

A Cost Benefit Analysis of Vocational Rehabilitation Services Provided by CRS Australia

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Abstract

This paper analyses the costs and benefits of participation in vocational rehabilitation programs provided by CRS Australia, an Australian Government business unit . It presents estimates of cost data from CRS Australia databases and an analysis of benefits data on employment participation and the reduction in the receipt of Australian Government benefits from surveys of CRS Australia clients. Non-participants who did not enter a CRS Australia program following an initial assessment interview were also examined to obtain a control group against which the outcomes from participation in CRS Australia programs can be measured.ⁱⁱ

1. Introduction

CRS Australia is a business unit of the Department of Health and Ageing and is the sole provider of Australian Government funded vocational rehabilitation . In 2002/03, a total of \$113.16 million was provided to CRS Australia for the provision of vocational rehabilitation services to Australian Government income support recipients with disabilities, illnesses or injuries. This paper reports on an analysis of the costs and outcomes recorded for CRS Australia clients who completed a rehabilitation program over 18 months to December 2002. In total, 16,348 clients completed a vocational rehabilitation program during this period. Table 1 shows a breakdown of this CRS Australia client group, according to various attributes.

Table 1 CRS Australia Clients by Sub-Category

<i>Sub-Category</i>	<i>Client Numbers</i>
Division	
NSW/ ACT	5,484
QLD	3,140
SA/NT	1,541
VIC/TAS	4,621
WA	1,562
Sub-Division	
Urban	11,458
Rural	4,538
Remote	352
Duration	
D<3 months	682
3<D<9months	7,276
D>9 months	8,390
Outcome of completed program	
Employment	9,364
Non-Employment	4,564
Secondary	2,420
Disability	
Physical	9,205
Sensory	841
Neurological	319
Intellectual/Learning	640
Acquired Brain Injury	1,028
Psychiatric	4,064
Other*	251
Total	16,348

Note: * Other includes 'unknown' or 'not to be recorded'.

2. Costs at CRS Australia

The calculation of all CRS Australia costs is based upon data from unit records on the 16,348 clients who completed a rehabilitation program and reported an outcome (be it employment, non-employment or secondary outcomes such as participation in training courses) over the course of July 2001 to December 2002. These case summaries contain data on pre-program, program and total hours for each client, disaggregated by Division, Location, Program Length, Outcome and Disability. Data on client participation in rehabilitation programs are multiplied by existing CRS Australia hourly costs to obtain *per client* cost estimates across all disaggregated sub-groups and for the total class.

CRS Australia Client Cost Structure

On the basis of a preliminary analysis of this and other data sets, CRS Australia has estimated its cost structure by division and location, excluding administrative and overhead costs for national and divisional coordination.

Rural and Remote per hour costs tend to be spread out more broadly by division, with costs at the highest cost Rural provider being 24 per cent difference greater than the lowest. This is likely to be due to economies of scale and especially divisions with a smaller number of larger rural towns and regions to service compared to those divisions with a more diverse and widespread group of regional centres.

The other major cost category to be considered is that of External Costs associated with individual client needs (e.g. special injury costs), where such costs are met by CRS Australia. These costs are important in determining the final expense of rehabilitating CRS Australia clients given the relative heterogeneity of this client base. Approximately 75.53 per cent of all CRS Australia clients incurred some external cost over the period of rehabilitation, with some differences across disability types.

In summary, the breakdown of costs in the calculation of CRS Program Costs includes program related costs which reflect billable hours for program contact, which itself is a subset of Total Costs, equal to all program costs plus time associated with pre-program costs and external costs borne by CRS Australia.

CRS Australia Client Participation

An examination of the recent CRS Australia caseload provides average contact time by clients, in terms of program and total contact hours can be found in Table 2.ⁱⁱⁱ The average length of participation in terms of hours spent is 25.91 Program hours and 30.36 Total hours. Program hours include all billable hours spent in CRS Australia rehabilitation programs, while Total hours also include pre-program engagement, notable time spent in referral and assessment activities involving CRS Australia staff.

Table 2 Per Client Program and Total Hours, CRS Australia

	<i>Program Hours</i>	<i>Total Hours</i>
Location		
Urban	26.59	31.09
Rural	24.37	28.64
Remote	23.73	29.06
By Program Length		
D<3 months	6.88	11.75
3<D<9months	16.13	20.75
D>9 months	35.94	40.21
By Outcome		
Employment	25.37	29.76
Non-Employment	27.68	32.20
Secondary	24.68	29.22
By Disability		
Physical	25.22	29.58
Sensory	25.34	29.80
Neurological	27.90	32.38
Intellectual/Learning	24.30	28.57
Acquired Brain Injury	29.22	34.40
Psychiatric	26.88	31.41
Other*	25.66	29.64
Total	25.91	30.36

Note: * Other includes 'unknown' and 'not to be recorded'.

There is a broad similarity of rates of program participation across all categories (excepting Program Length of course). This is somewhat unexpected given the known heterogeneity of CRS Australia's client base, which would suggest some fairly marked differences in terms of hours spent in contact with CRS Australia personnel or in related programs. Generally, discrepancies tend to be under 10 per cent, which represents around 3 hours, based on the average.^{iv} Clients with Employment (29.76 hours) or Secondary

(29.22 hours) outcomes have fewer contact hours than those with reported Non-Employment (32.20 hours) outcomes.

CRS Australia Client Costs

Table 3 below outlines costs on a per client basis for CRS Australia. The average per client program cost for CRS Australia is \$4,398. The costs of providing rehabilitation services in Remote (\$4,844) areas are higher than is the case for Rural (\$4,429) or Urban (\$4,372) regions. This reflects the higher external costs associated with service delivery in Remote regions.

Costs per client rise with program length, with costs for programs under 3 months averaging around \$1,561. This almost doubles to \$2,976 for programs between 3 to 9 months and then rising again to \$5,861 for programs of more than 9 months duration.

As expected, CRS Australia clients with employment outcomes (\$4,388) tend to have had lower costs than those with Non-employment outcomes (\$4,554), although those clients with secondary outcomes have lower average costs still, at around \$4,143. This alignment follows the pattern established for contact hours which indicated lower levels of contact for secondary outcomes.

Table 3 Per Client Program and Total Costs, CRS Australia

	<i>Program Costs</i>	<i>Total Costs</i>
Location		
Urban	\$3,265	\$4,372
Rural	\$3,209	\$4,429
Remote	\$3,582	\$4,844
By Program Length		
D<3 months	\$857	\$1,561
3<D<9months	\$2,026	\$2,976
D>9 months	\$4,518	\$5,861
By Outcome		
Employment	\$3,191	\$4,388
Non-Employment	\$3,471	\$4,554
Secondary	\$3,101	\$4,143
By Disability		
Physical	\$3,172	\$4,333
Sensory	\$3,179	\$4,392
Neurological	\$3,490	\$4,657
Intellectual/Learning	\$3,065	\$4,092
Acquired Brain Injury	\$3,660	\$4,873
Psychiatric	\$3,373	\$4,464
Other*	\$3,223	\$4,236
Total	\$3,256	\$4,398

Note: Costs include the 'external' costs discussed in Section 3.2.

* Other includes 'unknown' and 'not to be recorded'.

Summary

The average cost per a CRS Australia client program is \$4,398. This includes costs attributable to both program and pre-program (i.e. referral and assessment activities) hours as well as any external costs paid for by CRS Australia. Costs tend to be lower for clients who experience Employment or Secondary outcomes, as well as clients with Intellectual/Learning or Sensory disabilities.

3. A Cost Benefit Methodology

Underlying this cost benefit analysis of CRS Australia's programs is an established methodology based on evidence from previous studies on the suitability of applying various cost benefit analysis techniques to CRS Australia.

Cost Benefit Analysis is used to assess and compare the effectiveness and efficiency of existing policy programs in terms of actual or potential competing alternatives. In the context of assessing CRS Australia programs, cost benefit analysis can be used to establish the return to society from initial expenditures on such programs, given an assessment of plausible alternatives. Cost is usually measured in terms of per client program costs to CRS Australia, although strictly speaking it also includes expenditures by participants themselves and the opportunity cost of undertaking rehabilitation. This study examines cost strictly in relation to the service provider, in that it identifies only costs which are attributable to CRS Australia. This is in keeping with previous studies in this area.

This analysis draws upon findings from two previous studies of CRS Australia rehabilitation programs in Beggs (1988) and Anutech (1993) as well as a series of 'general studies' that examine related issues, notably, cost benefit analysis of VET training programs for people with disabilities in Dockery (2001).

Key Findings from Previous Studies

Two key findings can be seen from an examination of the previous literature in this area:

1. To determine the net impact of rehabilitation programs, information is required about future lifetime earnings and labour market status of participants as well as what these would have been had they not participated in rehabilitation programs. Clearly, it is impossible to observe both, and impracticable to observe earnings over a full working life. The most common approaches to determining the impact of rehabilitation are:
 - Cross-sectional analysis – at one or a number of points in time, observe the probability of employment P(E) and income (Y) of disabled persons who have participated in rehabilitation, and compare them with disabled persons who have not participated in such programs;
 - Longitudinal analysis - observe P(E) and Y before and after the rehabilitation program for the participants, and take the change as the

effect of the program. This ignores potential deadweight loss – the gains that participants would have achieved anyway; and

- Longitudinal analysis with control groups – observe the labour market status of a group of participants and non-participants both before and after the participants’ rehabilitation is undertaken. The gains by the non-participants (the control group) are taken as an estimate of deadweight loss.

2. The class of study examined in each of the above previous studies is that of microeconomic evaluations, which primarily use cross-sectional data, sometimes with control groups. These attempts to directly identify the effect on outcomes for the participant group, with some allowance made for substitution effects and the existence of alternative programs. Deducting program costs, which are usually more readily available, provides the estimated net benefit, and the ratio of benefits to costs provides the rate of return.

This paper uses a combination of cross-sectional data on employment and earnings obtained from surveys of CRS Australia clients and non-participants with other data on time spent on Federal Government income support programs to assess such impacts.

Many of the perceived costs and benefits of undertaking rehabilitation are quite difficult to quantify. Hence, most studies restrict themselves to a key subset of the factors detailed in Table 4, where these are highlighted in that table.

Costs are only assessed in terms of the provider costs, given the difficulty in collecting ‘private costs’ from clients. As well as these, only the two key benefits are quantified, namely the income premium earned by CRS Australia clients shared between the clients and government and the reduction in Federal Government payments of income support benefits such as Newstart Allowance and the Disability Support Pension (DSP).

This study quantifies the net benefit of CRS Australia’s rehabilitation programs in terms of these important costs, while Section 6 reports on a series of findings with regard to the less easily quantifiable benefits of undertaking vocational rehabilitation programs with CRS Australia.

A Cost Benefit Analysis Methodology

In keeping with the findings from previous studies, and in particular, the early studies into CRS Australia programs by Beggs (1988) and Anutech (1993), this study assesses the net benefit of CRS Australia operations to society in terms of the earnings potential of its clients relative to some ‘counterfactual’ or alternative course of rehabilitation. This is referred to as the Net Private Benefit. The gain in taxation revenue and reduction in government expenditure on various income support programs such as the Disability Support Pension (DSP) represents the Net Public Benefit from funding CRS Australia. The Net Social Benefit is combined value of both benefits.

The Net Private Benefit

This approach is discussed in Dockery (2001) and involves weighting employment and income earning outcomes of CRS Australia clients to correct for the existence of other available opportunities. This is assessed as being equal to:

$$\Pi = (Y_{CRS} - Y_{NONCRS}) - c \quad (1)$$

where Y is the income outcome associated with D, a set of potential measures to assist labour market outcomes for people with disabilities, where the subscript ‘CRS’ implies that the measures have been undertaken, in this case participation in a CRS Australia program, or not undertaken (NONCRS). Undertaking a CRS program involves some form of net cost to Australian society, measured as c. The net benefit of participation in a CRS Australia program is equal to Π , where this represents benefits after allowing for initial costs. It is important to realise that the benefit of participation extends well beyond the initial program in many cases, with clients receiving sufficient rehabilitation and training to occupy careers over many years. . Essentially, previous studies indicate that participation in a CRS Australia program has considerable private benefits over and above participation in an alternative activity. Typically, it is expected that these are most commonly manifested in a lifetime income premium, which is partly due to an increase in the probability of employment and partly due to higher earnings associated with more intensive workforce participation and steadier career progression.

It is the presence of such a *net lifetime* benefit that largely outweighs the full cost of providing clients with vocational rehabilitation programs. This is wholly driven by the income premium that CRS Australia participants are expected to enjoy relative to non-participants.

Obviously, to have some idea of the precise nature of the impact of CRS Australia on its clients, a counterfactual example is needed, that is a group of potential participants who instead undertake alternative courses of action and whose readily identifiable characteristics can be examined to provide a control for the CRS Australia client group. Ideally the characteristics of the control group should be identical to those of program participants except for program participation.

Formally, the benefit gained from participation in a CRS Australia program has two components: the increased likelihood of gaining employment and, once employed, a higher wage than would otherwise have been earned. Dockery (2001) characterises this relationship as being equal to:

$$\Delta Y_t = P(E)_t Y_t |_{CRS} - P(E)_t Y_t |_{NON\ CRS} \quad (2)$$

for each post-rehabilitation period (t=1 and onwards), the net gain or earnings differential for an individual.

The level of employment and earnings that would have been achieved by the participants even in the absence of the rehabilitation, $P(E)_t Y_t |_{D=0}$, is known as the “deadweight loss” associated with the program. This represents the extent to which non-participation in such a program could result in a proportion of subjects in a group still entering the workforce.

Typically, as in this study, a ‘snapshot’ approach is taken where groups are compared at the time of a survey of their immediate and expected outcomes. While the underlying model being examined is dynamic in nature, the absence of an ongoing or panel survey of both the study and control groups implies that short-term outcomes need to be extrapolated over the projected earning horizon of the ‘average’ CRS Australia client. This is necessary, because of the emphasis on the enhancement of lifetime earnings as a result of participation.

The net present value of the increased earnings stream, the earnings differential in each period, ΔY , is summed across the post-rehabilitation working life of the individual, assumed here to continue to the age of 65, and discounted at an appropriate discount rate, r – in this study, equal to the real rate of 7 per cent, a standard rate used by the Australian Treasury in its cost benefit analysis of publicly funded projects.

Including initial rehabilitation costs and summing across all n disadvantaged persons who participate in rehabilitation (i=1 to n), the net present value of the benefit stream is:

$$\Pi = (1 - t_i) \cdot \sum_{i=1}^n \left\{ -C_i + \sum_{t=1}^{t=65-age_i} (\Delta Y_{it} (1-r)^{-t}) \right\} \quad (3)$$

The full private financial gain to the individual amounts to the after-tax (1-t_c) earnings of participants, where t is the tax rate on income and consumption.

Net Public Benefit

The major component of the public benefit from participation in CRS Australia programs is equal to the enhancement of taxation revenues due to participation, effectively, the after-tax component paid on the income component enjoyed by CRS clients once other factors have been accounted for. This is equal to:

$$\Pi = (t_i) \cdot \sum_{i=1}^n \left\{ -C_i + \sum_{t=1}^{t=65-age_i} (\Delta Y_{it} (1-r)^{-t}) \right\}. \quad (4)$$

The other component of the public benefit is the reduction in government spending due to reduced income support. This is given as:

$$\Omega = \sum_b^n b \cdot [(P(NONCRS)_b - P(CRS)_b)] * B_b * t_b \quad (5)$$

where the value of the reduction in government support is the function of the difference in the probability of receiving a given benefit, b, for CRS and NON-CRS groups, multiplied by the average benefit over the average time spent on this benefit, t.

Conclusion

In conclusion, the cost benefit methodology used in this study is broadly consistent with earlier studies which examine cross-sectional data on participation in vocational rehabilitation programs. In particular, two previous studies for CRS Australia used client records to determine the impact of participation in rehabilitation programs on the employability of participants, where assessments were made on probable earnings outcomes given reported survey findings at the conclusion of program involvement.

4. Cost Benefit Analysis of CRS Australia Programs

Introduction

This section reports on the findings from a cost benefit analysis of CRS Australia's rehabilitation programs, using the dollar per client costs (\$4,398 on average) determined in Section 3.

This analysis involves:

1. The construction of suitable cross-sectional data sets using surveys of CRS Australia clients and non-clients to determine key differences in employment and income outcomes;
2. The calculation of the Private Benefit of participation, which is the *after-tax* income premium enjoyed by CRS Australia clients relative to non-participants and allowing for further involvement in vocational training programs; and
3. An estimate of the Public Benefit from participation in CRS Australia programs. This includes:
 - The *tax* premium gained from higher workforce participation and income levels as a result of participation in CRS Australia programs; and
 - The reduction in public expenditure on income support programs for people with disabilities.
4. The calculation of the Social Benefit and Benefit to Cost ratios.

Findings from an Examination of Cross-Sectional Survey Data

As part of this project and its wider review process, CRS Australia in consultation with the Department of Family and Community Services commissioned two surveys, one of CRS Australia clients and one of non-participants, to determine key characteristics which separate the two groups as well as to quantify eventual post-program outcomes. These surveys were:

1. A survey of 1,023 CRS Australia clients by *Market Solutions*, where the sample was stratified by Division and by outcome type; and
2. A survey of 404 non-participants, being people who had an interview with CRS Australia, were assessed as eligible for a vocational rehabilitation program, but subsequently did not commence a vocational rehabilitation program with CRS Australia for reasons of 'not interested' or 'obtained employment'. Discussions with CRS Australia and FaCS staff indicated that this group would be the best

proxy group to form the control, i.e. they were the group ‘most like’ the participant group in all ways, save program participation.

Findings from the first survey are discussed in the Main Report by Market Solutions (2003) to CRS Australia. The second survey of non-participants acts as a ‘control group’ for the earlier sample, and involved a modified questionnaire that is included in Appendix A of this report. Selection of this sample used a stratification process that was identical to that of the earlier survey. This allows for the control of various factors such as disability and gender, where this occurs at the sampling stage. Essentially the purpose of the second survey is two-fold.

First, it provides the researchers with some assessment of the extent to which CRS Australia benefits from ‘selection bias’ in the sense that its clients may have existing favourable characteristics which enable them to participate in rehabilitation programs.

Second, this process allows for some ‘matching’ of CRS Australia clients outcomes against outcomes for non-participants with similar initial characteristics. This goes some way to controlling for selection biases amongst CRS Australia clients.

Given this requirement, this section only reports on key characteristics of both samples, where they are relevant to the discussion of assessing costs and benefits of CRS Australia programs. These include: reasons for rejecting the offer of a CRS Australia interview, employment participation at the time of the survey, income levels and changes in income levels at the time of the survey, and participation in rehabilitation and/or training activity since initial contact with CRS Australia.

The Non-Participant Sample: Reasons for Not Attending a CRS Australia Interview

As Table 5 shows, around 17.08 per cent of non-participants cited employment reasons for not entering a CRS Australia rehabilitation program. Around 46 per cent of these respondents were employed in a full-time occupation, with 19 per cent employed on a part-time basis and 35% being employed on a casual basis only.

A further 20.3 per cent cited Medical Intervention Required as being the major reason why they did not commence at CRS Australia program at that time.

Table 5 Major Reason for Not Undertaking a CRS Australia Program (Q.1d in Non-Participants Survey)

<i>Reason</i>	<i>Frequency</i>	<i>Percent</i>
Employment	69	17.08
Study	14	3.47
Medical Intervention Required	82	20.30
Family	6	1.49
Transport Difficulties	4	0.99
Accessing Employment Service	4	0.99
Not a Priority at this Time	6	1.49
Moving	2	0.50
Participating in Another Program	28	6.93
Did Not Feel Would Benefit from a Rehabilitation Program	38	9.41
Other	151	37.38
Total	404	100.00

Note: These are responses to Q1d of the non-participant survey.

Around 28 respondents or 6.9 per cent cited participation in an alternative such as a Job Network program or undertaking voluntary work. A further 9.4 per cent cited a lack of perceived benefits from a rehabilitation program as being the key reason for non-participation, while around 37.4 per cent cited other reasons, ranging from a perceived lack of eligibility to the need to take time off to consider alternatives.

These survey results suggest that non-participants are stratified by those with immediate employment prospects and those who require further rehabilitation and training before they can re-enter the workforce.

Private Benefit: Comparing Employment and Income Outcomes Between CRS Australia Clients and Non-Participants

A comparison of employment outcomes between CRS Australia clients and non-participants requires that a suitable initial point of comparison is made and that furthermore, some assessment of the final outcome for both categories of person can be determined.

For the purposes of assessing employment outcomes, we classify secondary and non-employment outcomes together as non-employment.

Because the surveys only provide cross-sectional data (a snapshot) the best comparison for a 'permanent' outcome is their position *at the time of the survey*, be it in employment, secondary activities or non-employment.

An important point to remember is that all benefits are assessed in *per client* terms, hence, the employment and earnings outcomes are averaged across all CRS Australia clients and non-participants. These figures represent an ‘average’ change in income due to CRS Australia. Table 6 reports these findings.

Around 42.1 per cent of CRS Australia clients had employment outcomes at the end of their program, with the remainder having non-employment outcomes. Among non-CRS Australia participants, around 12.15 per cent had employment outcomes in terms of this being the most important activity undertaken since the termination of contact with CRS Australia, with the vast majority having non-employment outcomes over this period. This is in contrast to the 17.08 per cent of non-participants who cited employment as a reason for not progressing with a CRS Australia program.

Table 6 CRS Australia Income Premium

	<i>CRS Australia Clients (1)</i>		<i>Non-Participants (2)</i>	
	<i>Employment (1)</i>	<i>Non-Employment (2)</i>	<i>Employment (1)</i>	<i>Non-Employment (2)</i>
(A) CRS initial outcome or Non-CRS major activity %	42.10%	57.90%	12.15%	86.12%
(B) Employed at time of survey – (% of (A))	72.90%	15.70%	18.25%	10.68%
(C) Average weekly wage at time of survey (for employed group)	\$478	\$288	\$370	\$309
(D) Per cent of entire sample group employed at time of survey		39.78%		11.41%
(E) Gross average weekly wage by entire group (\$)		\$524		\$365
Gross CRS Australia client wage premium (%) (E1 – E2)	\$159 (43.51%)			

Amongst those CRS Australia clients having initial employment outcomes (42.1 per cent of the total), around 72.9 per cent were still in some form of employment at the time of the survey, while around 15.70 per cent of CRS Australia clients who initially had non-employment outcomes were in paid employment. Amongst non-participants, around 18.25 per cent of those whose earlier employment was a major alternative to attending a program with CRS Australia still reported being in paid employment with the dropouts attending another vocational course or being located outside the workforce. Amongst non-participants where non-employment factors were the dominant reason for non-

attendance at a CRS Australia rehabilitation program, only 10.68 per cent had found employment at the time of the survey.

This suggests that participation in a CRS Australia program has a strong impact on employment participation levels, in contrast to a non-participant sample where over one in six people do not participate for employment reasons. As a result, the average *before tax* weekly wage for CRS Australia clients is \$524 compared to \$365 for non-participants, implying a premium of \$159 or around 43.51 per cent above that of non-participant wages.

However, this wage premium needs to be adjusted for the higher levels of participation in post-rehabilitation training undertaken by CRS Australia clients. As Table 7 shows, roughly 23.87 per cent of CRS clients with employment outcomes at the time of the survey undertook some form of post-program training. By contrast, only 7.34 per cent of non-participants in employment, reported undertaking some form of vocational education or training prior to obtaining a job. Of course, many non-participants with non-employment outcomes were currently undertaking training at the time of the survey.

Table 7 Adjusted CRS Australia Income Premium

	CRS Australia (1)	Non-Participants (2)
(A) % Unadjusted Income Premium	43.51%	-
(B) Unadjusted gross weekly income premium (\$)	\$159	-
(C) % Undertaking further training prior to employment	23.87%	7.34%
(D) Income premium for further training	22.00%	
(E) Adjusted weekly income Premium {(B1) – [(C1-C2)*(D1)]}	39.87%	-
(F) Adjusted Premium (\$) { {(E)/(A)*(B)}	\$146	-
(G) Annual Premium (\$) { {(F)*52}	\$7,569	-
(H) Working Life Remaining (assumes average age of 38)	27 years	-
(I) Discount Rate	7%	-
(J) Wage Growth (real growth)	2.5%	
(K) Working Life Premium (\$) { {PV calculation}	\$117,690	-
(L) After-Tax {(K)*0.62} Lifetime Premium (\$)	\$72,968	-

The income premium for further training, as reported in a Birch et al (2002) is around 22 per cent, all other things being equal. Hence, the wage premium obtained above needs to be adjusted to account for the higher incidence of post-program vocational education and training being undertaken by CRS clients. Table 7 reports that once this is accounted for, the adjusted wage premium declines to around 39.87 per cent or around \$146 a week.

On the basis of this calculated weekly premium, the average annual premium is equal to \$7,569. Assuming a remaining working life of 27 years and a discount rate of 7 per cent, the working life premium is equal to \$117,690, or \$72,968 per client (including those without employment outcomes) in after-tax terms.

Public Benefit: Increased Tax Take and Reductions in Government Programs

The Public Benefit of CRS Australia's rehabilitation programs are equal to the taxes on increases in client incomes as well as the savings to the Federal Government of reductions in the level of benefits paid to clients.

Taxation collected on the enhanced earnings of CRS Australia clients is equal to the tax rate of 38 per cent (this assumes a *marginal* income tax rate of 30 per cent plus GST and other taxes equal to 8 per cent of *after-tax* income) applied to the estimate of the lifetime income premium of \$117,690 per client. This is equivalent to \$44,722 per client.

The Public Benefit from lower participation of CRS Australia clients in government income support programs has to be estimated using an assumption for CRS Australia clients, as actual figures on reductions in the receipt of benefits by CRS Australia clients at the time of their survey are not available. The survey of non-participants revealed that 24.26 per cent of respondents were receiving the Newstart allowance while 35.89 per cent of respondents were receiving the Disability Support Pension (DSP). By means of a weight, the ratio of *sample respondents reporting non-employment outcomes at the time of each survey* for CRS Australia clients to non-participants is used. This is equal to 0.68.^v On this basis we estimate that 16.31 per cent (24.26 per cent * 0.68) of CRS Australia clients were on Newstart Allowance and around 24.13 per cent (35.89 per cent * 0.68) were on the DSP.

The level of benefits for the both income support payments constitute the average rate as calculated using averages in assistance for singles/couples plus other benefits such as special pharmaceutical and rental assistance. Department of Family and Community Services (FaCS) estimates these annual averages to be \$8,928 for Newstart Allowance and \$10,460 for the DSP.

With regards to the DSP, we assume that on average around 57 per cent of clients remain on the pension until retirement at 65, in accordance with FaCS estimates. The average length of time for people with disabilities to receive Newstart Allowance is around 18 months. However, there is evidence to suggest that many people with disabilities eventually shift to the DSP after this period. We assume that 35 per cent of Newstart Allowance recipients ultimately end up on the DSP (regardless of whether they are CRS Australia clients or not) and that in doing so conform to the average assumptions regarding stay on this scheme. Evidence on movements from Newstart Allowance to the DSP indicates that around 3.8 per cent (24,545) of the 645,933 recipients of a Newstart

Allowance benefit over the 2002-03 year to June moved to the DSP. However, this seemingly small percentage is largely drawn from a subset of older people (mostly older males) who would satisfy the stringent requirements for receiving the latter benefit, which include independent assessments on their disability and work readiness.

Of course, the movement toward DSP would occur over many years given the nature of the disabilities of CRS clients and non-participants:

- Assessed disabilities;
- Their average age (38 years);
- Low reported success rate of finding jobs amongst those citing ‘non-employment’ outcomes (15 per cent among CRS Australia clients and 10 per cent among non-participants) or reasons for non-participation (non-participants).

On the basis of the above assumptions, and using a discount rate of 7 per cent and an assumed growth rate of 2.5 per cent per annum (equal to the assumed growth in real wages), we obtain a present value of the reduction in benefit per a CRS Australia client of \$1,269 for Newstart Allowance and \$14,429 for the DSP. It is important to bear in mind that these are in *per CRS Australia client* terms, rather than simple benefit recipient terms. In sum, every CRS Australia client saves the Federal Government \$15,699 in terms of reduced claims.

The Total Public Benefit per a CRS Australia client is equal to the expected present value of the increase in taxation of \$44,722 and the reduction in payments by the Commonwealth of \$15,699. This is equal to \$60,421.

Table 8 Reduction in Federal Government Benefit

	CRS Australia (1)	Non-participants (2)
(A) Newstart (% of sample in receipt of)	16.49% ¹	24.26%
(B) DSP (% of sample in receipt of)	24.40% ¹	35.89%
(C) Newstart (\$ per annum)		\$8,928
(D) DSP (\$ per annum)		\$10,460
(E) Newstart (PV\$ over 24 months) 7% discount rate		\$16,337
(F) DSP (PV\$ of all recipients including the 35% of Newstart recipients who enter the DSP, at a 57% chance of remaining on this till 65 at a 2.5% real growth rate,) 7% discount rate		\$125,542
(G) Per Capita Newstart (\$) (A*E)	\$2,694	\$3,963
(H) Per Capita DSP (B*F)	\$30,629	\$45,058
(I) Saving in Newstart (G(2) – G(1)) (Per Client)		\$1,269 ²
(J) Saving in DSP (H(2) – H(1)) (Per Client)		\$14,429
(K) Total Savings to Government Income Support Programs (PV\$ per CRS client)		\$15,699

Note:

1. Information on the receipt of these pensions by CRS Australia clients was not available, so the ratio of *Non-Employment* outcomes (as a per cent of the entire sample) by non-participants to CRS clients was used. This is equal to 0.68.

2. Newstart savings refer to the first two years on which recipients are on this benefit, with future earnings from any subsequent movement to the DSP being calculated on a per client basis in (J).

Social Benefit: Private and Public Benefits

Table 9 reports the Net Private, Public and Social Benefit of participation in a rehabilitation program with CRS Australia, on a per client basis.

Table 9 CRS Australia: Benefits and Costs of Program Delivery, Per Client

	Program Costs	Total Costs
Private Benefit		
Total Private Benefit	\$72,968	\$72,968
CRS Australia Cost	\$3,256	\$4,398
<i>Net Private Benefit</i>	<i>\$69,712</i>	<i>\$68,570</i>
<i>Ratio of Private Benefit to Cost</i>	<i>22.41</i>	<i>16.59</i>
Public Benefit		
Total Public Benefit	\$60,421	\$60,421
Cost	\$3,256	\$4,398
<i>Net Public Benefit</i>	<i>\$57,165</i>	<i>\$56,023</i>
<i>Ratio of Public Benefit to Cost</i>	<i>18.56</i>	<i>13.74</i>
Social Benefit		
Total Social Benefit	\$133,389	\$133,389
Cost	\$3,256	\$4,398
<i>Net Social Benefit</i>	<i>\$130,133</i>	<i>\$128,991</i>
<i>Ratio of Social Benefit to Cost</i>	<i>40.97</i>	<i>30.33</i>

The Total Social Benefit (per client) associated with participation in a CRS Australia program is equal to \$133,389. Since average cost per CRS Australia client is equal to \$4,398, where this is Total Cost, which includes pre-program (i.e. assessment and referral) costs and external costs as well as program costs, this implies a Net Social Benefit of \$128,991 and a benefit to cost ratio of 30.33.

5. Other Social Benefits

Assessing Non-Quantifiable Benefits

Quite aside from the measurable benefits associated with rehabilitation and employment outcomes, CRS Australia clients also benefit from a range of other non-quantifiable social benefits compared to non-participants. These include a variety of generic work skill benefits, some of which are rewarded by higher work opportunities and incomes, as well as the enhancement of self-esteem and lifetime opportunities and increasing independence.

To supplement the findings from the quantitative analysis, a series of focus group meetings (FGMs) were undertaken with a total of 38 CRS Australia clients in six locations around Australia; Melbourne, Sydney, Coffs Harbour, Brisbane, Adelaide and Perth.^{vi} Discussions were also held with CRS Australia staff in each of these locations.^{vii} We would like to take the opportunity to thank FGM participants and CRS Australia staff with whom we had discussions for giving so generously of their time in assisting us in collection of data for this report.

This Section reports the findings from an analysis of responses to survey questions on non-quantifiable benefits, where this was asked in the surveys of both CRS Australia clients and non-participants. It also refers to the findings of research from the FGMs involving CRS Australia clients.

Generic Work Skills Benefits

CRS Australia provides a wide variety of services as part of its rehabilitation. These include training initiatives which enable clients to acquire and develop generic work skills. Surveys of both CRS Australia clients and non-participants asked respondents to rate the extent to which the activities they had engaged in (i.e. involvement with CRS Australia or alternatives) had enhanced two important generic work skills for people undertaking workplace rehabilitation programs. These are the capacity to self-identify skills and abilities and to reassess career goals in view of their current circumstances.

Table 10 CRS Australia Client and Non-Participant Responses to Survey Questions on Generic Work Skills Benefits (Per Cent Agreement)

<i>Statement</i>	<i>CRS Australia Clients</i>	<i>Non-Participants</i>
Your activities helped you to identify your skills and abilities.	69.80	53.96

Your activities helped you to reassess your career goals.

71.10

50.99

As Table 10 above shows, CRS Australia clients were particularly satisfied that CRS Australia benefited career development with around 69.8 per cent reporting that participation in a CRS Australia rehabilitation program enabled them to identify their skills and abilities compared to only 53.96 per cent of non-participants who cited the activity they participated in (be it employment, another rehabilitation program or training) as being important in this area. Similarly, while around 71 per cent of CRS Australia clients credited their rehabilitation as being important in allowing them to reassess their career goals, only 51 per cent of non-participants thought this was true of their experiences following engagement in an activity other than a CRS Australia rehabilitation program.

The findings from the FGM research confirm the importance of CRS Australia's vocational rehabilitation approach to enable clients to identify personal strengths and barriers to employment and develop strategies and skills, along with job search skills. Several clients indicated that direct counselling by CRS Australia was responsible for assisting them in managing career changes.

Self Esteem and Independence Benefits

In response to questions on self-esteem and independence issues, CRS Australia clients reported substantially higher rates of agreement than non-participants, on statements which partially attributed their satisfaction with these issues to participation in CRS Australia programs. Only two questions – participation in leisure and recreational activities and involvement in family activities, saw a minority of clients agree that participation in CRS Australia enhanced these aspects of their lives. In these cases, relatively large numbers of clients saw participation in a CRS Australia program as having only a neutral impact on such activities.

Clients viewed involvement with CRS Australia as enhancing their self-esteem, with over 70 per cent agreeing that this factor as being important in making them 'feel better about yourself in general' (74.5 per cent versus 59.16 per cent for non-participants) and 'generally helped you to feel more self confident and believe in yourself' (72.7 per cent versus 58.9 per cent among non-participants).

Table 11 CRS Australia Client and Non-Participant Responses to Survey Questions on Self Esteem and Independence Benefits (Per Cent Agreement)

<i>Statement</i>	<i>CRS Australia Clients</i>	<i>Non-Participants</i>
As a result of your activities you became more involved in leisure and recreational activities.	46.90	34.16
Your activities made you feel that you don't need to rely on other people as much.	62.40	48.27
Your activities made you feel better about yourself in general.	74.50	59.16
Your activities made you feel more inclined to get out and enjoy life.	62.70	52.48
As a result of your activities you have become involved with family activities.	46.80	40.10
As a result of your activities you are better able to care for others.	57.60	41.09
As a result of your activities you are better able to afford what you need.	52.00	32.92
Your activities taught you how to manage your situation.	65.20	54.46
Your activities have generally helped you to feel more self confident and believe in yourself.	72.70	58.91

Health Benefits

Around 50.8 per cent of CRS Australia clients reported that their use of health services decreased as a result of participation in a rehabilitation activity. By contrast, only around 33.4 per cent of non-participants reported that their activities resulted in a reduction in the use of health services over the period under examination.

Table 12 CRS Australia Client and Non-Participant Responses to Survey Questions on Health Benefits (Per Cent Agreement)

<i>Statement</i>	<i>CRS Australia Clients</i>	<i>Non-Participants</i>
As a result of your activities your use of health services has decreased.	50.80	33.42

In contrast to responses on self-esteem and independence, this finding from the survey may appear to be relatively circumspect. However, the FGM research indicates perceived health benefits tend to be linked to CRS Australia's assistance in providing clients with

appropriate health service providers, as well as improvements in health related to raised self-esteem and improved employment outcomes.

Community Integration Benefits

CRS Australia clients reported that their rehabilitation program assisted them in being re-integrated into the workforce. Recognition of their special abilities was enhanced, with 66.9 per cent of clients acknowledging the importance of CRS Australia in this regard, while around 54.7 per cent of non-participants agreed that their alternative activities contributed to peer recognition.

Table 13 CRS Australia Client and Non-Participant Responses to Survey Questions on Community Integration Benefits (Per Cent Agreement)

<i>Statement</i>	<i>CRS Australia Clients</i>	<i>Non-Participants</i>
Your activities made sure other people were aware of your skills and abilities.	66.90	54.70
As a result of your activities the people around you are more available to participate in the workforce.	58.00	26.73

Importantly, around 58 per cent of CRS Australia clients viewed their activities as increasing the workforce participation levels of people around them, be they carers or colleagues. This was more than double that of the non-participant group, where only 26.73 per cent agreed that this was the case.

The Extent to Which CRS Australia Has Assisted Clients in Their Achievements

Overall, CRS Australia clients had significantly higher rates of positive responses with regards to the impact of their rehabilitation programs on workplace performance and community participation. Importantly, this success translated into increased perceptions of higher levels of self-esteem and independence.

6. Conclusions

Table 14 below summarises the findings from this study. The Total Social Benefit (per client) associated with participation in a CRS Australia program is assessed as equal to \$133,389. Since average cost per CRS Australia client is equal to \$4,398, where this is Total Cost, which includes pre-program (i.e. assessment and referral) costs and external costs as well as program costs, this implies a Net Social Benefit of \$128,991 and a benefit to cost ratio of 30.33.

Table 14 CRS Australia: Benefits and Costs of Program Delivery, Per Client

	Program Costs	Total Costs
Private Benefit		
Total Private Benefit	\$72,968	\$72,968
CRS Australia Cost	\$3,256	\$4,398
<i>Net Private Benefit</i>	<i>\$69,712</i>	<i>\$68,570</i>
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Cost	\$3,256	\$4,398
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Social Benefit		
Total Social Benefit	\$133,389	\$133,389
Cost	\$3,256	\$4,398
<i>Net Social Benefit</i>	<i>\$130,133</i>	<i>\$128,991</i>
<i>Ratio of Social Benefit to Cost</i>	<i>40.97</i>	<i>30.33</i>

In addition to these benefits, there appear to be substantial benefits from participating in CRS Australia vocational rehabilitation programs. Client-reported positive social benefits included better generic work and career management skills, improved self esteem and perceived health benefits, better workplace performance and community integration.

7. References

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Endnotes

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ⁱⁱⁱ Given the nature of CRS Australia's work, actual program hours (and costs) tend to be under-estimated. However, in view of information constraints on these data, using reported hours is likely to be more accurate than making an arbitrary correction for this occurrence.

^{iv} It should also be noted that discrepancies could be attributable to slight variations in reporting standards between individual divisions and locations within the CRS Australia system.

^v At the time of the surveys, 39.78 per cent of CRS Australia clients and 11.41 per cent of non-participants were in paid employment. On this basis, around 60.22 per cent of CRS Australia clients and 88.59 per cent of non-participants were on some form of alternative income support. The ratio of these figures is 0.68.

^{vi} Although sampling of regional areas was limited (to Coffs Harbour NSW), it does not appear that CRS Australia faces difficulties in smaller towns additional to those which one might logically associate with the smaller size of a regional job market (such as fewer and less diverse employment opportunities and greater overall unemployment). Whilst CRS Australia's task is more difficult in regional areas, it does not appear to be markedly different in nature.

^{vii} The decision to hold discussions with CRS Australia staff was made because, whilst clients have experience with only their own CRS Australia program(s), staff have experience with large numbers of clients, and hence are a position to supplement the information from FGM participants with their own observations over time.