May 30, 2025

# Diagonosing Medical Cost Trend

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# Medical cost growth makes the news

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## Medical cost growth will rise to highest level in 13 years; a renewed call to action to address affordability

Commercial health care spending growth is estimated to grow to its highest level in 13 years, according to PwC's newest research into annual medical cost trend. PwC's Health Research Institute (HRI) is projecting an 8% year-on-year medical cost trend in 2025 for the Group market and 7.5% for the Individual market. This near-record trend is driven by inflationary pressure, prescription drug spending and behavioral health utilization.

Despite global annual inflation expected to decrease, medical plan costs on the rise

**DUBLIN, Oct. 14, 2024** – Aon plc (NYSE: AON), a leading global professional services firm, forecasts medical plan costs across the world will rise on average 10.0 percent in 2025, according to its 2025 Global Medical Trend Rates Report ↗. This figure is just shy of the projected increase for 2024 of 10.1 percent, which represented the highest increase forecasted in 10 years.

## Global medical costs to stay elevated in 2025: report

**This continues the double-digit growth seen in 2024 and 2023.**

Medical costs are expected to remain high at a global average rate of 10.4% in 2025, according to the latest WTW Global Medical Trends Survey. This continues the double-digit growth seen in 2024 and 2023, where costs peaked at 10.7%.

In the Asia Pacific region, the medical trend is projected to rise from 11.9% in 2024 to 12.3% in 2025.

| Global Medical Trend WTW | Gross | | |
|---|---|---|---|
| | 2023 | 2024 | 2025 (projected) |
| Global† | 10.7 | 10.4 | 10.4 |
| Latin America† | 10.8 | 10.4 | 10.1 |
| North America | 7.8 | 8.1 | 8.7 |
| Asia Pacific | 10.9 | 11.9 | 12.3 |
| Europe† | 11.0 | 10.1 | 9.4 |
| Middle East and Africa | 10.9 | 10.4 | 12.1 |

# What is medical cost trend

The medical cost trend,  or growth rate, is consisted of:

- **Unit cost inflation:** changes in the price of per service, for medical products and services, prescription medicines, and consultants' fees.
- **Per capita utilization:** changes in the number or intensity of services used

# Factors driving high medical cost trend in Private Medical Insurance (PMI)

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## 01

### Medical Inflation

Cost of care delivery is affected by market economic factors; workforce shortage; health provider consolidation

## 02

### Advance in medicine

A rise in new medical technologies and pharmaceuticals has greatly contributed to increased costs of care globally

## 03

### Disease Burden

The increasing prevalence and cost of managing chronic conditions (e.g. cancer, cardiovascular disease, diabetes)

## 04

### Demographic change

Increased treatment cost due to aging and UW wear off of the portfolio

## 05

### Induced utilization

Fee for service payment system; provider moral hazard; defensive medicine

## 06

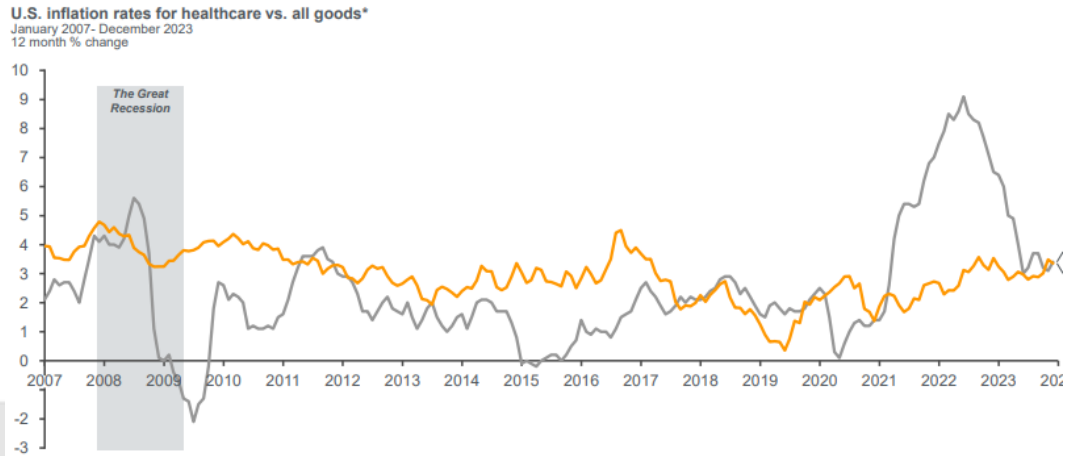
### Public program impact

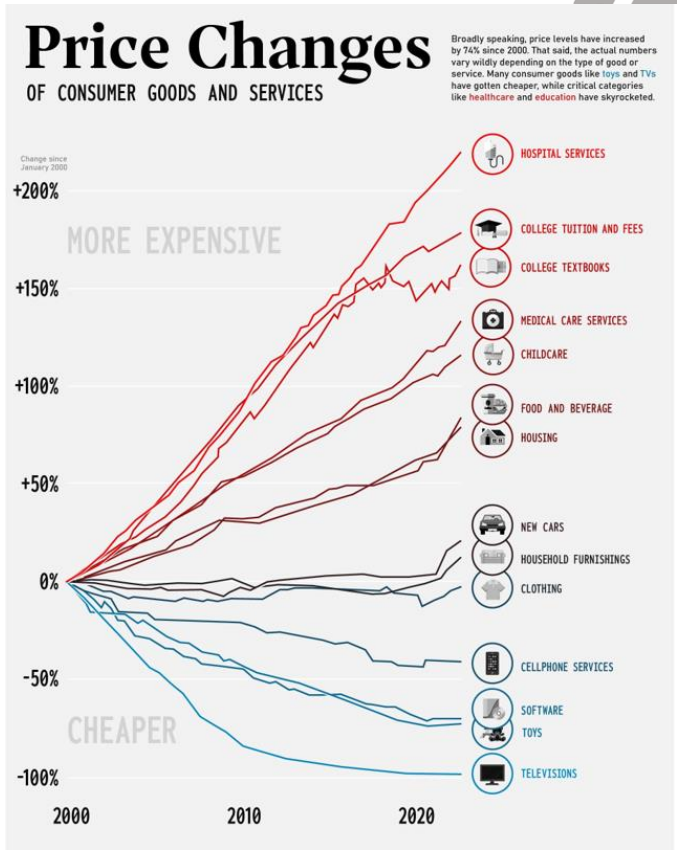
More members turn to private medical providers due to long wait time in public system as well as budget constraint that limit treatment options under public program

# Medical inflation generally higher than CPI

**Healthcare is disproportionally impacted by labor cost**

- Compared to other commodities, the cost of labor is the largest expense healthcare systems face
- Limited productivity gained in healthcare workers
- Staffing shortages have resulted in a greater demand for these services and higher costs



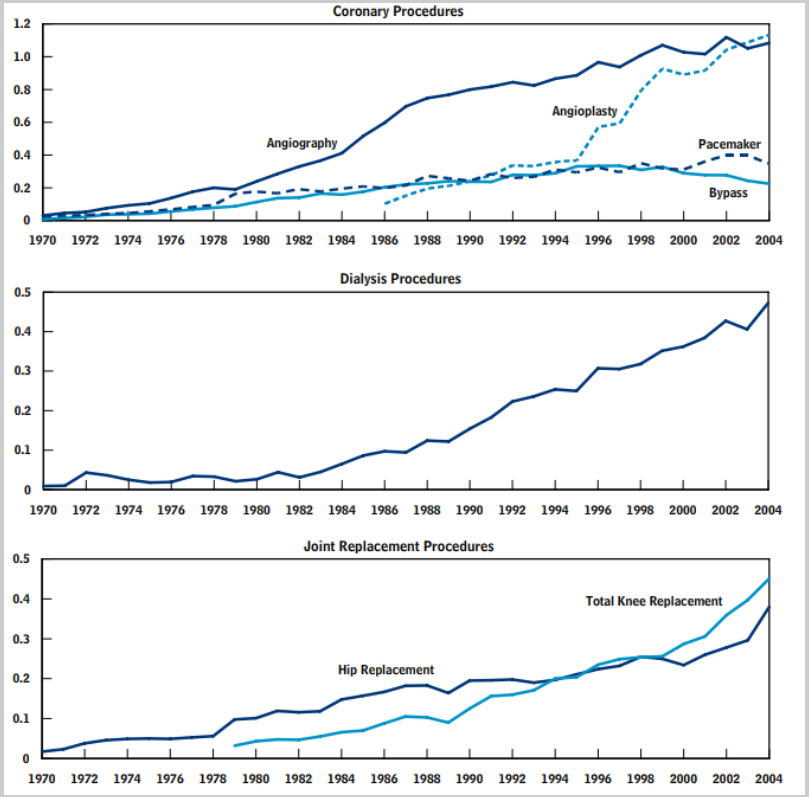




Source: U.S. Bureau of Labor Statistics (BLS); L.E.K. research and analysis

# How advance in medicine drive up cost

## Access to better technology increase medical cost

- Increasing penetration of higher tech medicine usage




Source：Congressional Budget Office based on data from the National Center for Health Statistics

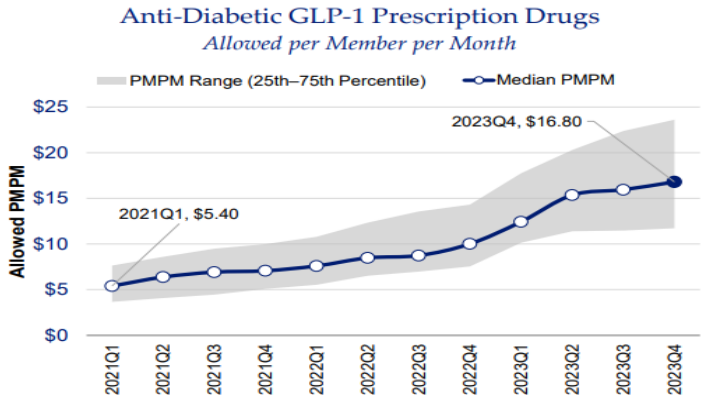
- More expensive services and medical products

### Cost of diabetes treatment


Metformin 1994 ($0.10- $1.00/ tablet)


Januvia 2006 ($3.65- $10.0/ tablet)


Ozempic 2017 ($300- $400/ shot)




Source：SHAPE Data Wearhouse, Segal Study

# How advance in medicine drive up cost

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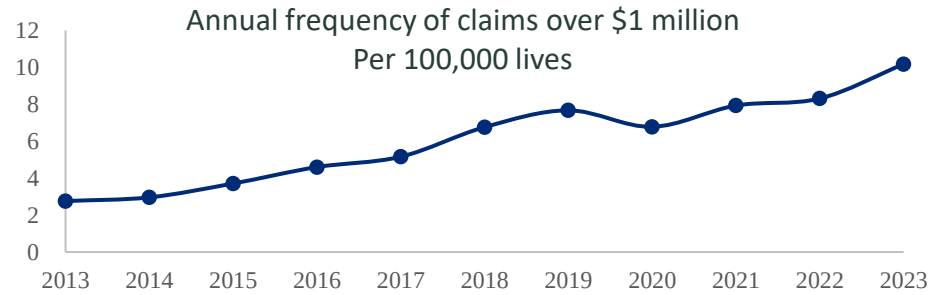
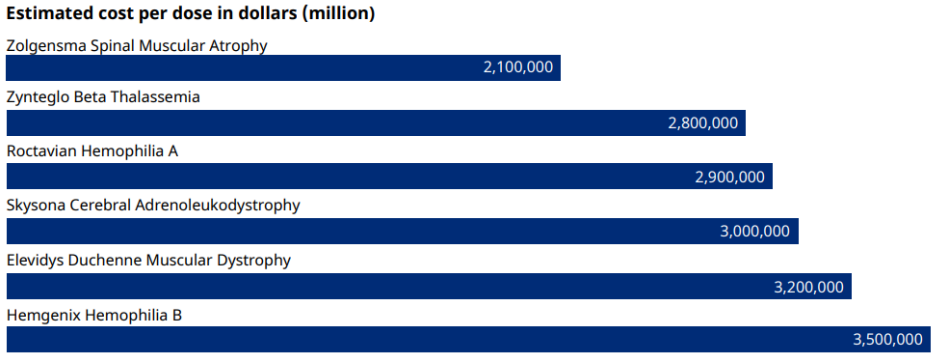
## Catastrophic medical claims are more prevalent

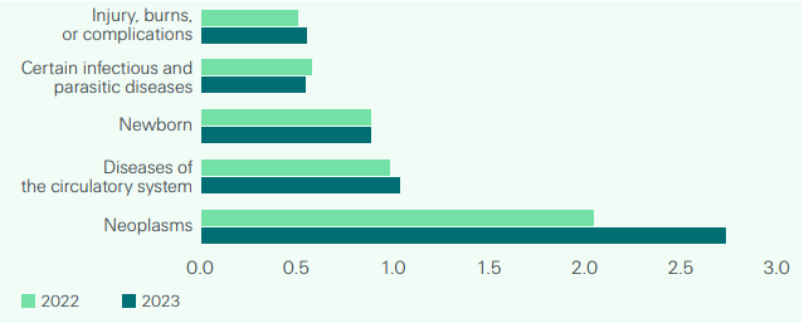
- Frequency of large medical claims ($1M and above) has been rapidly increasing




- Cell and Gene therapy cost a new challenge to the industry




- Increase in complexity: Diverse medical conditions with co-morbidities
  - Cancer
  - Neonate
  - Cardiovascular disease
  - Respiratory failure
  - Sepsis
  - Hemophilia
  - End-stage renal disease




Source: Swiss Re Analysis

# Increasing prevalence of chronic diseases drive up cost

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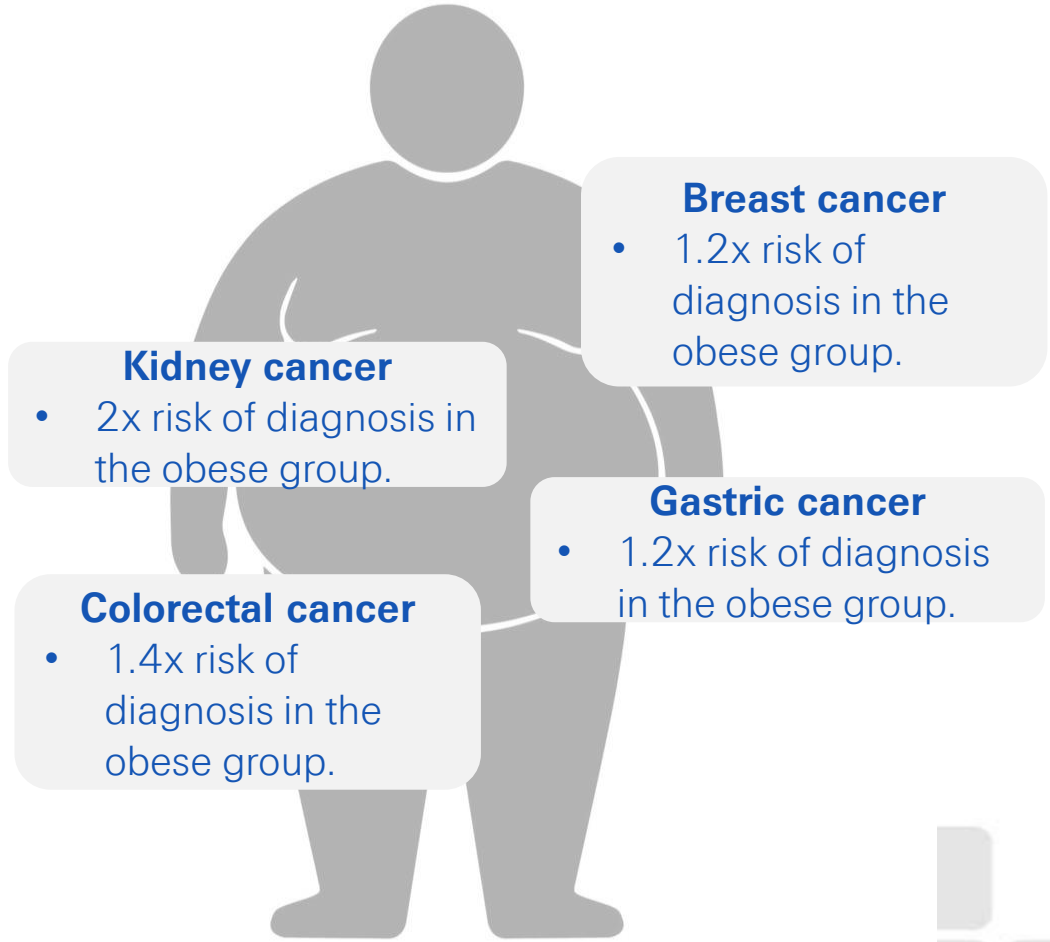


**Breast cancer**
- 1.2x risk of diagnosis in the obese group.

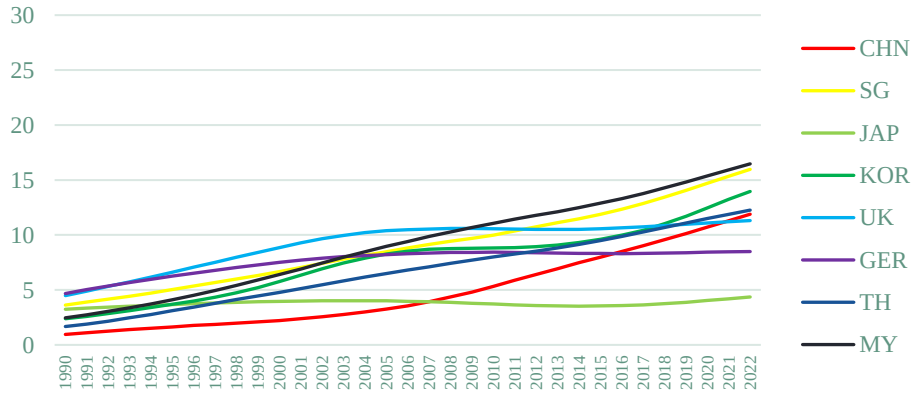
**Kidney cancer**
- 2x risk of diagnosis in the obese group.

**Gastric cancer**
- 1.2x risk of diagnosis in the obese group.

**Colorectal cancer**
- 1.4x risk of diagnosis in the obese group.

- More than **75%** of health care costs are due to chronic conditions
- **Obesity epidemics**: Obesity is a major risk factor to chronic diseases. Obesity rates continue to rise in most OECD countries, with 54% of adults overweight or obese, and 18% obese on average

Prevalence of obesity
(BMI > +2 standard deviations above the median)

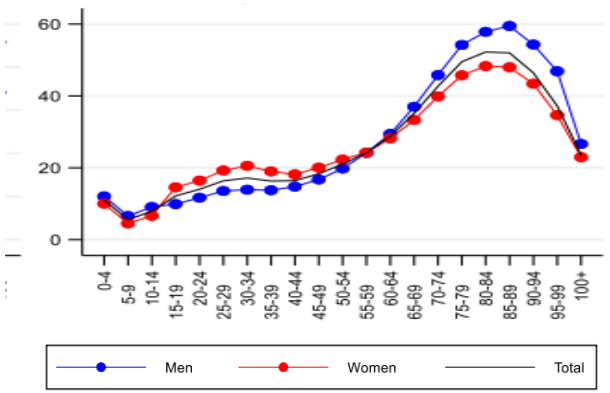



Source: Swiss Re study

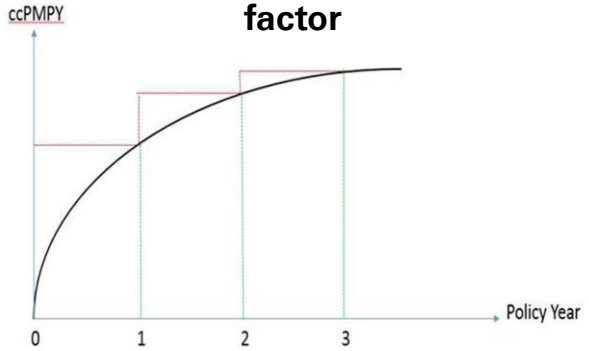
# Demographic change in PMI population

- Age is one of the key variables that drive cost difference
- Young v.s. old age segments: there generally is cross-subsidization from young to the old. Once the age mix change (i.e. lapse of young low-risk lives or "selective lapsing"), trend impact is more significant.
- New business v.s. in-force business: Effect of underwriting wear off drive up cost. Once the sales growth slows down, dilution from the lower cost newcomers diminish.
- Insurers with high premium increases tend to experience high selective lapsing, resulting in adverse change in risk profile

**Example of aging curve of healthcare cost**




**Example of duration factor**



# Induced utilization under Fee for Service model

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## Scientific theories

**Roemer's Law**: hospital beds that are built tend to be used

**Dr John Wennberg**: high rates of surgery were not being driven by the patients but rather by the doctors. His study found procedure rates can vary significantly based on resource availability:

Tonsillectomy rates variation: eleven-fold
Hemorrhoidectomy rates variation: five-fold
Hysterectomy rates variation: three-fold

## Live cases

After India launched national health insurance scheme, an increase of 20% in hysterectomy cases since July 2008 and sharp increases in cataract surgery after the arrival of health insurance. "A 1 percent increase in the reimbursement rate induced a 0.4 percent increase in its claim volume."

Arthritis Australia and Rheumatology Australia: at least 10% of joint replacements in Australia are avoidable resulting in unnecessary spending of some $200 million each year.

# Shift from public to private program

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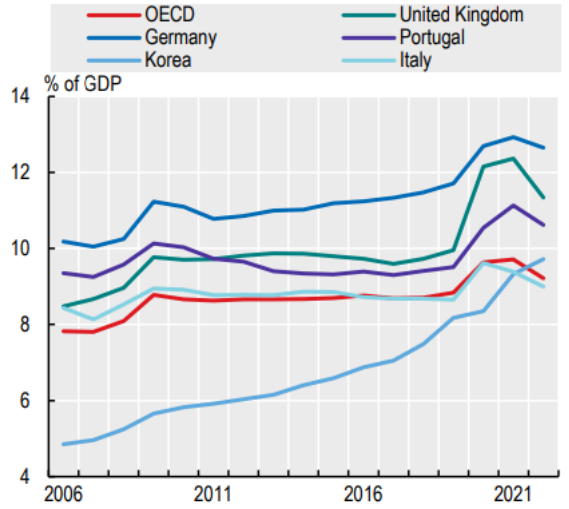
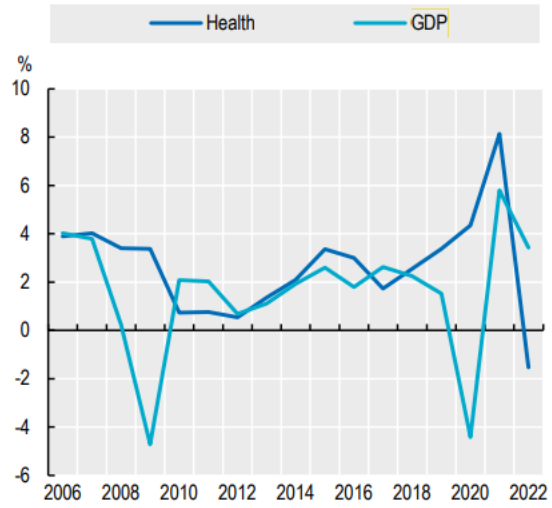
- Health systems are under financial pressure, with competing priorities squeezing the public funds available for health
- Demand for healthcare workers outstripping supply.
- Shortage of healthcare workers lead to long wait time in public providers and increased demand for private healthcare alternatives as people seek faster access to care

Health expenditure
as a share of GDP keeps increasing




Source: OECD Health Statistics 2023.

Annual real growth in per capita health expenditure and GDP growth




Source: OECD Health Statistics 2023.

# Shift from public to private program

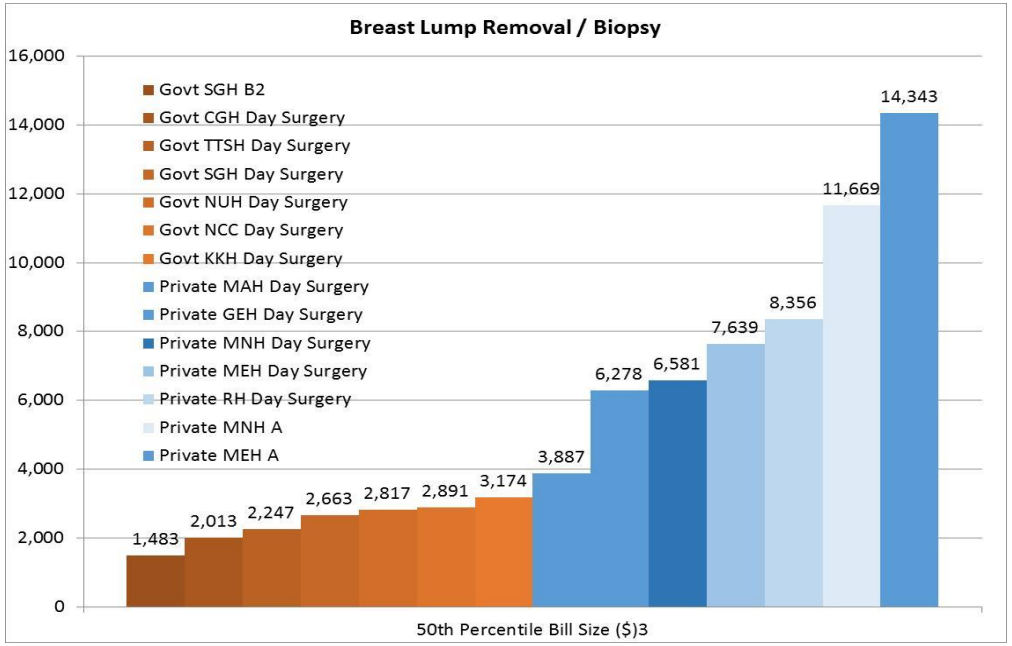
Example: UK PMI

- UK economy remains under pressure with sluggish GDP growth and high inflation, reducing disposable income.
- 7.6M people waiting for treatment (2024), 3X increase over a decade; emergency admission times exceeding 12+ hours; difficulty to access GP.
- Growing PMI Penetration and rising premium: Driven by NHS delays, 5.8 million people now covered—highest in 15 years. PMI premiums 15% rise in 2024.

Example: China PMI

- Out of pocket health expense
- Diagnostic Re Group (DRG) reform in public hospital under social health insurance
- Individual PMI grow to cover 10%+ of population

Variation in Healthcare Cost between Private & Govt Hospitals



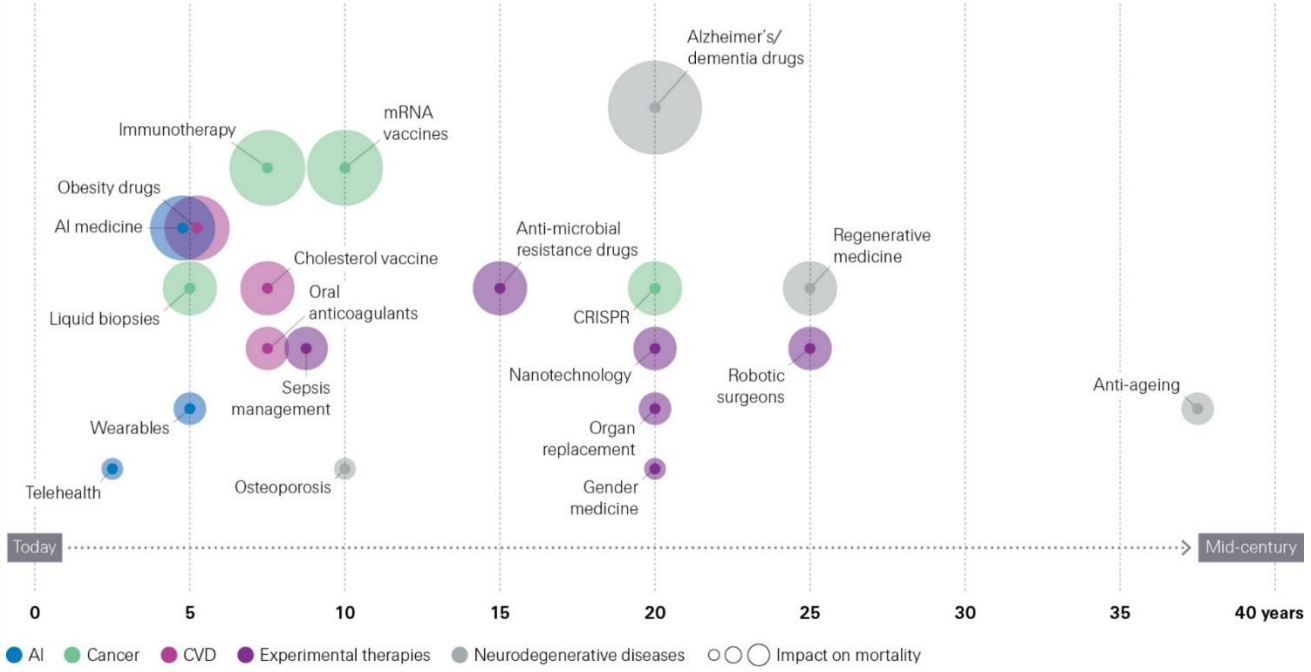

Source: https://www.moh.gov.sg

# Putting them all together - How to analyze your portfolio's medical cost trend

- Utilization v.s. unit costs
- Breakdown by medical service categories (e.g. outpatient, Rx, inpatient)
- Comparisons against market benchmark and across books to undiscover patterns from providers, disease conditions, regions, etc.
- How volatile are high cost claims
- Normalization of duration factor and aging factor
- Be mindful of leveraged trend from deductible impact

# Actuaries do not have the crystal ball

**Future medical advancements: many promising technologies but timing & uncertainty is high**




Source: Swiss Re study

- Innovation will continue
- There will always be demand for better / more healthcare
- Doctors will recommend treatments from which they can earn income

- Understand cost drivers
- Outlook assessment – Rx development, regulatory change impact
- Flexibility to review rates
- Constant effort to bend the curve

# Effort to bend the cost curve

| | |
|---|---|
| **Value Purchasing** | • Network management (provider contracting)<br>• Bundled pricing<br>• Value based contracting |
| **Utilization Management** | • Benefit redesign: cost sharing, benefit limits/exclusions, NCB<br>• Tiered pricing: tired provider coinsurance; tiered drug copay<br>• Pre-authorization/claim management |
| **Risk Selection** | • Underwriting<br>• High deductible product<br>• Pre-existing condition |
| **Health Management** | • Case management<br>• Disease management<br>• Wellness |
| **Reinsurance** | • Manage volatility from large claims<br>• Quata share<br>• Excess of loss |

# More news….the bright side of medical cost growth

On May 10th, 2025, Emily Whitehead who received first experimental CAR T-cell therapy celebrated her 15th anniversary of cure.



Picture taken on May 17th, 2025 of KJ, first patient treated with personalized CRISPR therapy