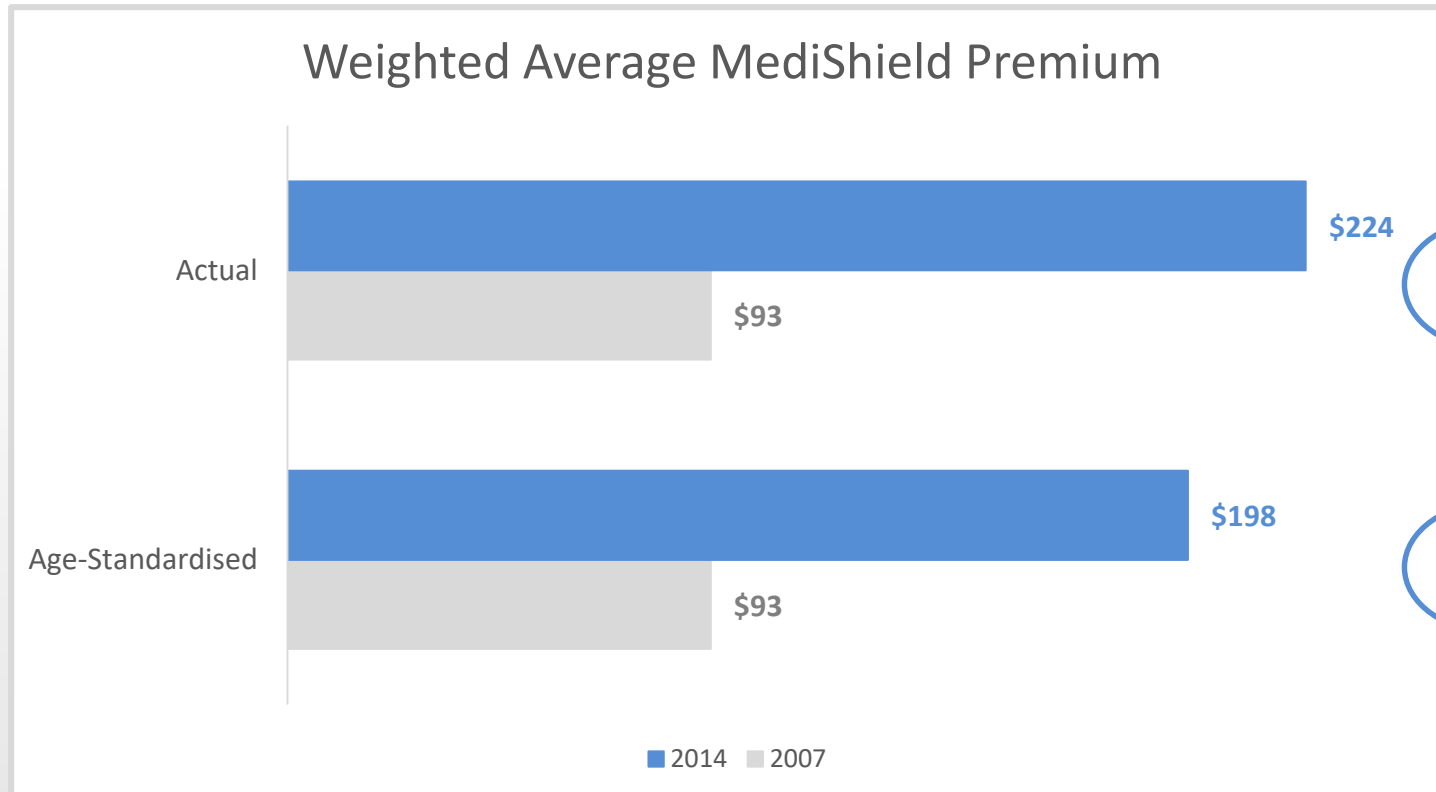
The Consumer Price Index measures the average price changes in **a fixed basket of consumption goods and services commonly purchased** by households over time.



# Key Drivers of Medical Cost Inflation

## Ageing Impact on Average Medical Costs

Ageing population has contributed to growth in average medical costs, **0.9% p.a.** between year 2007 and 2014.





# Key Drivers of Medical Cost Inflation

## Other drivers on Average Medical Costs

Between year 2007 and 2014,

Average Medical Costs **9.3% p.a.**

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CPI, Health **3.2% p.a.**

Ageing **0.9% p.a.**

Other drivers **5.2% p.a.**



**Advances in  
medical  
technology**

**Over-  
servicing**

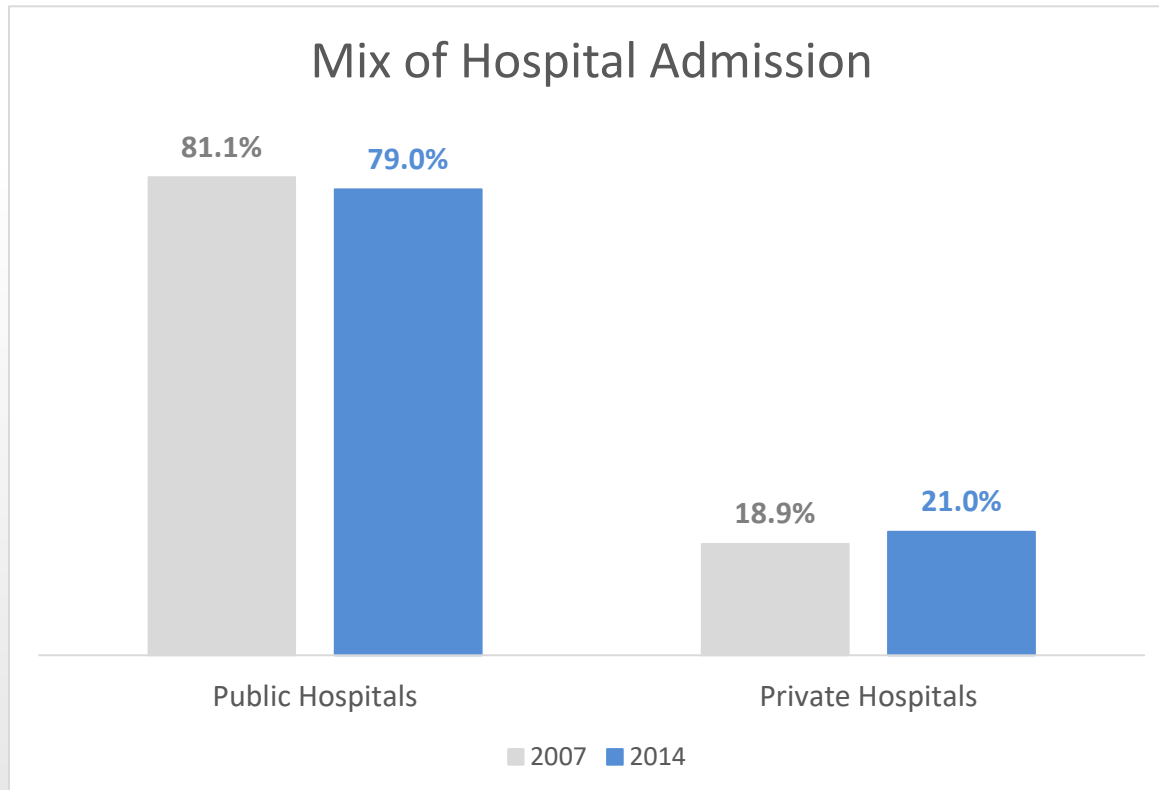
**Advances in  
pharmaceuticals**



# Key Drivers of Medical Cost Inflation

## Shift from Public Hospitals to Private Hospitals

Increased admissions at private hospitals has contributed to overall medical cost inflation, **0.5% p.a.** between year 2007 and 2014.



In year 2007, estimated average hospital inpatient bill size for

**Private Hospitals**  
**S\$5,700**

**Public Hospitals**  
**S\$1,700**

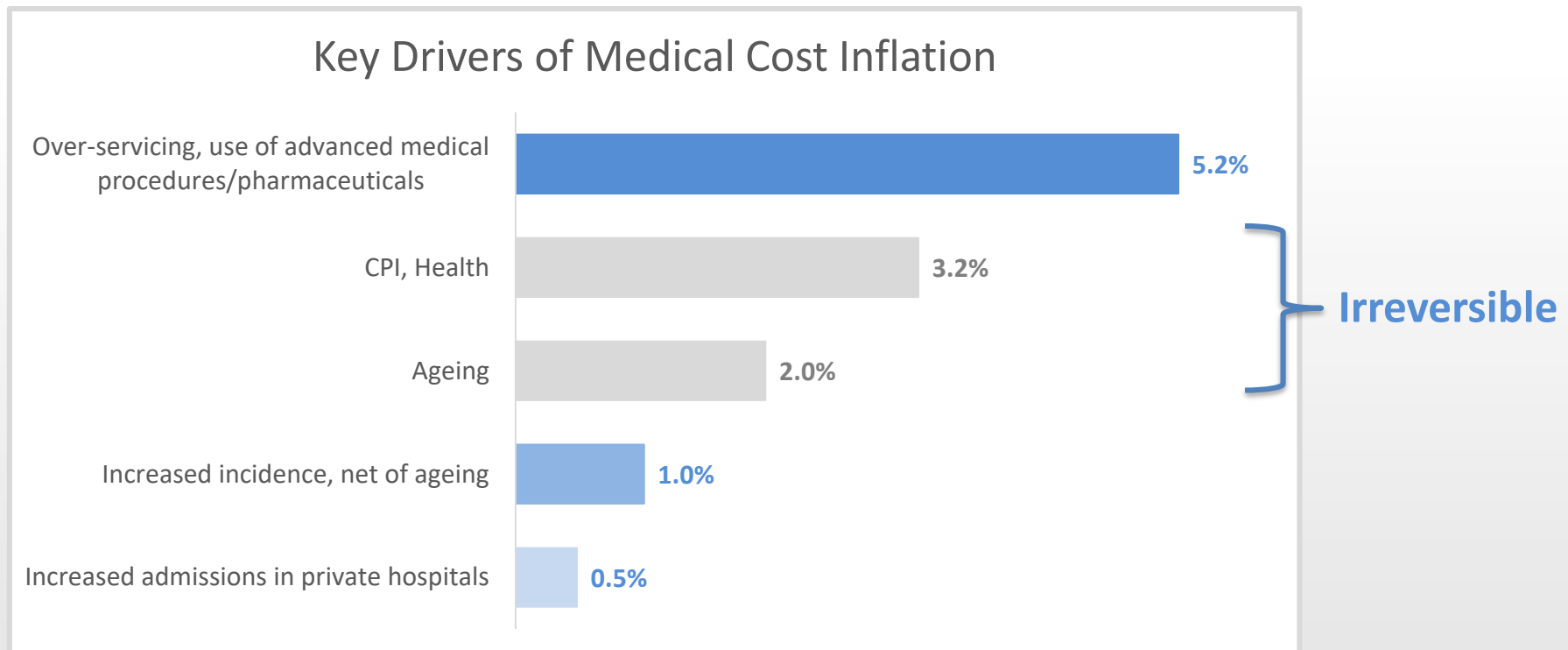


# Key Drivers of Medical Cost Inflation

## Summary

**Between year 2007 and 2014,**

driver analysis shows that medical cost inflation is at least **11.9% p.a.**





# What are the emerging practices?



# What are the emerging practices?

## Overview

### Bundled Payment System



### Pharmaceuticals and Insurers





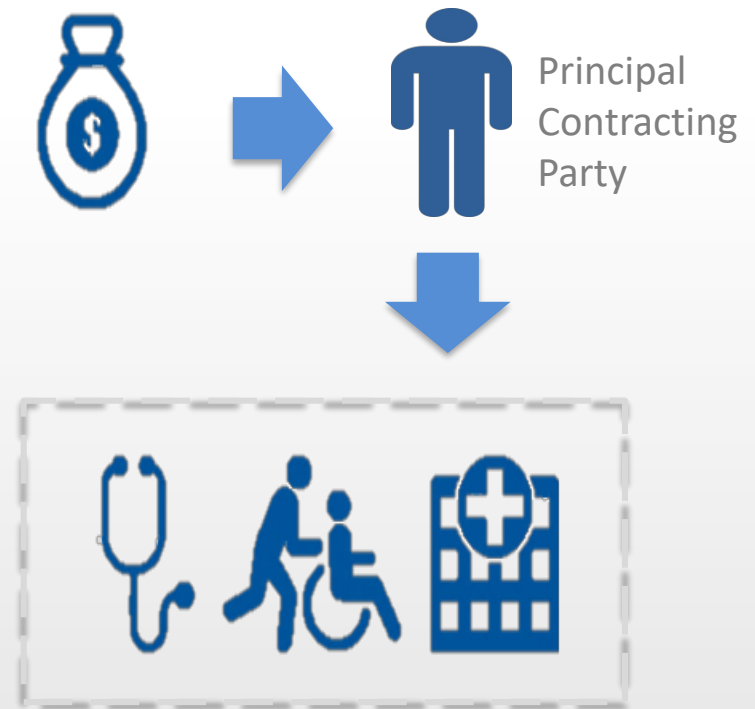
# What are the emerging practices?

## Bundled Payment System

### Conventional Payment System



### Bundled Payment System





# What are the emerging practices?

## Bundled Payment System

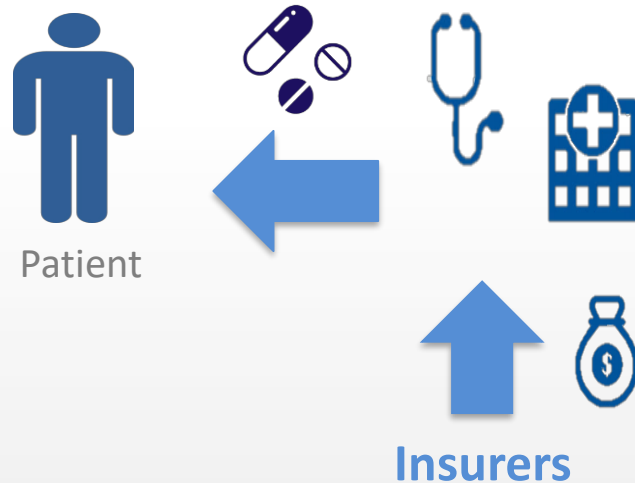
- Better care alignment
- Better understanding of medical costs
- Potential cost savings for insurers
- The Netherlands, United States of America



# What are the emerging practices?

## Pharmaceuticals and Insurers

### Conventional Payment System



- No specific limit on reimbursement
- Lack of visibility on price
- Lack of active cost management

### Preferred Medicine Policy

#### Option A

Insurers



negotiates



Preferred pharmaceuticals

- Only preferred pharmaceuticals will be reimbursed
- Applicable to those with same active substances
- Active cost management



## Option B



## Patient

- 28



# What are the emerging practices?

## Pharmaceuticals and Insurers

- The Netherlands
- Lower pharmaceuticals spending since year 2009
- Estimated savings of €348 million per year

How?

- Preferred medicine policy
  - Outpatient care only
  - Therapeutic groupings



## Take away

- Singapore Health System is relatively cost effective for now but **rapidly rising medical costs** remain a concern.
- Excluding irreversible factors such as CPI and ageing, medical cost inflation grew at **c 7% p.a.** between year 2007 and 2014.
- Bundled payment system and preferred medicine policy are emerging practices with potential to **taper medical cost inflation.**



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Any question?



Thank you!