



**ATTACHMENT B: REPORT OF THE AGA ON THE COST OF THE NIIS**



**Australian Government**  
**Australian Government Actuary**

# Memorandum

Ref No.:

5 February, 2013

**To:** s22

**From:** s22

**Subject:** **COST OF NDIS - NIIS OFFSET**

You have asked me about the potential impact of the NIIS on the costs of the NDIS.

This note updates earlier advice.

## **Background**

AGA reviewed the PC's cost estimates of the NDIS during 2012. In that review, we did not consider the potential offsetting impact of the NIIS on NDIS costs.

AGA concluded that a reasonable estimate of the net additional cost of the NDIS (over and above existing Commonwealth and state spending on relevant disability programs) would be around \$6.8bn in 2012 dollars (the same as the PC), before allowing for the SaCs decision or any further offset from accident compensation arrangements (or the NIIS).

Then, after allowing for the SaCS wage decision, AGA concluded that it was reasonably likely that the net cost of the NDIS would be around \$7.5bn in 2012 dollars, again before allowing for any further offset from accident compensation arrangements (or the NIIS).

## **NIIS**

To estimate the likely offsetting impact of the NIIS, certain assumptions are required, including:

- Cost profile of each new entrant to the NIIS
- Annual number of new entrants to the NIIS

The NIIS will operate 'prospectively'. That is, only new injuries after commencement will be admitted to the NIIS. This means that the client population of the NIIS will grow quickly in the first few years and will continue to grow for many years, even before allowing for any increase in the annual number of new entrants.

Key assumptions adopted by the PC included the following:

- Around 900 to 1,000 new catastrophic injuries each year leading to material lifelong specialist disability support needs.
- The 'fully funded' cost of disability support for each new entrant cohort would be around \$1.8bn. That is, an average fully-funded cost of \$1.8m-\$2m per person. Note that this represents an estimate of the present value of the average lifetime cost of providing support to a new entrant.

*Cost profile of each new entrant*

The PC relied in part on work done by PwC et al in 2005. Based on my understanding of the work done in 2005, the fully funded cost estimates are likely to have been based on an assumed real discount rate of 2% pa. That is, investment returns were assumed to be 2 percentage points higher than assumed inflation in care costs.

I have developed a simple spreadsheet model with the following features:

- the age profile of each new entrant cohort biased to younger ages (average new entrant age between 25 and 30)
- mortality 120% of population average
- real discount rate of 2% pa
- average annual fully-funded lifetime cost of \$1.8m-\$2m (per person)
- constant annual cashflow (in real terms)

This model implies an average annual cashflow per-person of around \$55-65,000 (today's dollars).

I have previously suggested that the average annual per-person cashflow for the NIIS will depend on the eligibility criteria for the scheme. An average annual cost of \$70,000 per person would be consistent with the NIIS eligibility criteria resulting in a NIIS population distributed in line with the NDIS population for disability severity categories 5-24 (as in the PC's report on NDIS). This is not unrealistic (but it is very uncertain). Data from TAC suggests the annual average expenditure on Tier 3 type supports is around \$65,000 - \$70,000 in that scheme. Although current average spending in NSW LTCS seems higher than this at around \$100,000 per person, a significant part of that spending will be on medical and similar services.

Taking all of this together, I conclude that the average annual cashflow implied by my simple model (\$55,000-\$65,000) is not unreasonable (although, again, highly uncertain).

Note also that the cost profile will vary from person to person and is likely to vary significantly. For the current purpose I have relied on an average annual cashflow but this approach is unreliable where small populations are concerned.

Annual number of new entrants to the NIIS

As noted above the PC estimated around 900 to 1000 new entrants each year across Australia. The PC's estimate drew on work done by PwC et al in 2005. That work estimated the following distribution of new entrants.

| Account   | Assumed Australian number of catastrophic injuries | Assumed Australian proportion |
|-----------|--|-------------------------------|
| General   | 240  | 31%                           |
| Road      | 380  | 49%                           |
| Work      | 65   | 8%                            |
| Treatment | 85   | 11%                           |
| Total     | 770  | 100%                          |

I am unable to determine precisely how the PC has updated its estimates. Very approximately, population growth might have been expected to result in revised estimates of about 850 (up from 770).

I have reviewed a recent financial condition report of the NZ Accident Compensation Commission. That report allows some broad consideration of the reasonableness of the PC's assumptions.

Among other things the financial condition report sets out estimated rates of serious injury in a number of injury categories. Serious injury is likely to be similar to the injury severity contemplated by the NIIS. The estimates at 2011 are repeated in the table below.

| Account     | Estimated annual number of serious injuries |
|-------------|---|
| Earners     | 55-65                                       |
| Non-earners | 85-95                                       |
| Road        | 100-120                                     |
| Work        | 15-25                                       |
| Treatment   | 20-30                                       |

The earners and non-earners accounts, between them, include injuries that would be described as general injury by the PC (falls, sporting injuries, criminal assaults etc).

Combining these two accounts results in the following estimates for ACC.

| Account   | Estimated annual number of serious injuries | Proportion |
|-----------|---|------------|
| General   | 140-160                                     | 50%        |
| Road      | 100-120                                     | 35%        |
| Work      | 15-25                                       | 7%         |
| Treatment | 20-30                                       | 8%         |
| Total     | 275-335                                     | 100%       |

There is a clear difference between the ACC distribution and the PwC distribution, particularly in relation to general injury. In relative terms, the ACC expects about 40% more general injuries than motor (50 = approx. 1.4 x 35) while the PwC work assumes about 35% fewer (31 = approx. 0.65 x 49).

As well as this, based on consideration of relative population sizes, it is possible that the number of new entrants to the NIIS might be expected to be towards or even higher than the top of the PC's 900-1000 range.

In summary, the great uncertainty surrounding this sort of estimation process needs to be comprehended:

- We are using estimates that are more than 5 years out of date and which, themselves, were based on poor and incomplete data
- Consideration of NZ ACC experience is likely to be instructive but certainly cannot be expected to produce reliable estimates – for example, there is unlikely to be perfect or even strong correlation between the ACC serious injury definition and the NIIS eligibility criteria. As well, ACC covers at least some cerebral palsy cases, making comparison with the medical treatment injury section of NIIS difficult.

I have considered 2 scenarios:

1. annual number of new entrants = 1,000 and average annual cashflow per-person = \$65,000

and

2. annual number of new entrants = 1,200 and average annual cashflow per-person = \$60,000.

The choice of scenarios is largely subjective. However, they are, broadly, based on the high and low end of the estimated range for the number of new entrants (note that the actual number of new entrants could easily fall outside this range). Further I have assumed a lower average cost for the scenario which is based on 1,200 new entrants. Again, the choice is subjective but in line with an argument that the higher the number of people who are admitted to the scheme, the lower will be the average cost per person, all else equal. The results are summarised in the table below.

|  | <b>Scenario 1</b> | <b>Scenario 2</b> |
|--|-------------------|-------------------|
| Steady state population<br>(number alive and aged less than 65 – today's population terms) | 30,500            | 36,600            |
| Steady state cashflow<br>(today's dollars)   | \$2.0bn           | \$2.2bn           |

This is intended to provide a broad indication of the size of the NIIS offset at maturity (after 60 years). Thus, the NIIS might account for around 7%-9% of the Tier 3 population by number but significantly more by cost – perhaps 17%-20% of the cost of care and support (excluding administration costs). In other words, the cost of care and support under the NDIS might eventually be perhaps 17%-20% lower than the gross cost estimated by the PC (that is, about \$9.8bn down from \$11.8bn in today's dollars).

The eventual impact on the net cost of the NDIS is even more significant, at perhaps 25%-30%. That is, the net cost of the NDIS might be reduced from around \$7.5bn (today's dollars) to around \$5.5bn at maturity of the NIIS, which is at least 60 years after it is fully implemented. Note that the \$7.5bn estimate assumes no offset at all from injury compensation schemes.

In very broad terms, about \$1.1bn of the \$2bn is estimated to relate to motor accident, workplace accident and medical treatment injury. The remainder is estimated to relate to general injury (falls, sporting injury, criminal assault etc).

The estimate of \$2bn at maturity of the NIIS is considerably higher than the PC's estimate of the NIIS offset of \$720m. Part of the difference (perhaps \$400m) relates to timing – the PC's estimate is at 2050 whereas my estimate is at maturity of the NIIS, which will be at least 60 years after it is fully implemented. I am unable to explain the rest of the difference – little detail is contained in the PC report regarding the derivation of that number, probably because this item was not a major component of the PC's work and had no bearing on the main results. I discussed this difference with the actuaries who supported the PC and I am satisfied that an estimate of \$2bn at maturity of the NIIS is likely to be more appropriate than the PC's estimate.

### **Shorter term impacts**

The discussion above looks at the potential impact of the NIIS on NDIS costs when the NIIS reaches maturity. Since the NIIS is intended to operate prospectively, it will take a long time to mature.

Accordingly, you have also asked about possible shorter term impacts. This will depend, among other things, on when the various legs of the NIIS are introduced.

You have asked that I prepare estimates assuming a NIIS for motor vehicle accidents commences in most jurisdictions (both launch and non-launch jurisdictions) progressively over the period from 2013 to 2015 (and being in place in all jurisdictions by 1 July 2018) and a NIIS for workplace accidents and medical treatment injury commences nationally on 1 July 2018 (while recognising existing arrangements for workplace accidents in NSW and Victoria).

Additional assumptions are needed and include:

- more than 2,000 people already receiving support (about 600 in NSW, 1,500 in Victoria and 70 in Tasmania)
- average per person cost (2013-14 dollars) of \$65,000
- cost inflation of 4.3% pa
- new entrant numbers Australia-wide in 2013-14 terms are 400 (motor), 80 (work) and 70 (medical treatment)
- growth in the number of new entrants of 1% pa
- jurisdictional new entrant numbers are assumed to be in the same proportions as their profound and severely disabled population (eg 32.2% of motor new entrants are assumed to be in NSW etc).

The table below shows the estimated NIIS offset until 2019. Note that the estimated NIIS offset has not been adjusted to allow for limited (cohort) NDIS launch in some jurisdictions.

| <b>Year</b> | <b>Total NIIS Offset (\$m)</b> |
|-------------|--------------------------------|
| 2013-14     | 149                            |
| 2014-15     | 175                            |
| 2015-16     | 209                            |
| 2016-17     | 248                            |
| 2017-18     | 290                            |
| 2018-19     | 340                            |

It is essential to note that a very high level of uncertainty surrounds these estimates. At best, they can be taken as possibly broadly indicative. If anything the estimates are intended to err on the conservative side (that is, to avoid overstating the size of the offset) but it is possible that the actual offset could be higher or lower than the estimates presented here.

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