



# Insurance Medicine: Lessons from an International Perspective

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MMDA - Chesterfield, MO – USA – 11 May 2018



# Agenda

- **The Global View**
- **Requirements**
- **Mortality**
- **Genetics**
- **Product Plus**
- **Conclusion**



# The Global View

- How many of you work with any markets outside the U.S.?
- Global Diversity
  - Mortality and Morbidity
  - Regulation
  - Social need/insurable interest
  - Product



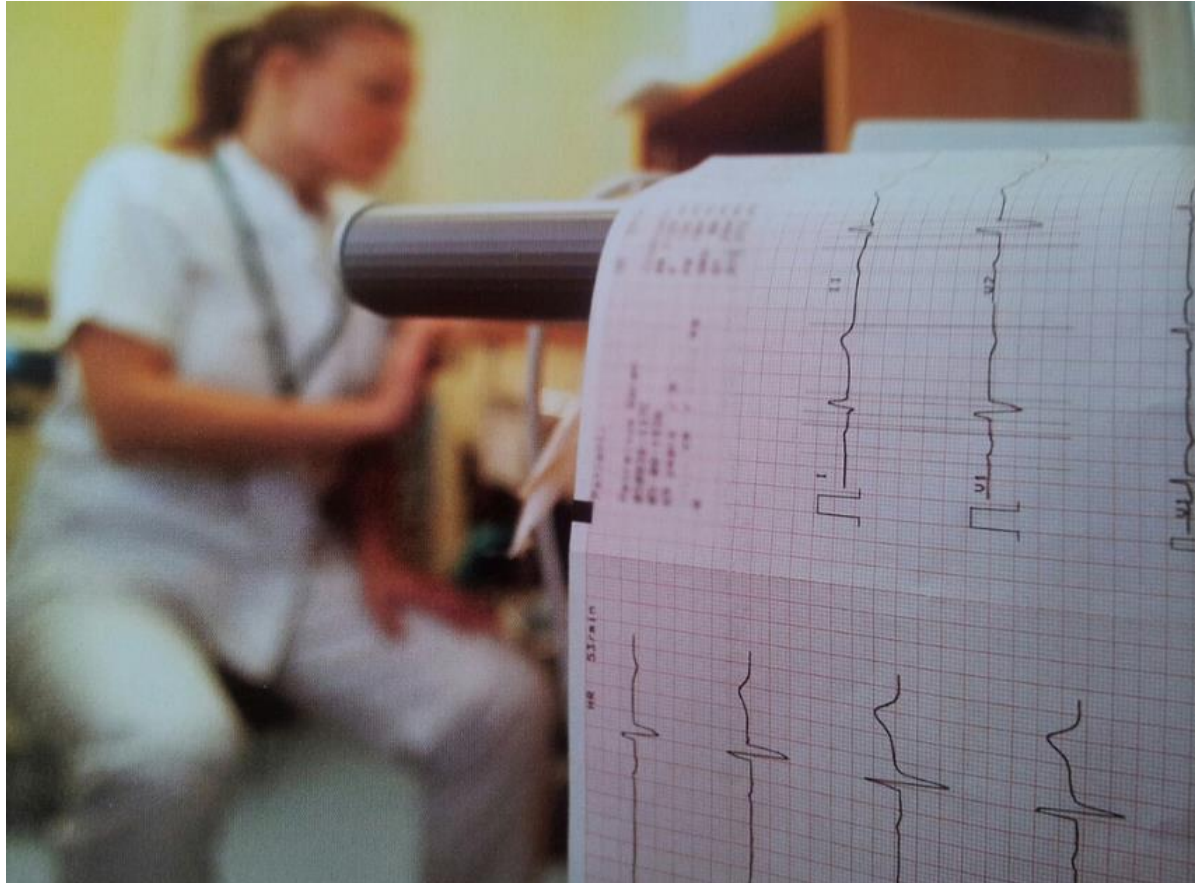
# Requirements

- **Vary significantly based on location, sum assured, product**
- **Often no benefit/cost analysis to substantiate**
- **Driven by competition**



# Requirements - Examples

- **APS/med reports**
- **Med exams**
- **Abdominal US**
- **CXR**
- **CBC/full chem panel**
- **EKG/treadmills/echo**
- **Tumour markers**
- **Sed rate**



# Requirements – General Practitioner Report - UK

## **Your patient's consent**

I've enclosed a copy of your patient's signed consent for you to fill in this report.

We've told them the report will contain details of relevant illness, trauma, referrals for specialist advice or treatment, hospital admissions, family history of disease and consultations with you and any other medical adviser, therapist or counsellor.

We've also told them the medical report will not ask for details of any negative tests for HIV, hepatitis B or C, unfavourable genetic test results and that the medical report will not ask for any incidences of sexually transmitted diseases unless there are long term health implications.

# Requirements – SA – Master's Test

- **Four tracings: rest, post 3 min exercise, 3 and 6 min recovery**
- **Of little value unless early positive**

Most of the insurance companies in South Africa and medical officers use the following classification (or very similar) for grading an ischaemic effort ECG.

Equivocal: - horizontal ST segments with depression of 0 – 0.5 mm.

Grade 1A: - horizontal ST segment depression of 0.5 – 0.9mm.

Grade 1 : - horizontal ST segment depression of 1.0 - 1.5 mm.

Grade 1B : - horizontal ST segment depression of 1.5 - 1.9 mm, or J. point depression of > 1 mm with downwards sloping ST segments (often associated with inverted T. waves).

Grade 2 : - ST/T. wave changes > than indicated above for grade 1B.

# Genetics around the world



# Australia – historical status

- **No genetic testing for insurance applicants**
- **May ask for existing genetic test results**
- **Cannot use if testing was done for research purposes and applicant unaware of results**
- **Consider beneficial effects, e.g. more screening**
- **Can only apply results to applicant**

# Australia – Actuaries Institute - 2017

## Combination proportion of the population who obtain genetic tests and predictive power of genetics

	Base		Variation	
% of population who obtain PRS-based genetic tests	0.5%	1%	2%	5%
Increase in disease risk (high vs low risk)	31%	131%	231%	331%
Increase in claims from NB anti-selection	1.8%	4.2%	9.5%	26.3%
% of in-force lapsed due to low risk result	0.1%	0.2%	0.3%	0.8%
% increase in lapse rate	0.5%	1.0%	1.9%	4.8%

- Assumptions based on predictive genetic tests or polygenic risk scores, not monogenic diseases
- CI-trauma cover

# Australia – Parliamentary Joint Committee

## Genetic information

As the use of genetic testing in health care increases, concerns have been raised around privacy and genetic discrimination. In response to concerns over genetic discrimination, several countries have enacted legislation or voluntary agreements to restrict or fully ban the use of genetic information by insurance companies.

The committee is of the view that it is inherently unfair to limit or deny a person access to products such as life insurance based on factors that are out of their control. The committee is concerned that the use of genetic information by life insurers has impacted on participation in public health research projects and other forms of research. The committee is recommending that the Financial Services Council, in consultation with the Australian Genetic Non-Discrimination Working Group, assess the consumer impact of imposing a moratorium on life insurers from using predictive genetic information.

# Australia – PJC Recommendations

- **Assess consumer impact of imposing a moratorium on life insurers using predictive genetic information – unless consumer provides results to show they are not at risk of developing a disease.**
- **Update FSC Standard 11 and 16 (Family History)**
- **Ban use of predictive genetic information while standards being updated**
- **Adopt a moratorium on the use of predictive genetic testing**
- **Consider legislation or regulation banning or limiting use of predictive genetic information**

# UK

- **The Government and the ABI believe the relationship between medical data and insurance underwriting should be proportionate and based on sound evidence. Insurance companies should have access to all relevant information to enable them to assess and price risk fairly in the interest of all their customers.**
- **Prohibits use of predictive genetic information**
  - **Limits: life – £500,000, CI £300,000, IP £30,000**
- **Can use HD test > £500K**
- **Diagnostic test results allowed**

# Canada

- **Bill S-201 passed to become Canadian Genetic Non-discrimination Act in 2017**
- **Prohibits any person to undergo a genetic test as a condition of:**
  - **providing goods or services**
  - **entering into a contract**
  - **offering or continuing specific terms or conditions in a contract**
- **Prohibits requiring disclosure of genetic test results**
- **Written consent can be obtained to utilize favourable genetic info**



# Canadian Non-discrimination Act

- Insurers modifying application questions
- APS forms request that doctors not include genetic information
- If genetic information is received, must document that it is not being used
- Specific authorization to use genetic information if favourable to the client
- Family history is still usable
- Overall pricing has not yet been adjusted
- Closely being monitored
- May be further judicial challenges to the law

# Others

- **No use of genetic information +/- family history**
  - Austria
  - Belgium
  - Denmark
  - France
  - Ireland
  - Portugal
  - Korea
  - Japan

**How have these restrictions impacted insurance lines of business to date?**

# Product “Plus”

# Product Sampling

- Life
- Critical illness – early, severe, multi-pay, staged
- Income protection
- TPD
- Hospital/surgical cash
- LTC
- Medical reimbursement
- Cancer only
- Juveniles
- Female products
- Disease-specific
- Travel
- Impaired annuities
- Other



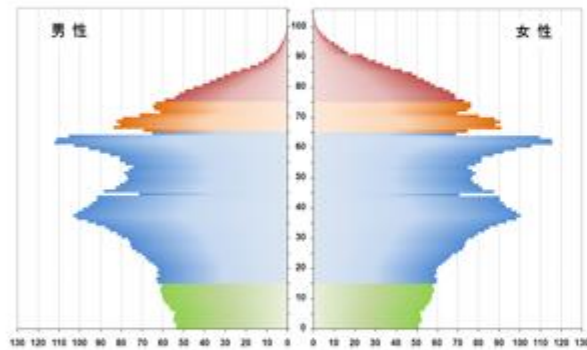
Photo – U.S. government image

# Japan – a looming crisis?

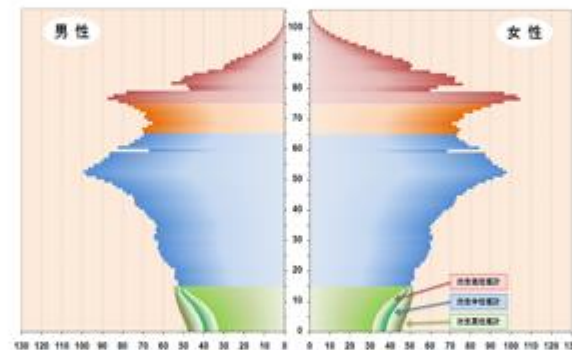
## Demographic pyramid in JPN

Aging society of Japan

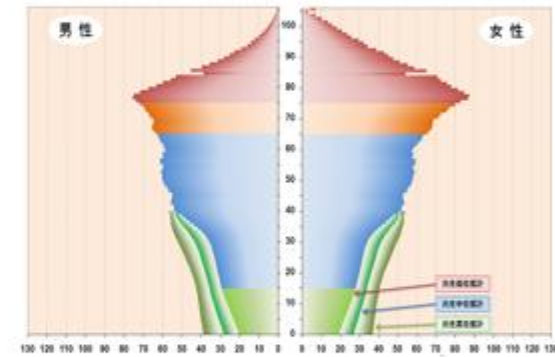
2010



2025



2050



<http://www.ipss.go.jp/site-ad/TopPageData/pyra.html>

**By 2050, approximately one-third of the population will be over 65 years of age!**

# Japan

News > Life and Health

30 Mar 2018

## Japan: Super elderly outnumber other senior citizens

According to the Ministry of Internal Affairs and Communications, the number of Japanese aged 75 or older stood at 17.70 million as of 1 March, while those between the ages of 65 and 74 numbered 17.64 million.

Because people are living longer, the number of older senior citizens is growing by an average 30,000 every month. On current trends, by 2025 Japan's first wave of baby boomers will all be 75 or older, outnumbering their 65- to 74-year-old counterparts by 50%, reported *Nikkei Asian Review*.

- **Financial institutions creating new services for asset turnover**
- **Addressing legal guardianship for those with dementia**
- **Government considering allow delay in pension until age 70**
- **Change takes time**



# Japan – The Ballad of Narayama

The film is set in a small rural village in Japan in the 19th century. Once a person reaches the age of 70 he or she must travel to a remote mountain to die of starvation, a practice known as ubasute.

Ubasute “abandoning an old woman”, also called obasute and sometimes oyasute “abandoning a parent”), is the mythical practice of senicide in Japan, whereby an infirm or elderly relative was carried to a mountain, or some other remote, desolate place, and left there to die.

# Lonely Death Insurance – Japan/Korea

News > Long Reads

## Japan's lonely deaths: A growing industry is now devoted to cleaning up after Japanese people dying alone

As family dynamics change in the country, more people are living by themselves. Anna Fifield reports on the grim fallout

Anna Fifield | Tuesday 30 January 2018 16:45 GMT | 0 comments

News > Non-Life

20 Dec 2017

	M	F	M	F
Days until discovery	(a)	(b)	(a)	(b)
0~ 1 (日)	25.40	88.87	37.95	91.91
2~ 3	26.38	6.84	29.33	5.30
4~ 7	18.13	2.21	16.75	1.58
8~ 14	12.77	1.17	7.26	0.47
15~ 30	9.57	0.41	5.52	0.47
31~ 90	6.13	0.21	2.42	--
91~180	1.32	0.07	0.68	0.09
181~365	0.13	0.07	0.10	0.09
366~	0.17	0.14	-	0.09

(a) Living alone, (b) Living not alone

Data provided by Dr. Tonoya, RGA, Tokyo

## South Korea: Call for insurance schemes for those who die alone

# Japan – Longevity and Life Insurance

News > Life and Health

21 Feb 2018

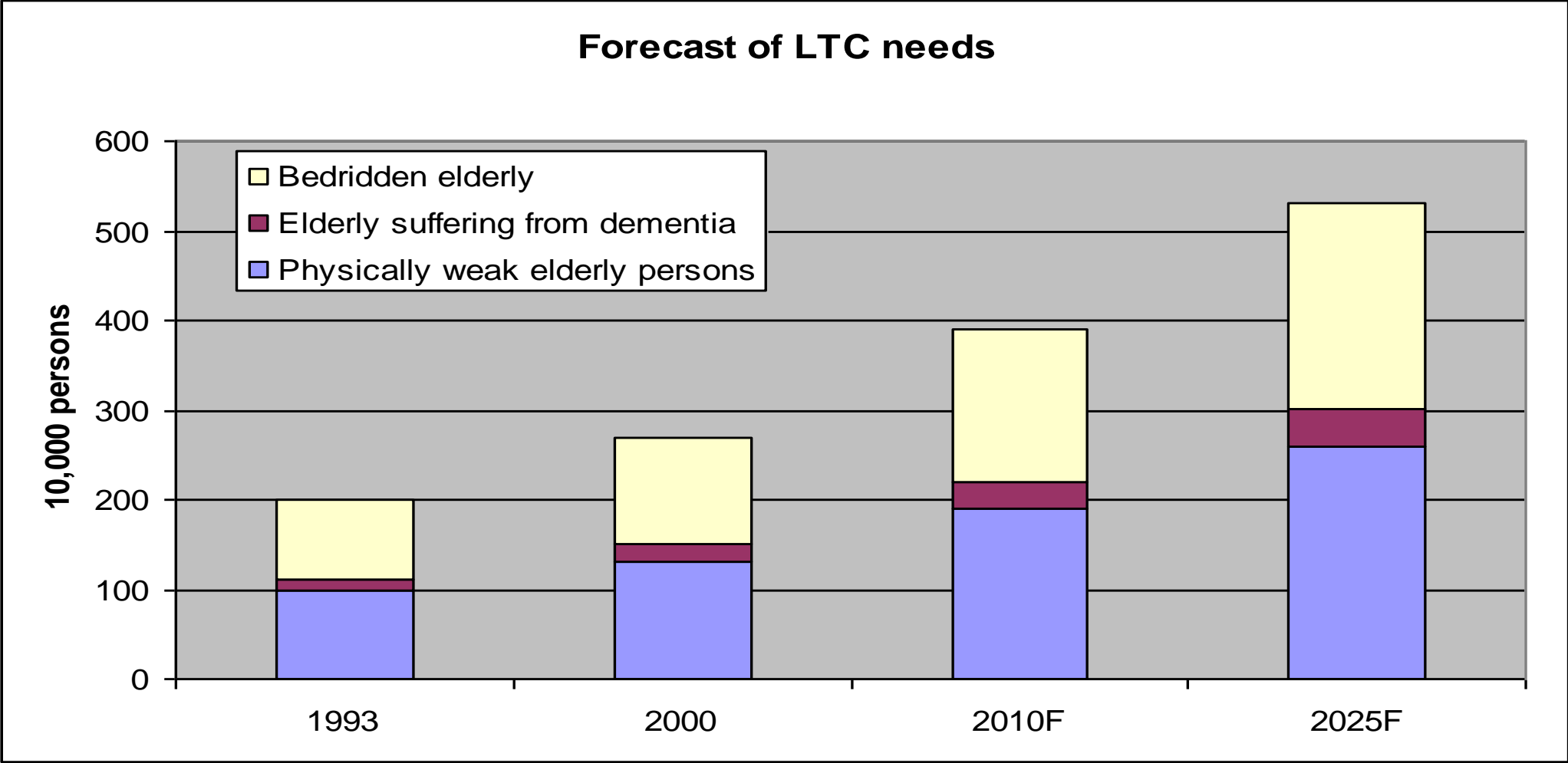
## **Japan:** Insurers lower life insurance premiums on longer life spans

Major insurer, Nippon Life Insurance, will cut premiums for life insurance products by up to 20% as its payout is on the decline due to the rising longevity of policyholders, company officials say. The discounts will take effect on policies purchased after March.

On the back of people's longer life spans, other Japanese insurers also plan to lower mortality insurance fees. The size of the cut in insurance fees will vary depending on policyholders' age, sex and type of contracts, reports Kyodo News.

- **While life premiums will decrease, health premiums will increase**
- **New mortality tables show improved mortality for every age bracket**

# Increase of LTC needs in Japan



Source: Ministry of Health, Labour and Welfare, Japan (MHLW)

# Benefits of Public LTC Insurance

## ■ 2-types of insurance benefits

### • In-home service

#### ○ Home-visit/Day Services

- home-visit long-term care
- home-visit bathing
- home-visit rehabilitation
- day rehabilitation (day care)
- home-visit nursing care

#### ○ Short-stay service, short-stay care

### • Services at facilities

- Long-term care welfare facilities for the elderly (Special nursing homes for the elderly)

Tiered system of benefits

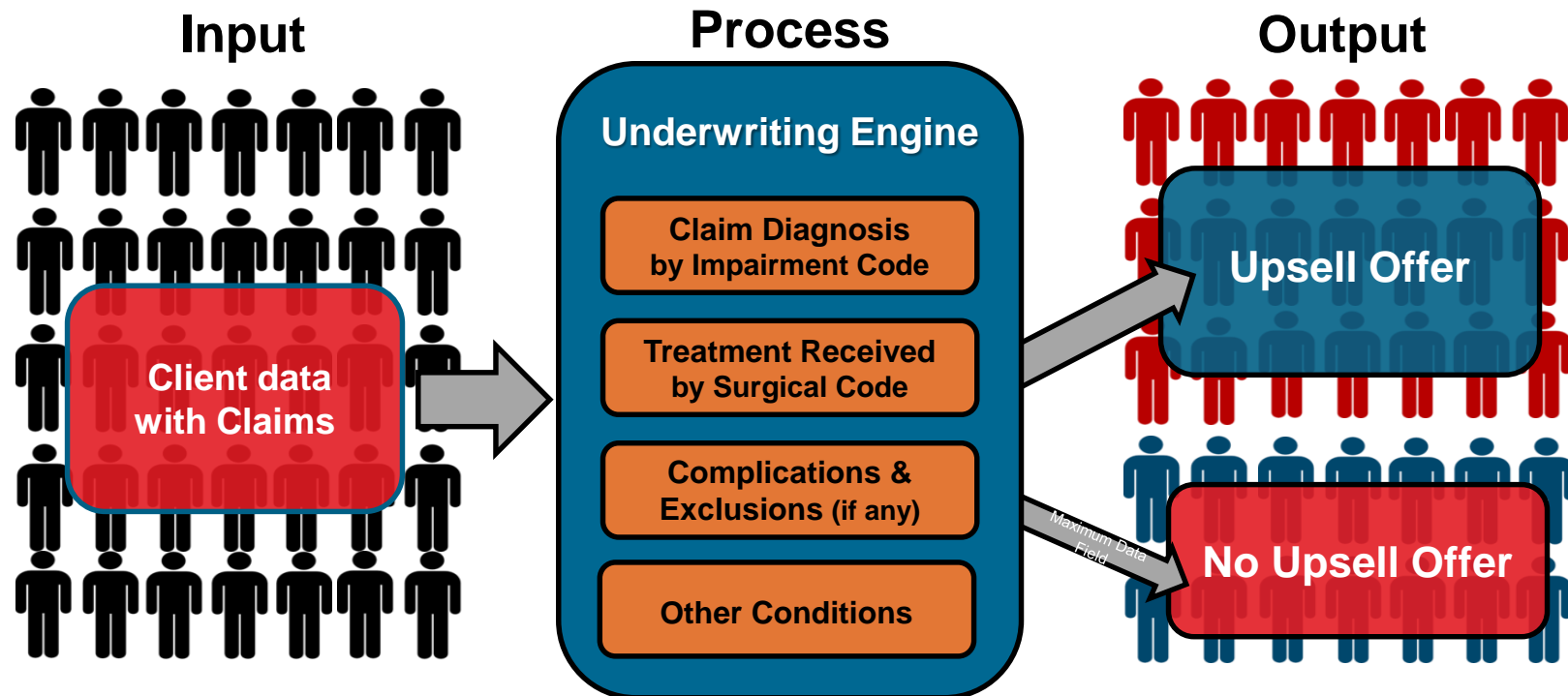
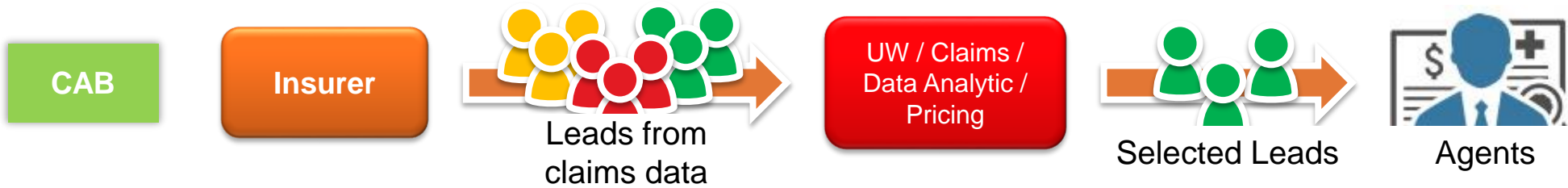


# **Korea/Japan/HK: Claims as a Business (CAB)**

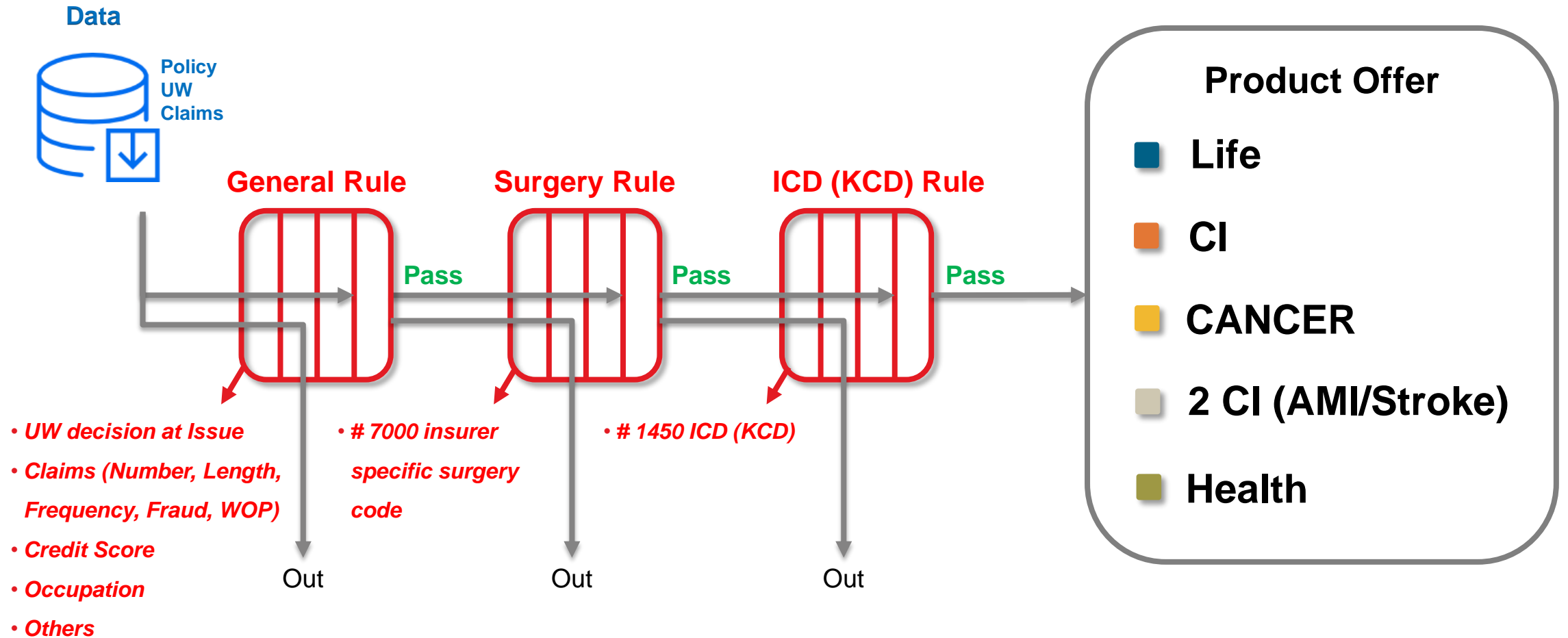
- **Upselling to existing customers is important in the Korea insurance market as two-thirds of the new policies are sold to existing customers.**
- **Claimants are the right customers for additional sales from agent perspective but they are afraid to contact them due to the arduous underwriting process.**
- **Generates leads using historic medical claims and pre-approves a range of products with minimal underwriting.**



# CAB – How it works



# CAB – Rules Engine Process



# South Africa – Claims Tools

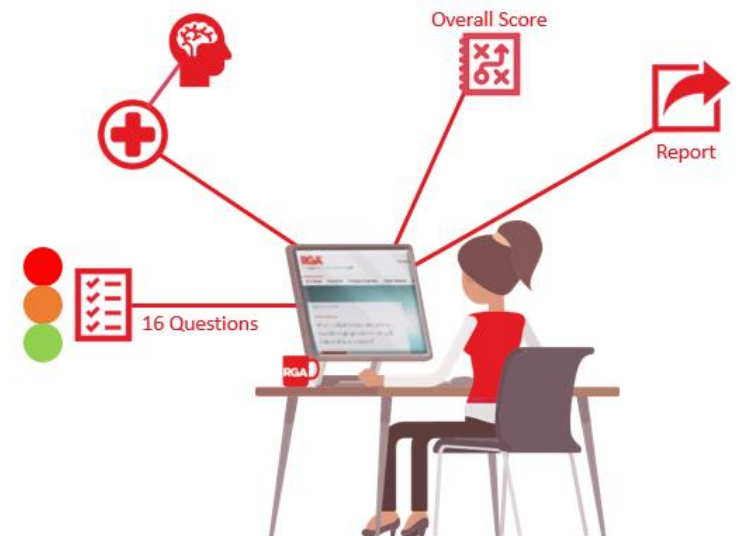


-  R90,000 pm
-  7 Days
-  AGE Early 40s



# SA – The avatar “Morgan”

- Interactive algorithm
- Based on 16 questions to generate the “M-score”
- Addresses medical and employer context
- Additionally assesses:
  - Support systems
  - Personality traits (catastrophizing, anger)
  - Resilience
- Provides guidance how to approach the claimant and claim management



# Australia: Group TPD – What happened? A debacle!

- **The number and benefit amount of TPD claims rose.**
- **The definition of TPD was liberalised, resulting in more claims.**
- **Cover was available with no underwriting**
- **Superannuation funds encouraged clients to make greater use of their TPD benefits under their group policy.**
- **Lawyers' developed awareness of this insurance and filed an increasing number of TPD claims on behalf of clients.**

# Australia: What changes were needed?

- **Product design**
- **Levels of automatic cover reduced**
- **A move from a lump sum TPD to an installment design that offers rehabilitation and assistance to return to work**
- **Claims adjudication – a move from a medically focused approach to a more holistic approach focusing on function and capability**
- **Building adjudicator capability through core concepts of improved claims case management**
- **Philosophical changes on helping clients back to health, function, and work**

# Continuous Cancer Benefit – Product Design

## Standard Cancer Product

- Whole of life coverage (up to age 100)
- Cancer coverage is terminated after 1st cancer diagnosis

**VS.**

## Continuous Cancer Benefit

After the 1<sup>st</sup> diagnosis of cancer, additional payments are made if the life assured is still suffering from cancer as below:

- Still undergoing treatment for the 1<sup>st</sup> cancer
- Relapse of 1<sup>st</sup> cancer
- Spread of 1<sup>st</sup> cancer
- Second primary cancer

### Taiwan:

Initial lump sum is payable, then X% FA will be paid every 1 to 3 years up to 20 years if the insured is still suffering from cancer (can claim up to 280%)

### Hong Kong:

Initial 100% is payable on diagnosis then another 2 claims are payable (300% overall), after 1 or 3 year WP for new primary cancer or relapse/continuation respectively.



# Singapore



## Ministry of Health's Diabetes Risk Assessment

Over 400,000 Singaporeans are living with DM. One in three Singaporeans has a lifetime risk of getting diabetes and the number of those with diabetes is projected to reach one million by 2050, if current trends continue. In April 2016, MOH declared War on Diabetes to rally a whole-of-nation effort to reduce the burden of diabetes in our population and keep Singaporeans healthy as we age.

“Fortunately I was at the low risk category, and got a \$4 coupon off my next cab ride which was what got me to do the test in the first place!” Andy Hui, Head of Singapore, RGA

SINGAPORE: About 20 per cent, or 8,500 people, of 44,000 who used the Government's diabetes risk assessment tool were found to be at higher risk for the disease.

# Singapore

News > Regulations

03 Apr 2018

## **Singapore:** Financial industry to develop guidance on use of AI & data analytics

The Monetary Authority of Singapore (MAS) is working with key industry stakeholders to develop a guide to promote the responsible and ethical use of artificial intelligence (AI) and data analytics by financial institutions.

The guide will set out key principles and best practices for the use of AI and data analytics, helping financial institutions to strengthen internal governance and reduce risks of data misuse. The guide is targeted for completion by the end of the year. It will cover all segments of the financial sector including FinTech firms, said the MAS in a statement released yesterday.

# Singapore

News > eDaily

18 Apr 2018

## **Singapore:** Great Eastern launches AI-powered wellness and loyalty platforms

At a media preview yesterday, the insurer demonstrated GETGREAT, which features an AI-powered wellness coach, GERI, who offers personalised advice 24/7 to spur users towards their personal wellness goals.

GETGREAT complemented by UPGREAT, a loyalty benefits and rewards platform which features over 135 participating lifestyle merchants like Samsung, Krispy Kreme and Robinsons. UPGREAT users will also receive exclusive offers from partners like Qoo10 and Trip.com.



# Takaful

- Takaful - Arabic for “mutual guarantee among a group of people”
- The first Islamic Insurance company was formed in Sudan in **1979** followed by Saudi in **1980**
- The first Takaful operator in Malaysia was established in **1984** after the issuance of the Takaful Act by Bank Negara
- Based on brotherhood , solidarity, and mutual assistance which provides for mutual financial aid and assistance to the participants in case of need whereby the participants mutually agree to contribute for that purpose

# The 3 Main perils to avoid in Takaful

- **Al Gharar** (Uncertainty) - This arises due to the unclear terms in the contract, all parties involved should have "full disclosure" or knowledge of the counter values intended to be exchanged as a result of the transaction. In addition, any form of contract which is lopsided, in favour of one party at the expense and unjust loss to the other, is also classified as Gharar.
- **Al Maisir** (Gambling) - Gambling is prohibited. Uncalculated risk is evaluated as a kind of gambling as the insured is considered making a bet on the loss occurrence.
- **Al Riba** (Fixed Interest) - Paying and/or receiving interest is not permissible. In insurance companies this refers to the investment side (e.g. investments in fixed interest rate)

# Takaful vs. Conventional

Area of Differences	Life Insurance	Takaful
<b>Contract</b>	<b>An exchange/sale contract</b>	<b>A combination of donation and profit sharing</b>
<b>Responsibility of policyholders/ participants</b>	<b>Pay premium</b>	<b>Pay contribution, share surplus</b>
<b>Liability of insurer/operator</b>	<b>Pay Benefit as promised</b>	<b>Administrate and provide capital</b>
<b>Investment Fund</b>	<b>No restriction on instruments</b>	<b>Shariah compliant instruments</b>
<b>Shareholder and policyholders fund</b>	<b>Usually no distinction</b>	<b>Clear segregation of funds</b>
<b>Underwriting surplus</b>	<b>Goes to the Shareholder</b>	<b>Remain in risk fund or distributed to participants</b>

# Juveniles

- **Products vary significantly by market**
- **CI very popular especially in Asia**
- **Most CI had congenital exclusion, now less so**
- **Underwritten in Asia not in UK**
- **Move to cover neurodevelopmental disorders for CI**
  - **Based on DSM 5 definitions**
  - **Likely moderate risk (to insurers) product**





# Common Features of UK Child CI Products

- **Non-underwritten, rider to adult policy**
- **Payout is a fixed amount or a % of the adult cover**
- **Applies to current or “future” children**
- **Covers same adult diagnoses – same definitions**
- **Coverage from 30 days – age 18 years (21 if full-time student)**
- **Survival period: 10 – 28 days after diagnosis**
- **Most exclude TPD**

# Less Common Features of UK Juvenile CI Products

- **Some cover additional paediatric-specific diagnoses**
- **Double benefit if need to travel out of country for treatment**
- **Reduced benefits for some diagnoses, e.g. *ca in situ* bladder**
- **Loss of independent existence (LOIE) provision**

# Exclusion Language

## Association of British Insurers (ABI)

- **Child cover – pre-existing medical conditions**
- **A claim will not be covered for children’s critical illness cover if:**
  - **The child’s condition was present at birth;**
  - **The symptoms first arose before the child was covered; or**
  - **The child dies within [28] days of meeting the definition of the critical illness.**

# Children and Claims – Water and Oil?

- **Emotional aspect**
- **Dealing with and addressing someone's child**
- **Parents will be the advocate**
- **The parents and child have experienced a loss – it may or may not be covered**
- **Language, communication, and sensitivity are very important**

# Microinsurance

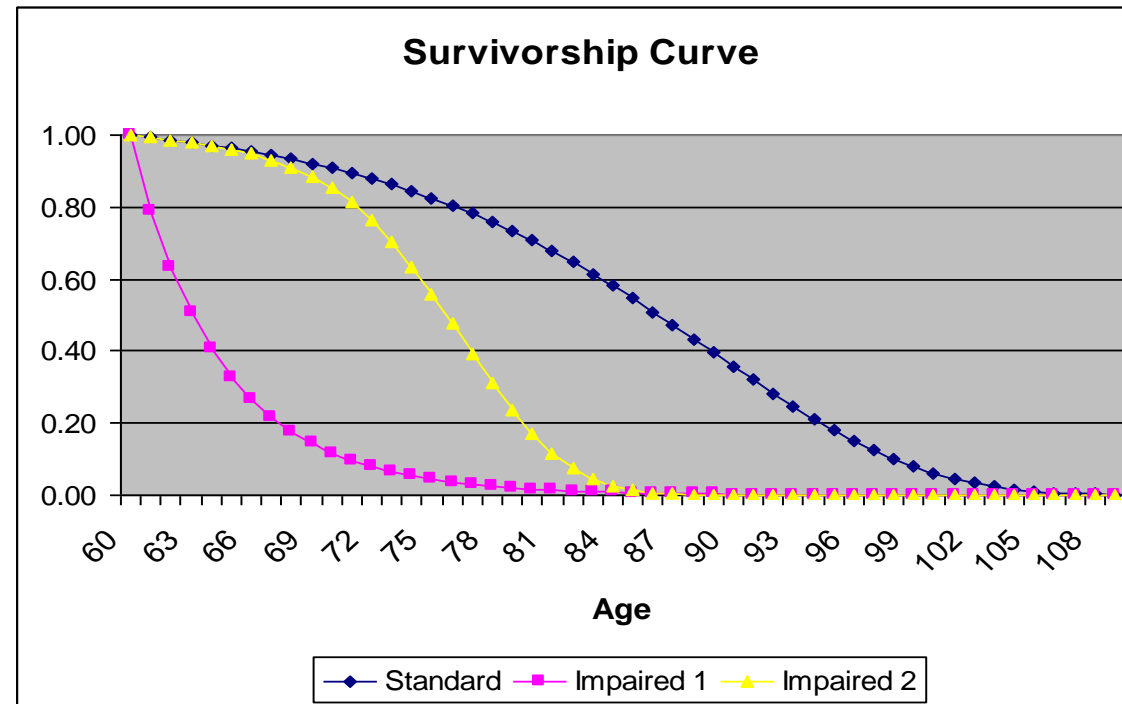
- **Microinsurance, or insurance for the low income and mass market, is a fast-emerging financial service taking advantage of low penetration rates and the increasing need to protect emerging consumers from financial shocks.**
- **500 million current insureds, up to 3-4 billion market potential**
- **Primarily mobile device sales**
- **Funeral, credit-life, personal accident, hospital cash, healthcare**
- **Group ratings, no underwriting**
- **Profits based on volume and low distribution costs**

# Microinsurance - Markets

Markets	Microinsurance Offered (Y/N)
<b>EMEA</b>	
South Africa & *Rest of Africa	Y
UAE	Y
France	N
Germany	N
Italy	N
Poland	N
Spain	Y
UK	Y
<b>Latin America</b>	
Brazil	Y
Mexico	Y
<b>Asia (excl. SEA)</b>	
Hong Kong	N
Japan	N
South Korea	Y
China	Y
India	Y
<b>Southeast Asia</b>	
Malaysia	Y
Thailand	Y
Philippines	Y
<b>Americas</b>	
U.S.	N
Canada	N
<b>Oceania</b>	
Australia	N
New Zealand	N

# Impaired Annuities – UK and South Africa

- Usually purchased with a pension lump sum
- Estimate ELE and MLE
- Minimal underwriting – questionnaire (93% accurate)
- 0% fraud





# Underwriting Impaired Annuities

- How confident are we with the given information?
- Impact of age
- Impact of early survival/mortality by impairment
- Impact of medical advances – e.g. new cancer treatments

**Notional Enhancement**

# Summary

- **Significant global diversity in insurance**
- **Takeaways and learnings for the U.S. market?**
- **Consider coming to ICLAM in Mumbai, India  
– November 10-13, 2019**
- **<https://assoc.iclam.org/iclam2019>**

**Thank You!**

**Questions?**

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