



Medisave Projection

Adequacy of Basic Healthcare Sum

PRESENTED BY:

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Agenda

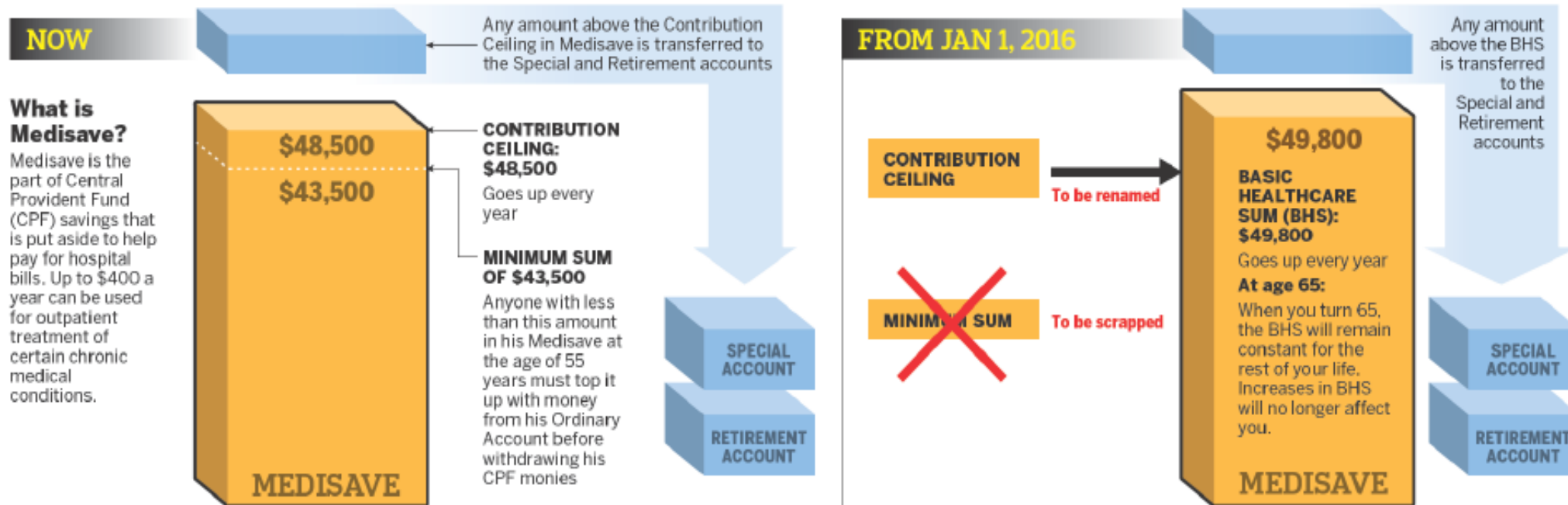
- Introduction & Objectives
- Methodology & Assumptions
- Results
- Sensitivities and Key Drivers
- Conclusion and Potential Next Step
- Q&A



Medisave – Recent Changes

Changes to Medisave

Several changes to Medisave were announced during the parliamentary debate over the Health Ministry's budget last week. **Salma Khalik** and **Mike M Dizon** explain what these changes are.

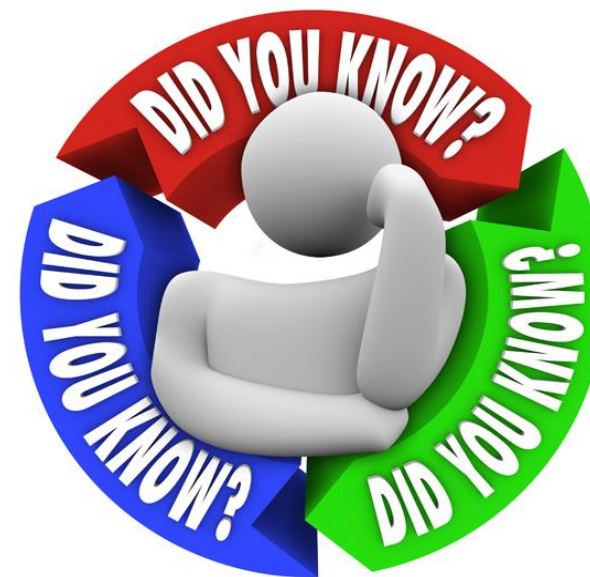


Extracted from the Straits Times 17 March 2015

Medisave – Terms to know

BHS– Basic Healthcare Sum

- The Basic Healthcare Sum (BHS) is an estimate of what you need to save for your basic healthcare needs in old age.
- This will be set at \$49,800 from 1 January 2016 for all CPF members. It will be increased yearly with medical inflation up to attained age 65. BHS level remains flat thereafter.
- As most Singaporeans today generally work up to age 65, the BHS is an estimate of what you are likely to need for your healthcare expenses throughout retirement.



Note:

Your Medisave contributions will go into your Medisave Account until your balance reaches the BHS. (above which automatically transferred to your other CPF accounts)

Introduction & Objectives



Issues to be addressed:

- a.1. Is Basic Healthcare Sum (BHS) sufficient, for current retiree aged 65, to cover future Basic MediShield Life premium outgo?
- a.2. Is BHS sufficient to meet future withdrawals from Medisave Account, including premiums and out-of-pocket medical expenses?
- b. What is your average Medisave Account balance now? Is this enough to reach the BHS at age 65?

Introduction & Objectives



MediShieldLife

1%



- Median Income Singaporean
- Basic MediShield Life policy
- Additional 1% Employer CPF contribution
- B and C ward hospital stay

Introduction & Objectives



Is it sufficient?

Depend....

See next slides

Methodology & Assumptions

Starting Age:

- 65, 55
- 50, 40, 30



Medisave Asset (A)

Forward projection of Medisave Account Balance to retirement age

"How much my Medisave Account Balance as at retirement age"



Sufficient
 $A > B$



Insufficient
 $A < B$



Retirement Age
= 65

Life Expectancy:

- 92
- 93



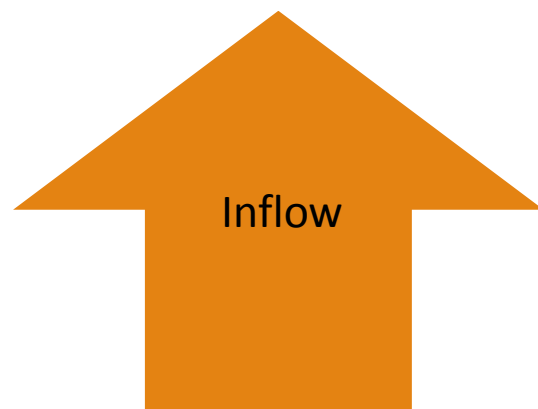
Please see slide 17 and 20 for further derivation of appropriate life expectancy

Future Liability (B)

Prospective reserve requirement at retirement age

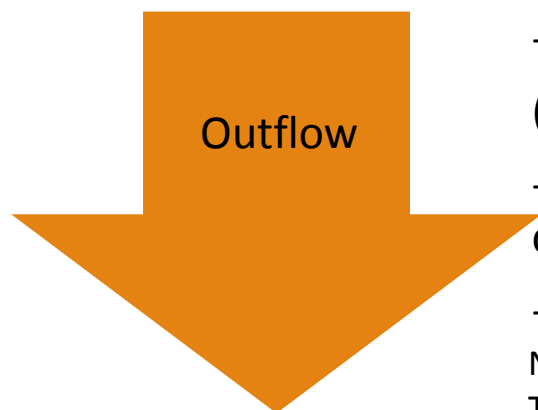
"How much do I need to set aside in my Medisave Account as at retirement age?"

Methodology & Assumptions



Medisave Account Inflow:

- + Medisave contribution
- + Interest income



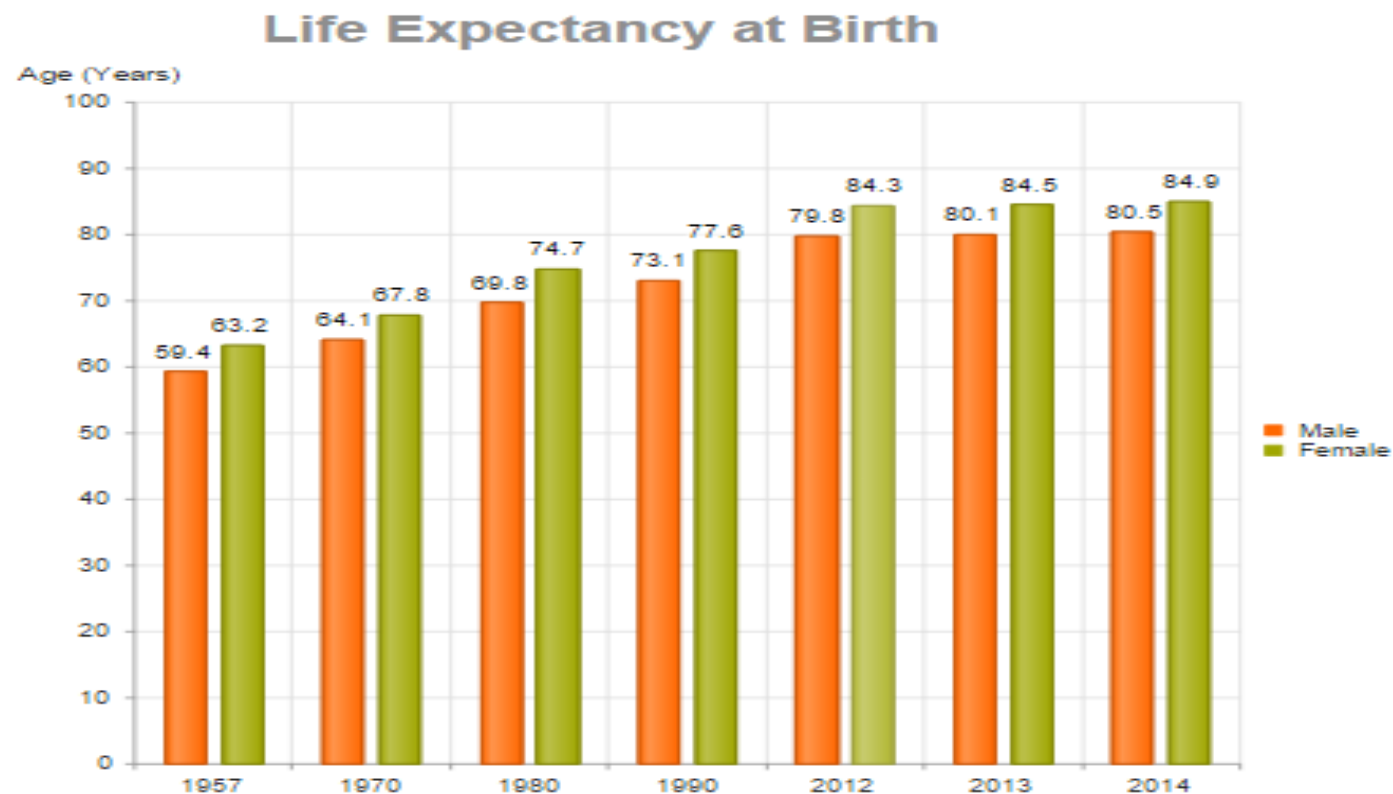
Medisave Account Outflow:

- Insurance premiums
(i.e. Basic MediShield Life & ElderShield premiums)
- Out-of-Pocket Medical Expenses (i.e. Medical expenses not covered by MediShield Life*)
- Other withdrawal

Note:

This exclude voluntary withdrawal to meet other medical needs.

Methodology & Assumptions



*Data from 1980 onwards refer to the resident population.
Data for 2014 are preliminary.

Methodology & Assumptions

MEDISAVE FUND EXPECTED CASHFLOW

MEDISAVE ACCOUNT VALUE PROJECTION
Please note assumption on row 105-109

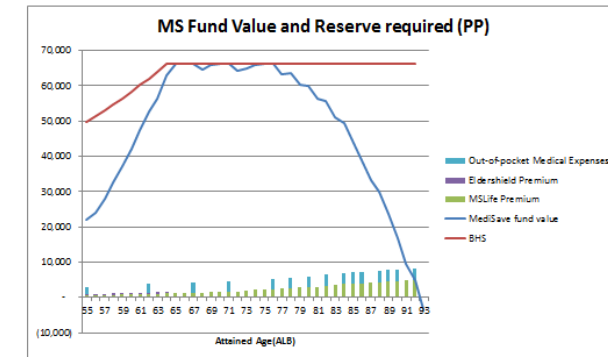
Projected Medisave fund (per person) at age 65
Projected Required Medisave fund at age 65

66,122
62,446

EXPECTED FUTURE LIABILITY - PROSPECTIVE RESERVE

41,941	-	-	-	20,505
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											EXPECTED NET PRESENT VALUE							
Attained AGE End of Year	t End of Year	Interest On MediSave	Medical Insurance Premium Outgo	Disability Insurance Premium Outgo	MediSave Contribution	Other Withdrawal	Medical Expense Net Insurance Recoveries	Interest Earned	SURPLUS	MEDISAVE FUND VALUE (No decrement)	Discount Rate	Medical Insurance Premium Outgo	Disability Insurance Premium Outgo	MediSave Contribution	Other Withdrawal	Medical Expense Net Insurance Recoveries	RESERVE	RESERVE Per Policy
			BOY	BOY	EDY	EDY	EDY	EDY	EDY	EDY		BOY	BOY	EDY	EDY	EDY	EDY	EDY
55	0									21,900	1.000	34,605	3,587	38,609			17,524	17,107
56	1	4.0%	415	425	3,946	-	1,961	842	1,988	23,888	0.962	35,558	3,288	36,207	-	-	16,264	18,903
57	2	4.0%	415	425	4,120	-	-	922	4,202	28,090	0.925	36,549	2,977	33,535	-	-	16,915	22,906
58	3	4.0%	442	425	4,301	-	-	1,089	4,523	32,613	0.889	37,552	2,654	30,575	-	-	17,591	27,222
59	4	4.0%	692	425	4,490	-	-	1,260	4,633	37,245	0.855	38,333	2,318	27,308	-	-	18,295	31,639
60	5	4.0%	884	425	4,688	-	-	1,437	4,817	42,062	0.822	38,948	1,969	23,712	-	-	19,027	36,231
61	6	4.0%	884	425	4,894	-	-	1,630	5,215	47,278	0.790	39,586	1,605	19,766	-	-	19,788	41,213
62	7	4.0%	941	425	5,110	-	-	1,836	5,580	52,857	0.760	40,191	1,227	15,447	-	-	20,579	46,550
63	8	4.0%	941	425	5,335	-	2,445	2,060	5,583	56,440	0.731	40,820	834	10,731	-	-	18,958	49,881
64	9	4.0%	1,002	425	5,569	-	-	2,201	6,342	62,783	0.703	41,410	425	5,591	-	-	19,716	55,961
65	10	4.0%	1,082	425	5,814	-	-	2,451	6,758	66,122	0.676	41,941	-	-	-	-	20,505	62,446
66	11	4.0%	1,152	-	-	-	-	2,539	1,446	66,122	0.650	42,420	-	-	-	-	21,325	63,745
67	12	4.0%	1,152	-	-	-	-	2,539	1,446	66,122	0.625	42,918	-	-	-	-	22,178	65,096
68	13	4.0%	1,227	-	-	-	2,861	2,536	(1,433)	64,629	0.601	43,358	-	-	-	-	20,204	63,562
69	14	4.0%	1,227	-	-	-	-	2,536	1,309	65,338	0.577	43,816	-	-	-	-	21,012	64,828
70	15	4.0%	1,420	-	-	-	-	2,581	1,161	66,122	0.555	44,093	-	-	-	-	21,853	65,945
71	16	4.0%	1,420	-	-	-	-	2,588	1,169	66,122	0.534	44,380	-	-	-	-	22,727	67,107
72	17	4.0%	1,512	-	-	-	3,025	2,584	(1,952)	64,170	0.513	44,583	-	-	-	-	20,611	65,194
73	18	4.0%	1,666	-	-	-	-	2,500	835	65,005	0.494	44,634	-	-	-	-	21,436	66,070
74	19	4.0%	1,774	-	-	-	-	2,529	755	65,760	0.475	44,575	-	-	-	-	22,293	66,868
75	20	4.0%	2,056	-	-	-	-	2,548	492	66,122	0.456	44,220	-	-	-	-	23,185	67,404
76	21	4.0%	2,190	-	-	-	-	2,557	368	66,122	0.439	43,711	-	-	-	-	24,112	67,823
77	22	4.0%	2,190	-	-	-	-	3,080	2,557	(2,712)	0.422	43,182	-	-	-	-	21,997	65,179
78	23	4.0%	2,425	-	-	-	-	2,439	15	63,425	0.406	42,388	-	-	-	-	22,877	65,265
79	24	4.0%	2,425	-	-	-	-	3,105	2,440	60,335	0.390	41,562	-	-	-	-	20,687	62,249
80	25	4.0%	2,747	-	-	-	-	2,304	(444)	59,891	0.375	40,367	-	-	-	-	21,514	61,882
81	26	4.0%	2,747	-	-	-	-	2,286	(3,532)	56,299	0.361	39,125	-	-	-	-	19,244	58,369
82	27	4.0%	2,926	-	-	-	-	2,135	(791)	55,508	0.347	37,647	-	-	-	-	20,014	57,661
83	28	4.0%	3,347	-	-	-	-	3,159	(4,420)	51,088	0.333	35,671	-	-	-	-	17,855	53,327
84	29	4.0%	3,565	-	-	-	-	1,901	(1,664)	49,424	0.321	33,391	-	-	-	-	16,362	51,752
85	30	4.0%	3,793	-	-	-	-	3,189	(5,101)	44,323	0.308	30,837	-	-	-	-	15,307	46,745
86	31	4.0%	3,983	-	-	-	-	3,102	(5,471)	38,852	0.296	27,923	-	-	-	-	13,441	41,370
87	32	4.0%	3,983	-	-	-	-	3,110	(5,638)	33,154	0.285	24,904	-	-	-	-	10,869	35,773
88	33	4.0%	4,242	-	-	-	-	1,157	(3,085)	30,069	0.274	21,489	-	-	-	-	11,304	32,793
89	34	4.0%	4,242	-	-	-	-	3,127	(6,336)	23,733	0.264	17,938	-	-	-	-	8,628	26,566
90	35	4.0%	4,608	-	-	-	-	3,136	(6,979)	16,755	0.253	13,863	-	-	-	-	5,837	19,701
91	36	4.0%	4,608	-	-	-	-	3,145	(7,267)	3,488	0.244	9,626	-	-	-	-	2,326	12,552
92	37	4.0%	4,907	-	-	-	-	183	(4,724)	4,764	0.234	4,907	-	-	-	-	3,043	7,950
93	38	4.0%	4,907	-	-	-	-	3,164	(8,072)	(3,308)	0.225	-	-	-	-	-	-	-



Methodology & Assumptions

Contribution

- Up to end of retirement age.
- Wage inflation at **4.40%p.a.**
- Median Income & Average Medisave Account balance
- **INCLUDE** 1% additional contribution to Medisave

Insurance premiums

- Basic MediShield Life premium inflation at **3.20% p.a.**
(frequency of increase : 2 years)
- No premium increase for Basic ElderShield

Medisave Account

Medical Expense

- **\$1.9k** per incidence, increases at **3.20% p.a**
- Medical expense incidence based on systematic sampling method (see on slide 14)
- B2 and C Ward stay

Others

- Interest on Medisave Account at 4.00%p.a.
- Basic Healthcare Sum of \$49.8k from Jan 2016, increasing at **3.20% p.a.**
- CPF contribution ceiling based on \$85k p.a. salary, increasing at wage inflation (i.e. **4.40% p.a.**)

Methodology & Assumptions

A) Wage/Salary Inflation

Table 2: Change In Gross Monthly Income From Work (Including Employer CPF Contributions) Of Full-Time Employed Residents, 2003 To 2013 (June)

	Nominal Change					
	10 Years		5 Years		5 Years	
	2003-2013		2003-2008		2008-2013	
	Cumulative (%)	Annualised (% p.a.)	Cumulative (%)	Annualised (% p.a.)	Cumulative (%)	Annualised (% p.a.)
Median (50th Percentile)	53.7	4.4	20.2	3.7	27.9	5.0
20th Percentile	41.3	3.5	11.6	2.2	26.6	4.8
	Real Change*					
	10 Years		5 Years		5 Years	
	2003-2013		2003-2008		2008-2013	
	Cumulative (%)	Annualised (% p.a.)	Cumulative (%)	Annualised (% p.a.)	Cumulative (%)	Annualised (% p.a.)
Median (50th Percentile)	17.5	1.6	7.0	1.4	9.8	1.9
	(21.5)	(2.0)	(7.5)	(1.5)	(13.0)	(2.5)
20th Percentile	8.0	0.8	-0.6	-0.1	8.7	1.7
	(11.7)	(1.1)	(-0.2)	(-)	(11.9)	(2.3)

Notes: (1) Data exclude full-time National Servicemen.

(2) * – Deflated by Consumer Price Index for all items at 2009 prices (2009 = 100). Figures in brackets are deflated by Consumer Price Index less imputed rentals on owner-occupied accommodation at 2009 prices

Source:

Labour Force in Singapore ,2013 pg25 (<http://stats.mom.gov.sg>)

Methodology & Assumptions

B) Medical Inflation

Mid-Year	% Change		
	CPI Health Care	Hospitalisation Fee	Consultation Fee at GP & Polyclinics
2004		0.3%	1.0%
2005		0.7%	0.2%
2006		0.7%	0.5%
2007		5.7%	2.4%
2008		7.1%	4.3%
2009		1.7%	1.8%
2010	1.9%	1.9%	1.2%
2011	2.4%	2.8%	1.7%
2012	4.5%	6.7%	5.3%
2013	3.9%	4.8%	3.1%

CAGR 10 years	3.2%
CAGR 5 years	3.6%

CAGR- Compounded Annual Growth Rate

Source:

Yearbook of Statistic Singapore 2014 & 2008 (www.singstat.gov.sg)

Methodology & Assumptions

C) Median Income

Using median gross monthly income from work (excluding employer CPF) aged fifteen years and over by age :

Age From	Age To	Median Income
30	34	3,997
35	39	4,480
40	44	4,333
45	49	3,500
50	54	3,000
55	59	2,560



Median Income (monthly):
 30 year old : \$4.0k
 40 year old : \$4.3 k
 50 year old : \$3.0k

Source:

Source from Labour Force in Singapore ,2013 pgT31 (<http://stats.mom.gov.sg>)

Methodology & Assumptions

D) Medisave Account Balance (Approximate approach)

= Estimated CPF Account Balance x {Medisave Account Balance / Total CPF Account Balance}

= Estimated CPF Account Balance x {Contribution to Medisave Account(% of Salary)/ Total CPF contribution (% of Salary)}

Current Age (ALB)	CPF Account Balance		Average MA Contribution (% of Salary)	Medisave Account Balance	
	Male	Female		Male	Female
30	50,984	55,364	6.65%	9,400	10,200
40	103,323	97,223	6.58%	18,900	17,800
50	114,354	98,934	6.88%	21,900	18,900

Notes:

1. CPF account balance derived from Annex H, CPF Annual Report year 2013

2. Average % contribution to Medisave Account derived from Annex A, CPF Annual Report year 2013.

3. The estimation ignores:

- Prior withdrawal from Medisave Account balance due to premium paid to MediShield / Integrated Shield plan and Out-of-Pocket Medical Expenses.
- Prior withdraw from CPF account balance for housing purchase.

Overall, ratio of MA / Total CPF is likely to be higher than calculated

Methodology & Assumptions

E) Medical Expenses for B2 and C Ward

Average of total medical and surgical bills

Average Total Bill	B2 Ward (weight = 50%)	C Ward (weight = 50%)	Average
Medical Specialties -	1,657	1,775	1,716
Surgical Specialties -	2,077	2,201	2,139

Average of medical & surgical bills	1,900
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Notes:

1. Source: www.moh.gov.sg
2. Equal weight is applied between medical and surgical bills.
3. Cost above exclude national heart centre as the bills are biased towards cardiovascular medicine.
4. Average medical expenses will be an input to calculate out-of-pocket medical expenses

Public Hospitals
Alexandra Hospital
Changi General Hospital
Khoo Teck Puat Hospital
KK Women's & Children's Hospital
National University Hospital
Singapore General Hospital
Tan Tock Seng Hospital
National Heart Centre

Methodology & Assumptions

F) Medical Expense Incurrence Rate

Random sampling method using systematic sampling approach with hospital admission rate in year 2012 as parameter:

Age		Hospital admission rate per 1,000		Average Hospital admission rate per 1,000		Sample	
From	To	Male	Female	Male	Female	Male	Female
30	34	37	156	52	98	-	-
35	39	44	101			-	1
40	44	56	64			-	-
45	49	70	70			1	1
50	54	97	82	134	100	-	-
55	59	131	95			1	1
60	64	174	124			1	-
65	69	226	172	272	215	1	1
70	74	317	258			1	1
75	79	442	359	442	359	2	1
80	84	585	492	585	492	2	2
85	99	760	656	760	656	12	7
Total						21	15

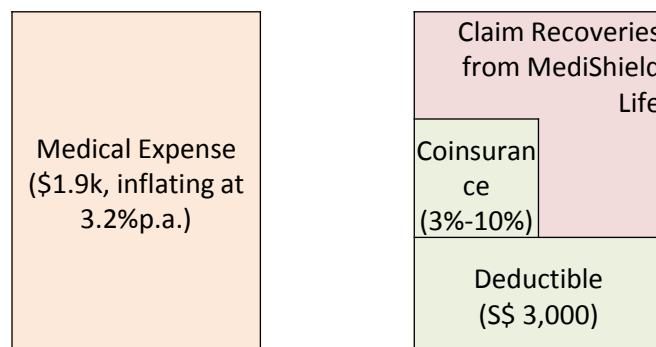
Notes:

1. Source: www.moh.gov.sg
2. The same sample outcome is taken for each age band.
e.g. 100 medical expense incidence per 1,000 means it takes 10 years (i.e. 1,000/100) to have 1 medical expense
3. Medical expense incidence will be an input to out-of-pocket medical expenses in next slide

Methodology & Assumptions

G) Out-of-pocket medical expenses

Medical expense incidence x Policyholder's Claim portion (i.e. Green color block)



Where:

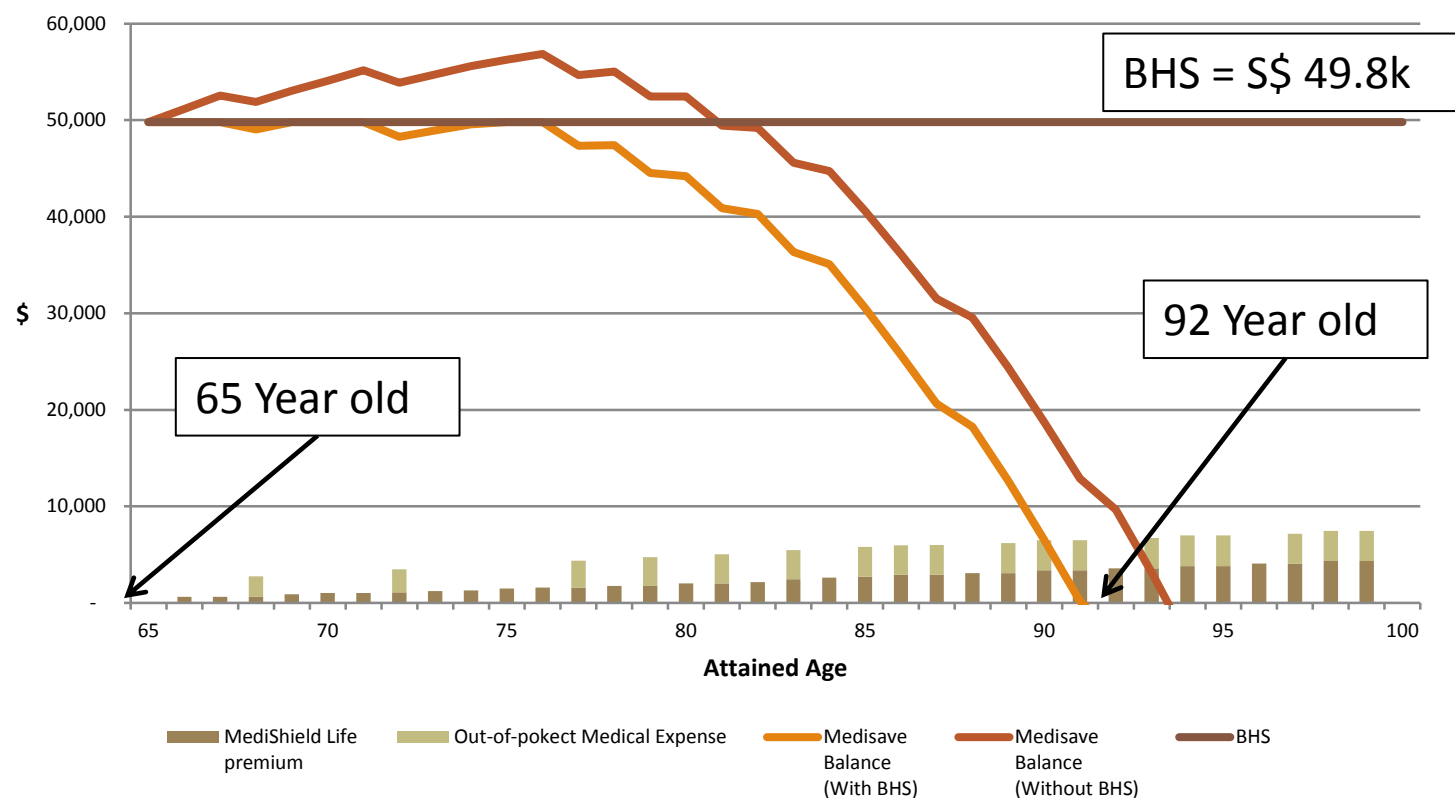
Deductible = based on B1 ward of \$3,000

Coinsurance = Varies with size of claim (i.e. 3% - 10%)

Medical expense incidence = Sampling from previous slide

Results – Basic Healthcare Sum

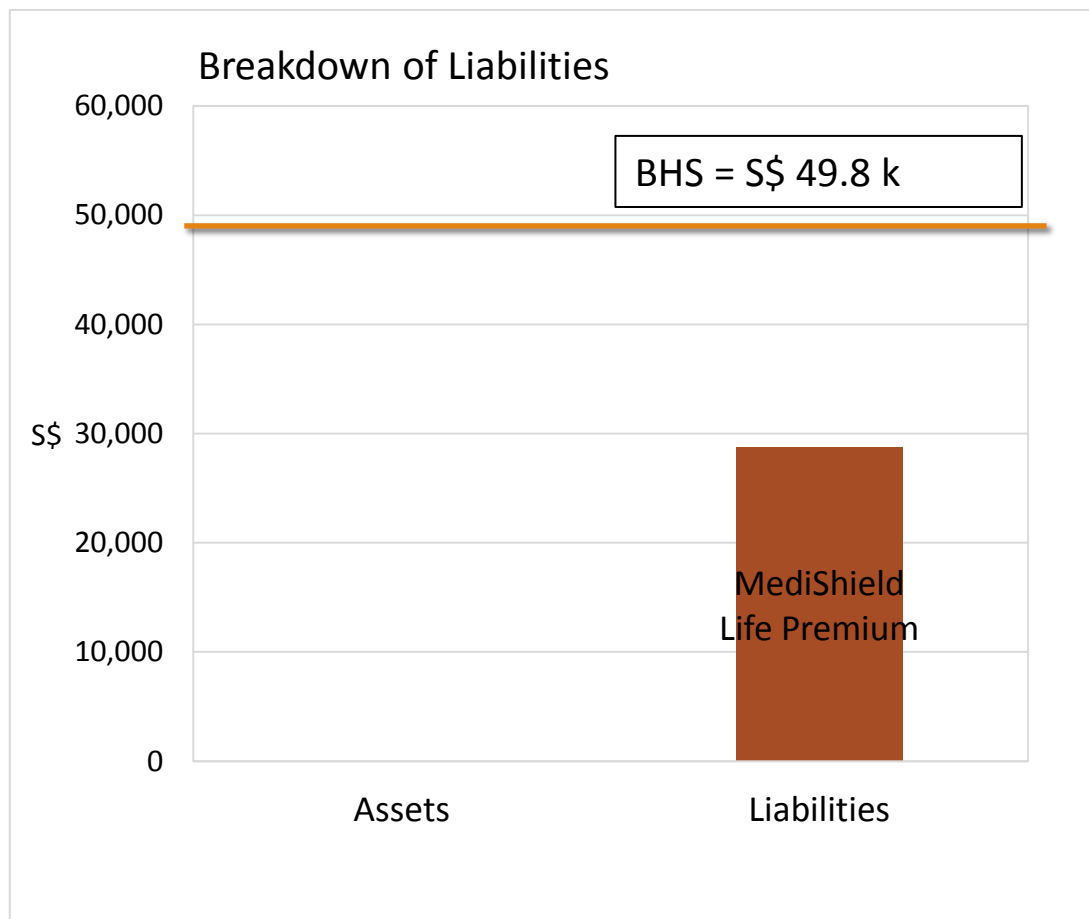
Adequacy of BHS for current 65 year old



Observation

- BHS will last up to age 92
- BHS acts as ceiling on Medisave Account Balance.
- Without this ceiling, Medisave Account Balance will last up to age 94

Results – Basic Healthcare Sum



Key Assumptions

- Current Age = 65
- Life expectancy = 92

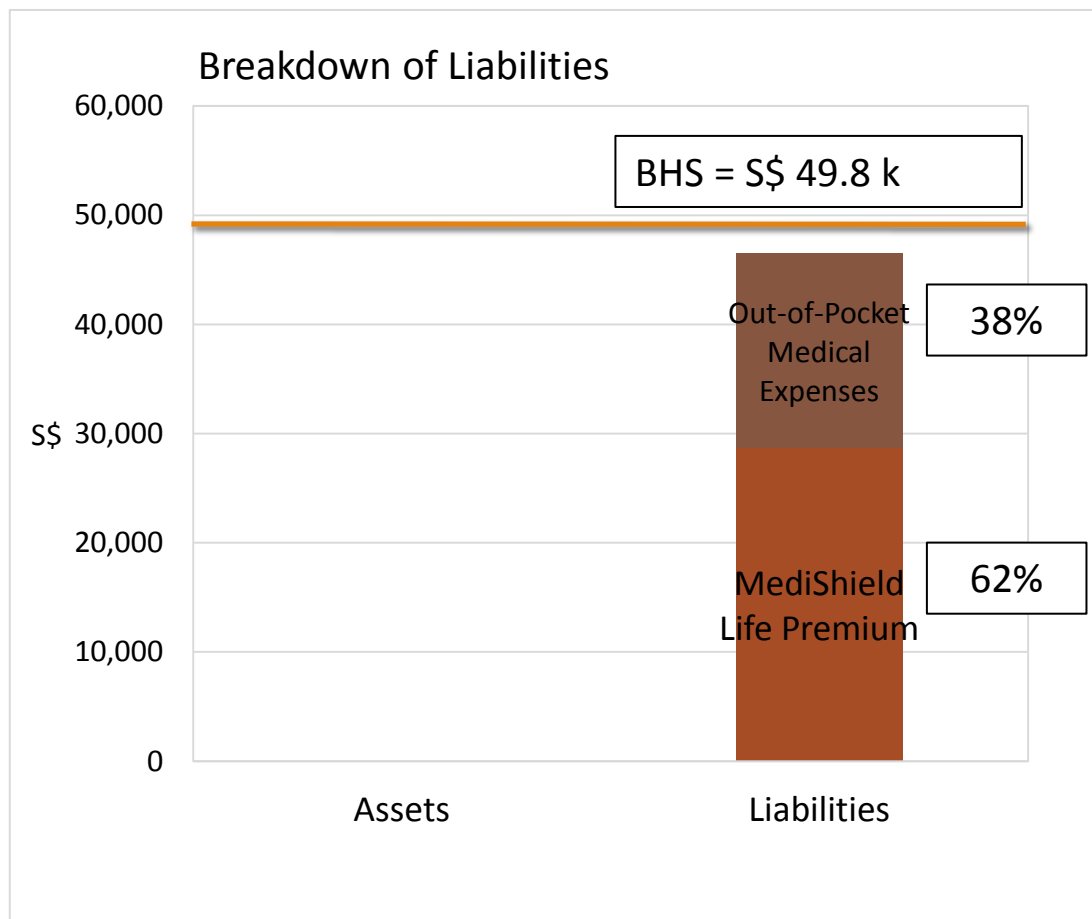
Observation

For current age 65, Basic Healthcare Sum is sufficient to cover for future insurance premium liability of S\$ 29k

Note:

Assumes no further voluntary withdrawal from Medisave Account.

Results – Breakdown of Liabilities



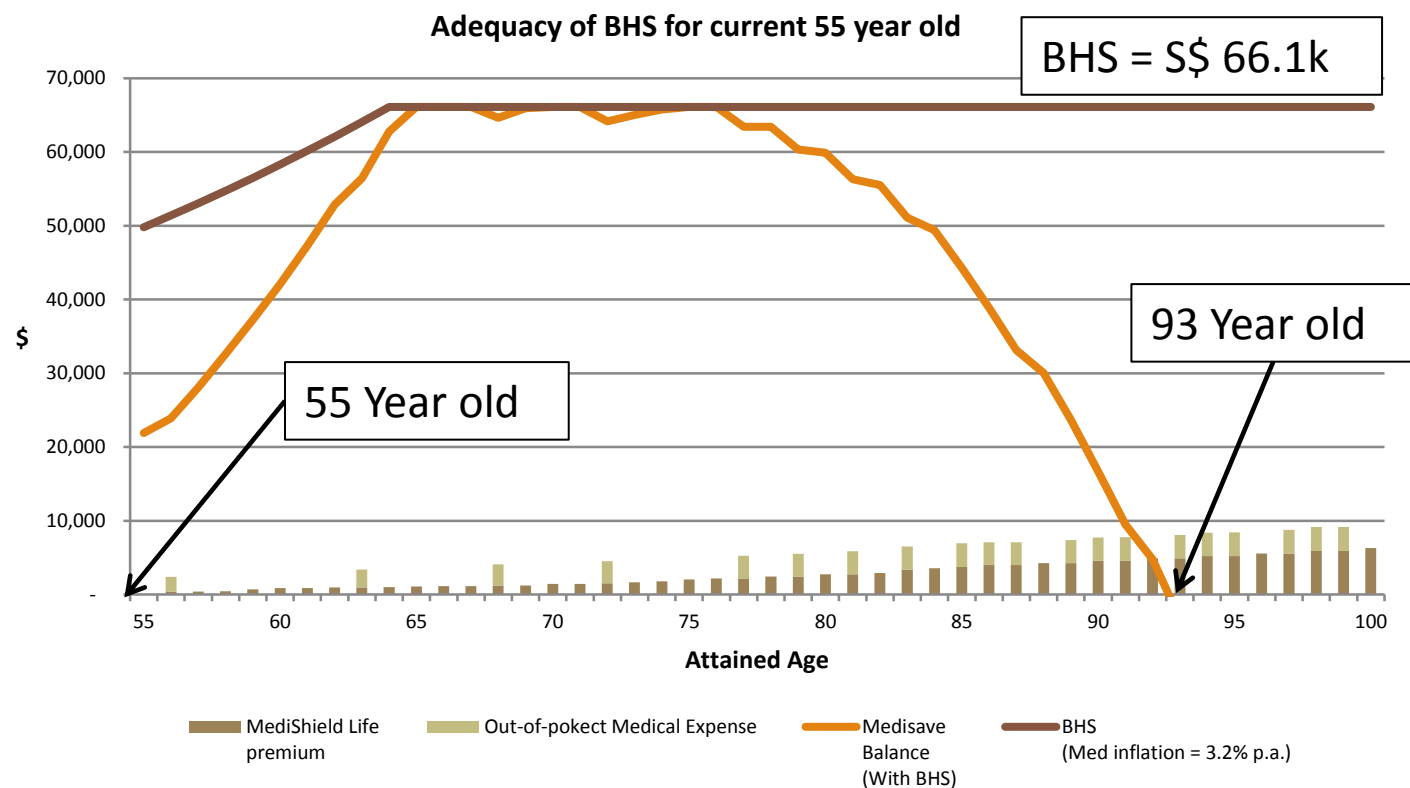
Key Assumptions

- Current Age = 65
- Life expectancy = 92

Observation

For current age 65, Medisave Account Balance required is \$46.5k.

Results – Surplus breakdown by item



Key Assumptions

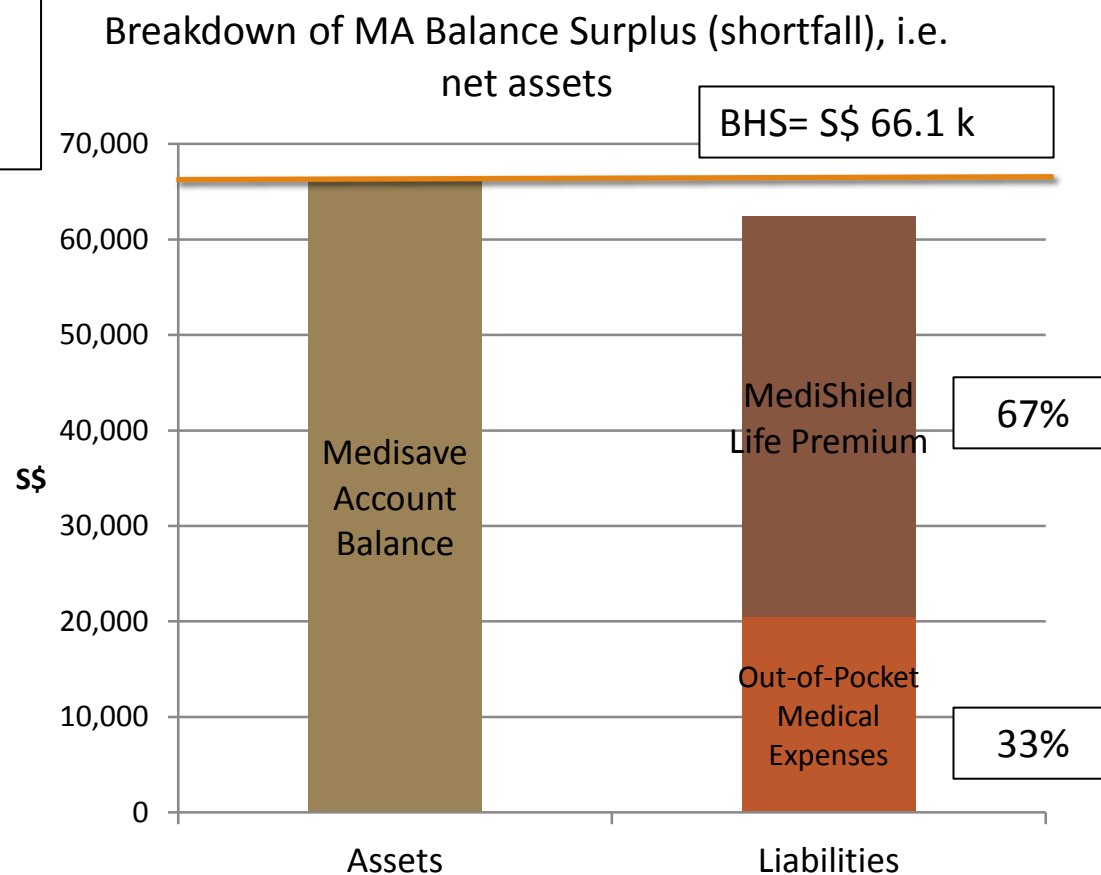
- Current age = 55
- Retirement age = 65
- MA Balance = \$ 22k
- Monthly Income = \$3k / month

Observation

Medisave Account Balance will last up to age 93

Results – Surplus breakdown by item

As at
attained
age 65



Key Assumptions

- Current age = 55
- Retirement age = 65
- Life expectancy = 93
- MA Balance = S\$ 22k
- Monthly Income = S\$3k / month

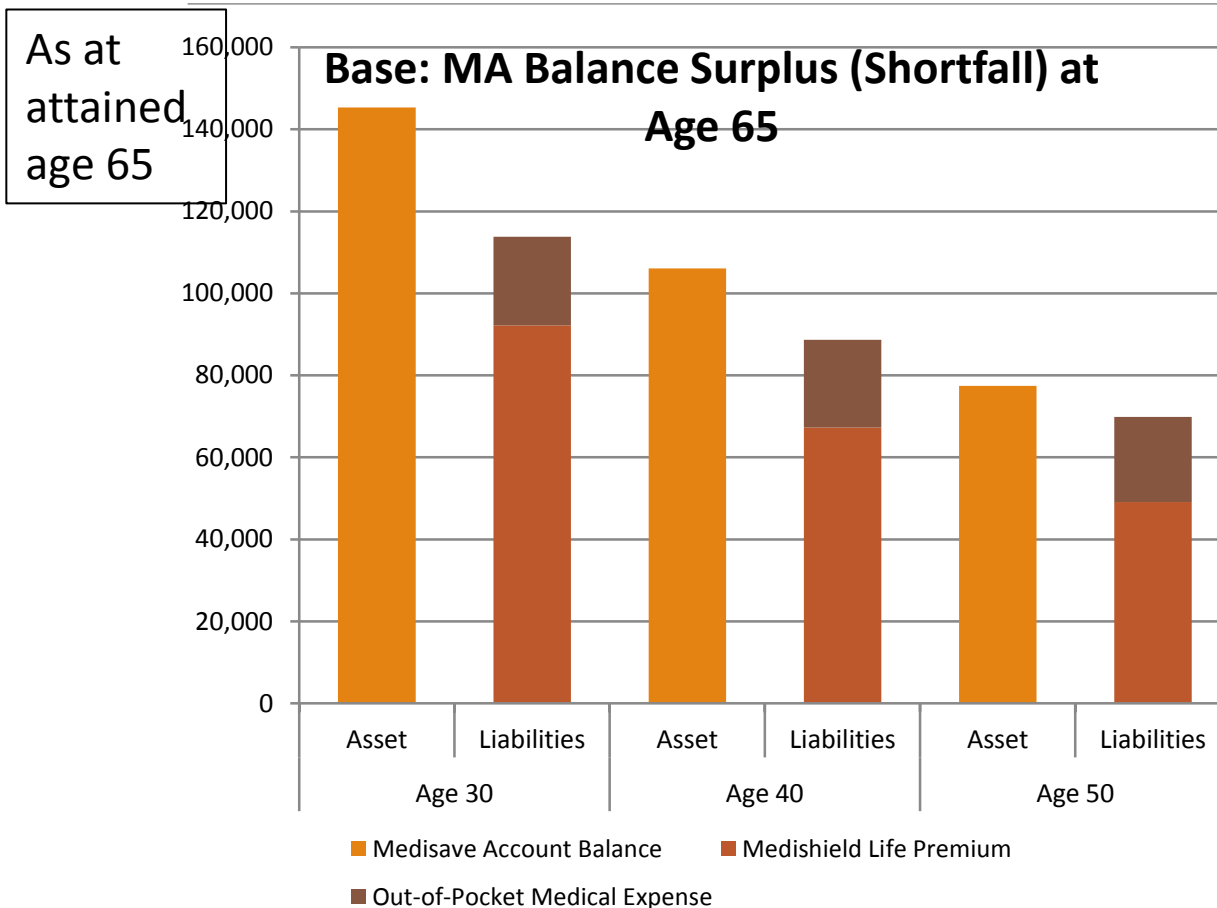
Observation

At projected age 65, current 55 year old is expected to have Medisave Account balance of S\$ 66k and Liability value of S\$62k. This produces surplus of S\$ 4k

Note:

- 1) Out-of-pocket medical expenses refers to medical expenses not covered by Basic MediShield Life
- 2) Projected BHS at projected age 65 = S\$66.1k

Results – Variation Across Age



Base Scenario Assumptions:

- Retirement Age = 65
- Life expectancy = 93
- Medical inflation = 3.20% p.a.
- Salary inflation = 4.40% p.a.

Observation

- All age group is expected to have **sufficient** Medisave Account Balance at age 65.
- Adequacy is worsens with increasing age

Note

Uncertainty in projections increases with younger current age and longer projection period.

Results – Sensitivities and Key Drivers

Base assumptions for Male Age 55

- Retirement age = 65 (Age of assessment of adequacy of MA Balance)
- Life expectancy = 93
- Medical inflation = 3.20% p.a.
- Current salary = S\$ 3k per month

Scenarios tested:

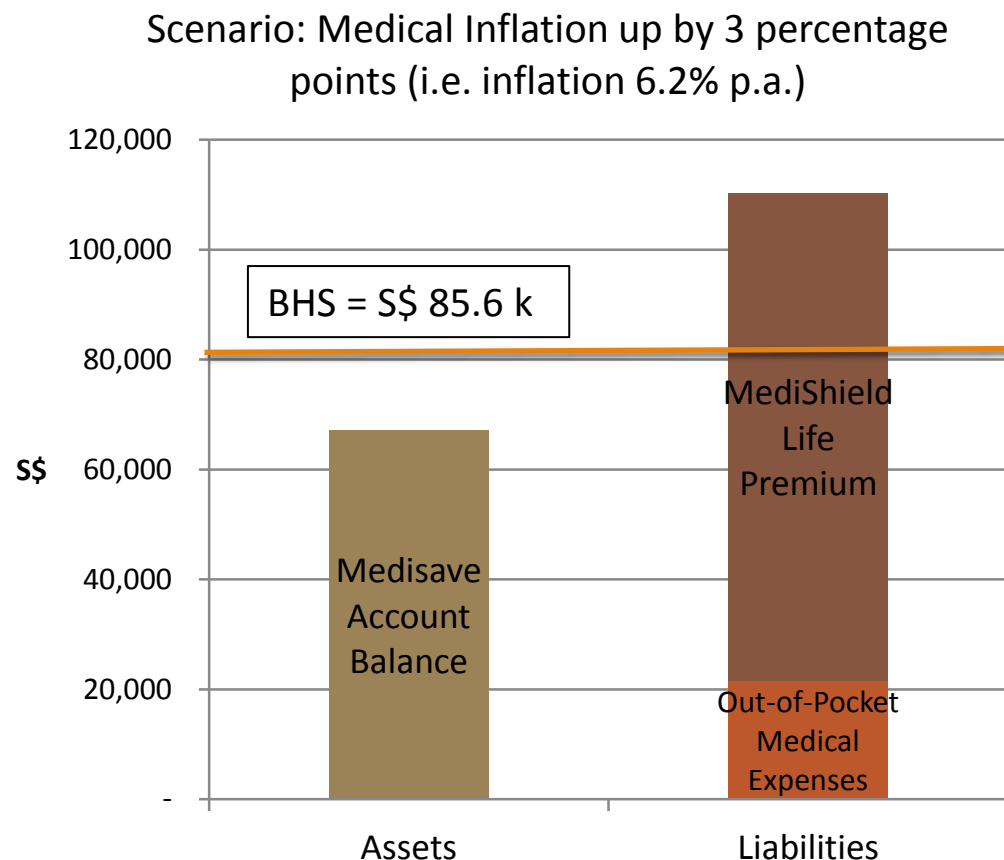
- **Medical Inflation** is increased by 3 percentage points
- **Life Expectancy** is increased to 95
- **Current Salary** is decreased by 25%
- **Exclude 1% additional contribution** to MA Balance.
- **Retirement Age** is reduced to 60
- Removal of **Basic Healthcare Sum**
- Increases **CPF wage ceiling** from S\$5k to S\$6k / month
- Proxy of Integrated MediShield Life plan



Results – Sensitivities and Key Drivers

Scenario: Medical inflation Up by 3 percentage points

As at
attained
age 65



Scenario 1	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Medical inflation Up 3% point	0	67,200	21,600	88,700
Change from Base	0	1,100	1,100	46,800

Observation

S\$4k surplus -> S\$-43k surplus (i.e. **Down** S\$ 47k)

Surplus is sensitive to medical inflation assumptions which will drive up MediShield Life premium and out-of-pocket medical expenses.

Note:

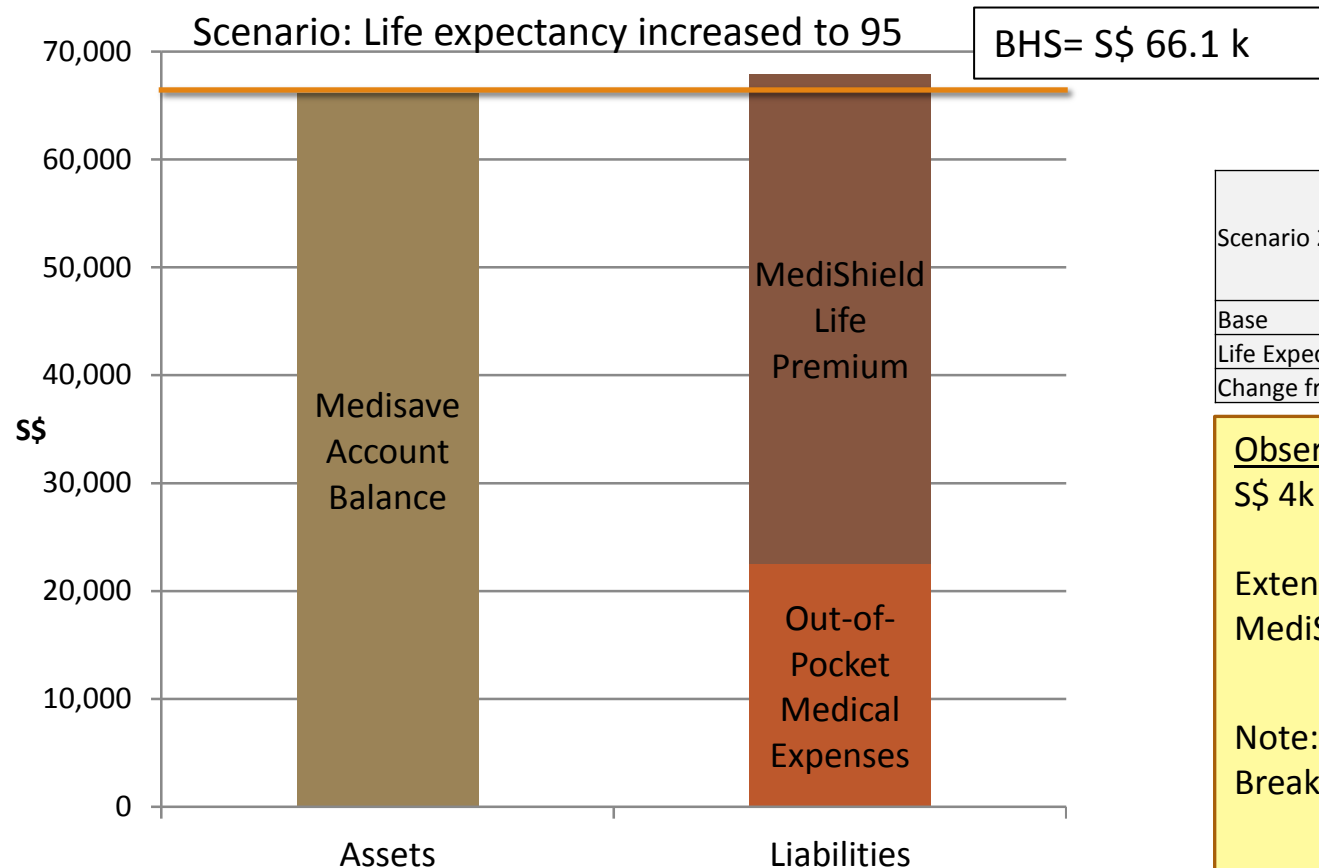
Break even point occur when medical inflation reaches 3.70% p.a.
Higher medical inflation leads to higher BHS level

Results – Sensitivities and Key Drivers

Scenario: Life expectancy increased to 95



As at
attained
age 65



Scenario 2	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Life Expectancy Up to 95	0	66,100	22,500	45,400
Change from Base	0	0	2,000	3,500

Observation

S\$ 4k surplus -> S\$ -2k surplus (i.e. **Down** S\$ 6k)

Extending life expectancy, from 93 to 95, increases projected MediShield Life premiums and out-of-pocket medical expenses.

Note:

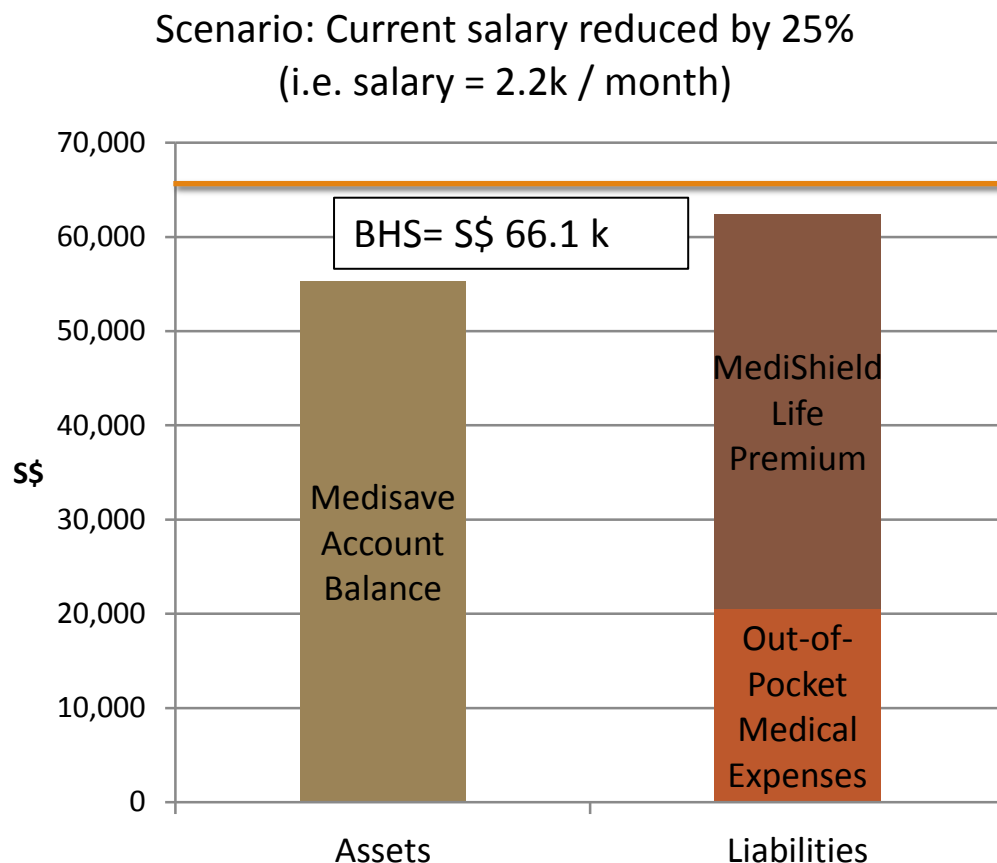
Break even point occurs when life expectancy is at 94

Results – Sensitivities and Key Drivers

Scenario: Current salary reduced by 25%



As at
attained
age 65



Scenario	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Salary reduced by 25%	0	55,300	20,500	41,900
Change from Base	0	-10,800	0	0

Observation

S\$ 4k surplus -> S\$ -7k surplus (i.e. **Down** S\$ 11k)

Surplus is sensitive to current level of salary. Lower salary level reduces projected Medisave Account Balance at retirement age.

Note:

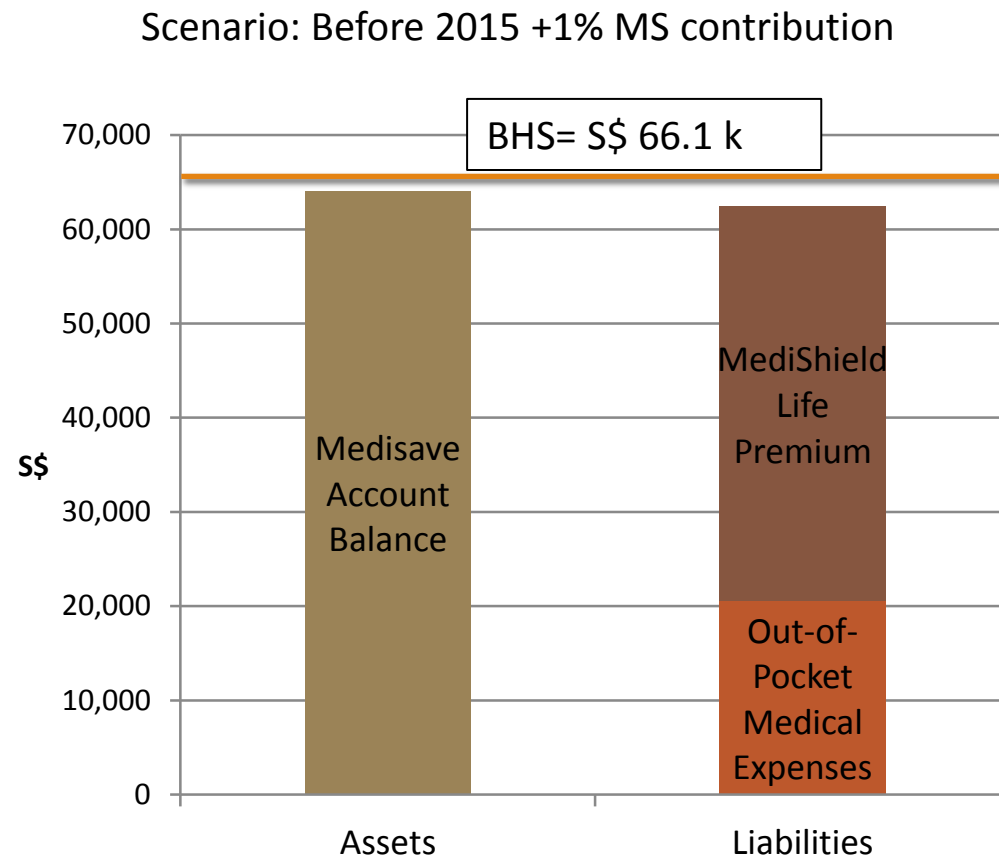
Break even point occur when current salary level drops by 10% (i.e. S\$ 2.7k / month)

Results – Sensitivities and Key Drivers

Scenario: Before 2015 +1% MS contribution



As at
attained
age 65



Scenario	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Excl 1% additional contribute	0	64,100	20,500	41,900
Change from Base	0	-2,000	0	0

Observation

S\$ 4k surplus -> S\$ 2k surplus (i.e. **Down** S\$ 2k)

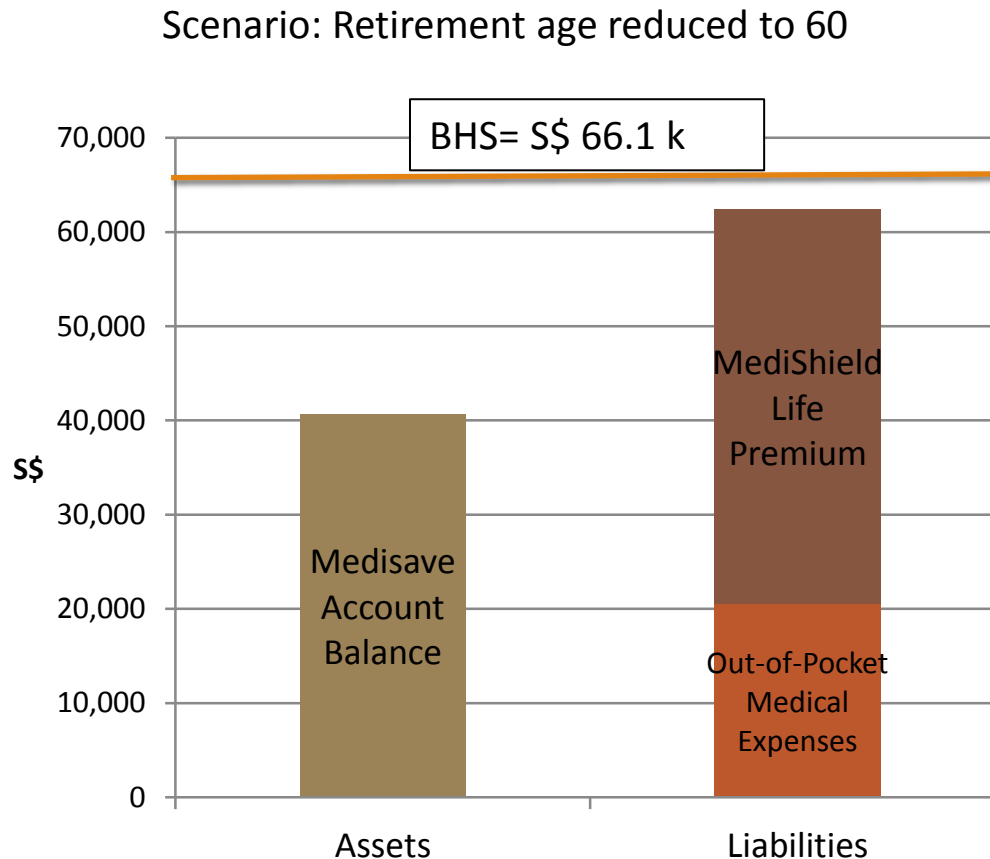
Excluding additional 1% contribution decreases the projected Medisave Account Balance slightly. As such, the overall impact of additional 1% contribution towards median income earner is minimal.

Results – Sensitivities and Key Drivers

Scenario: Retirement age reduced to 60



As at
attained
age 65



Scenario	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Retirement age reduced to 60	0	40,700	20,500	41,900
Change from Base	0	-25,400	0	0

Observation

S\$ 4k surplus -> S\$ -22k surplus (i.e. **Down** S\$26k)

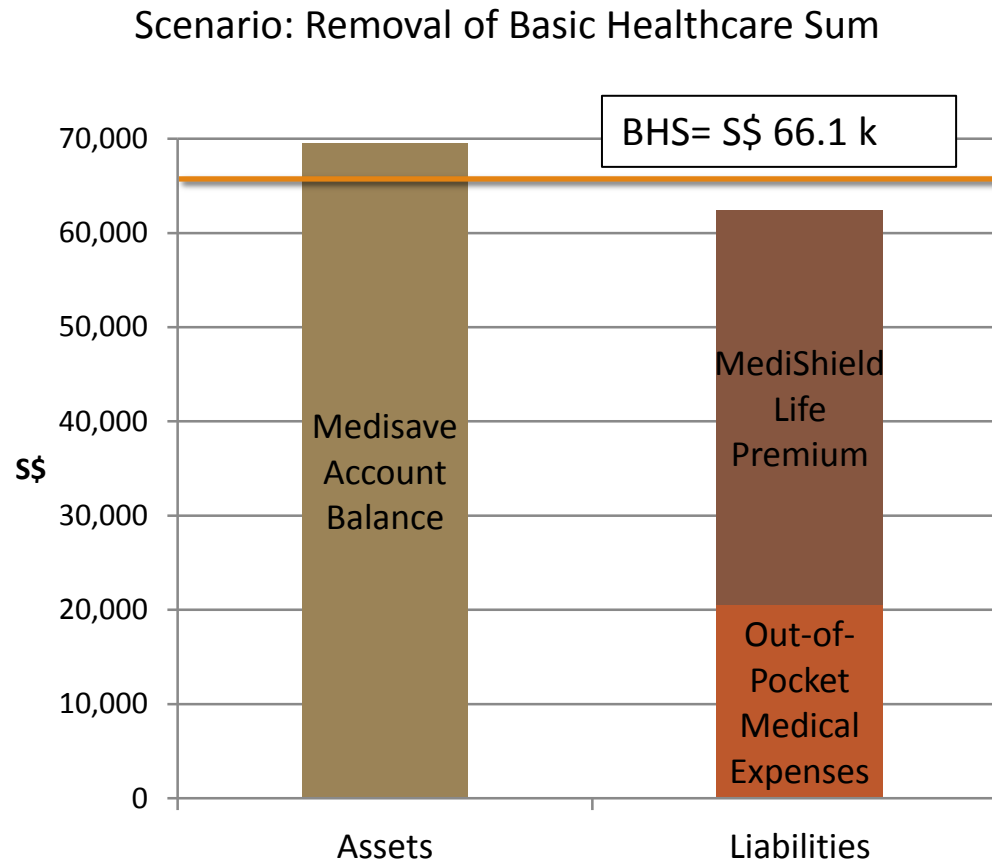
In contrast, reducing retirement age by 5 years (i.e. to 60 year old) reduces surplus significantly due to reduction in contribution into Medisave Account, leading to overall lower projected Medisave Account Balance.

Results – Sensitivities and Key Drivers

Scenario: Removal of Basic Healthcare Sum



As at
attained
age 65



Scenario	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Removal of BHS	0	69,500	20,500	41,900
Change from Base	0	3,400	0	0

Observation

S\$ 4k surplus -> S\$ 7k surplus (i.e. **Up** S\$ 3k)

Removal of BHS allows more contribution into Medisave Account. However, the impact towards surplus is not significant and largely depend on :

- 1) Existing Medisave Account balance
- 2) Current level of salary, cap at CPF wage ceiling

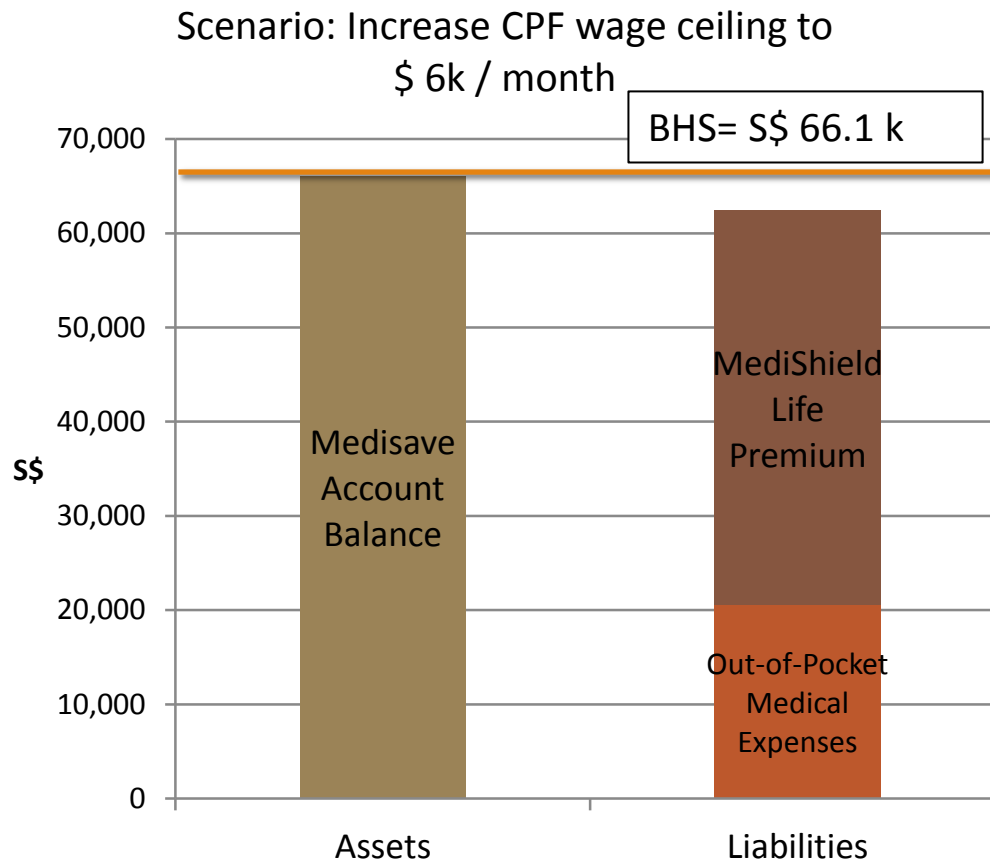
As such, removal of wage ceiling shall only impact those with current high Medisave Account Balance

Results – Sensitivities and Key Drivers

Scenario: Increase CPF wage ceiling to \$6k



As at
attained
age 65



Scenario	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Increase salary contribution to \$6k	0	66,100	20,500	41,900
Change from Base	0	0	0	0

Observation

S\$ 4k surplus -> S\$ 4k surplus (No change)

The increase in CPF wage ceiling has no impact to the assumed median income earner. Under base scenario , with CPF wage ceiling of S\$ 5k / month, projected wage shall not hit the ceiling.

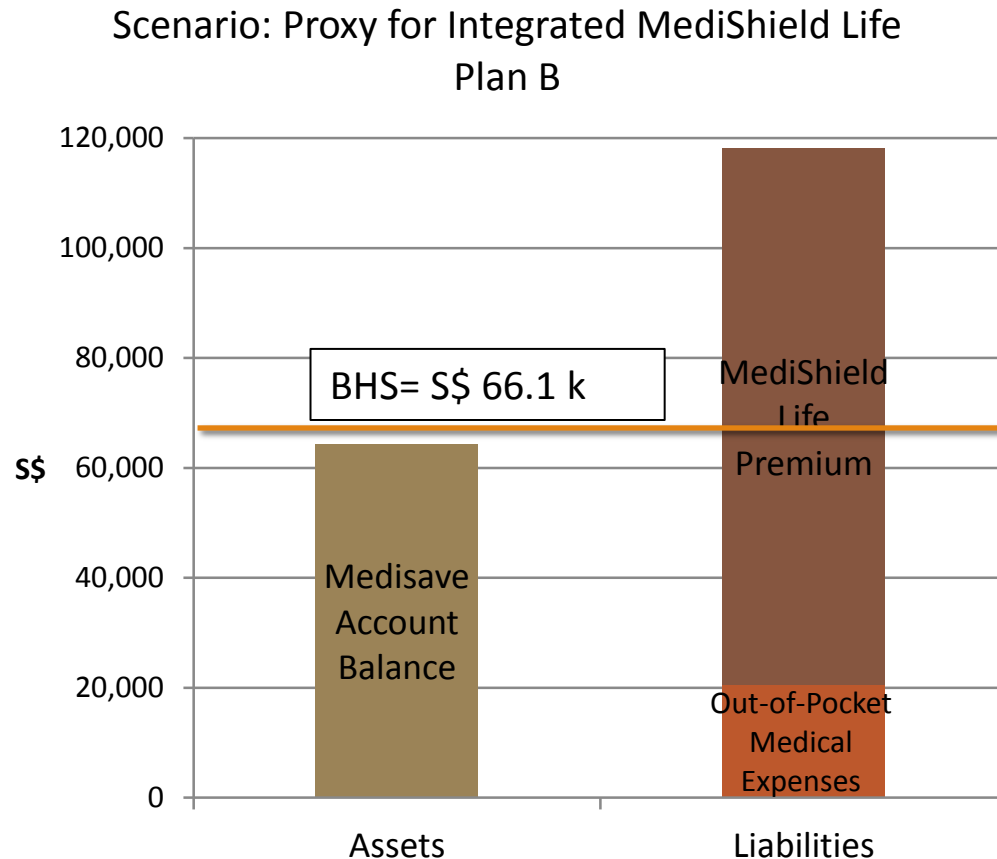
As such, removal of wage ceiling shall only impact higher income earner.

Results – Sensitivities and Key Drivers

Scenario: Proxy for Integrated MediShield Life Plan B



As at
attained
age 65



To proxy the premium rates, we increase MediShield Life premium as follows:

- c50% for age < 60
- c125% for age >= 60

Scenario	Assets		Liabilities	
	Future Contribution	Medisave Account Balance	Out-of-Pocket Medical Expenses	MediShield Life Premium
Base	0	66,100	20,500	41,900
Inflating MediShield Life Premium	0	64,300	20,500	97,700
Change from Base	0	-1,800	0	55,800

Observation

S\$ 4k surplus -> S\$ -54k surplus (i.e. Down S\$ 58k)

The proxy ratio is taken from the ratio of Plan B Private Shield / Basic Shield Plan.

Note:

- The Liability at projected age 65 = S\$ 118k. This is c80% higher than projected BHS level of S\$ 66.1k.
- Increasing wage by 50% will bring deficit down to S\$52k. The wage ceiling mechanism prevent higher contribution from being made. Any shortfall likely require cash payment.

Results – Sensitivities and Key Drivers Summaries



SCENARIOS (55 YEAR OLD)	SURPLUS / (SHORTFALL) (\$ '000)	Change from base (\$ '000)	Comment
BASE	4	-	
Medical inflation Up by 3 percentage points	(43)	(47)	-
Current Salary Down by 25%	(7)	(11)	-
Life expectancy Up to 95	(2)	(6)	-
Exclude additional 1% MS contribution (2015)	2	(2)	Minimal impact to median income earners
Retirement age reduced to 60	(22)	(26)	Sensitive to retirement age
Removal of BHS	7	3	Impact those with high MS Account Balance
Increase CPF wage ceiling from \$5k to \$6k	4	No change	Impact high income earners
Proxy for Integrated MediShield Life Plan B	(54)	(58)	BHS creates shortfall which require cash top-up

Conclusion and Potential Next Step

- Current retiree age 65, with MS balance equal to BHS of S\$ 49.8k, is expected to have sufficient MS Balance up to attained age 92, allowing for:
 - Future premium liabilities of Basic MediShield Life (i.e. 62% of total liability)
 - Future out-of-pocket medical expenses (i.e. 38% of total liability)
- Current median income earner age 55 is expected to hit BHS of S\$ 66.1k at attained age 65. This MS Balance is projected to last up to attained age 93, allowing for:
 - Future premium liabilities of Basic MediShield Life (i.e. 67% of total liability)
 - Future out-of-pocket medical expenses (i.e. 33% of total liability)
- Current median income earners aged 30,40 and 50 year old are expected to have sufficient Medisave Account Balance at attained age 65.
 - Assuming Life expectancy of 93 and working age to 65

Note

Uncertainty in projections increases with younger current age and longer projection period.

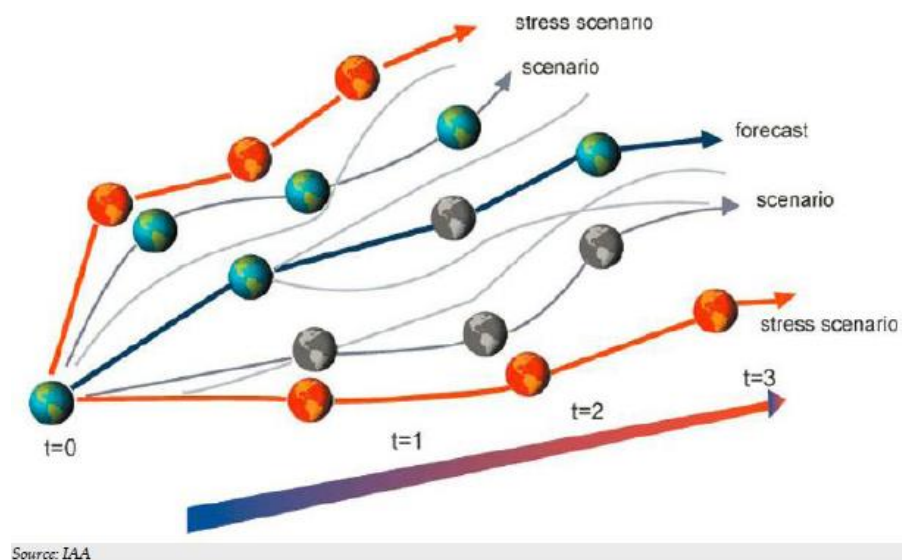
Conclusion and Potential Next Step

- Medisave Account Balance adequacy will be negatively affected by:
 - Higher medical inflation
 - Increase in life expectancy
 - Lower current salary level.

Conclusion and Potential Next Step

Goal 1: Independent assessment of adequacy of Medisave Account Balance and BHS

- This requires stochastic analysis
- Additional data required for MA balances by
 - Sex
 - Age
 - Wage (for calculating CPF contributions) level
 - Inflation history
 - Withdrawal history
 - Premium payment
 - Expenses



Conclusion and Potential Next Step

Goal 2: Writing a program to allow individual members to assess adequacy of their own MA balances

Issues to be addressed:

- Medium for disseminating program (e.g. the CPF website?)
- Parameters which members can select (e.g. life expectancy at age 65)
 - Ranges for these parameters (e.g. 85 – 100 for life expectancy)
 - Information to help members select parameters for themselves
- Assumptions to be adopted and how to explain how they were selected
- Values to be illustrated and how to interpret them
 - To illustrate on multiple scenarios (cf. life insurance benefit illustrations)?



Q&A



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APPENDIX

CAVEATS ON ASSUMPTIONS:

- Wage inflation may vary with actual economic condition, attained age, current wage level and individual circumstances. (slide 9)
- Medical inflation may vary with actual economic condition, potential government's action and different hospitals (i.e. public vs private) (slide 10)
- Medisave Account Balance varies with individual's out-of-pocket medical expenses and level of premiums paid to integrated shield plan and ElderShield supplementary. (Slide 12)
- Medical expense size may vary with medical inflation and the different level of medical needs involved. (slide 13)
- Medical expense incidence depend on person's age, gender and individual's health status. The assumption on applying the same expense incidence within the age banding is a modelling simplicity. It may not hold in practise. (e.g. male who turn 65-69 may not continuously go to hospital for once a year) (slide 14)

CAVEATS ON MODELLING

- No subsidy on MediShield Life has been modelled.
- No allowance for withdrawal from Medisave Account balance for other than medical expense (i.e. pregnancy, vaccination)
- No allowance for withdrawal at 55 ALB
- Uncertainty in projection increases for the younger age with longer projection term.