ST. JOHN'S COLLOQUIUM

Global Health Care Cost Drivers

Plenary Session
JUNE 29th 2016, 1:45 pm – 3pm

IPEBLA IACA IAAHS PBSS Canadian Institute of Actuaries Institut canadien des actuaires

International Actuarial Association Health Section and American Academy of Actuaries Jointly Sponsored a Series of Webcasts in 2015 (continuing in 2016) on Global Health Care Cost Drivers

- Featured eight countries:

✓ Netherlands and Israel
✓ South Africa and United States
✓ Australia and Singapore
✓ Canada and Chile

- Exploring each country's:

✓ General characteristics
✓ Financing system
✓ Cost drivers
✓ Methods of coping with the cost drivers
✓ Measurement metrics
✓ Insights, successes, hurdles
✓ Future trends

Agenda

- Introduction (5 min)
- Background (10 min)
- Panel discussions (50 min)
- Q&A from audience (5 min)

INTRODUCTION

APRIL S CHOI

PANELISTS

- Adrian Baskir, B.Bus Sci, FIA
  Vice-chair of IAAHS
  Bupa, UK

- John Have, FSA, FCIA
  Have Associates, Canada

PANELISTS

- Emile Stipp, BBusSc, LLB, FIA,
  Chair of IAA Health Committee,
  Discovery, South Africa

- Tom Wildsmith, MAAA, FSA,
  President, American Academy of Actuaries
  Aetna, United States

BACKGROUND PRESENTER and MODERATOR

- Chi Cheng Hock, FFS, FSAS
  Treasurer of IAAHS
  Singapore

- April S Choi, FSA, MAAA
  Chair of IAAHS
  KAC Group LLC, United States

Background Presentation

Chi Cheng Hock

ST. JOHN'S COLLOQUIUM

JUNE 27-29, 2016

IAA HEALTH SECTION
PLENARY SESSION
Wed 29 Jun 2016 01.45pm – 03.00pm

GLOBAL HEALTHCARE COST DRIVERS

BACKGROUND

IPEBLA IACA IAAHS PBSS Canadian Institute of Actuaries Institut canadien des actuaires

INTERNATIONAL ACTUARIAL ASSOCIATION
JOINT COLLOQUIUM 2016
St. John's Newfoundland Canada
27 – 29 JUN 2016

IAA HEALTH SECTION
PLENARY SESSION
Wed 29 Jun 2016 01.45pm – 03.00pm

GLOBAL HEALTHCARE COST DRIVERS

BACKGROUND

Chi Cheng Hock, FFA & FSAS
Treasurer & Member, Executive Committee
IAA Health Section

Member, Scientific Program Committee
IAA Joint Colloquium 2016

JOINT IAAHS – AAA HPITF WEBCASTS:

EXPLORING GLOBAL HEALTH CARE COST DRIVERS

Sponsored by:
- **International Actuarial Association Health Section (IAAHS)**
- **American Academy of Actuaries (AAA) Health Practice International Task Force (HPITF)**

18 Feb 2015
- **Israel** — **Dr. Tuvia Horev [Professor, Ben-Gurion University of the Negev]**
- **Netherlands** — **Rian de Jongh [Actuary, AAG]**

13 May 2015
- **South Africa** — **Emile Stipp [Chair, IAA Health Committee]**
- **United States of America Tom Wildsmith [President-Elect, AAA (at the time, now President)]**

03 Sep 2015
- **Singapore** — **Alvin Fu [VP & Head (Group Insurance Marketing), Great Eastern Life (then, now Chief Corporate Solutions Officer, AIA (Singapore))]**
- **Australia** — **Stuart Rodger [Partner, Deloitte Australia]**
  Candice Ming [Manager, Deloitte Australia]

04 Nov 2015
- **Canada** — **John Have [President, Have Associates]**
- **Chile** — **Jonathan Callund [Managing Director, Callund y Compania Ltda]**

Global Healthcare Cost Drivers

Background

Order of Presentation:

- The Plenary Session – Synopsis
- Statistical Comparison of Countries Covered
- Comparison of Healthcare Systems
- Comparison of Healthcare Cost Drivers
- Proposed Measures to Control Healthcare Cost Inflation
- Questions Which May Be Asked

Appendix: Overview of Healthcare System in Each Country

- For Information
- Will not be presented

All errors and omissions are mine and mine alone

Introductory Presentation

The PLENARY SESSION

Synopsis

- **Rising healthcare cost and methods of managing it** have been the subject of debate for many years
- This plenary session opens with a **short presentation summarising** the content of four **webcasts, organised jointly by the AAA Health Practice International Task Force and IAA Health Section in 2015**, covering **8 countries – Australia, Canada, Chile, Israel, The Netherlands, Singapore, South Africa and the USA**
- This **presentation will be a lead into the panel discussion**, on how healthcare cost has been affected by the ageing population, general inflation, economic and medical advancement, healthcare provision arrangements, healthcare financing arrangements, government policy and public expectations, among many other factors
- The **discussion will range across the globe**, and try to identify methods that are likely to be effective in managing healthcare cost drivers

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Population									
- **2008 (million)**	7.0 (*7.1*)	16.5	49.7	**311.7**	**4.6**	21.1	33.3	16.8	61.2
- **2013 (million)**	7.7 (*8.1*)	16.8	52.8	**320.1**	**5.4**	23.3	35.2	17.6	63.1
Median Age of Population									
- **2008**	29	**40**	**24**	36	39	37	39	31	39
- **2013**	30	**42**	**26**	37	38	37	40	33	40
Population < 15 Years (% Total Population)									
- **2008**	28	18	**31**	20	**17**	19	**17**	23	18
- **2013**	28	17	**30**	20	**16**	19	**16**	21	18
Population > 60 Years (% Total Population)									
- **2008**	14	21	**7**	18	14	19	19	13	**22**
- **2013**	15	**23**	**9**	20	16	20	21	14	**23**
Total Fertility Rate (Per Woman)									
- **2013**	**2.9**	1.8	2.4	2.0	**1.3**	1.9	1.7	1.8	1.9

Source: World Health Organization: World Health Statistics 2015 and 2010 [Table 9]

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Life Expectancy at Birth									
- **2008**	81	80	**53**	78	81	**82**	81	78	80
- **2013**	82	81	**60**	79	**83**	**83**	82	80	81
Life Expectancy at Age 60									
- **2008**	-	-	-	-	-	-	-	-	-
- **2013**	**25**	24	**17**	23	**25**	**25**	**25**	24	24
Healthy Life Expectancy at Birth									
- **2007**	73	73	**48**	70	73	**74**	73	70	72
- **2013**	72	71	**52**	69	**76**	73	72	70	71
Neonatal Mortality Rate (Per 1000 Live Births)									
- **2008**	2	3	**20**	4	**1**	3	4	5	3
- **2013**	2	3	**15**	4	**1**	2	3	5	3
Infant Mortality Rate: By Age 1 Year (Per 1000 Live Births)									
- **2008**	4	4	**48**	7	**2**	4	5	7	5
- **2013**	3	3	**33**	6	**2**	3	5	7	4
Under-five Mortality Rate: By Age 5 Years (Per 1000 Live Births)									
- **2008**	5	5	**67**	8	**3**	5	6	9	6
- **2013**	4	4	**44**	7	**3**	4	5	8	5

Source: World Health Organization: World Health Statistics 2015 and 2010 [Table 1]

HEALTH SYSTEMS DATA

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Physicians									
Per 10,000 Population									
- **2000 – 2009**	36	**39**	**8**	27	15	10	19	11 (*27*)	21
- **2007 – 2013**	33	-	**8**	25	20	**33**	21	10 (*32*)	28
Nurses / Midwives									
Per 10,000 Population									
- **2000 – 2009**	61	**151**	41	98	44	109	100	**6** (*75*)	**6** (!)
- **2007 – 2013**	50	84	51	-	58	**107**	93	**1** (*88*)	88
Dentists									
Per 10,000 Population									
- **2000 – 2009**	11	5	**1**	**16**	3	15	12	4	4
- **2007 – 2013**	7	-	2	-	4	5	**13**	**<0.05** (*10*)	5
Hospital Beds									
Per 10,000 Population									
- **2000 – 2009**	**58**	48	**28**	31	32	39	34	23 (*56*)	39
Radiotherapy Units									
Per 1,000,000 Population									
- **2007 – 2013**	3.9	7.2	**0.6**	**12.4**	3.5	4.0	8.1	0.9	5.0

Source: World Health Organization: World Health Statistics 2015 and 2010 [Table 6]

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Gross National Income Per Capita (PPP Int. $)									
- **2007**	27.4	41.7	9.8	47.0	**47.9**	34.0	36.2	13.3	36.1
- **2012**	32.1	43.2	12.2	54.0	**76.9**	42.5	42.6	21.0	35.8
Total HE as % GDP									
- **2007**	8.0 (?)	8.9	8.6	**15.7**	3.1	8.9	10.1	6.2	8.4
- **2012**	7.4	12.7	8.9	**17.0**	4.2	8.9	10.9	7.3	9.3
Government HE as % Total HE									
- **2007**	55.9	**82.0**	41.4	45.5	32.6	67.5	70.0	58.7	81.7
- **2012**	59.8	79.6	48.4	47.0	35.9	67.0	70.1	47.7	**84.0**
Government HE as % Total Government Expenditure									
- **2007**	10.1	16.2	10.8	**19.5**	7.2	17.6	18.1	17.9	15.6
- **2012**	10.5	**20.0**	14.0	**20.0**	11.1	17.8	18.5	14.9	16.2
Out-of-Pocket HE as % Private HE									
- **2007**	74.4	33.5	29.7	22.6	**93.9**	55.5	49.6	53.2	62.7
- **2012**	64.5	41.9	13.8	22.4	**93.7**	57.8	50.1	62.1	56.4
Private Prepaid HE as % Private HE									
- **2007**	15.3	34.5	**66.2**	63.5	2.8	24.1	42.6	46.8	6.9
- **2012**	26.4	38.4	**81.1**	63.7	4.0	26.2	41.0	37.9	17.1

Source: World Health Organization: World Health Statistics 2015 and 2010 [Table 7]

HEALTH EXPENDITURE DATA (2)

Slide 18

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Per Capita Total (US$'000)									
- **2007**	1.9	4.2	0.5	7.3	1.1	3.9	4.4	0.6	3.9
- **2012**	2.4	5.8	0.7	8.8	2.3	6.1	5.8	1.1	3.6
Per Capita Total (PPP Int. $'000)									
- **2007**	2.2	3.5	**0.8**	**7.3**	1.6	3.4	3.9	0.9	3.0
- **2012**	2.3	5.4	**1.1**	**8.8**	3.2	3.9	4.6	1.6	3.2
Per Capita Government (US$'000)									
- **2007**	1.1	3.5	0.2	3.3	0.4	2.7	3.1	0.4	3.2
- **2012**	1.4	4.6	0.3	4.2	0.8	4.1	4.0	0.5	3.0
Per Capita Government (PPP Int. $'000)									
- **2007**	1.3	2.9	**0.3**	**3.3**	0.5	2.3	2.7	0.5	2.4
- **2012**	1.4	4.3	**0.5**	**4.2**	1.2	2.6	3.2	0.8	2.7

Source: World Health Organization: World Health Statistics 2015 and 2010 [Table 7]

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Primary Care [General Practitioner Outpatient]									
- Public	Y		Y	Y*	Y	Y		Y	Y
- Private	Y	Y	Y	Y	Y	Y	Y	Y	*y*
Secondary Care [Specialist Outpatient]									
- Public	Y		Y	Y*	Y	Y		Y	Y
- Private	Y	Y*	Y	Y	Y	Y	Y	Y	Y
Tertiary Care [Hospital Inpatient]									
- Public	Y		Y	Y	Y	Y	Y	Y	Y
- Private	Y	Y*	Y	Y	Y	Y			Y

***Non-profit organisations**

Source: IAAHS – AAA HPITF Webcast Presentations 2015

*Federal funding is available for qualified non-profit provider

HEALTHCARE FINANCING SYSTEMS (1)

Slide 20

Public Sector

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Government									
- Direct Funding of Healthcare Providers			Y	Y	Y	Y	Y	Y	Y
- Subsidies for Healthcare Consumers				Y	Y	Y			
- Subsidies of Health Insurance Premiums	Y	Y		Y	Y			Y	

Source: Webcast Presentations 2015

Health Insurance

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Insurance [Consumer Pays Part or All of Premiums]									
- National Health Insurance Scheme*	Y	Y		Y	Y	Y			
- Private Health Insurance Plans	Y		Y	Y	Y	Y	Y	Y	
National Health Insurance Scheme (if any)									
- Mandatory?	Y	Y		Y	Y	Y		Y	
- Access to Provider									
- Public?	Y			Y	Y	Y		Y	
- Private?	Y	Y		Y	Y				
Private Health Insurance Plans									
- Premium Payer									
- Individual?	Y	Y	Y	Y	Y	Y	Y	Y	Y
- Employer?		Y	Y	Y	Y		Y		Y
- Access to Provider									
- Public?					Y	Y			Y
- Private?	Y	Y	Y	Y	Y	Y	Y	Y	Y

Source: Webcast Presentations 2015

*Excluding direct government funding of healthcare providers

HEALTHCARE COST DRIVERS (1)

Slide 22

Demographic / Socio-economic [Demand Side]

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Ageing Population	Y	Y	Y	Y	Y	Y	Y	Y	Y
Lifestyle		Y	Y	Y			Y		Y
Rising Income / Expectations							Y		Y
Chronic Morbidity	Y	Y	Y	Y	Y	Y	Y		Y
Increased Disease Burden			Y	Y					Y

Note: *No "**Y**" does not mean that this factor is not a driver of healthcare cost in the country – it just means that it was not mentioned in the webcast presentation*

HEALTHCARE COST DRIVERS (2)

Financing [Demand Side]

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Release of Latent Demand		Y			Y				
Perverse Incentives to Consume Healthcare Services		Y	Y	Y					
Availability of Funding			Y	Y	Y	Y			Y
Adverse Selection Age / Gender / Biologics			Y						
Increasing Share of Private Healthcare Provision	Y			Y					

Note: *No "**Y**" does not mean that this factor is not a driver of healthcare cost in the country – it just means that it was not mentioned in the webcast presentation*

Healthcare Provision

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Medical Innovation / Technological Advancement	Y	Y	Y	Y		Y		Y	Y
Up-coding		Y	Y						
End-of-Life Protocols		Y							
Regulation		Y						Y	
Administration Expenses				Y					
Stretched Healthcare Provision Capacity	Y			Y	Y				
Inefficiencies in Healthcare Provision / Financing	Y		Y	Y		Y		Y	

Note: *No "**Y**" does not mean that this factor is not a driver of healthcare cost in the country – it just means that it was not mentioned in the webcast presentation*

Healthcare Provision Management (1)

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Co-ordination of Care									
Chronic Illness Management		Y	Y	Y	Y	Y	Y	Y	Y
Disease Management			Y	Y	Y	Y	Y	Y	Y
Treatment of Co-Morbidity			Y	Y					
Step-down Care Options				Y		Y		Y	
Provider Networks			Y	Y					Y
Primary Care Providers as Gatekeepers / Early Interventionists	Y	Y	Y	Y		Y			

Note: *No "**Y**" does not mean that this factor is not a cost management measure utilised or considered in the country – it just means that it was not mentioned in the webcast presentation*

HEALTHCARE COST MANAGEMENT MEASURES (2)

Slide 26

Healthcare Provision Management (2)

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Increase Capacity	Y			Y	Y				
Rationing of Healthcare Services			Y			Y			
Improvement in Drug Procurement Protocols			Y				Y		
Increase Privatisation of Healthcare			Y						

Note: *No "**Y**" does not mean that this factor is not a cost management measure utilised or considered in the country – it just means that it was not mentioned in the webcast presentation*

Healthcare Financing Measures

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Government Funding of Healthcare Providers									
Pay-for-Performance [E.g. ACO in USA / ABF in Australia]	Y			Y					
Bundled Payment [E.g. DRG-based]			Y	Y	Y				
Public Sector Expenditure Caps	Y						Y		
Allocation of Medical Technologies	Y		Y						

***Note**: No "**Y**" does not mean that this factor is not a cost management measure utilised or considered in the country – it just means that it was not mentioned in the webcast presentation*

Healthcare Financing Measures

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Insurance									
Reduction in Insurance Payout [e.g. Co-payment or Excess (Deductible)]		Y		Y	Y	Y			Y
Managed Care Arrangements			Y	Y			Y		Y
Regulation of Private Insurance	Y			Y					

Note: *No "**Y**" does not mean that this factor is not a cost management measure utilised or considered in the country – it just means that it was not mentioned in the webcast presentation*

HEALTHCARE COST MANAGEMENT MEASURES (4)

Slide 29

Prevention Measures

Country	ISR	NED	RSA	USA	SIN	AUS	CAN	CHI	UK
Wellness Programmes / Screening	Y	Y	Y	Y	Y		Y		Y
Electronic Health Records / Central Health Registry			Y	Y		Y			
Research			Y	Y				Y	

Note: *No "**Y**" does not mean that this factor is not a cost management measure utilised or considered in the country – it just means that it was not mentioned in the webcast presentation*

Global Healthcare Cost Drivers

Background

END of PRESENTATION

THANK YOU!

Global Healthcare Cost Drivers

Background

APPENDIX: (VERY) BRIEF OVERVIEW of HEALTHCARE SYSTEMS

Israel

The Netherlands

South Africa

United States of America

Singapore

Australia

Canada

Chile

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

ISRAEL

Healthcare Provision

Sick Funds (see below) manage 65% of all hospital beds (97% of the general beds) in the country. The balance is owned by private enterprises.

Healthcare Financing

National Health Insurance
All qualifying residents must join the national health insurance scheme.

Each resident is a member of one of 4 Sick Funds. Residents may move freely between Funds.

Premiums are income related and collected as a "health tax", by the National Insurance Institute, which then allocates them to the Sick Funds, principally on a capitation basis. However, some additional budget is allocated on a pay-for-performance basis.

The law provides for government financing of the scheme, with the allocation of the budget updated annually.

Voluntary Health Insurance
Sick Funds may offer additional voluntary health insurance to members, which is governed by the National Health Insurance Law.

Commercial entities may also offer VHI plans, on both individual and group bases.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

THE NETHERLANDS

Healthcare Provision

Hospitals and outpatient specialist centres are managed by non-profit private organisations. General practitioners practice independently but act as gatekeepers to the hospitals and specialist centres.

Healthcare Financing

National Health Insurance Scheme
All qualifying residents must join the national health insurance scheme.

Individuals aged 18 years and above pay flat premiums, which are community rated, directly to the health insurers participating in the scheme.

Employers pay income-related premiums to a Health Insurance Fund, which is a risk equalization fund. The government also contributes to this Fund out of general tax revenue.

Private Health Insurance
A participating health insurer receives premiums from insured individuals as well as risk equalisation benefits, proportionate to the risks it assumes.

It pays a large portion of the eligible expenses incurred by insured individuals directly to the healthcare providers.

The insured individual has to pay a smaller portion of the eligible expenses he or she incurs, a co-payment, to the healthcare provider, as well as non-eligible expenses fully.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

SOUTH AFRICA

Healthcare Provision

The government provides healthcare services to 42 million residents with the expenses funded out of tax revenue.

Private healthcare facilities provide healthcare services to 9 million residents, on a fee-for-service basis.

Healthcare Financing

National Health Insurance
The government finances public healthcare providers directly, and not through any national insurance scheme.

Private Health Insurance
Private insurers may offer Medical Schemes under the Medical Schemes Act, where membership is voluntary but acceptance of membership is guaranteed. Premiums are community rated across all Medical Schemes, and may be paid by the insured individual or his or her employer.

Insurers reimburse healthcare providers (private) directly for expenses incurred by insured individuals.

An insurer may have to pay, or may be eligible, risk equalisation premiums, to or from other insurers, under a risk equalisation arrangement.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

UNITED STATES of AMERICA

Healthcare Provision

While federal funding is available for qualified non-profit providers, physicians are generally privately funded.

Hospitals are comprised of a mix of non-profit, for profit and public facilities.

Healthcare Financing

National Health Insurance
The government finances national medical support programmes out of taxation:
- Medicare for seniors and disabled qualifying residents; and
- Medicaid for low income qualifying residents.

It also provides private health insurance premium and benefit subsidies to lower-middle income individuals.

Private Health Insurance
Individuals or their employers are required to purchase private health insurance. Insurance coverages are predominantly managed care plans with physicians and institutions that have contract arrangements and negotiated fees with insurers.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

SINGAPORE

Healthcare Provision

The government provides 70% of tertiary (hospital), and 30% of secondary (specialist) and primary (general practice) healthcare services in the country. Private healthcare providers provide the complementary of the government healthcare provisions.

Healthcare Financing

Public
Out of general taxation, government subsidises the public healthcare providers, which must collect the balance of costs from consumers (either directly (i.e. OOP) or from third party payors (e.g. insurers)), as well as national health insurance premiums payable by individuals.

National Health Insurance
The government manages a national health insurance scheme which provides basic levels of benefits. Membership by qualifying residents is mandatory, and insured individual must pay the premium, which is age-related.

Private Health Insurance
Private health insurers may offer insurance plans which complement the national health insurance scheme and which is integrated with national scheme, or other plans.

Residents have medical savings accounts, into which they and their employers contribute, from which they can withdraw either to pay healthcare providers directly for services consumed, or health insurance premiums, both national and private (subject to limits).

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

AUSTRALIA

Healthcare Provision

Australia has both public and private healthcare providers at all levels – tertiary (hospital), secondary (specialist) and primary (general practice).

Healthcare Financing

National Health Insurance
Under a National Health Insurance scheme, funded out of general taxation, government finances almost all services provided by public hospitals, and subsidises secondary and primary care services, as well as a high proportion of prescriptive medicines.

Funding is provided at different levels:
- Federal, either direct to providers or through States and Territories; and
- State or Territory.

Private Health Insurance
Private health insurers can offer insurance plans to complement the NHI. Health funds can cover both public and private healthcare expenses.

Insured individuals pay premiums which are community-rated. Insurers transfer funds to each other under a risk equalisation scheme.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

CANADA

Healthcare Provision

Most hospitals are public and financed by Provincial governments on an annual budget basis.

Most physicians (general practice and specialist) not working in the public hospitals are private providers and are paid on a fee-for-service basis.

Healthcare Financing

Public Healthcare Financing (71%)
The public healthcare system is funded with some premiums, general tax revenue and transfers from the Federal government under the Canada Health Transfer Plan.

Private Health Insurance (29%)
Private health insurance is available only for non-core services, e.g. dental and vision.

The insured individuals or their employers may pay the premiums.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

CHILE

Healthcare Provision

The government manages public hospitals and medical centres.

Private providers manage medical centres, clinics and laboratories, but not hospitals.

Healthcare Financing

Public Healthcare Financing
The public healthcare system is funded by general taxation and a national health insurance scheme.

Members of the national health insurance scheme may contribute to a healthcare fund, in which case the member has access to private healthcare providers on an insured basis. Otherwise, they have access only to the public healthcare system. They may attend private healthcare providers but must pay for the expenses out-of-pocket.

Private Health Insurance
Residents can also buy separate private health insurance to cover private provider expenses.

APPENDIX: OVERVIEW of HEALTHCARE SYSTEMS

UNITED KINGDOM

Healthcare Provision

Most primary care (general practice) is provided by public providers via the National Health Service (NHS) although limited private GP services can be accessed in the major urban areas.

Secondary and tertiary care, whilst also provided mainly via the NHS, is accessible privately although in the case of secondary care, private provision merely involves faster access to the specialist. There are numerous well developed tertiary private hospitals which operate in parallel with the NHS.

Healthcare Financing

National Health Insurance
Under the National Health Service, funded out of general taxation, government finances almost all services provided by public hospitals, and subsidises secondary and primary care services, as well as a high proportion of prescriptive medicines. Services in the NHS are "free at the point of service" although prescriptions and dental services are subject to a flat charge payable upon treatment

Private Health Insurance
Private health insurers offer insurance plans to complement the NHS. This typically covers treatment for secondary and tertiary care only in the private sector. Insured individuals pay premiums which are risk rated and only gender is excluded as a rating factor.

Companies also offer insurance as employee benefits and these arrangements are typically experience rated. These company arrangements can either be insured by an insurer or via a self funded Health Trust.

PANEL DISCUSSIONS – How to Bend the Health Care Cost Trends?

Adrian Baskir, John Have,
Emile Stipp, Tom Wildsmith

Q.1 - Reduce Waste and Improve Efficiency

- Examples:

  Payment redesign focusing on value - shifting payments from volume based to quality based incentives (US & Netherlands).

- Can you give examples of what's being done in your country?

Q.2 – Pharmacy Costs

- Pharmacy costs continue to climb each year: price increases, new expensive blockbuster drugs that cure dread diseases, increasing chronic illnesses driving up utilization, etc.

Canadian drug price gouging for generics called 'hard to celebrate'

CBC News, Feb 9, 2016

- Is pharmacy costs a problem in your country? If so, what's being done to tamper the increase?

Q.3 – Innovation and Technology

- Examples: Precision medicine, tele-health, digital health, electronic records

- Can you describe some of the innovation and technology initiatives that have been adopted in your country? How have (or will) they help lower the healthcare cost trends?

Q.4 – Wellness and Preventive Care

- Eating healthy food and keeping fit can reduce obesity. Preventive care can help detecting illness and receive treatments early on.

- Can you describe some of the wellness and preventive care activities in your country that encourage healthy behavior and improve population health? Have they been effective?

Q.5 – Data Analytics

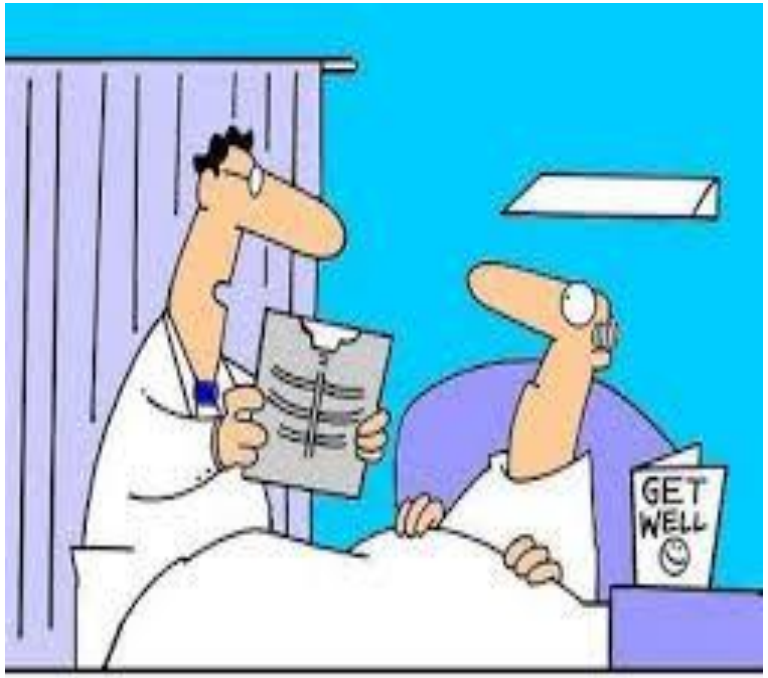
- With new data and sophisticated analytics, there are increased opportunities to improve both efficiencies and quality. Examples: comparative effectiveness and quality measurements.

- Can you give examples of how data analytics have been used to improve efficiencies or quality?

Q.6 – Shortage in Care Providers

- In many countries, its population is getting older, which creates more healthcare demand, requiring more doctors, nurses and care takers.

- How is your country tackling this issue and what could be done to manage the increasing demands?

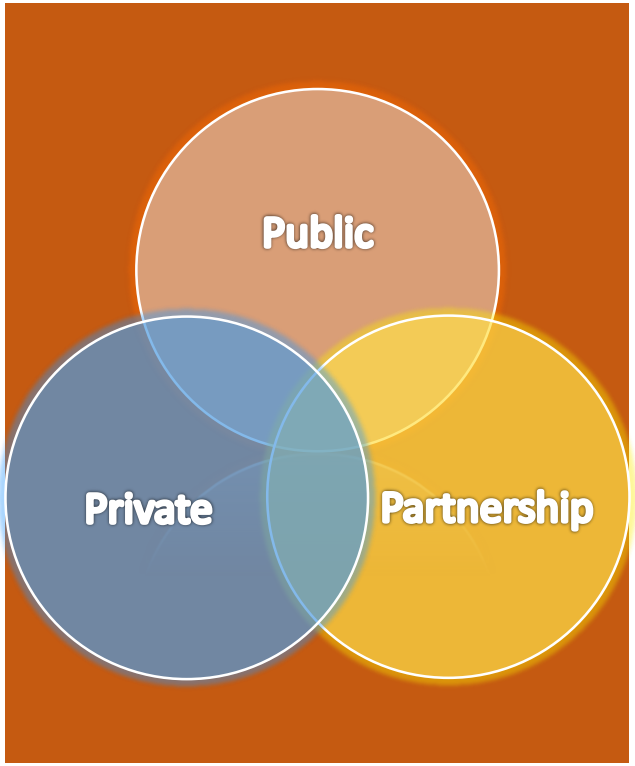


"Your x-ray showed a broken rib, but we fixed it with Photoshop."

Q.7 – Public Private Partnership

- Partnership between the public and private sectors can be in various forms and scales. Often, the private sector is expected to bring forth efficient, innovative or high quality services and practices.

- Can you give an example of a successful public private partnership?



Q&A

THANK YOU!

APPENDIX

Appendix – Adrian Baskir's Bio

Adrian Baskir, B.Bus Sci, FIA

Adrian Baskir was born in East London, South Africa and now lives in London, UK. He attended the University of Cape Town where he obtained a Bachelor of Business Science (Hon) degree and qualified as a Fellow of the Institute of Actuaries in 1991. Adrian began his working career with Old Mutual South Africa fulfilling various management and executive roles in the Healthcare, Investments and Employee Benefits Divisions respectively. In January 2009, he transferred to London with Old Mutual plc. In February 2011, Adrian joined Bupa UK. He is currently Chief Actuary for Bupa Insurance Limited in the UK. He manages a large team and is responsible for Pricing, Reserving and implementing Solvency 2 Pillar I in the UK.

Adrian has been very active within the Actuarial Profession. He served as President of the Actuarial Society of South Africa (ASSA) from 2005-2007, having been President Elect 2003-2005. He was Honorary Secretary of ASSA from 1998-2000. He served on numerous ASSA committees including Healthcare, Professional Conduct, Programme, and Communications. He chaired the Admissions Committee and, post his Presidency, convened the Social Security & Retirement Reform Task Force. Since moving to the UK, Adrian served on the Council of the Institute and Faculty of Actuaries from 2009 to 2013 and also served on its International Committee. He currently serves on the Committees of both the International Actuarial Association's Health Section and Healthcare Committee.

Appendix – John Have's Bio

John Have, FSA, FCIA

John started Have Associates in 1983 as a small actuarial firm providing actuarial consulting to financial institutions, consultants and brokers across North America. Services include employee benefit premium rates and product development, claim liability evaluations, insurer mergers / acquisitions, advice in setting rating / experience adjustment models for provincial WCB programs, WCB valuations plus actuarial research for both the Canadian and US actuarial profession. John has provided expert legal opinions on the actuarial values attached to the various product designs, contract wordings and exclusions. Example: pre-exiting conditions exclusion on LTD contracts.

Prior to starting Have Associates, John worked for 2 Canadian insurers. As group actuary he was responsible for the development of employee benefit rates and products at Dominion Life for both Canada and US. From 1979 to 1983, he was VP, Group Operations at Constellation - providing full employee benefits with a significant emphasis on disability products in Canada. John received Bach of Math from the University of Waterloo in Ontario in 1970. He became a Fellow of the Society of Actuaries in 1976 and a Fellow of the Canadian Institute of Actuaries in 1976.

John is a frequent speaker at actuarial meetings and participates in many professional activities of the Canadian Institute of Actuaries, the Society of Actuaries and International Actuarial Association. He received the Canadian Institute of Actuaries' Gold Award for Volunteer Service in recognition of his contribution to the actuarial profession in Canada. And he recently completed 2 actuarial research projects related to public health insurance costs and trends (1) projecting hospital costs in New Brunswick over next 10 years and (2) comparing Canada with 19 other OECD countries. John completed the first ever Canadian LTD experience study in 1998 and has just completed the first ever Canadian post-employment benefits experience study for the CIA.

Appendix – Emile Stipp's Bio

Emile Stipp, BBusSc, LLB, FIA

Emile is a health care actuary with more than 17 years' experience. He was a partner in Deloitte & Touche, and joined Discovery Health as General Manager: Chief Health Actuary, in March 2007, with overall responsibility for the health actuarial work within the Discovery Group in South Africa and internationally. Emile was the Convenor of Actuarial Society of South Africa's Health Care Committee from 2003 to 2007, and also served on the AIDS Committee and Short Term Insurance Committee of ASSA. He was elected in 2007 to the Council of the Actuarial Society of South Africa and held this position until 2010. He has been a member of Board of Examiners of the Actuarial Society since 2007, and became Chairman of the Board in 2010.

In May 2008, Emile was elected as Chairman of the Health Section of the International Actuarial Association and held that position until 2014. In 2013, he was appointed as the first Chairman of the newly constituted Health Committee of the International Actuarial Association. In October 2014, Emile became the 2014 recipient of the Murray Medal, the highest award of the Actuarial Society of South Africa, for his contribution to the profession.

Appendix – Tom Wildsmith's Bio

Tom Wildsmith, IV, MAAA, FSA

Tom is the current president of the American Academy of Actuaries, and senior public policy manager in Aetna's Washington, D.C. office. Tom served as the Academy's Health Practice Council (HPC) vice president from 2010 to 2012; he is a member of the Academy's Public Interest Committee and previously served as chairperson of the HPC's Communications Committee and its Medicare Steering Committee. An Academy member since 1989, Tom has performed critical work for subgroups on actuarial value premium review, exchanges, risk sharing, and health care costs. During his 30-plus year career, Tom has worked as a company actuary, a consultant and a staff actuary for a major health insurance trade association. Tom and his wife Sally have been married 33 years and have adult children.

Appendix – Chi Cheng Hock's Bio

Chi Cheng Hock, FFA, FSAS

Cheng Hock qualified as a Fellow of the Faculty of Actuaries in 1985, after graduating from the Heriot-Watt University in 1981. He joined Great Eastern Life Assurance in Singapore that year, where he spent 21 years. He then held positions with the Monetary Authority of Singapore and with UOB Life Assurance, and had provided consultancy services to the Central Provident Fund Board. He has written four textbooks for the Singapore College of Insurance. He is currently providing independent actuarial and risk management consultancy services. Cheng Hock has also served on the Council of the Singapore Actuarial Society in various capacities – Council Member, Honorary Secretary, Vice-president and President. He has participated in a number of International Actuarial Association (IAA) projects and is currently the Treasurer of the IAA Health Section.

Appendix – April S Choi's Bio

April S Choi, FSA, MAAA

April is an actuarial executive with over 35 years of health care experience. She is currently an independent actuarial consultant based in California.

April has been the chairperson of the International Actuarial Association Health Section since 2014. She was the chairperson of the Academy of Actuaries (AAA) Health Practice International Task Force from 2009 to 2014. She is a member of the AAA Health Practice Council, chairperson of the Public Program Committee, and she has served on many of the Academy's healthcare reform workgroups. She received the American Academy of Actuaries' Outstanding Volunteerism Award in 2015. She is a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries.