



The impact of changes in the participation rate within the Australian PHI market

Prepared by Andrew Gower/Peter Grigaliunas

Presented to the Actuaries Institute
Actuaries Summit
17 – 19 May 2015
Melbourne

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Institute of Actuaries of Australia

ABN 69 000 423 656

Level 2, 50 Carrington Street, Sydney NSW Australia 2000

t +61 (0) 2 9239 6100 f +61 (0) 2 9239 6170

e actuaries@actuaries.asn.au w www.actuaries.asn.au

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The views contained within this paper are those of the authors and not their employers or clients (both past and present). The authors would like to thank Andrew Matthews FIAA along with other senior executives at Medibank for their review, conversations and challenges around this topic.

1 Summary

This paper seeks to investigate the impacts of population age structure and participation rates on two key aspects of the Australian Private Health Insurance (PHI) market; namely:

- Hospital benefits per insured life, and
- Proportion of benefits included within the age based Risk Equalisation (RE) pool.

These are two important factors that drive hospital prices that consumers see in the market.

The second item is also important in the spread of product and pricing that can be offered by insurers, since as this rises the effective floor price within a state also increases. Limiting this may reduce participation as customers see less choice with respect to hospital products.

Section 2 covers the actual participation experience seen since 1998 and briefly touches on the impacts this has on both statistics outlined above. Section 3 then seeks to project possible experience into the future. Firstly allowing for ABS population projections, and then also allowing for possible participation rate changes. This section also briefly touches on the implications of these outcomes.

Since 1998, an increase of about 0.7%p.a. in benefits per insured life has occurred via changes in the population age structure. If we also allow for changes in participation rate, this reduces to 0.5%. This reduction is masked by the introduction of Lifetime Health Cover (LHC) loadings when benefits dropped as younger members were forced into the PHI market. When allowing for changes in participation rate, as well as population age, this increases to 1.1%p.a. since 2002.

Over this time, the RE pool has also increased to represent about 41% of all hospital benefits as the population has aged and participation has increased in age segments above 60. This again challenges the perceived value equation for younger customers who, through RE, fund a part of older member claims.

Based on the age projections undertaken by the ABS, the impact of age is likely to continue over coming years, with increases of 0.5-0.6%p.a. in benefits per insured life being seen out to 2040. When adding possible changes in participation rates as well, the impacts become more challenging to respond to with increases of up to 1.5%p.a. seen.

Responding to this level of benefit increase via the current approaches, of which the most common appear to be price increases or benefit downgrades, are likely further challenge the consumer value proposition. This in turn, could force more Australian's to use the public system requiring further funding through government budgets that are likely to be stretched as outlined in the Intergenerational report.

It is also important to remember that benefit inflation will also be driven by increases in service cost, the mix of services performed and other drivers of benefits. These also need to be accounted for when looking at the size of customer impacts.

These challenges will need to be addressed over the coming years via a multi-disciplinary approach across the whole health sector since many are also faced by the public system. This could lead to changes in:

- Product design,
- RE approach,
- The level of data sharing and standardisation across the health system,
- Contracting of health services,
- The funding and support of both the public and private health systems.

2 Past Participation

Many papers have focused on the participation rates over the past 30 years and the various drivers of those changes. The following is not a detailed review, but a couple of key points where material age or claiming profile changes of occurred.

A range of key changes to government policy have occurred over that time, although the most material include:

- The introduction of firstly Medibank (1975) and later Medicare (1983) which started a downwards trend in participation. The 'free' public hospitals were perceived to supply appropriate cover for the younger and healthy people.
- The introduction of the Medicare Levy Surcharge (1997), 30% rebate (1999) and Lifetime Health Cover (2001). Before this participation was about 30%, whereas afterwards a participation rate above 40%. This also changed the age profile at the time with younger singles and families being encouraged to purchase PHI through tax incentives. A good paper discussing the impacts of this was 'Health after Lifetime Health Cover'.
- Changes to increase the government rebate for over 65's (2005). Since then, as discussed in Section 2.1.3, growth in participation has been driven by older age groups.

Since 2005, the changes in policy have been generally smaller with less impact on participation. Over that time, participation has slowly increased to current levels of about 50%.

The most recent changes in 2014, the indexation of the rebate to CPI, are currently flowing through the industry, with initial results showing limited impacts on participation rates.

For a more detailed review of the various changes and their impact on the number of insured lives please see the most recent PHIAC Operations of Private Health Insurers report.

2.1 Recent Trends in Participation

Since 1998, participation has increased over time, as shown below. Much of this increase occurred in 1990-2000 when Lifetime Health Cover (LHC) was introduced, but since then continued growth has occurred.

LHC saw a step change in all age groups except those over 75. For these age groups participation growth has occurred since 2001 with smaller increases for the oldest groups.

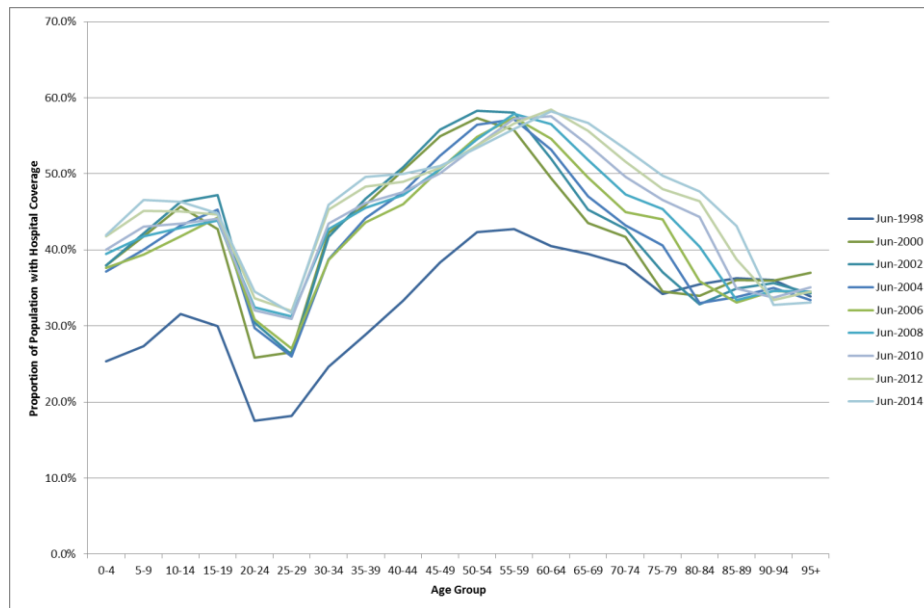


Figure 1 - Participation by Age Group since 1998

2.1.1 Participation up until age 30

For most people under 30, they remain on a family policy until their early 20's when they complete full time study.

Since the introduction of LHC, there has been slow growth in participation of younger children (those under 14); while participation of teenagers has remained reasonably constant. This is likely to be, in part, driven by three aspects:

- Teenagers have greater health needs (most notably orthodontics) and this may have led to families remaining in cover.
- Teenagers generally have parents in their late 40's and 50's; with this always being an area of participation in PHI.
- Younger families are being impacted by the Medicare Levy Surcharge more than previously.

While participation of children can be important, it is more material on ancillary cover due to the higher ancillary cost of children. The impact on hospital is minor due to the low level of claims paid (with the exception of newborns whom have high levels of claims).

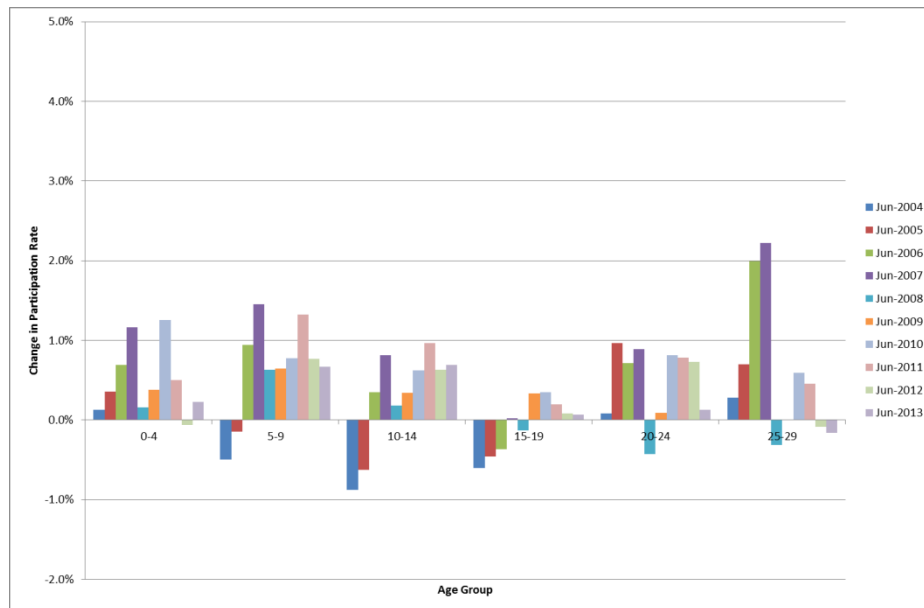


Figure 2 - Change in Participation Rate of persons under 30

2.1.2 Participation between age 30 and 65

Participation of those throughout their middle years was a key driver of the introduction of LHC in 2000.

There has been steady growth for customers in the 35 to 45 age bracket. This corresponds to the growth in under 14's seen above.

After these ages, participation has reduced for customers in their 50's. This is an age where often the high costs of children have been overcome and the perception of personal health needs is yet to take over.

While not available from within PHIAC data, the product choice of these customers is likely to have changed since 2000. There has been continued shift towards lower coverage (with more exclusions or restrictions) due to customers no longer requiring Obstetrics and having more cost effective products available for purchase.

While the impact of this is hard to assess, the customers who have downgraded are likely to have personally assessed less need for the services excluded; hence the impact on income from this is likely to be greater than the impact on benefits. This, in turn, may also be causing increased prices due to the need to cover fixed management expenses.

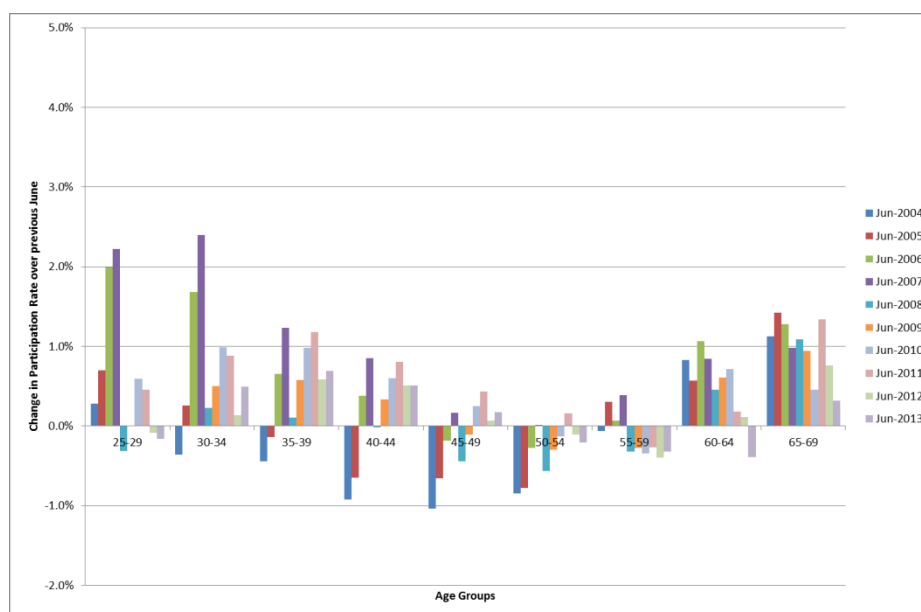


Figure 3 - Change in Participation Rate of persons between 25 and 69

2.1.3 Participation post age 65

Participation of those over 65 has steadily grown since the introduction of LHC. This is likely to be driven by a range of reasons:

- The greater value within the product. While most customers are unlikely to be aware of this; the benefit cost of these customers is generally well above the price they pay.
- The increased rebate customers receive, although when this was first introduced there wasn't a material spike in participation.
- The increased wealth of customers over 65. With superannuation being introduced in the early 90's; newly retired customers may have increased spending power within the health system.
- The power of inertia, with these customers been within the PHI system for many years and see it as valuable.

These customers have recently been a core focus of a number of insurers; with a growth in products targeted towards these groups (i.e. Top level hospital cover excluding Obstetrics). These new products may support additional growth in this area.

One exception to this increase in participation is at ages over 90. While the population is currently small, current forecasts¹ are for this to grow at 3-5%pa over the next 15-20 years.

¹ Based on the most recent ABS forecasts of the Australian population

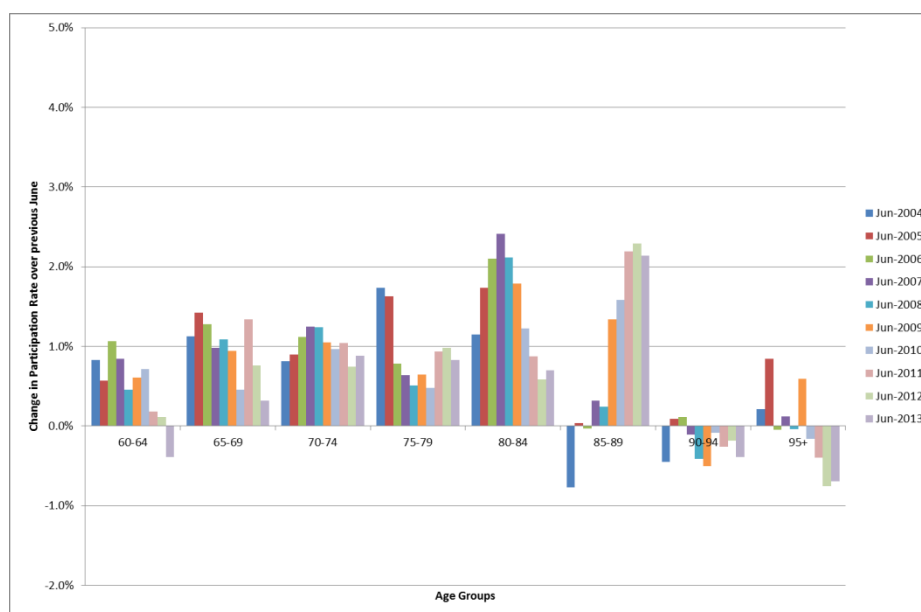


Figure 4 - Change in Participation Rate of persons above 60

2.2 Impacts of recent participation changes on Claiming and RE

Since 1998, these changes in participation have changed both claiming and the level of RE seen in the Australian PHI market.

By removing the impact of both the increased utilisation (both in terms of additional separations and more services per separation) and increases in costs at a service level we can see the impact of these changes on the level of claiming². This is shown in Figure 5 below.

The impact of the Lifetime Health Cover saw a material reduction in benefits payable per life, since then this measure has increased. If we remove the changes in participation rates over time, the growth has been a relatively constant 0.7% over the time. This rate of increase has been factored into past pricing decisions and is in addition to increases in services and cost of each service.

By including participation rate changes, the growth reduces to 0.5%p.a. This reduction masks the introduction of LHC, with more recent years seeing growth of about 1.0%p.a. in benefits per insured life.

² This has been achieved by using the FY2014 claiming per insured life from PHIAC. This also removes the impact of downgrading.

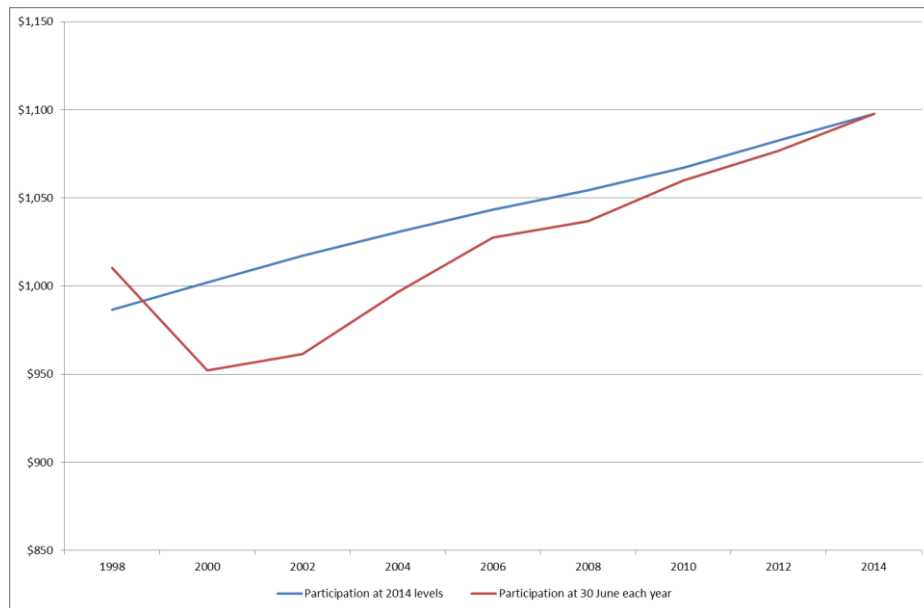


Figure 5 - Benefits per insured life

In addition to this, we have seen the level of benefits included within RE increase over that time. While this is to be expected, it is important to note that RE now represents about 41% of all benefits as shown in Figure 6.

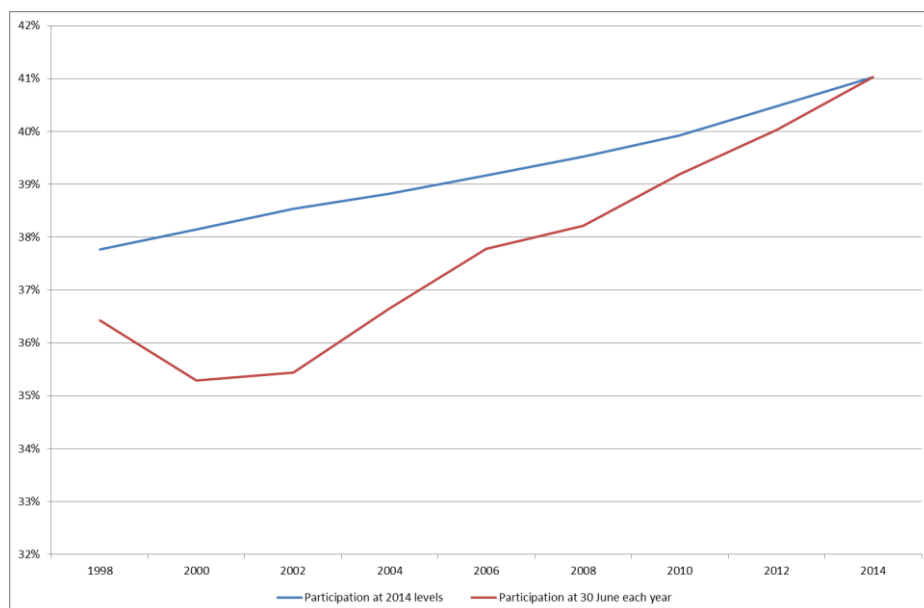


Figure 6 - Proportion of benefits included within RE

3 The future

This section discusses what the future may look like. Firstly it covers what may happen with just the current population projections occurring before moving on to allow for changes in participation. This section concludes with a brief discussion around the impacts on product design and risk equalisation.

3.1 Population change only

The ABS regularly undertakes population projections for the Australian population. The most recent one was undertaken in 2014 out of the 2012 census. As seen in above, the benefits per insured life has grown at 0.7% pa excluding participation rate changes. This growth is likely to reduce slightly over the coming years to levels around 0.5% as shown below.

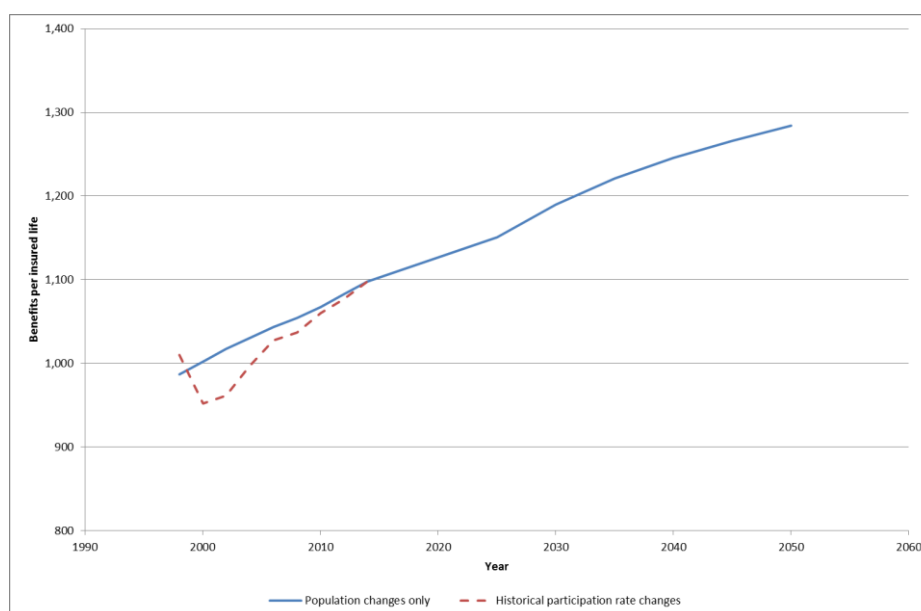


Figure 7 - Benefits per Insured Life without a change in Participation Rate

While RE has been a long standard part of the Australian PHI market, the form that it has taken has changed in the past. Under the current system, this is likely to grow to being about 48% of all claims by 2050 before any changes in participation are taken into account.

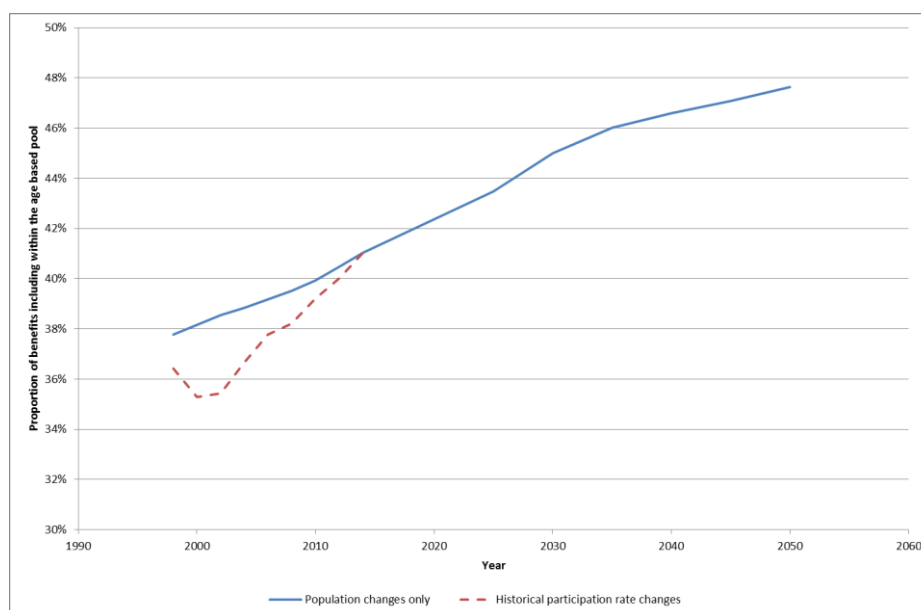


Figure 8 - Proportion of Claims included within RE

This impact is important to consider further. Younger members are generally on more basic products which exclude or restrict services. For these products the costs of RE can be a large proportion of the price (up to 80-90% for the most basic products). As the proportion of benefits included within RE increases the cost curve of various hospital products flattens, which is likely to increase the challenges faced on engaging younger members which then reduces participation.

The current product range is likely to fail and have limited pricing differences if the proportion included within RE grows too large. This is demonstrated in Table 1.

		Hospital ranking				
		Very low	Low	Medium	High	Very High
Age profile		Young	←————→ Old			
Current RE		Cost	Cost	Cost	Neutral	Positive
Cost of RE as percentage of total cost of product		90%	60%	30%	~0%	-30%
Pricing relativities	Today	40	50	60	80	100
	RE at 45%	45	55	65	80	100
	RE at 50%	60	70	80	90	100
	RE at 60%	80	90	100	100	100

Table 1 - Impact of Increasing RE proportion on various Hospital products

3.2 Other scenarios

In addition to the future population changes, it is likely that participation will continue changing, either due to wealth, different product constructs or government policy. To test these possibilities a range of scenarios are presented in this section.

3.2.1 Scenario 1 - Continued trend of over 65's

As seen above, participation of the older population has been consistently growing over recent years.

This increase in participation may be driven by:

- Continued increased wealth. Superannuation is, slowly, creating additional wealth for Australians when they retire. One area they can choose to spend this increased wealth is PHI, either via taking higher cost products or more customers
- Improved products for older members. Recent years have seen a growth in products that cover the needs of older members while excluding obstetrics cover. This is likely to improve engagement and hence participation of these older members.
- Changes to the nature of Public Hospital System. While many of the hospital procedures that occur in the private system are important for quality of life, they aren't about the immediate saving of life. Changes in the perception of the public system can be important for participation in PHI.

Figure 9 shows the impact potential increases in participation of members over 60 will have on both benefits payable and the proportion of benefits included within RE. There are only minimal impacts out to 2020, although the growth then increases dramatically as the twin effects of increase participation and an older society takes effect.

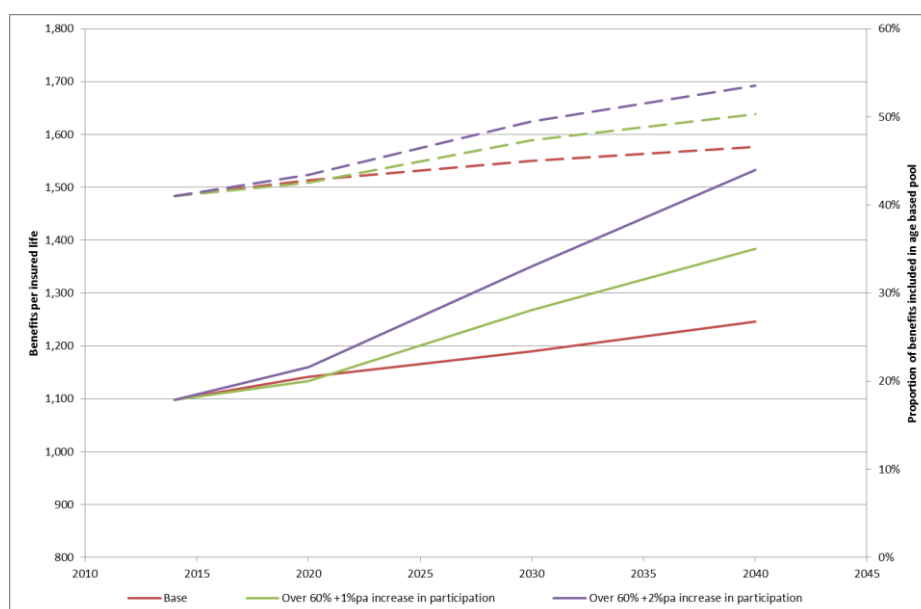


Figure 9 - Changes in Benefits per insured life and proportion of benefits within RE if older members continue to have increased participation

3.2.2 Scenario 2 - The young and families drop out

Younger singles and couples currently support older customers via community rating and RE. While this provides sociality benefits, these customers can be forced into PHI via sticks included within the Australian tax system and the need to pay higher prices if they enter after the age of 30 (i.e. LHC). As outlined in Section 2.1.2 above, participation rates of these customers have been flat or reducing in recent years. This may be driven by:

- Increased need to subsidise the older members. With increased subsidisation, the costs are likely to increase. If Risk Equalisation costs increase by 20% (see above), then the most basic products that young singles buy are likely to increase by a similar amount. This will increase the pressures on these members.
- Public hospital system perception changes and these customers decide that the public system meets their needs. If the perception of the public system, which is a 'free'³ system for consumers, increases then the participation within PHI is likely to reduce. This is most likely to occur for younger customers due to their lower health needs.

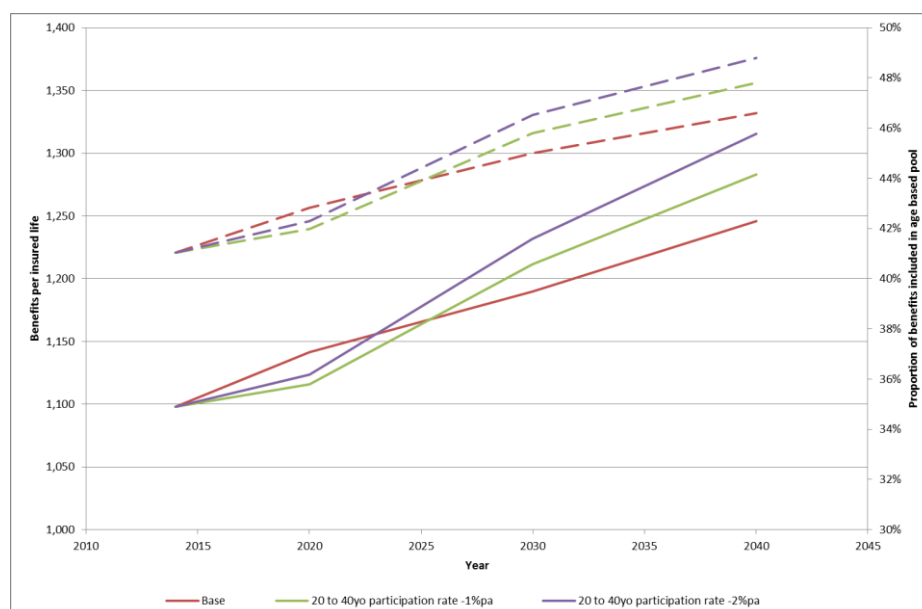


Figure 10- Changes in benefits per life and proportion of benefits within RE if younger members drop out

Overall this has similar upwards trends as above, although not the same extent as scenario 1 above. The short term impact, out to 2020, sees a reduction of growth.

3.2.3 Combined scenarios 1 and 2

Since the impacts of the above two scenarios are complementary, these are both likely to occur. The graphs below combine a variety of combined scenarios.

These all show the material increases that occur after 2020.

³ The public hospital system in Australia is paid for via taxation revenue with people being seen on the basis of needs rather than the ability to pay.

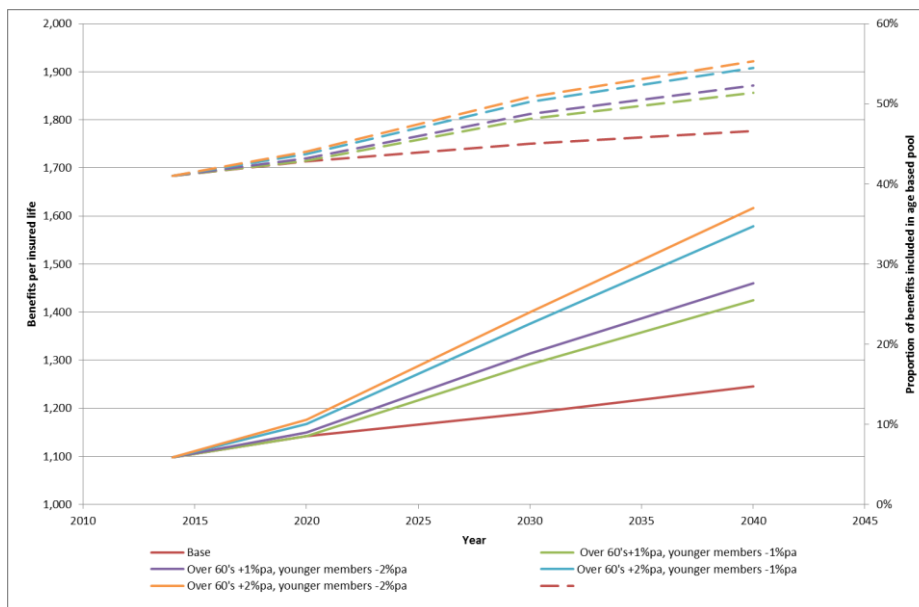


Figure 11 - Combination of both Young leaving the industry and the old growing

3.2.4 Scenario 4 - The young get engaged

Young singles and couples are generally considered disengaged by both the taxation system, which doesn't force them into the system, and the value proposition of PHI. The resulting hospital participation rates seen in Australia are about 30-35%; compared with a population average of nearly 50%.

If younger members get engaged, then participation of these customers may increase. This may be either via an improved value proposition, changes to the taxation system or the LHC system. The most widely discussed option has been negative LHC on ages under 30, although this is only one possible approach to engage customers.

The impact of either an increase in participation of 5% or 10% for customers in the 20-30 age band is shown in Figure 12. The impact in the short term is material, and similar in size to that seen when LHC was introduced, although longer term the impacts of the aging population continues to dominate. Hence this is a short term solution to the challenges.

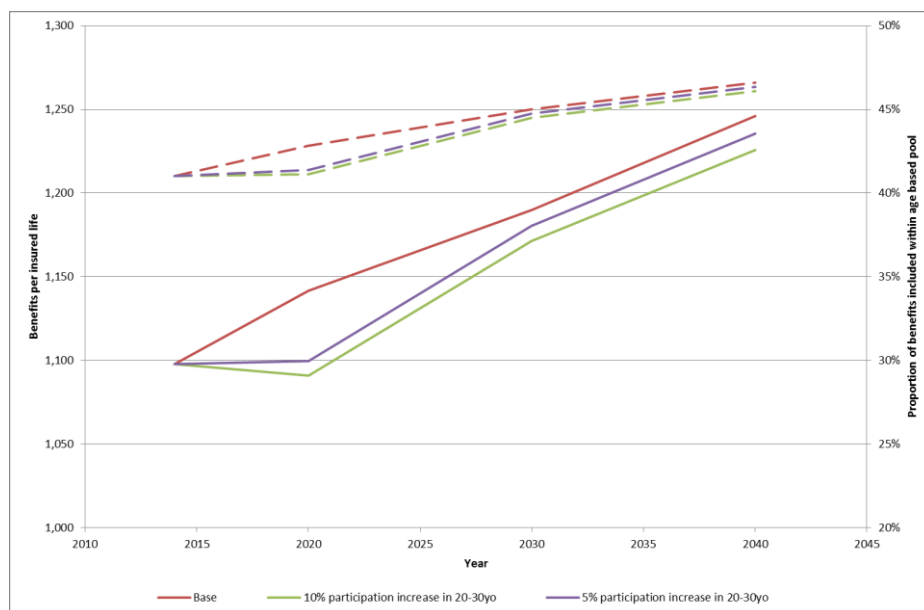


Figure 12 - Change in Benefits per life and proportion of benefits in RE pool if the young get engaged

3.2.5 Risk rating

Risk rating has often been discussed as a way of driving improved health outcomes via the price signalling that can occur. Even if risk rating is allowed using limited factors material impacts on both participation and benefits per SEU could occur.

Possible scenarios include:

- Allowance to rate for Body Mass Index. Obesity is a key driver of health outcomes and, with over 60% of Australian overweight or obese a likely driver of this. This is most likely to reduce the participation of 30 to 65 yo's and will also reduce the benefits per member since overweight and obese members are likely to claim at higher levels.
- Allowance to rate for smoking status. This is another area where risk rating has been previously discussed. In this case, the impact is likely to be higher on older members with higher levels of claiming. This is also likely to reduce the benefits per member since smokers see higher levels of claiming a range of services.

To reflect this we make two changes to occur within our model:

- 2% lower participation for ages 35-55.
- 5% reduction in benefits paid for ages between 35-55.

This is just one possible scenario and there are likely to be many more.

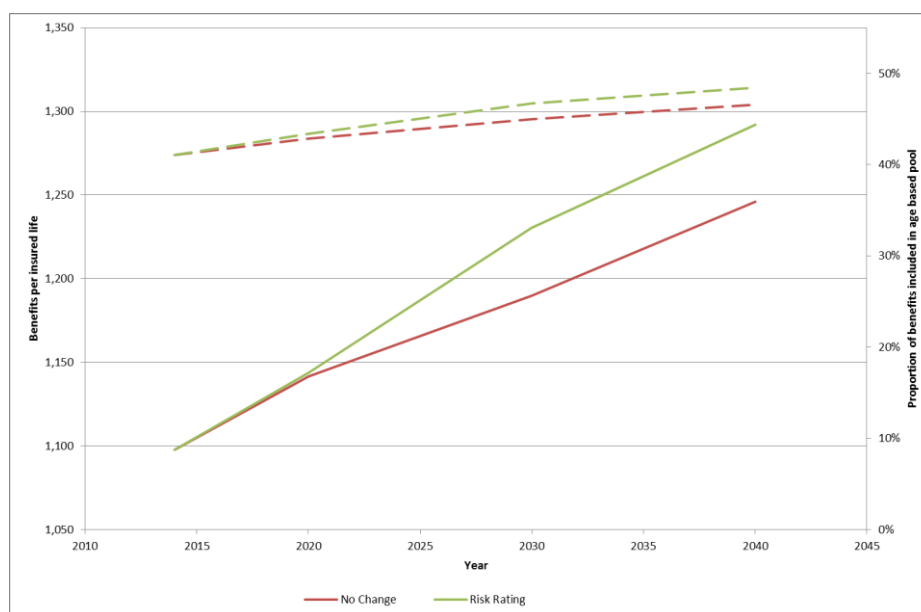


Figure 13 - Changes in benefits per life and proportion of benefits within RE for risk rating

3.3 Summary of the scenarios

The scenarios outlined above cover a range of situations that may occur. With many of them, the likely outcome is higher costs and more subsidisation from younger customers.

The impacts estimated in 2020 are minor and, provided the participation doesn't change rapidly, provides time to reflect these challenges across the health system as a whole. That said; these impacts are already having impacts on customers with the nature of participation changing (i.e. product downgrades) reducing the level of income from many customers. This hasn't been factored into the above analysis, but is likely to increase the need to create solutions in the short term.

Scenario			2014	2020	2030	2040	CAGR
Population only	change	Bens per life	1,098	1,142	1,190	1,246	0.46%
		RE%	41.0%	42.8%	45.0%	46.6%	
Increase in older participation	1%	Bens per life	1,098	1,134	1,268	1,383	0.89%
		RE%	41.0%	42.5%	47.3%	50.3%	
	2%	Bens per life	1,098	1,160	1,351	1,533	1.29%
		RE%	41.0%	43.4%	49.5%	53.5%	
Decrease in younger participation	1%	Bens per life	1,098	1,116	1,212	1,283	0.60%
		RE%	41.0%	42.0%	45.8%	47.8%	
	2%	Bens per life	1,098	1,124	1,232	1,315	0.70%
		RE%	41.0%	42.3%	46.5%	48.8%	
Combination	1%,-1%	Bens	1,098	1,142	1,292	1,425	1.01%

of above two scenarios		per life					
		RE%	41.0%	42.9%	48.1%	51.4%	
	1%,-2%	Bens per life	1,098	1,150	1,313	1,461	1.10%
		RE%	41.0%	43.2%	48.8%	52.3%	
	2%,-1%	Bens per life	1,098	1,168	1,376	1,578	1.41%
		RE%	41.0%	43.8%	50.2%	54.5%	
	2%,-2%	Bens per life	1,098	1,176	1,400	1,617	1.50%
		RE%	41.0%	44.1%	50.9%	55.3%	
Increased Stick impacting the under 30's	5%	Bens per life	1,098	1,099	1,180	1,236	0.46%
		RE%	41.0%	41.4%	44.7%	46.3%	
	10%	Bens per life	1,098	1,091	1,171	1,226	0.42%
		RE%	41.0%	41.1%	44.5%	46.1%	
Risk rating		Bens per life	1,098	1,144	1,230	1,292	0.63%
		RE%	41.0%	43.4%	46.7%	48.4%	

Detailed outlines of the various scenarios are included in Appendix 1 – Detailed outline of scenarios.

3.4 Impacts on Product design and price

Regardless of changes in participation, there is likely to be continued development of hospital products. This appears to be a key area of competition, with many insurers having a wide range of hospital products compared to 20 years ago, when there was often 1 or 2 (Top and Basic). This has assisted the growth in participation, but can undermine the philosophy of community rating and hence challenge many of the outcomes above.

Recent developments include:

- Top cover without Obstetrics. A number of insurers have introduced products like this. This is likely to continue recent trends of increases in participation from older members, which in turn may endanger the participation of younger customers.
- The removal of Obstetrics from all but Top Hospital. These services that are expensive to insurers and are often excluded from RE. By including these on Top hospital only, the likely impact is that customers will be excluding and accepting the risks of needing these services. This is likely to further reduce the participation of younger members. One possible reaction to this is including Obstetrics claims within the RE system, although this may be short sighted.
- The restriction of Psychiatric cover from all but Top Hospital. Like Obstetrics, cover for these services has recently been withdrawn from lower level covers.

This is an expensive area of coverage, although one that is used by younger members and families. It is also important to note that, unlike Obstetrics (where usage can be predicted by the insured), Psychiatric cover is an insurance element. The public hospital system in this area is also under strain and unable to cover the likely gap without additional support.

These changes are likely to support, and enhance, the recent trends in participation which, in turn, will further challenge the PHI system by way of increasing benefits per life and the level of RE.

Over the long term, there may be a move to fewer hospital products as lower ranked product prices are increased to cover RE. This may well impact overall population participation requiring additional actions by government if they desire having a private health system or require increased public spending on health.

The definition of a complying health insurance product (CHIP) is also an area that may change. The discussion of increasing the excess has occurred since this hasn't increased from \$500 since 2000, but larger scale changes could be introduced and impact participation. Having a standard hospital product design to enable participation in RE and receive the government rebate is just one of these possible changes.

3.5 Impacts on Pricing and RE

The scenarios above indicate that the impact of age and participation rate changes on prices is likely to continue for the near term. Due to the current approach to setting and approving price, this may become politically challenging.

Community rating is a core part of the Australian PHI market. In line with this, the RE approach supports this and any changes to community rating would require changes to the RE approach.

With increased levels of benefits included within the RE pool, the level of price difference is likely to reduce over time between hospital products. If we are to maintain our current product range, there is likely to be changes required to the RE approach. These will then have wide ranging impacts on the pricing, product designs and other operations of insurers. Considering the likely need to introduce these over time, discussions about these changes may need to occur in the near future to provide sufficient time to create meaningful change.

An alternative approach is to introduce risk rating while reducing the size of RE. There are positives to this approach, with price being a signal to drive behavioural change, although the analysis above in 3.2.5 showed that the outcomes may not be better for the system. It also might not be an effective signal to consumers with no improvement in overall health status of the population. This would need to be tested

as some rating factor systems are likely to be too complex to affect behavioural change. That said, risk rating may not be accepted by either the medical system or the public and is also likely to require a long timeframe for the change to become effective.

3.6 Impacts on Hospitals and contracting

The contracting of hospital services is a key driver of the benefits paid. There are a range of possible actions that may be taken to reduce the impacts of the changes in population age structure and participation:

- Increased measurement of health outcomes, with benefit payment being linked to these, rather than the current approach based on throughput. This is also likely to improve alignment of interests between customers, insurers and health providers.
- The need for pre-approval for certain procedures. This is already being used in some areas (e.g. plastic surgery), but may become more widespread as a way to keep costs lower. This could even result in some approaches not being approved (e.g. only one replacement hip may be covered).
- Focus of health programs to support out of hospital care, reducing the cost of older customers.

If participation in PHI reduces, then private hospitals may see lower throughput and hence generate lower profits. Hence they have an important interest in maintaining suitable participation rates in PHI.

3.7 Impacts on the taxation system and other government incentives

The Australian PHI industry is supported by the federal government via both explicit incentives and measures within the personal tax system. While the impact of these measures does vary; they generally impact consumer PHI value equation at various ages in some way.

Possible changes to affect participation could involve:

- Increases to the surcharge if tax payers don't have an adequate amount of hospital coverage. There could also be a reduction in the income level at which this applies.
- Removal of the rebate on general treatment products with an increase on hospital products.
- Negative LHC on ages below 30, or increasing the 10 year limit on paying LHC.

3.8 Impacts on General Treatment Products

Much of this paper has focused on hospital since benefits are more closely linked to age and the presence of RE. General Treatment policies are also important in the Australian PHI market and have generated higher percentage margins in the past.

The changes in participation are likely to see different demands on general treatment. Older customers are likely to desire increased benefits for certain services, with less focus on those designed for younger members. This is likely to lead to more focussed products with different benefit structures which in turn may reduce margins. Without the cross subsidy currently seen, insurers will need to adjust margin outcomes elsewhere via reductions in benefits, increased prices or lower management costs.

4 Closing remarks

Over the past 30 years, the Australian PHI market has changed a number of times and continues to change and adapt to both an older society and the needs of the Australian population.

The continued aging of the population is likely to have impacts that are wide ranging of the future of the Australian PHI market. Even without changes to age based participation rates, benefits are likely to continue growing at about 0.5%p.a. due to the aging population, and the increase in risk pooling with increase subsidises which will require careful management and messaging to ensure wide scale community participation.

With likely continued change in participation rates, the impact of this may be amplified presenting further challenges to the industry with respect to consumer engagement. This challenge is apparent currently, as evidenced by the rise of price focused aggregators and the reaction to rate change, tackling the changes now may improve outcomes and lessen the shock that consumers are likely to face in the future.

The current approach of the government to supporting the PHI industry (via both carrots and sticks⁴) is not likely to require change due to the aging population in the short term (before 2020). If participation continues to change like recent years, then earlier changes may be needed. This need will be amplified by continued health cost inflation and societal views towards health care; both of which are also underpinning increases in benefits.

Responses to these challenges are likely to be multi-faceted and require support from a range of stakeholders. The interfaces that the PHI industry has with Medicare and the public hospital system are complex and likely outcomes are unlikely to be the optimal for all participants in the health system.

⁴ This includes areas such as the Medicare Levy Surcharge and the government rebate; as well as LHC.

5 References

The following references have been used in this report:

- Australian Government Intergenerational Report 2015, Australian Treasury, <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2015/2015-Intergenerational-Report>
- ABS – Population Projections Series B (2014) catalogue item #####
- PHIAC Operations of Private Health Insurers 2013-14, <http://phiac.gov.au/wp-content/uploads/2015/03/Operations-of-PHI-Annual-Report-2013-141.pdf>
- Australian Institute of Health and Welfare, www.aihw.gov.au
- ‘*Health after Lifetime Health Cover*’, Andrew P Gale, Alan Brown presented to the 2003 Biennial Convention.
http://www.actuaries.asn.au/Library/conv03paper_galebrown.pdf

6 Appendix 1 – Detailed outline of scenarios

Section	Name	Changes
3.2.1	Scenario 1 - Continued trend of over 65's	This scenario sees participation of the population over 60 increase by either 1% or 2% (pa compound).
3.2.2	Scenario 2 - The young and families drop out	This scenario sees participation of the population between 20-40 increase by either 1% or 2% (pa compound).
3.2.3	Combined scenarios 1 and 2	This combines the above two scenarios.
3.2.4	Scenario 4 - The young get engaged	This scenario sees participation between 20-30 increase by either 5% or 10% in a single jump.
3.2.5	Risk rating	This see participation rate reduce by 2% (single jump) and benefits per life reduce by 5% for ages between 35-55.