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28: Australia's National Disability Insurance Scheme: the role of actuaries

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Abstract:

The National Disability Insurance Scheme is one of the most significant welfare reforms Australia has seen in a century. The reform incorporates several themes that have been gaining traction in other countries, including individual budgets and actuarial (or social investment) approaches. This chapter provides an overview of NDIS and an analysis of its more unusual attributes within the broader personalization agenda. In particular, we assess the use of actuarial approaches and their implications for the administration of the scheme. At the heart of the scheme sits a tension between the unusually prominent role given to actuarial methods (which are typically used for monitoring and forecasting costs) and the fundamental objective of achieving the best possible outcomes for people with a disability (taking account of value-for-money constraints).

Keywords:

personalization, individual budgets, actuarial approaches, disability

Introduction

The National Disability Insurance Scheme (NDIS) is one of the most significant welfare reforms that Australia has seen in a century. In addition to providing a major funding injection into disability services, this reform incorporates several themes that have been gaining traction in other countries. First, the NDIS reform harnesses market forces with budgets delegated to individuals as a way of driving choice and control for people with a disability. Rather than using a 'one size fits all' service, individuals can (in principle) choose services that meet their needs (Anttonen 2012), which is argued to improve wellbeing (LeGrand 2007). Second, the scheme is based on an

actuarial model of disability services and principles of social investment (Needham and Dickinson 2017). Such an approach views early intervention and targeted investment in certain support services as a way of improving outcomes for an individual and reducing overall lifetime expenditure across a number of different parts of government.

This chapter provides an overview of the emergence of this new scheme and focuses on its more unusual attributes within the broader personalization agenda – the use of actuarial approaches and their implications for the administration of the scheme. We start by providing some context and background on actuarial approaches in social policy and the NDIS, before moving on to examine how the actuarial approach is functioning in the scheme. In particular, we consider how social and economic outcomes will be valued and we summarize some of the administrative challenges of the scheme. We argue that at the heart of the scheme sits a tension between the unusually prominent role given to actuarial methods (which are typically used for monitoring and forecasting costs) and the fundamental objective of achieving the best possible outcomes for people with a disability (taking account of value-for-money constraints).

Context: the NDIS

The NDIS is a recent example of approaches that seek to embed a more personalized approach to the design and delivery of disability services. These reforms have been driven by several potentially conflicting agendas. They have emerged in response to fiscal pressures and a shift in many industrialized countries away from collective social welfare provision and block-funded models in favor of markets and 'self-directed care' (Giaimo and Manow 1999). Yet, these reforms have also responded to a desire to better achieve inclusion and human rights for people with disability (Williams and Dickinson 2016). These twin drivers have led to significant interest in individualized funding systems for disability services, but do sit in tension with one another (Needham and Glasby 2015; Muir and Salignac 2017). Although aspects of individualized funding for disability services may be found in a number of countries

throughout the world, it is debatable whether these approaches save money, improve outcomes, and increase the inclusion of people with disability in the design of their care, suggesting that the way these types of schemes are implemented is crucial (Dickinson 2017).

Traditionally, Australian disability services have been the responsibility of State and Territory governments, and different models have been developed across the eight jurisdictions (Fisher 2010). Added to this jurisdictional complexity are insurance-based funding of disability services (e.g. traffic accident schemes funded by compulsory third-party insurance) and disability services funded privately as a result of public liability claims. In practice this meant that individuals who acquired a disability through misadventure (at work or in a road traffic accident, for example) were entitled to greater levels of service provision than persons born with disability.

The Productivity Commission is an independent statutory body created to give technical advice on primarily economic and regulatory questions referred to it by the Australian Government. It was charged with investigating the organization and funding of disability services and developing a design for a national scheme. The Productivity Commission found the existing system was ‘underfunded, unfair, fragmented, and inefficient, and gives people with a disability little choice and no certainty of access to appropriate supports’ (Australian Productivity Commission 2011 p.2). The report set out the design for a market-based social insurance scheme: the NDIS. Under this design, individualized packages of funding would be available for people with ‘serious and permanent’ support needs. This funding would then be used by them to purchase support services from the market. The economic rationale behind this system is that spending resources in more appropriate ways – tied to goals of prevention, early intervention and investment approaches – will save public expenditure on tertiary provision and benefit the economy and society because individuals with disability will be better able to engage with the labor market and mainstream society (Australian Productivity Commission 2011). Unlike some other countries, the NDIS focuses solely on those under 65 years of age (i.e. when participants become eligible for aged care).

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The NDIS was passed into legislation with bi-partisan support in 2013 and broad public support (Thill 2015). The scheme began in trial sites around the country in 2013 and started national roll-out in July 2016. It was planned to be fully implemented across urban, rural, and remote localities and across a diverse range of disability types by 2020, although timelines are being slowed due to a number of challenges in implementation (Australian Productivity Commission 2011; Collings et al. 2016).

It is estimated that, when fully implemented, approximately 460 000 individuals who have a significant and permanent disability will receive personalized funding budgets (Australian Productivity Commission 2011; Collings, Dew, and Dowse. 2016). The legislation that sets out the scheme (the NDIS Act) establishes the National Disability Insurance Agency (NDIA) as an independent statutory agency (NDIS Act 2013). The NDIA is the main implementation agency operating nation-wide, which employs planners who make decisions about eligibility and the supports individual participants will receive. The Act also creates a statutory office: the Scheme Actuary, who plays a crucial role in price setting and forward planning. The actuary reports to the NDIA board (i.e. not just the Chief Executive Officer), rather than the governments directly.

The NDIS is projected to cost around $22 billion per year, representing a roughly 53% boost in funding for disability overall (Australian Productivity Commission 2011). When the NDIS Bill was introduced, the then-Prime Minister stated that:

> "The risk of disability is universal, so our response must be universal. The only solution is therefore a nationwide, demand-driven system of care tailored to the needs of each individual and established on a durable, long-term basis. … The scheme will respond to each individual's goals and aspirations for their lifetime, affording certainty and peace of mind for people with disability and their carers alike. … The National Disability Insurance Agency (NDIA) will work with people to plan, and to take account of their individual circumstances and needs. The scheme will give people the care and support that is objectively assessed as being reasonable and necessary over the course of their lifetime. It will give

> people real choice and control over these supports, including the ability to manage their own funding, if they wish”[1]. (Gillard 2012 p.13877)

Personalization of social service funding and market-based provision are trends in public management internationally. Investment approaches that emphasize longer-term considerations are also becoming more common (Boston and Gill 2017). The NDIS is unusual in that it brings these together explicitly under one scheme. Moreover, it is unusual because of the central role played by actuarial analysis, which currently includes the determination of the size of individuals’ funding packages, potential evaluation of outcomes, and sustainability of the scheme as a whole.

‘Social Investment’ and actuarial approaches to social policy

The term ‘social investment’ can signify many different things. Historically in the United Kingdom it was associated with Blairite third way politics and policy (Giddens 2000). More recently it has been used by the European Union to describe an approach to social policy that emphasizes stronger, more active assistance, such as training or childcare provision that has a long-term benefit (European Commission 2017). Current approaches in New Zealand and Australia are distinct from these. While focused on early intervention, the New Zealand and Australian approaches are aimed primarily at preventing long-term liabilities on the state purse (English and Bennett 2011; Stuart 2014; Boston and Gill 2017). Here, actuarial assessment is used to estimate what this liability will be (English and Bennett 2011). Actuarial analyses are central to insurance principles, allowing the calculation of the expected future funding liability and targeting of investment in areas which create the largest reduction in future costs (Scott and Boyd 2016). In the context of the NDIA, the use of the term social investment in political discourse appears to be to emphasize the

[1] While the scheme itself does not require user contributions, participants have the option to self-manage their funds or have them managed by a third party (Productivity Commission 2017).

scheme's long-term focus: investing in supports and services now in order to achieve longer-term benefits

Applying an actuarial model in disability

While there has been some debate about the meaning of the term 'insurance' in respect of the NDIS (Walsh and Johnson 2013 p.329), the scheme has all the characteristics of a social or public insurance scheme. It pools societal resources to socialize (some of) the risks of disability; coverage is automatic (under particular circumstances); the methods for defining benefits are prescribed in law; entitlement is based on contributions made across the whole population (not on individual premiums); and the scheme as a whole is overseen by government (Malisoff, 1966).

The NDIS operates like an insurance agency in the sense that it uses actuarial analyses to assess and manage the risk of cost overruns to ensure it can meet the present-day and predicted future costs of claims and expenses (Walsh and Johnson, 2013). Federal government provides just over half the funding of the NDIS, with the rest being met by State and Territory governments (Productivity Commission 2017). The funding is drawn from a range of sources, including an increase in tax, with 'risk' being pooled across the population (Productivity Commission 2017). The funding is not currently hypothecated, meaning that it may change from year to year according to the whim of different governments or budgetary exigencies; however, a separate NDIS savings fund has been created (Commonwealth Government 2017; Dickinson 2018). A key problem is that future years of the NDIS are being funded via underspent monies from earlier years – creating an incentive against ensuring that participants get the full monetary value allocated in their plans. That is, the more money carried forward the less the government has to find each year to fund the scheme which could mean, perversely, that participants are encouraged to underspend. This was found to be the case by a recent review of the NDIS (Productivity Commission 2017).

It has been strongly emphasized by governments from both sides of the political divide that they are committed to fully funding the scheme (Walsh and Johnson 2013

p.331). When analyzed from an insurance perspective, it is worth noting that the NDIS is not fully-funded in the sense that the life-long costs of all new entrants into the scheme in any given year are to be funded from that year's revenue, as the term might suggest. Rather, it is an uncapped pay-as-you-go system that assumes that the current year's revenue is sufficient to meet all that year's costs (Productivity Commission 2017). The Productivity Commission has argued for an element of mixed funding, suggesting the scheme should build up a reserve fund so that it is better able to operate as an insurance-based scheme (separate from the savings fund that has been established). Importantly, the intention in fully-funding the scheme is that there should be no 'gap' that would require a user contribution to make up the shortfall between the value of their NDIS support package and the actual costs of obtaining care (Productivity Commission 2017).

Perhaps the NDIS's closest comparison is with New Zealand's Accident Compensation scheme (known as ACC) (Accident Compensation Act 2001). ACC was established in 1974 following the Woodhouse Royal Commission report and is a comprehensive social insurance scheme covering injuries arising from accident or misadventure (but not illness or disability from birth). The administering agency, the Accident Compensation Corporation, also uses actuarial modelling to predict future liabilities affecting the scheme's funding. One important difference, however, is that, unlike the NDIS, ACC also provides compensation for loss of earnings (at 80 percent of loss), which is indeed mentioned by the Productivity Commission. This means that expenditure on rehabilitation and other services which result in a faster return to work feed directly into the actuarial modelling as a future saving.

The application of actuarial approaches within the NDIS

To identify its funding needs, the NDIS uses scheme actuaries: a critical part of the "functioning of the NDIS [is] the strict management… supported by systematic national data collection for actuarial analysis" (Australian Productivity Commission 2011 p.39). The Scheme Actuary is appointed by, and reports to, the NDIS Board, and

is responsible for overseeing and ensuring the financial sustainability of the scheme. Official duties of the Actuary, are to assess:

(i) the financial sustainability of the NDIS;

(ii) risks to that sustainability; and

(iii) on the basis of information held by the NDIA, any trends in provision of supports to people with disability, including

(a) the causes of those risks and trends; and

(b) estimates of future expenditure of the NDIS. (*NDIS Act* 2013)

Although the role of the actuaries was set out in the original NDIS Act, which outlines actuarial oversight of scheme expenditures (*NDIS Act* 2013), the Act does not authorize public monitoring and evaluation of how well the scheme is meeting its goals of ensuring choice, control, and better outcomes for individuals. It is unclear why these gaps in the legislation occurred and why the scheme actuaries have been given such a prominent position. We can, however, speculate that immense political pressure to roll the scheme out quickly played a role. Other stakeholders have called for a requirement on government to report on whether the NDIS roll-out and its policy goals are in alignment (Ernst and Young Consulting 2015, pp.26–27).

In the original blueprint for the NDIS, it was argued that while actuarial modelling covers a broad set of approaches, within the NDIS "it particularly aims to ensure that long-run scheme revenues (premium income) remain aligned with scheme costs (reflecting service utilization and unit costs)" (Australian Productivity Commission 2011, p.590). This is done using data to estimate future supports and their associated costs over the individuals' lifetimes. Costs are then compiled across all individuals, providing an annual cost of the scheme over future years (Australian Productivity Commission 2011). Here, future lifetime costs become future liabilities of the scheme and need to be met through taxation revenue (Australian Productivity Commission 2011).

Supports to be provided under the scheme are based on the principle of providing 'necessary and reasonable care' (Productivity Commission 2017). This implies that

estimating future costs requires not only adequate data on life expectancy, but also the life-long impacts of factors such as the medical progression of disabilities, the impact of new technologies on what might be regarded as 'reasonable', and changes in family circumstances affecting the availability of informal care. Foster et al. (2016) discuss the difficulties of operationalizing the fundamental principle of 'reasonable and necessary care' and identify issues concerning the scope of care provided; the level, or quantum, of care; and the inter-relationships with these factors, which also depend upon the (often changing) capacity of family and others to provide informal care.

Moreover, the NDIS Act authorizes expenditures only indirectly, as a necessary implication of a provision which requires that expenditures 'represent value for money.' This introduces a role for the Scheme Actuary into almost all aspects of the system, since pricing of services and planning personalized budgets all impact upon value for money. In addition, neither the Act nor the initial design outline provisions for meaningful and ongoing monitoring and evaluation of impact, whether against the policy objectives or the participants' self-identified goals. As a result, 'value for money' can only be judged in terms of efficiency – units of service delivered rather than outcomes achieved.

Despite how pivotal actuarial analysis is to the success of the NDIS, there continues to be a great deal of uncertainty about how actuaries operate within the scheme and how accurate modelling can be. As noted by the actuaries, "Analysis conducted by the Australian Government Actuary has confirmed that there are uncertainties around all cost elements of the NDIS, e.g. populations, severity distributions, and average costs" (Australian National Audit Office 2016 p.13) .

To fulfil the mandate set out in the NDIS Act (described at the start of this section), scheme actuaries require complex and longitudinal data, particularly to ensure continuous monitoring. Serious questions remain over how these data are obtained and its quality, with a current lack of transparency around the monitoring framework being designed by the actuaries and implemented by the NDIA, an agency whose capacity has come under considerable scrutiny (Australian National Audit Office

2016). It was argued in the original Productivity Commission report (the blueprint for the scheme) that actuarial modelling would also play an important role in evaluating specific services and interventions funded under the NDIS. How this has translated into practice is unknown, as a result of limited transparency (Australian National Audit Office 2016).

Actuary cost modelling in services usually works through estimating costs based on independent information about prices and expenditures. However, in the NDIS, actuaries set the prices of services and supports, and, to some degree, also make decisions regarding what services are to be provided to whom through the NDIA and planners (Johnson 2016). For example, the actuaries have advised planners (see discussion below) on not being afraid to make large upfront investments in equipment (Johnson 2016). As noted in the rules for the scheme actuary, the role is to "monitor, assess, and report on consistency of resource allocation across regions, planners, disability type, and other groupings as appropriate" (Commonwealth Government of Australia 2013 p.5) . This could foreseeably see them involved in planning in a much more hands-on way in the future.

While much is determined by the scheme actuaries, planners (employed by the NDIA) are also crucial mediators of how effectively the scheme works in terms of ensuring wellbeing. Planners meet with participants and determine their individual packages – what is included, excluded, and so forth. To date, the extent to which participants are able to exercise choice is inconsistent (Carey et al. 2017; Warr et al. 2017). Serious concerns have been expressed over planners and many have never worked in disability before. Moreover, they make decisions about who can and cannot access the scheme, despite a lack of qualifications on which to make such decisions (Warr et al. 2017). Notably, while health professionals may provide documentation, they are not directly involved in the planning process (David and West 2017). Challenges around planners have been particularly evident in cases of lifelong disability where the severity of impacts are variable or intermittent in nature, such as multiple sclerosis (Warr et al. 2017). While yet to be investigated, given planners are employed by the NDIA who are guided by the scheme actuaries, it is unclear how they weigh up the competing demands of ensuring that costs to the scheme do not blow out and ensuring

that individual needs are met. The main mechanism for this is price setting. The scheme has three models for price settings at present: the price ‘limit’ (max price), price ‘benchmark’ (indicative but variable), and pricing by quotation. An example of how actuaries could influence individual packages is as follows: if more participants have complex needs than the modelling anticipates, the actuary might seek to recoup costs by cutting ‘limit’ prices for standardized services like residential care – with predictable (undesirable) impacts on service quality.

How will social and economic outcomes be valued?

The actuarial modelling of NDIS performance focuses on costs. As the Productivity Commission (Australian Productivity Commission 2011 p.590) notes:

> “Financial (or actuarial) models measure any discrepancies between expected and actual costs and outcomes, and the adequacy of revenues to meet projected costs over the long-term. The models explain why such discrepancies may have occurred, and analyse their implications for the financial sustainability of the scheme and its objectives for achieving outcomes for people with disability (either in aggregate or in specific categories).

By itself, such modelling has limited ability to measure personal wellbeing or social and economic outcomes of the scheme, particularly as it is not being completed by all planners/participants (Warr et al. 2017). It also cannot assess whether participants’ goals are being met, or whether participants experience their choice and control as purely formal (i.e. I get to choose who provides the service) or substantive (i.e. I get to choose how the service is provided). For a more robust evaluation of wellbeing, outcomes, and goals – which is after all the fundamental objective of the NDIS – alternative methods are needed and as the NDIS Costs Report points out, is a more difficult task than measuring costs against cost expectations (Productivity Commission 2017 p.128). To date, there is also limited information on benefits, which means that it is not possible to conduct a proper cost-benefit analysis. The NDIA has developed and piloted what it calls the NDIS Short Form Outcomes Framework, which comprises 8 participant domains (including choice and control,

daily activities, relationships, home environment, health and wellbeing and life-long learning) and five family carer domains (e.g. whether families have the support they need, whether they know their rights, if they can gain access to desired services) (NDIA 2017). The short form questionnaire uses Likert scales for each domain. For example, to assess choice and control, the questions range from 'I choose' to 'someone else chooses [services] for me.' It does not attempt to assess whether participants feel the services delivered contribute to achieving their stated personal goals, largely because personal goals are so diverse and the instruments being used are not apposite for this (Johnson 2015 p.20). In other words, while packages are personalized, the measures for success of the scheme are not.

The Outcomes Framework is intended to provide a basis for comparing 'how participants are faring relative to other Australians at a comparable stage of life relative to other OECD countries, seeking to contribute to knowledge of what types of supports lead to good outcomes' (Productivity Commission 2017 p.130). While it must be acknowledged that outcome evaluation for the scheme is in its early stages, the framework approach raises at least three important issues. First, it is far from comprehensive – many of the crucial wider social and economic outcomes are not included in Short Form Outcomes Framework. These include barriers to social and economic participation, satisfaction with the scheme and ability to easily navigate it (especially for those with complex needs), whether complaints functions are adequate, and how the scheme is changing the outcomes of families more broadly.

Second, there is no cost-benefit analysis aspect to the Outcomes Framework. Central to the effectiveness of the scheme is to provide the types – and levels – of supports where the individual and social benefits outweigh the costs. There appears to be no mechanism for judging this, leaving open the possibility that 'reference packages' based on costs will drive the level of supports provided, not net social benefit.

Third, and related to the above point, there is a disconnect between the actuarially-based cost estimates and the measurements of outcomes. If the actuarial modelling identifies growth in costs in certain areas, what is the mechanism for determining

whether or not those cost increases are warranted by the additional social and economic benefits accruing?

The key challenge for the NDIS, as a result of its reliance on centralized price-setting, is whether there is *enough* variability in prices for them to function as price 'signals', and for different providers to develop different market strategies that create enough diversity within the market to meet a range of different needs and preferences. Currently, as outlined earlier, the pricing guides (NDIS 2015) specify three kinds of price with different scope for variation in each type: a *price limit* is a maximum price for a unit of service, typically used for services that are highly standardized (e.g. personal care attendants or residential accommodation); *benchmark prices* signal what the NDIA thinks is a reasonable price, but they may accept a quote for a higher amount (e.g. if a client has complex or specialized needs); and *quotable items* for highly-tailored services so that a price can't be estimated without a quote. However, the NDIA and NDS agreed in their joint statement on pricing that they would set prices that a 'hypothetical efficient provider' could survive on – presumably a *single* provider within a market - rather than prices that could support a diversity of approaches by different providers, some of them community-based, others for-profit (NDS and NDIS 2017). At present it is unclear how the scheme actuaries will know how the prices that have been set are affecting providers' sustainability. This has significant implications for the care provided under the scheme, if large market gaps emerge because prices are not sustainable or do not incentivize diverse approaches to service provision.

Arguably, the Act – and the resulting actuarial approach – displays the 'democracy deficit' identified in megaprojects by Flyvbjerg et al (2003). A democratic deficit refers to a lack of democracy and transparency coupled with inherent complexity that makes it difficult for ordinary citizens to securitize a particular policy or decision (Flyvbjerg et al. 2003). The NDIS does not require transparency about rule-setting, nor does it authorize the collection and publication of information enabling civil society to assess whether the scheme is effective. This means it is difficult to hold the scheme accountable if information about its functions and effects is not available.

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Conclusion

As noted at the outset of this chapter, the NDIS has been driven by two conflicting goals: the desire to provide better services to people with a disability and a desire for economic efficiency. In reconciling these tensions, the government has taken an actuarial approach to the allocation of resources through personalized budgets within the scheme. Yet, at present, there is a distinct lack of transparency around how the actuarial modelling is being conducted and whether the evaluation of the scheme (as part of the actuarial responsibility) is indeed sufficient to determine whether it is (a) meeting its policy objectives, (b) helping to meet its participants' personal goals, and (c) delivering quality services that protect and value the wellbeing of participants.

The NDIS provides important lessons, or perhaps warnings, for international counterparts. The NDIS is similar to international models in that it uses individual budgets and market mechanisms to deliver disability care (Needham 2010). Unlike the UK, the Brukerstyrt Personlig Assistanse in Norway, and similar programs in Scandinavia and Denmark (Askheim 1999; Askheim et al. 2014; Brennan et al. 2017), the NDIS is not voluntary or means tested. All eligible participants will be included in the scheme. Moreover, as demonstrated throughout this chapter, the scheme utilizes a unique approach to determining the allocation of funds. Drawing on experiences in New Zealand, it uses scheme actuaries in an unusual and unprecedented way. Much can be learned from the Australian experience regarding how actuaries are best used and the governance arrangements which should sit around them.

Arguably, at present an unprecedented amount of control for the scheme lies in the hands of actuaries – more than may be appropriate or beneficial for the scheme. As noted, the actuaries play a role in: setting prices, determining size and type of packages given to individuals, assessing the overall sustainability of the scheme, and monitoring and evaluating the scheme. This is done with very limited oversight. The NDIS Act does not require the actuaries to report to Commonwealth or state governments (*NDIS Act* 2013). Rather, they report only to the NDIA – an agency with a well-documented history of implementation challenges (Australian National Audit

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Office 2016). Without this transparency – to both civil society and government – it is difficult to assess whether the scheme (and the use of actuarial modelling in disability services) will be successful. Moreover, there is a distinct lack of check and balances in place regarding the role and activities of the scheme actuaries. For international counterparts, the Australian experience demonstrates that transparency, information sharing, and accountability mechanisms are crucial in the design of personalization schemes. From our analysis, the unprecedented role of actuaries poses potential risks to individual participants and their ability to truly exercise choice and – as a result – to the scheme as a whole.

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