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Building Insight for Action and Change

Individualised Funding Analysis

Report for Manawanui InCharge

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manawanui
INDIVIDUALISED FUNDING SUPPORT

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Executive Summary

Introduction

This report provides a quantitative analysis of the cost patterns of Individualised Funding (IF) in New Zealand. Individualised Funding is a means by which disability support funding is allocated directly to disabled individuals. IF offers families more choice and control over how to meet the needs of their personal circumstances, and offers the potential to develop their lives in a way that is self-directed rather than prescribed.

The focus of this study is on the established model of IF operating in New Zealand, which is funded within the Home and Community Support Services (HCSS) portfolio. Enhanced IF, currently being trialled in some parts of New Zealand, is excluded from this study.

The following questions are the focus of this study:

1. What are the characteristics of IF users compared to people in non-IF situations?
2. How has funding for IF changed over time, and how does this compare with non-IF spending?
3. To what extent does IF contain disability services costs compared to non-IF situations?

Data sources

This report is substantially based on a detailed analysis of entries in the Ministry of Health's Socrates database, and validated against records from the client management system of Manawanui InCharge (MIC). The Socrates database offers an extensive record of interactions between disabled people and disability support services, and the allocated expenditure to meet people's needs; it is not however designed for this type of analysis and the records required considerable filtering and recalibrating to enable this analysis to occur. In addition, the estimated costs were derived from applying an allocation/spend ratio of 85%; this is a conservative assumption and MIC's own data indicates a ratio of 81%, therefore the actual costs may be lower than the estimated costs.

A key challenge of this research was identifying comparable groups of IF users and non-IF users, given the variation in levels of need within support package allocation categories. The research has focused on a core group of complex users with high levels of HCSS allocations.

These findings should therefore be seen as indicative and exploratory, and are best viewed as a means of assessing cost management, rather than specifying the actual costs themselves.

Findings

The key findings of this study are the following:

- IF users tend to be younger than people in non-IF situations, and have more complex care needs.
- The increased uptake of IF has resulted in an increase in total IF spending from $10 million in 2009/10, to $39 million in 2013/14.
- Total non-IF HCSS spending has fluctuated over this time, ranging between $88 million to $98 million.

- IF costs per user (in the school leaver to 65 years age group, which was the focus of this study) declined from 2009/10 to 2013/14, from $28,035 per annum to $20,212; a decline of 28%. This was driven by the growth in IF spend being lower than the growth in IF users. This may indicate some degree of controlling costs.
- There is evidence to indicate that in cases of higher needs/complexity, costs for IF users over time fall below those of non-IF users.
- Total DSS costs, and to some degree HCSS costs, tend to remain more stable for complex IF users compared to complex non-IF users.
- The transition from non-IF to IF appears to mark an initial increase in costs; this is likely to relate to service needs, often arising from changes in personal circumstances at time of transition requiring IF.
- There is evidence that IF users with high and complex needs are less likely to transition to Residential Care than people not using IF. This means that IF slows down the movement of people to higher cost services.

Limitations

From the data available, it is not possible to ascertain the extent to which the initial increase in costs is caused by IF itself, or by the changes in personal circumstances at time of transition requiring IF. It is reasonable to assume that a change in circumstances is a key driver of increased costs, since most IF users fall within the high needs group.

It is also not possible to determine whether the costs for those users who transition to IF would have increased had they remained as non-IF and not transitioned. IF users with more complex needs (based on higher allocation packages) appear more likely to be containing both total DSS costs and HCSS costs than non-IF users. An indication of this is that the complex users who were the focus of this review appear less likely to transition to more costly services such as residential care if they are using IF rather than traditional services.

It is important to note that IF was initially targeted at very high needs clients with stable conditions. Each client was approved on an individual basis with the requirement being that their needs were too complex for traditional service provision. From 2009, the criterion of being in a stable situation was removed, and instead, NASCs were required to consider if the transition to IF would be cost neutral. The implication of this is that by applying a principle of cost neutrality, an increase in costs would be expected to occur regardless of if IF was adopted, or more traditional approaches. This is important for this research as it means that for many, the transition point to IF can be marked by significant changes in personal circumstances and needs, and therefore costs of support. Changes in costs in the transition to IF would therefore reflect the needs of the client and not the transition to IF itself.

Conclusions

Taken together, these findings shed light on an area that has not been explored in-depth in New Zealand before. They suggest that IF offers a useful lever for containing costs for disability support services at a time of constrained budgets.

These findings warrant further investigation, particularly to explore more deeply the cost-effectiveness of IF and the quality of life outcomes from IF approaches compared to traditional disability support.

Acknowledgements

The authors wish to acknowledge the staff of the Ministry of Health and Manawanui InCharge, for the supply of data for this analysis, and for the constructive feedback and dialogue on the analysis approach and findings.

This research was commissioned by Manawanui InCharge.

Background to this research

Individualised Funding, in which disability support funding is allocated directly to disabled individuals, is well established as part of the disability services spectrum in New Zealand and other countries, including the US, UK, Canada and Australia. Individualised Funding (IF) offers disabled people and their families greater choice and control over how to meet the needs of their personal circumstances, and offers the potential to develop their lives in a way that is self-directed rather than prescribed.

This report provides a quantitative analysis of the financial impact of IF in New Zealand at three levels:

- Firstly, to understand the type of people who use IF
- Secondly, the patterns of IF costs over time
- Thirdly, to understand the comparative costs of IF and non-IF situations. In particular, the report assesses the extent to which IF offers a means of containing disability services costs compared to non-IF situations.

The report is substantially based on a detailed analysis of entries in the Ministry of Health's Socrates database, and validated against records from the client management system of Manawanui InCharge (MIC).

Approach

Key research questions and overall method

Through an analysis of routinely collected data on IF, this research is intended to shed light on the patterns of costs of IF use in New Zealand, relative costs between IF and non-IF users, and to explore the potential cost containment or otherwise that IF may offer. The focus is on the established model of IF operating in New Zealand, not Enhanced IF.

The following questions are the focus of this study:

1. What are the characteristics of IF users compared to people in non-IF situations?
2. How has funding for IF changed over time, and how does this compare with non-IF spending?
3. To what extent does IF contain disability services costs compared to non-IF situations?

These questions were explored primarily through an analysis of the Ministry of Health Socrates Database, with some validation of the findings through analysis of MIC's own databases. The approach to answering each question is detailed in the table below.

Question	Approach/comment
1. What are the characteristics of IF users compared to people in non-IF situations?	Age band analysis undertaken, accompanied by analysis of Support Package Allocation (SPA) codes.
2. How have IF costs changed over time, and how do these compare with non-IF spending?	Exploring patterns of allocated costs over time for IF and non-IF situations; total costs and total costs per user calculated.
3. To what extent does IF contain disability services costs compared to non-IF situations?	Levels of overall disability support spending are compared between IF and non-IF situations analysis, in the patterns of cost over time for complex services users, based on two care package cost brackets ($30-$60,000 and $60,000 and over). A comparison of 3 years from onset of IF or DSS enrolment, or 2009/10 (whichever is earlier), is used for this analysis.

Detailed discussion of the analysis method can be found in Appendix 1.

Service users

The following client types were the focus of this analysis:

- DSS service users, including IF and non-IF, but excluding Enhanced IF (EIF); in effect this primarily means users of Home and Community Support Services (HCSS), which is the only funding centre that permits IF.
- Services utilised between July 2009 and June 2014
- Aged from school leavers to 65 years, where more than two-thirds of IF services are applied (note that the age of school leaving varies substantially, but marks an important transition from the education system to more independent living).

The analysis compares between:

- IF users – those who have received IF at some point during the period under review.
- Non-IF users – those who have received HCSS but have not received IF during any of the periods under review.

An important contextual note to this study is that IF was initially targeted at very high needs clients with stable conditions. As a result of this, the population accessing IF has traditionally been higher cost and more complex than those who used traditional HCSS services. In addition, many individuals transition to IF when there is a significant change in need and to access appropriate services for their needs, which may not exist in traditional service environments.

In 2009, the Ministry of Health removed the requirement for stability and instead required NASCs to ensure that the situation was cost neutral when compared to a similar HCSS package requirement. The implication for this research is that for many, the transition to IF can be marked by significant changes in personal needs, and therefore costs of support. Changes in costs in the transition to IF would therefore reflect the needs of the client and not the transition to IF itself.

Research limitations

The initial intention was that a range of other issues would also be explored, but were limited by a range of issues. A key issue is the underlying structure of the Socrates dataset itself, which in its raw form, is not suitable for cost analysis. By nature it is an iterative system – each time a change is made to an existing arrangement a new record is generated rather than removing or modifying the old one. Whilst this ensures a good audit trail it does not suit the needs of this type of analysis, and as such requires substantial recalibration to enable the analysis performed here, to overcome such issues as duplicate entries, NASC coding errors, bulk funding, and special users.

The analysis is not able to determine if the differences in cost patterns between population groups is directly attributable to IF itself, or if these are due to pre-existing differences between groups. A range of limitations of the research are detailed further in this document and in Appendix 1.

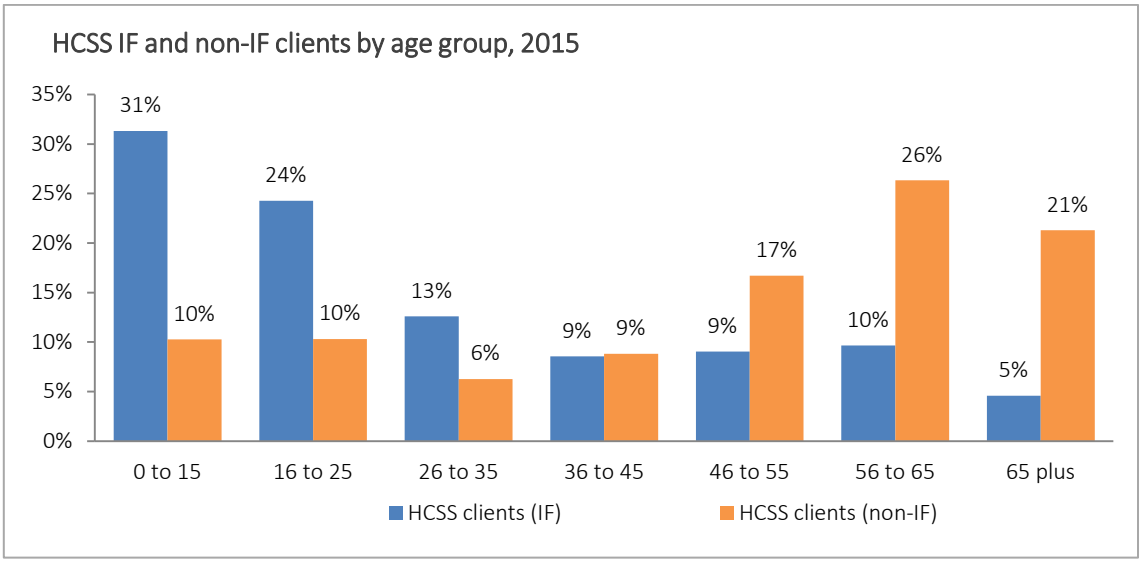
1. What are the characteristics of IF users compared to people in non-IF situations?

Key points:

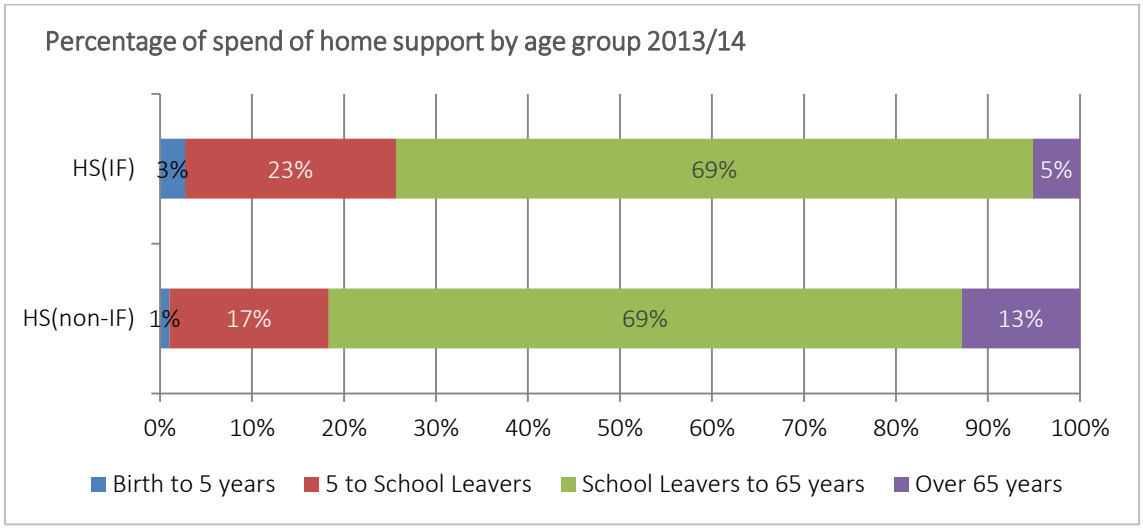
- IF users tend to be younger than people in non-IF situations
- IF users tend to have more complex care needs than people in non-IF situations, indicated by overall higher SPA codes among IF users.
- The number of IF users (from school leaving to 65 years of age) has grown substantially.

Age groups using IF

IF users tend to be significantly younger than non-IF users; Ministry of Health data indicates approximately 68% of IF users are aged under 35 years, while only 26% of non-IF users are under 35 years, as indicated in the chart below.

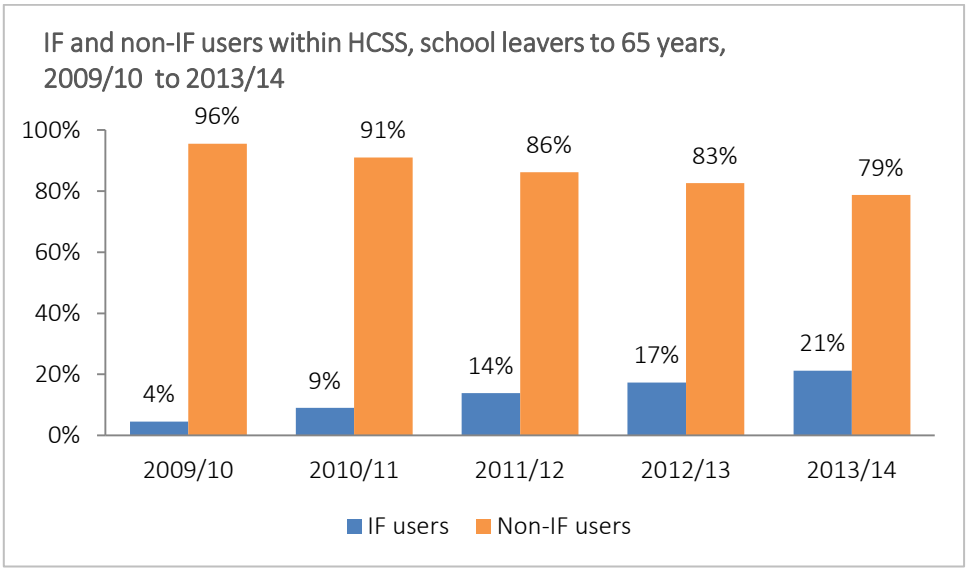


When exploring age distribution at different life stages, the finding of IF being concentrated among younger age groups remains apparent. Using 2013/14 data directly from the Socrates database, school leavers to 65 years age group comprise 69% of HCSS users, in both IF and non-IF situations. IF is more common in the 5 years to school leaving age compared to non-IF situations (23% versus 17% respectively); and less common in the over 65 years age group (5% compared to 13% respectively).



Because of the different age patterns of IF and non-IF use, this analysis mainly focuses on the school leaving to 65 years age group, where more than two-thirds of spend is concentrated in both IF and non-IF; where there is some consistency in funding regimes; and where these are not affected by either educational system supports or aged care supports and entitlements. This also offered a sufficient pool of DSS records for analysis purposes.

Over the period 2010 to 2014, the number of individual IF users in this age group increased from 246 in 2009/10 to 1343 in 2013/14; an increase of 446%. The number of HCSS non-IF users declined from 5237 to 4988 over the same period. The figure below shows the changing relative composition of IF and non-IF users with HCSS over 2009/10 to 2013/14.

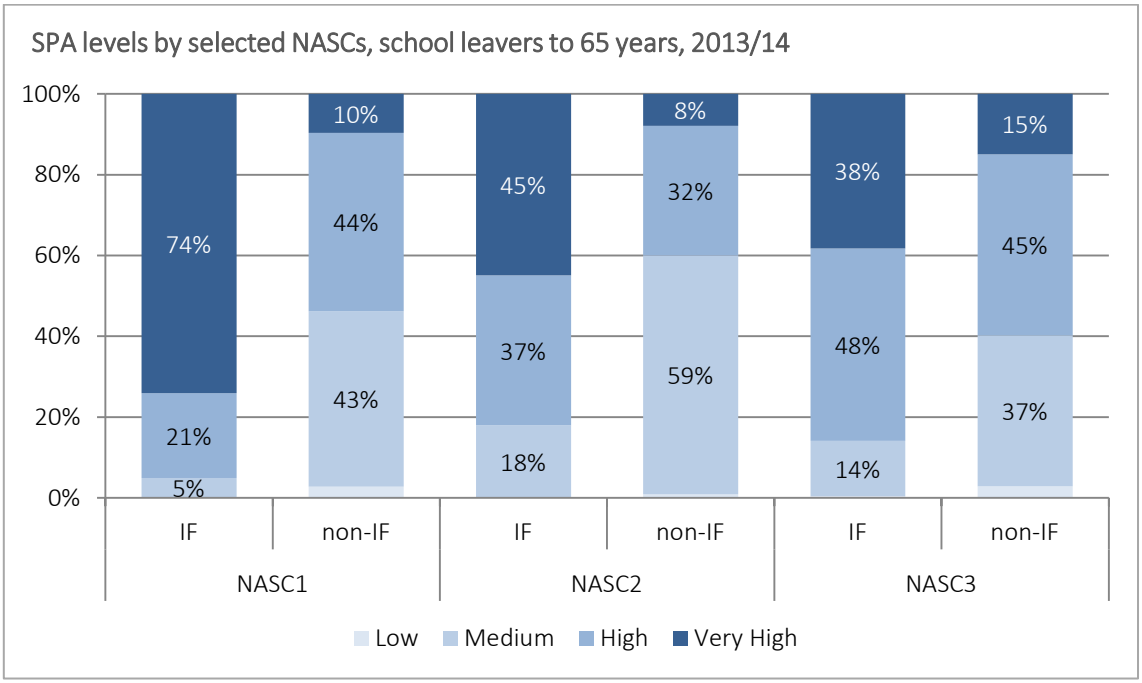


Complexity of support needs of IF users

Categorisations of the Support Package Allocation (SPA) tool provide a useful initial profile of the complexity of support needs for IF and non-IF users. The SPA tool assesses disabled people's level of need, from low to very high. However, a key limitation of the SPA tool is that on the one hand, it is generally thought to be used consistently *within* NASCs. On the other hand, it is not used consistently *between* NASCs, primarily due to inconsistent treatment of natural supports (such as family members) in assessing level of need.

This variation is illustrated by an analysis of the three largest out of 15 NASCs, which between them accounted for between 52% and 57% of IF spend over 2009/10 to 2013/14. These NASCs are anonymised for the purposes of this analysis.

The figure that follows compares the SPA profiles for the 3 selected NASCs for HCSS IF users and non-IF users, for the school leavers to 65 years age group in 2013/14. Similar patterns are observed in earlier years.



Using these three NASCs for comparison, the figure shows firstly, differences between NASCs in SPA ratings, which are likely to reflect different interpretations of the SPA criteria. Secondly, regardless of NASC, IF users are much more likely to have a high to very high SPA rating than people in non-IF situations. Between 38% and 74% of IF users are categorised as very high in these three NASCS, compared to 8% to 15% of people in non-IF situations. This indicates that the people most likely to take up IF are those with high and complex needs, and therefore have higher costs.

We also found that IF users were likely to have reached the level of SPA rating shown above at the time of transition, rather than progressing while receiving IF. This shows that users are already regarded as relatively complex (i.e. high or very high SPA level) when they are transferred to IF.

It should be noted that the SPA categories disguise substantial variations in need. As the following table indicates, even for people who are categorised as 'very high', the level of support provided

can average $1200 per week but range from $900 to $1500; this means that a change in support needs can still create considerable differences in costs, even within the 'very high' SPA category. By its nature, IF is generally concerned with meeting complex needs requiring intensive support. However, this range of costs within SPA bands makes further analysis by SPA band unreliable.

Furthermore, due to the range of users classified as very high, it is also likely that within this classification there is a level of unrecorded variation in complexity which also inhibits comparison.

For this reason, the cost analysis focuses on different cost bands of disability support. This required the development of a comparable group of 'complex' IF and non-IF users, based around the level of need (in terms of the quantum of service demand). This is detailed in section 3.

Support package allocations: school leavers to 65 years

Band	Average (per week)	Maximum (per week)	NASC Management approval required
Very Low	$10	$15	>$15
Low	$37	$55	>$55
Medium	$150	$225	>$225
High	$600	$900	>$900
Very High	$1200	$1500	>$1500

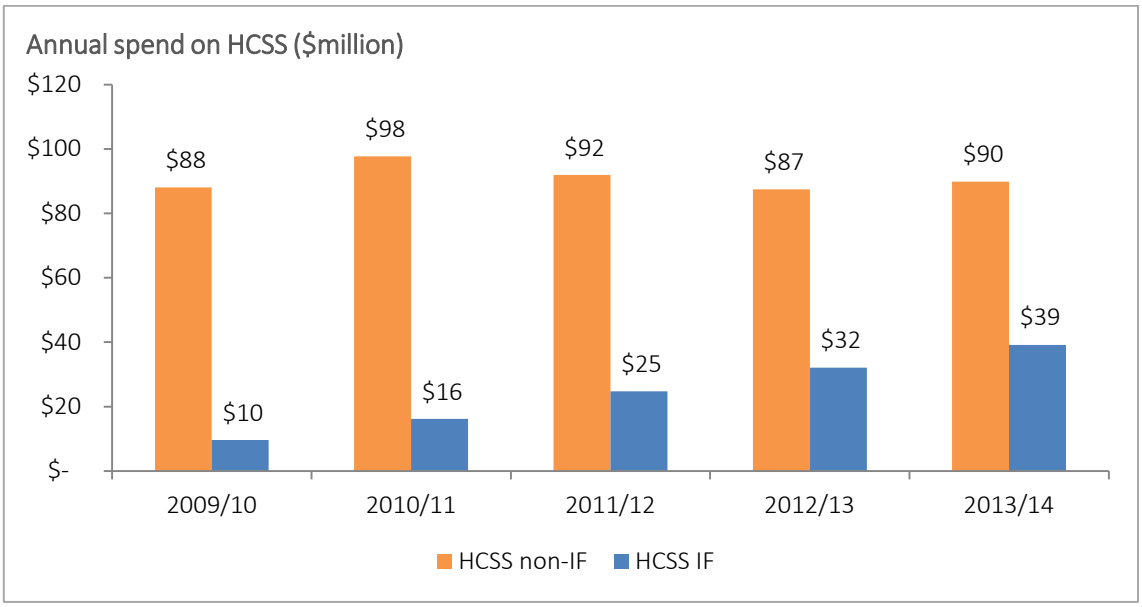
2. How have IF costs changed over time, and how do these compare with non-IF spending?

Key points

- Total IF spending overall has grown from $10 million in 2009/10, to $39 million in 2013/14, reflecting the increased uptake of IF.
- IF costs per user (in the school leaver to 65 years age group, which was the focus of this study) declined from 2009/10 to 2013/14, from $28,035 per annum to $20,212; a decline of 28%. This was driven by the growth in IF spend being lower than the growth in IF users.
- Total non-IF HCSS spending has fluctuated over this time, ranging between $88 million to $98 million.

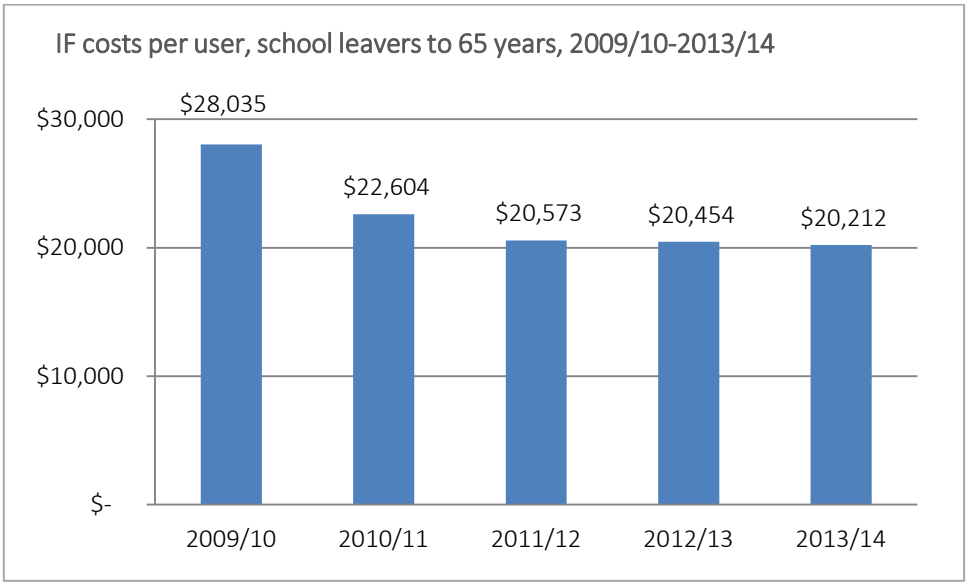
IF as a component of HCSS spending has grown significantly over the five years from 2009 to 2014, from $9.6m in 2009/10 to $39.2m in 2013/14; this equates to 9.8% in 2009/10 and 30.4% in 2013/14, and a growth of 315% over the five years. This is directly attributable to an increased uptake of IF.

At the same time, the non-IF component of HCSS spending has fluctuated between $88m and $98m over this period.



Over this period, IF also grew as a proportion of total HCSS spend, from 9.8% in 2009/10 to 30.4% in 2013/14.

IF costs per user (in the school leaver to 65 years age group, which was the focus of this study) declined from 2009/10 to 2013/14, from $28,035 per annum to 20,212; a decline of 28%.



The decline in the cost per user was driven by the growth in IF spend being lower than the growth in IF users. Costs in the school leaver to 65 years age group over this period increased from $6.9million to $27.1million, an increase of 290%. This is a lower level of growth than the numbers of people in this age group transitioning to IF, which increased at a rate of 446%. This indicates that the growth in IF take-up spend is not matched by increases in spending in this age group; this may indicate some degree of controlling costs, and/or that the mix of people using IF is changing to include more people with lower assessed needs than were originally included in IF, and who therefore have lower allocations and payments.

3. To what extent does IF contain disability services costs compared to non-IF situations?

Key points:

- For people receiving IF, total DSS costs, and to some degree HCSS costs, tend to remain stable or decline for IF users.
- IF users with more complex needs appear more likely to be containing both total DSS costs and HCSS costs than non-IF users, and there are indications that this group has lower costs over time (both absolute and relative) than non-IF users.
- The transition from non-IF to IF marks an initial increase in costs; this is likely to relate to changes in personal circumstances at the time of transition requiring IF, or improved access to the services that are needed.
- Residential care costs appear lower among complex IF users than complex non-IF users.

Cost comparison by allocation package sizes

This analysis explores changes in average cost per user for people with higher allocation package sizes, which provides a signal of the level of complexity of service user needs.

For this part of the study, we have undertaken a rolling analysis, comparing IF users with non-IF users from the point of transition to IF. We selected IF users with a minimum of three years of IF allocations.

We established a comparison group of people who had never used IF. The comparison is based on the earliest date of taking up DSS services. We selected non-IF users with a minimum of three years of history.

To ensure valid comparisons, the following analysis focuses on a group of clients we have referred to as 'complex users'. We applied the following criteria to determine this group, for both IF users and non-IF users:

- Users who had accessed HCSS for three years or more.
- Users who had a substantial HCSS package; in case, those for whom HCSS comprised some 50% or more of their total package allocation at year 1.
- People in the school leaving to 65 years group.

These users were grouped into total DSS and HCSS funding allocation bands, from $30,001 to $60,000, and more than $60,000 in year 1.[1] However, it should be noted that the filters that have been applied, particularly the requirement for a substantial HCSS package, considerably reduces the number of clients that can be analysed, among both IF and non-IF users; for example, this

[1] The selection of cost bands are to both enable reasonable comparisons and to ensure a critical mass of people in each band.

threshold substantially excludes those receiving residential care (except where they shift to residential care from IF in the course of a year).

It should also be noted that users who take up IF often continue to or take up other DSS services. We observed IF users tend to simultaneously receive IF and non-IF services, with the proportion of non-IF services reducing over the first few years of transition (such as carer support, respite and behaviour support) due to their circumstances or commissioning arrangements in place.

Services include those outside of HCSS, which can't be acquired within IF; as well as other HCSS services, which are scaled back over time, but may also reflect services that may not be acquired within IF or a need of the user to continue a service which can't be transferred into IF. .

To obtain a better appreciation of the wider impact in our analysis we have looked at (1) all HCSS costs for IF users (i.e. funded within IF and using traditional means), and (2) all DSS costs for IF users (which also include costs outside of HCSS such as respite and carer support). We then compare to all HCSS and DSS costs for non-IF users.

A feature of this analysis is that it reflects absolute spending levels since 2009/10, i.e. these were not inflation-adjusted, which would have created distortions in the data.[2] Data is annualised from the point of enrolment in either DSS or IF (or July 2009, whichever is sooner), from which three years of cost data are taken.

The tables below show the actual average amount of total DSS and HCSS allocations for the two cost bands, and the percentage change over three years. This analysis is striking in that in all instances, costs appear to be better contained among IF users than non-IF users, whether by decreasing costs at a higher rate, or decreasing costs while non-IF users increase.

Notably, average costs for IF users appear to reduce to a significantly lower level than non-IF costs in both total DSS costs and HCSS over the three year period in the $60,000 and over group – regarded as having the most complex users.

[2] This analysis compares actual dollars spent, recognising that one of the factors that causes spend to increase over time is inflation. The alternative – inflation adjusting – aims to 'remove' the effect of inflation so we can see other patterns and trends – but in doing so we are a) not seeing the total picture and b) introducing assumptions that might distort the data (for example, CPI may not equal actual changes in DSS costs).

Average allocations for complex users – HCSS only (school leavers to age 65 years)

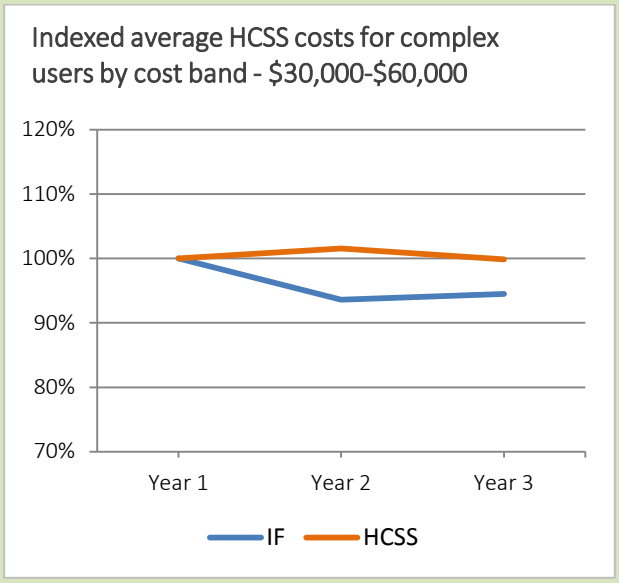
	Number of service users	Year 1	Year 2	Year 3	% change year 1-3
$30,001-$60,000 (as at year 1)					
Complex IF	176	$ 41,848	$ 39,167	$ 39,530	-5.5%
Complex non-IF	226	$ 39,976	$ 40,586	$ 39,924	-0.1%
More than $60,000 (as at year 1)					
Complex IF	82	$ 83,204	$ 78,486	$ 66,763	-19.8%
Complex non-IF	27	$ 79,094	$ 78,296	$ 77,484	-2.0%

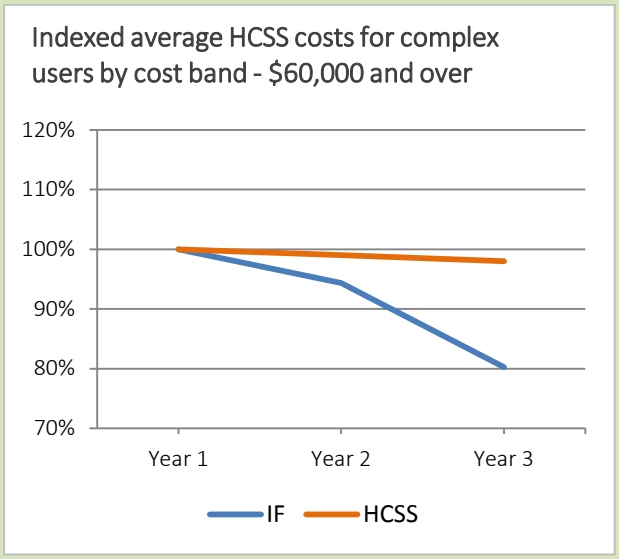
Average allocations for complex users – total DSS (school leavers to age 65 years)

	Number of service users	Year 1	Year 2	Year 3	% change year 1-3
$30,001-$60,000 (as at year 1)					
Complex IF	195	$42,072	$39,956	$41,407	-1.6%
Complex non-IF	309	$40,329	$42,825	$44,672	+10.8%
More than $60,000 (as at year 1)					
Complex IF	103	$85,251	$76,124	$66,417	-22.1%
Complex non-IF	66	$75,791	$71,770	$70,806	-6.6%

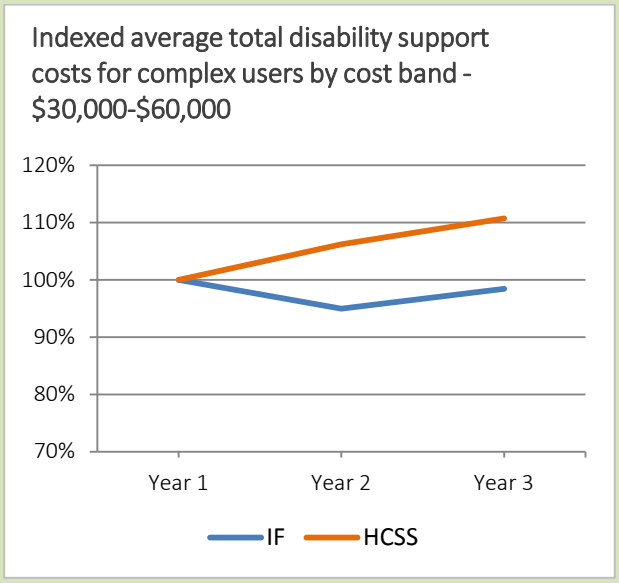
The differences in cost containment between IF users and non-IF users are revealed further in the graphs on the following page. In these graphs, the costs are indexed; year 1 is set at 100% for both IF and non-IF users, and the changes from year 1 through to year 3 are then plotted. This enables observation of spending over time, relative to the first year, for IF and non-IF users.

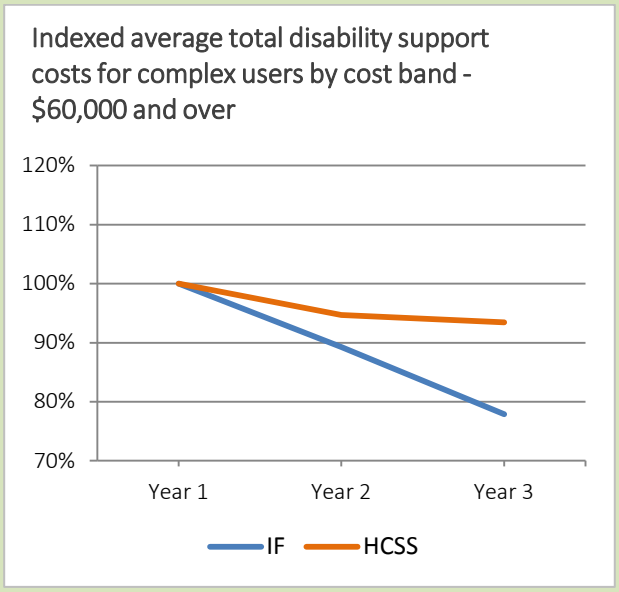
Indexed average allocations – HCSS only (school leavers to 65 years)





Indexed average allocations – total disability support (school leavers to 65 years)





Residential care costs for complex users

This next analysis explores cost patterns in the same cohort, looking specifically at how residential care costs within total DSS costs vary for these groups. Residential care was chosen as it presents a generally higher cost option for meeting care needs.

As with the previous analysis, this focuses service users in the school leavers to 65 years age group, with costs of greater than $30,000 in their first year of receiving HCSS, and with a substantial HCSS package (comprising 50% or more of total package allocation at year 1).

In this analysis, residential care costs were averaged per user and tracked from year 1 to year 3 from receiving HCSS.

The table below shows the residential care costs for complex users where total DSS costs were in the $30,000 to $60,000 band, or more than $60,000.

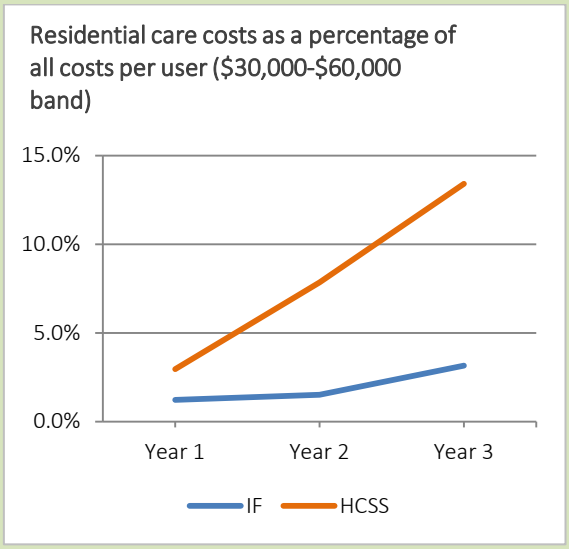
The table below shows that residential care costs in both cost bands are substantially lower among complex IF users than complex non-IF users. Furthermore, these costs grow at a much lower rate among IF users in the $30,000-$60,000 band, and decline in the $60,000 and over band. This suggests that IF users are less likely to transition to residential care than non-IF users and supports previous data indicating IF as a means of containing costs.

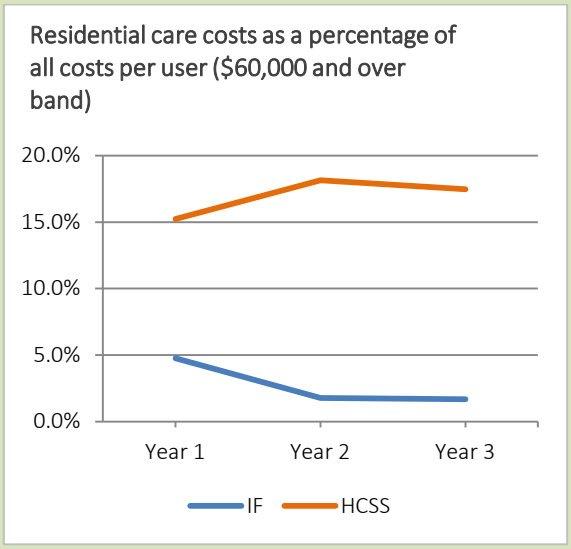
Average annual residential care costs for complex users (school leavers to age 65 years)

	Number of service users	Year 1	Year 2	Year 3	% change year 1-3
$30,001-$60,000 (as at year 1)					
Complex IF	195	$514	$602	$1,309	154%
Complex non-IF	309	$1,192	$3,361	$5,993	403%
More than $60,000 (as at year 1)					
Complex IF	103	$4,048	$1,353	$1,119	-72%
Complex non-IF	66	$11,548	$13,018	$12,371	7%

The graphs that follow show residential care costs as a percentage of total DSS costs for these service users. They reinforce the above findings, that residential care costs are lower among complex IF users compared to complex non-IF users.

Residential care costs as a percentage of all costs per user





Transition to IF

Any situation where a person's support needs change to require enhanced levels of support, by definition, demands an increase in costs. IF is no exception, and is often required because of the scale and complexity of changing care needs. This study shows that the transition from pre-IF to IF marks a shift in costs; our analyses indicate average annual costs per user increased from $14,030 to $27,969 (based on HCSS costs for IF users in the school leavers to 65 years age group). This would plausibly reflect transition at a point of significant change in a person's care needs, and where IF is part of a new suite of services that a person is receiving, rather than the cost of IF itself. Also the inclusion of other services as outlined above in the IF package at the point of transition, and then scaled back over time may contribute to the initial increase in overall cost. It is not possible in this data to identify non-IF users at a similar transition point to explore comparative transition costs.

This is consistent with the issue noted earlier that since 2009, stability of personal circumstances was removed as a criteria for IF selection by NASCs; instead NASCs have assessed if the shift would be cost neutral (i.e. would be likely to cost the same as non-IF). The implication of this is that by applying a principle of cost neutrality, then an increase in costs would be expected to occur regardless of whether IF was adopted or more traditional approaches. Even the very high SPA category masks substantial variation among its users, and it is difficult to accurately compare these users with non-IF users in the same category, given the changing needs that often mark the point of transition.

The key question is therefore **how do the IF costs compare to those of similar needs receiving traditional HCSS**; which this chapter has primarily focused on through the analysis based on allocation package sizes.

Implications

The following patterns are evident:

- IF appears more effective than non-IF at containing costs over time, and in some instances, reduces costs, for total DSS spending and within HCSS spending.
- IF reduces costs more in the higher cost groups (more than $60,000) which may indicate that IF is more effective at containing costs in higher levels of complexity.

Taken together, these findings indicate that once transitioned to IF, overall DSS costs are more likely to be contained among complex IF users compared to complex non-IF users. The increased costs for IF users plausibly reflect a transition at a point of significant change in a person's care needs, and where IF is part of a new suite of services that a person is receiving.

Limitations

This analysis provides an exploration of what can be inferred from available service and cost data. However, as with any analysis of routinely collected data, this research does not in itself constitute a formal cost-effectiveness analysis. It offers an understanding of the patterns of estimated IF costs over time, and some comparison with IF users, but to undertake a full cost-effectiveness analysis would require a range of data that was not available for this research.

The analyses are based on estimated spending levels rather than exact spending levels for each person. This applies spending assumptions to each allocation, based on the underlying service category. These assumptions are based on Ministry of Health guidance around spending patterns for both IF and non-IF (HCSS) users. As noted earlier, the estimated costs were derived from applying an allocation/spend ratio of 85%; this is a conservative assumption and MIC's own data indicates a ratio of 81%, therefore the actual costs may be lower than the estimated costs.

We stress that this analysis is making use of a dataset for purposes that it was not designed for; and as discussed earlier, required significant calibration to enable a cost analysis to take place. Our validation and checking found that the aggregated costs were reasonably close to the Ministry of Health expected costs, so we can have reasonable confidence that these figures are indicative of actual costs, but any marginal differences between groups or over time should not be seen as actual differences.

Other key limitations of this research are:

- No data is available from either Socrates or MIC on what people are purchasing. This means that it is simply not possible to explore differences between IF and non-IF users on the disability support services that people are using with IF funds.
- The limited number of records in several categories reduces the strength of the analysis. In many cases the number of comparable non-IF users is quite small (possibly because many have already been transitioned to IF).
- Whilst this report signals some cost savings in IF use compared to non-IF use, because of the inherent difficulty in profiling DSS users, some differences in costs may be due to

pre-existing differences between IF and non-IF users that this study was not able to identify.

- There is no reliable data on quality of life and other outcomes, which would enable a detailed economic cost-effectiveness analysis (such as an understanding of comparative disability-adjusted life years).
- For reasons of data, time and budget constraints, this study generally only focused on the school leavers to 65 years age group. An analysis of IF use would also be helpful across other age groups.

With these considerations in mind, this analysis is indicative and exploratory, with a view to prompting more layered analysis that explores the value of the impacts of IF.

Future research

Taking the findings and the limitations into account, this study should therefore be seen only as a useful starting point for exploring this area. To undertake a more extensive analysis would require a cost-minimisation analysis involving such approaches as:

- A systematic approach collecting data from both IF and non-IF users, including identifying among IF users how their funds are spent, the services that are being purchased through IF compared to non-IF, and the quality of life outcomes that are being obtained over time.
- Establishing a consistent approach to identifying changes in costs that can be attributed to switching to IF and not to other factors such as pre-existing differences between IF users and non-IF users.
- Exploring more deeply the potential savings that might arise if people in the same circumstances as IF users were to take up a non-IF option; and the magnitude of the relative impact of IF participation on such issues as health and quality of life.

Conclusions

This is the first such study into the costs of IF, relative to non-IF services in New Zealand. As such, it provides a useful preliminary insight into patterns of costs over time.

In broad terms, the following patterns are evident with regard to IF:

- Use of IF is increasing over time, and IF is growing as an overall proportion of HCSS spend.
- The growth in the numbers of people using IF is higher than the growth of IF spend, indicating that either costs are being controlled to some degree, and/or that increasing numbers of people with less complex needs and lower costs are receiving IF.
- The people most likely to take up IF are those with high and complex needs, and therefore higher costs.
- A large number of highly complex users (those with high SPA ratings and high service needs) are transitioning to IF, which may indicate it is regarded as a more suitable environment to manage costs and quality of life.
- Average costs for IF users with more complex needs (based on higher allocation packages) appear more likely to be contained, for both total DSS costs and HCSS costs, compared to non-IF users. Costs for these IF users also tend to reduce to levels below those of non-IF users.
- The transition from pre-IF to IF is marked by an initial increase in overall average costs per user; this is likely to reflect changes in need, regardless of the service configuration (i.e. IF use or non-IF use).
- There is evidence that IF users with high and complex needs are less likely to transition to Residential Care than people not using IF. This means that IF slows down the movement of people to higher cost services.
- Overall, this suggests that IF users tend to settle on a package of care arrangements that do not alter substantially and which are effective in containing costs.

It must be stressed that this is only a first step in assessing cost-effectiveness of IF, and that from this data, we cannot attribute causality of IF to quality of life outcomes. Alongside a cost analysis there needs to be a thorough study of such impacts as independence and quality of life for both IF users and people in non-IF situations.

The transition to IF offers for many a way of better managing the needs and complexity of disabled people's lives. Taking up IF often enables access to services that may have been allocated, but which were not taken up using traditional HCSS approaches. By implementing a means of accessing services that support greater independence and quality of life, for both disabled people and their families, there are likely to be quality of life benefits that a cost analysis alone does not explore, and which offers an important departure point for the next wave of investigation that is needed.

Appendix 1: Detailed research method

Method

This research analysed data extracted from the Ministry of Health's Socrates database and MIC's databases, comparing IF users with traditional support users. The analysis draws on an extensive database of over 440,000 entries using Socrates, dating back to 2009. Alongside this, for validation purposes, MIC's own client management system was analysed to validate some of the findings.

All data was anonymised, with name and address fields removed. A client code number was created that enabled NHI linking to MIC records, and the NHI records were then removed prior to analysing the two datasets.

Socrates dataset analysis

Data was annualised to enable comparison over time.

The Socrates dataset includes a unique row of data for each service and package of care, and details the funding allocations made to different services provided. Therefore each client review can result in several lines of data reflecting the different types of services being allocated to the user. Each reassessment would then result in additional lines of data.

In its raw form, the Socrates dataset is not suitable for cost analysis. By nature it is an iterative system – each time a change is made to an existing arrangement a new record is generated rather than removing or modifying the old one. Whilst this ensures a good audit trail it does not suit the needs of this type of analysis, and as such requires substantial recalibration to enable the analysis performed here.

The following issues were particularly pertinent:

- Duplicate entries, such as where services are rebooked to reflect different arrangements while leaving the preceding service line when the dates overlapped.
- NASC coding errors, for instance inserting wrong period frequency resulting in under/over statement of allocation in Socrates. Although these may have been corrected, the original entry was often left unadjusted in Socrates.
- Large bulk-funded amounts not aligned to allocation at the service level.
- Special users / NASCs included in the dataset but outside of scope.

The following work was performed to receive, validate and adapt the Socrates dataset for the purposes of our analysis:

- Define data and information security requirements
- Submission of data request
- Receipt of anonymised data file
- Initial data validation and outlier analysis

- Data queries to Ministry of Health and file updating by the Ministry
- Developing data controls - applying filters and violation criteria to reflect Ministry of Health guidance
- Develop formulae to restate the costs and dates to address the issues identified in a controlled manner
- Additional validation and further development of data controls to remove irregular data, in consultation with Ministry of Health
- Checking the aggregated allocations by comparing with Ministry of Health budget data provided; this focused in particular on Home and Community Support Services (HCSS) – both IF and non-IF allocations.
- Mapping the service codes to service classifications to facilitate analysis.
- Apply assumptions around average spend levels to reflect spending patterns by service type.
- Analysis performed on the cleaned dataset

MIC Client Management System

MIC data was also accessed for validating against the Ministry of Health data, through the following steps:

- Define data requirements and submission to MIC
- Receipt of anonymised data file reflecting different sources of spending (ACC, holiday pay, liability insurance, MIC fees, payroll fees, reimbursements and additional funding)
- Consolidation and annualisation of different spends into single dataset at the individual user level
- Use of the consolidated dataset to validate the Ministry of Health allocations and determine the level of spend vs allocation and to identify any other issues with consistency in the data
- Match consistency of user IDs from the MIC data against those identified as IF users in the MIC dataset

Validation

In databases of this size and complexity, some considerable effort is required to bring the dataset to a level where it is sufficiently consistent to enable analysis.

The initial validation of the Ministry of Health dataset resulted in identification of several high unit prices which were distorting the overall dataset and creating significant apparent over-estimates of expenditure. These were highlighted and reported to Ministry of Health, who subsequently advised on an approach to correction or removal. The dataset was subsequently filtered to remove selected service codes, which mainly related to bulk purchases. This entailed the removal of the record or restatement of a standardised unit cost where the raw unit cost was outside an expected range.

In addition, some additional mis-codings were identified; for instance, rates expressed as weekly which should have been annually. To help identify this we needed to apply a set of controls to help identify expected ranges, and to correct many of the errors. However due to the nature of the dataset it has not been possible to identify and address all of these errors. Nevertheless, the aggregated totals in the final dataset that was used for analysis was within 10% of the actual spend for the 2013/14 financial year for HCSS (both IF and non-IF), which we were advised by Ministry of Health would provide an acceptable range.

The quality of the analysis is therefore restricted by the accuracy of the coding, and any remaining errors may impact on the quality and accuracy of the analysis.

Based on communications with Ministry of Health, we understand that some of the underlying data quality issues have been identified and resolved over time, thus reducing the level of mis-codings over time.

Service users

The following client types were the focus of this analysis:

- DSS service users, including IF and non-IF, but excluding Enhanced IF (EIF); in effect this primarily means HCSS users, which is the only funding centre that permits IF.
- Services utilised between July 2009 and June 2014
- Aged from school leavers to 65 years, where more than two-thirds of IF services are applied (note that the age of school leaving varies substantially, but marks an important transition to DSS).

The analysis compares between:

- IF users – those who have received IF at some point during the period under review. Note many of these users will have continued to use non-IF services to access services outside of HCSS.
- Non-IF users – those who have received HCSS but have not received IF during any of the periods under review.

Exploring cost patterns

Within the Socrates dataset, costs from each row were allocated to the relevant financial years to allow review of spend patterns and rollout of IF over time. This supported the *macro* analysis of the overall size of the IF spend over time. This facilitated our understanding of how much was allocated to IF year on year.

The analysis is based on financial years beginning from 1 July 2009 (the 2009/10 year). Note there was a small amount of activity in the previous year (the 2008/09 year) which was incomplete and does not form part of our analysis.

We also reviewed the IF user journey, in terms of how IF impacts on cost patterns over time from the initial uptake. This is different for each user, depending on the exact date they first took up IF. Once this date was established we allocated spending for each user into years from the start of receiving IF, i.e. year 1, year 2, year 3 etc. This supports the *micro* analysis (i.e. relative to each user's experience). To provide a means of comparison, the analysis explored:

a. How allocations and spending change when users transition to IF
b. How spend patterns compare to complex users with similar characteristics i.e. users with similar cost profiles who did not transfer to IF

Services

The initial Socrates dataset included hundreds of different service codes which prevented any meaningful analysis around service utilisation. To address this, services categories were developed by mapping service codes to a list provided by the Ministry of Health. This allowed the following expenditure classifications: HCSS, Carer support, Day Activity, EIF, IF, Rehab, Residential, Respite and Other. This also allowed us to restate the allocations to estimated spending, in line with assumptions provided by the Ministry of Health.

Spending vs Allocations

The Socrates dataset reflects allocated funds reflecting service planning in advance of utilisation of the services. Spend (i.e. actual costs) was based on estimated spending levels against allocation as advised by service classification. This allowed us to reflect historic differences between allocations and spend.

A spending to allocation rate of 82-85% was advised by the Ministry of Health. A conservative allocation was used in this analysis of 85% (i.e. by multiplying all allocations by 0.85 to obtain an estimation of costs). This was used to estimate the level of spending for IF HCSS services. The non-IF HCSS spending to allocation rate was generally 78% (with some exceptions), again as advised by Ministry of Health.

Scope limitations

Because of the limitations of the Socrates dataset, the following areas are outside the scope of this analysis:

- How IF is being used: No data is available on what services are being purchased and at what cost.
- Market efficiencies: It is not possible to accurately explore the number of providers emerging and if unit cost patterns are changing for IF, due to the lack of information on what services are being purchased.

- Changes in personal independence and quality of life: There is no quality of life data available within the Socrates dataset. It was hoped that there may be some proxies for aspects of quality of life that could be suggested by the data. In particular –
    - Stability of home arrangements, indicated by changes in the number of NASC assessments, is thought to change post-transition to IF, which may suggest greater stability in the home situations of IF clients
    - Complexity, in terms of the number of providers working with clients changes post-transition to IF.

  However, we were advised the nature of data entry meant that entries made in error would still be recorded as an assessment/provider; therefore some instances that would appear to be multiple assessments would in fact be only a fraction of this. For these reasons, the proxies proposed would not be suitable.

Appendix 2: Background to the Socrates Database

Note: This material is taken from documentation supplied by Ministry of Health

The National Needs Assessment and Service Coordination (NASC) Information System

Disability Support Services (DSS) is part of the National Health Board at the Ministry of Health. DSS is responsible for planning and funding disability support services for people with long-term physical, sensory, and/or intellectual disabilities who meet the eligibility criteria. Most people receiving supports are aged under 65.

There are 15 Needs Assessment and Service Coordination (NASC) organisations which are funded by the Ministry to assist people with disabilities to gain access to support services

The National NASC Information System, known as Socrates, is currently used by all 15 Ministry of Health funded NASCs and the four Ministry of Health funded RIDCA (Regional Intellectual Disability Care Agency) to record details of client demographic data, support needs, and service allocation data. Where possible, information is codified to known standards (Statistics NZ, HISO, etc), to ensure that data is recorded in a way which is consistent with other NZ Health and Disability systems.

Socrates was developed and deployed in late 2007. Until that time each NASC and RIDCA operated a separate, standalone database which recorded basic details about clients and details of their service allocation. The information collected in the separate databases was not always comprehensive and there was no standardised format for that data. As part of the deployment, data was migrated from each of the different databases into Socrates.

Information about service allocation was sent to the Ministry (Sector Services) via a combination of paper based and electronic methods. This process was labour intensive and resulted in data errors which directly impacted on service provider payments. It was also of limited use to the Ministry in defining the demographics of clients and the services they receive.

The National NASC Information System:

- Collects and stores accurate, standardised information from each NASC.
- Provides a national database of people with disabilities receiving DSS-funded support services.
- Records information about people with disabilities in a consistent way.
- Generates reports for both DSS and NASCs to assist budget forecasting and service planning.
- Creates clear audit trails for Ministry funded disability support services.
- Enables relevant client demographic and service allocation information to be supplied to the Service Provider via standard reports.
- Delivers electronically validated information to Sector Services in order that payments can occur.

- Supports NASC business process via automated workflow and task generation.

At a high level, the following information is collected for each client:

Client Demographic Data

- Name, Gender, Date of Birth and, where applicable, Date of Death.
- Ethnicity, including Iwi and Hapū where applicable.
- Disability
- Language, including preferred Language and whether an Interpreter is required.
- Address, including details of the client's type of residence and relationship to others in that household.
- Contact Details
- Personal and Professional Contacts

Referral

- Date of the Referral, First Contact and Completion.
- Who made the Referral.
- Outcome of the Referral.
- Eligibility Assessment (where applicable).

Needs Assessment

- Date of Assessment, First Contact and Completion.
- Reassessment Date
- Needs Assessor
- Assessment Location
- Functional Support Needs
- Goals
- Specialised Assessment (where applicable)

Service Coordination

- Date of Coordination
- Review Date
- Coordinator
- DSS funded service allocation (Provider, Service, Quantity, Service Period)
- Non-DSS funded service allocation (where applicable)
- Unmet Needs
- Outward Referrals