

School Enrolment and Attendance Measure Randomized Controlled Trial: Full Report

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Abstract

This research project implemented a randomized controlled trial of the SEAM program in Terms 3 and 4 of the 2016 school year. The purpose of the study was to determine the effects of the SEAM program. The study enrolled 448 treatment group students who were referred to SATOs for potential SEAM intervention, and 448 matched control group students who were not referred to SATOs. Approximately one-third of treatment group students received a compulsory conference notice, approximately one-third of treatment students' families signed an attendance plan, about 20% had a compulsory conference take place, and payment was suspended for approximately 5% of treatment students. No significant differences following any of these interventions were observed between treatment and control students.

1 Introduction

History of SEAM

The Improving School Enrolment and Attendance through Welfare Reform Measure (SEAM) operated in the Northern Territory between March 2013 and December 2017. The program had its origins in a 2009 trial program which linked certain types of welfare payments to children's school attendance in fourteen schools in six NT communities. This trial resulted in a Federal Budget allocation of \$107.5 million over ten years under the Stronger Futures in the Northern Territory for a revised and expanded version of the program, which was implemented in 52 schools in 23 NT communities (SEAM communities) between March 2013 and January 2015. Following a decision by the Australian Government, SEAM ceased effective 31 December 2017. SEAM was designed as a complement rather than a substitute to ongoing NT Government efforts to increase engagement between families and schools. The intent of the measure was to help integrate the work of Senior Attendance and Truancy Officers (SATO), Department of Human Services (DHS) social workers, school staff, students, and student caregivers in receipt of certain Centrelink payments to improve school enrolment and attendance.

How SEAM worked

The SEAM process functioned as follows: when a SEAM school identified a child as having poor school attendance (defined as five unauthorized absences in five consecutive

weeks for primary school students, and ten unauthorized absences in ten consecutive weeks for secondary school students), they informed the NT Department of Education (NT DoE) Enrolment and Attendance Team. NT DoE then cross-checked DHS records to identify whether the student’s caregiver was receiving certain income support payments via Centrelink, which would put them “in-scope” for SEAM intervention. If the student’s caregiver was in fact in-scope, they were added to a list of families whom SATOs intended to contact with a Compulsory Conference Notice. This notice informed the family that they needed to attend a conference to develop an Attendance Plan for the student.¹ If the student conformed to the Attendance Plan and improved their attendance rate, no further action was taken. If the family did not attend the Compulsory Conference or did not comply with their agreed Attendance Plan they would be subject to a Compliance Notice from NT DoE, and could have their income support payments suspended. If the student did not comply with attendance requirements within 13 weeks, those payments were eligible for cancellation.

SEAM randomized controlled trial

This research project implemented a randomized controlled trial (RCT) of the SEAM program by leveraging the program’s under-capacity to serve every eligible student. The SEAM RCT began at the beginning of Term 3 2016 and ended at the end of Term 4 2016, and took place in seven Northern Territory schools: Shepherdson College (Galiwinku), Milingimbi, Sadadeen (Alice Springs), Clyde Fenton (Katherine), Ngukurr, Gunbalanya, and Maningrida. The study enrolled 448 treatment and 448 matched control students. Students who were equally eligible for the SEAM intervention were randomly assigned to a treatment group that was referred to the SATOs for intervention, or a control group that was not contacted by the SATOs. Eligibility was determined according to existing SEAM program criteria, which were not changed for the purposes of the study.

It is important to remember that this research follows an *encouragement design*, meaning that the treatment was structured as an encouragement to participate in the

¹ Because there were many more SEAM-eligible students than SATOs could contact, compulsory conference notices were not delivered to all SEAM-eligible students.

intervention (in this case that meant a referral to a SATO for possible SEAM intervention) rather than the SEAM intervention itself. So while half of the participants were in the treatment group, this only meant that they were referred to SATOs for possible SEAM intervention. Through this study, 31.8% of treatment students received a compulsory conference notice, 21.6% attended a compulsory conference, 31.6% signed an attendance plan, and 5.12% eventually had their payments suspended.

No significant differences following any of these interventions were observed between treatment and control students. Furthermore, except for the suspension of payments, the magnitude of differences between treatment and control students is small.

2 Literature Review

The SEAM program was a type of welfare sanction, sometimes referred to as a conditional cash penalty (CCP) program, because participants could eventually be subjected to a loss of welfare payments for failure to comply with program conditions. There is no consensus among academic researchers as to whether welfare sanctions or CCP programs work (in the sense that they incentivize the desired behavior).

The published study closest to this one is the Wisconsin Learnfare study. This stratified randomized trial evaluated welfare-recipient families of chronically absent 13 to 14 year-old students in ten counties in Wisconsin, U.S., between 1993 and 1995. 13 and 14-year-olds whose families were receiving welfare payments and who had been identified as poor attenders were selected at random to be subject to the CCP conditions. The conditions required students to be enrolled in school and to have no more than two unexcused full-day absences from school per month. While initial analysis indicated that results were short-term and very small (Frye and Caspar 1997), a recent re-analysis indicated substantial improvements in attendance (4.5 percentage points) and enrolment (3.5 percentage points) for treatment students (Dee 2011) outside Milwaukee County. (The treatment was not implemented with sufficient fidelity in Milwaukee County, the largest county in the study, which accounted for nearly two-thirds of the 3,205 total enrolled students, to evaluate its effects there.) It should be noted that the Learnfare study was substantially larger than the SEAM RCT, and the SEAM RCT does not have sufficient sample size to detect an effect as small the one found

by Dee (2011).

Two other studies related to the SEAM RCT are both of welfare sanctions for failure to comply with the work requirements as part of the United States' Temporary Assistance for Needy Families (TANF) program, which provides cash welfare to low-income parents.

First, Wu et al (2006) uses data from Wisconsin's welfare assistance database from 1997 to 2003 to show that while sanctions were common, most sanction spells were typically short and benefits were restored to nearly all recipients who were sanctioned. They also found that families most likely to be sanctioned also had characteristics that made them unlikely to succeed in the labor market.

Second, Slack et al (2007) uses data from the 1998 wave of the Illinois Family Study to show that sanctioned families typically do not increase engagement with formal work, but instead increase engagement with informal work.

Because all these studies are of mostly urban populations in the United States, they may not generalize to the present case. Still, there is no researcher agreement that welfare sanctions are an effective policy in general.

3 Summary statistics

Table 1: Study enrolment by school

School code	School	Number of study-enrolled pairs
136	Clyde Fenton	20
162	Sadadeen	25
178	Gunbalanya	35
181	Maningrida	119
182	Milingimbi	68
183	Ngukurr	60
186	Shepherdson College	121

Table 1 shows that over half of all the study-enrolled pairs came from two schools: Maningrida and Shepherdson College (Galiwinku). Thus, any overall study results will substantially reflect the outcomes at these two schools.

Table 2: Study enrolment by school year

School year	Number of study-enrolled pairs
1	37
2	49
3	45
4	50
5	55
6	56
7	34
8	42
9	38
10	33
11	6
12	3

Table 2 shows that the number of study pairs in primary school is about equal to the number of study pairs in secondary school, with significant drop-off for students in years 11 and 12, who are barely represented among the study-enrolled pairs. This reflects the fact that only 12 Year 11 and 6 Year 12 students were SEAM-eligible; this could be because these students were not enrolled in school at all and therefore were not failing to attend, or it could reflect greater rates of attendance among these students.

Table 3: Gender makeup of study-enrolled pairs

Gender makeup	Percentage
Both males	49%
Both females	48%
Mixed male-female	3%

Table 3 shows that nearly all the study-enrolled pairs were made up of two students of the same gender.

Table 4 shows that nearly all the study-enrolled pairs were enrolled during the first part of study enrolment, in August 2016.

Table 4: Study enrolment by month

Month	Study-enrolled pairs
August	411
September	17
October	11
November	4
December	6

4 Study results

Table 5: Summary of SEAM implementation

School code	School name	CC notice given (rate)	CC notice given (total)	CC took place (rate)	CC took place (total)	AP signed	AP signed (total)	Payment suspended (rate)	Payment suspended
136	Clyde Fenton	0.15	3	0.15	3	0.15	3	0.05	1
162	Sadadeen	0.28	7	0.28	7	0.28	7	0.04	1
178	Gunbalanya	0.20	7	0.20	7	0.23	8	0.11	4
181	Maningrida	0.29	35	0.01	1	0.28	33	0.04	5
182	Milingimbi	0.53	36	0.40	27	0.53	36	0.06	4
183	Ngukurr	0.43	26	0.43	26	0.43	26	0.07	4
186	Shepherdson College	0.24	29	0.21	26	0.24	29	0.03	4

Notes: A CC is a compulsory conference, and an AP is an attendance plan. It is unusual that for some schools, the rate of signed APs is higher than the rate of CC attendance. It is possible that this reflects new APs being negotiated for some students after the delivery of a compliance notice.

One of the goals of the SEAM RCT was to evaluate the implementation of the SEAM program. Table 5 illustrates that the SEAM program was being implemented roughly as expected, although there is significant variation by school. For example, at Clyde Fenton, 15% of referred students received a compulsory conference notice, compared to 24% of referred students at Shepherdson College and 53% of referred students at Milingimbi.

Another surprising result is that at some schools – namely, Maningrida and Milingimbi – the rate at which attendance plans were signed by the caretakers of referred students was significantly higher than the rate at which these caretakers attended compulsory conferences. It is possible that this result reflects disparities in data collection rather than disparities in actual implementation, and further research is needed in order to discover which is the case. It is also possible that this reflects new Attendance Plans being negotiated for some students, resulting in the Conference Notice no longer being valid.

Other than the higher rate of signed attendance plans than compulsory

conferences attended at some schools, the rate at which compulsory conference notices are given exceeds the rate at which compulsory conferences took place. This in turn exceeds the rate at which attendance plans are signed, which in turn exceeds the rate at which payments are suspended, which accords with program expectations.

4.1 Results by intervention and school

In this section, we present attendance rates before and after each step of the SEAM intervention at each study school. The final column of each table shows the difference -in-differences (that is, the difference in attendance before and after the intervention for control students minus the difference in attendance before and after the intervention for treatment students). Because only the treatment students underwent a SEAM intervention, for the control students, *before* indicates their attendance before the intervention date for that control student’s matched treatment “twin”, and *after* indicates their attendance after the intervention date for that control student’s matched treatment “twin.”

Table 6: Attendance rate before and after referral to SATOs, treatment and control, by school

School code	School name	Before referral (treatment)	After referral (treatment)	Before referral (control)	After referral (control)	Difference in differences
136	Clyde Fenton	40.46	40.93	42.68	36.55	6.60
162	Sadadeen	38.54	28.58	40.15	26.40	3.80
178	Gunbalanya	59.35	53.07	54.52	50.64	-2.39
181	Maningrida	56.27	47.26	59.64	48.92	1.70
182	Milingimbi	59.31	43.72	57.36	42.67	-0.90
183	Ngukurr	44.57	37.13	46.39	38.71	0.24
186	Shepherdson College	69.82	47.25	65.46	47.06	-4.17
	Overall averages	57.45	44.50	56.89	44.43	-0.49

Table 7: Attendance rate before and after CC notice given, treatment and control, by school

School code	School name	Before CC notice given (treatment)	After CC notice given (treatment)	Before CC notice given (control)	After CC notice given (control)	Difference in differences
136	Clyde Fenton	61.52	41.23	46.41	39.13	-13.01
162	Sadadeen	33.30	32.97	27.98	30.45	-2.79
178	Gunbalanya	54.32	54.77	45.88	52.05	-5.72
181	Maningrida	48.43	50.62	59.63	52.17	9.64
182	Milingimbi	64.91	48.11	63.71	47.29	-0.38
183	Ngukurr	50.36	39.24	45.62	40.90	-6.39
186	Shepherdson College	69.40	55.93	71.75	54.23	4.06
	Overall averages	56.80	49.08	57.87	48.68	-1.47

Note: A CC is a compulsory conference.

Table 8: Attendance rate before and after CC took place, treatment and control, by school

School code	School name	Before CC took place (treatment)	After CC took place (treatment)	Before CC took place (control)	After CC notice given (control)	Difference in differences
136	Clyde Fenton	61.52	41.23	46.41	39.13	-13.01
162	Sadadeen	35.83	33.25	29.31	30.74	-4.00
178	Gunbalanya	31.42	55.17	55.09	51.99	26.85
181	Maningrida	NA	50.97	NA	53.02	NA
182	Milingimbi	59.79	48.77	65.85	47.58	7.25
183	Ngukurr	50.46	39.22	45.70	40.90	-6.43
186	Shepherdson College	69.26	55.97	71.76	54.24	4.22
	Overall averages	57.46	49.33	58.72	48.97	-1.62

Note: NA indicates missing data for that subset of students. A CC is a compulsory conference.

Table 9: Attendance rate before and after AP signed, treatment and control, by school

School code	School name	Before AP signed (treatment)	After AP signed (treatment)	Before AP signed (control)	After AP signed (control)	Difference in differences
136	Clyde Fenton	NA	41.04	NA	38.97	NA
162	Sadadeen	35.83	33.25	29.31	30.74	-4.00
178	Gunbalanya	30.48	55.19	54.45	52.01	27.14
181	Maningrida	48.54	50.61	59.70	52.17	9.60
182	Milingimbi	61.84	48.64	66.59	47.26	6.13
183	Ngukurr	NA	40.14	NA	41.75	NA
186	Shepherdson College	69.01	56.03	71.14	54.25	3.91
	Overall averages	56.61	49.35	62.73	48.80	-6.67

Note: NA indicates missing data for that subset of students. An AP is an attendance plan.

Table 10: Attendance rate before and after payment suspended, treatment and control, by school

School code	School name	Before suspended (treatment)	After suspended (treatment)	Before suspended (control)	After suspended (control)	Difference in differences
136	Clyde Fenton	50.79	41.13	17.46	39.05	-31.25
162	Sadadeen	86.96	33.38	69.57	30.55	-14.56
178	Gunbalanya	NA	55.29	NA	51.95	NA
181	Maningrida	70.03	51.29	69.49	53.36	-2.61
182	Milingimbi	78.03	50.20	67.83	48.84	-8.84
183	Ngukurr	78.87	39.74	46.04	41.88	-34.97
186	Shepherdson College	100.00	56.69	88.89	55.08	-9.50
	Overall averages	78.71	49.93	63.81	49.59	-14.66

Note: NA indicates missing data for that subset of students.

4.2 Summary of SEAM effects

Table 11: Summary of differences between treatment and control students

	After minus before (treatment) (1)	After minus before (control) (2)	Difference (3)	<i>p</i> -value (4)	Number of study pairs (5)
CC notice given	-7.72	-9.18	-1.47	0.82	143
CC took place	-8.13	-9.75	-1.62	0.75	97
AP signed	-7.26	-13.92	-6.67	0.42	142
Payment suspended	-28.88	-14.22	14.66	0.58	23

Note: A CC is a compulsory conference, and an AP is an attendance plan.

Table 11 reflects the study results for all students in all the study schools. The differences in Column (1) are the differences in attendance (calculated as the attendance rate after the intervention date minus the attendance rate before the intervention date) for the treatment students, and the differences in Column (2) is the same figure for the control students (where the intervention date is the intervention date for their matched treatment “twin”). For example, the average difference in pre- and post-compulsory conference notice attendance rate for treatment students in the study was -7.72% (that is, attendance was about 8 percentage points lower after the notice than before, probably due to the general trend of attendance falling throughout Terms 3 and 4 in the Northern Territory). The average difference in pre- and post-compulsory conference notice attendance rate for control students was -9.18% . Column (3) reports the difference between Columns (2) and (1) (the difference between the before-and-after differences for control and treatment students). Column (4) reports the *p*-value of the difference reported in Column (3), which reflects the probability that the observed difference would have been observed if there is no true difference between treatment and control groups. These probabilities are quite high, at 82, 75, 42, and 58% for the four outcomes of interest. In general, a probability that the observed difference would have been observed if there is no true difference between treatment and control groups must be less than 5% in order to conclude that any observed differences are caused by the treatment. Thus, it is not possible to conclude that there are any statistically significant differences between the treatment and control groups.

5 Study mechanisms

Mechanisms are the reasons behind an observed result. While RCTs are designed to assess program effects, the study results suggest a number of possible mechanisms that may be behind the results, as well as some reason to be cautious that this study has assessed the true effect of the SEAM program.

If it is indeed the case that the SEAM program did not have an effect on SEAM-treated student attendance at school, this may be because the SEAM intervention did not provide incentive enough for families to perform the sometimes difficult task of getting their children to school. This weak incentive could have taken two (non-mutually exclusive) forms. First, in our conversations with SATOs, we learned that this may be because families have enough income from other welfare programs or from non-welfare sources (such as mining royalties) so that any payment suspension would not have a large proportional effect on income at hand. Second, as we observe in the data, the probability of welfare sanction was extremely low – well less than 10% for SEAM-treated families, and there were many SEAM-eligible families who are not treated – so families may not have believed that they were likely to have welfare payments suspended, even if they failed to comply with attendance plans (and they would have been correct).

In addition, NT DoE informed us that attendance is typically at its lowest all year during Terms 3 and 4, so it is possible that the timing of the study conflicted with a period in which raising attendance rates was most challenging. We may have observed different results had this study been conducted in Term 1 or Term 2.

6 Conclusion and caveats

This study has found that, although the SEAM intervention was being implemented roughly according to expectations, there were no statistically significant differences in attendance before and after SEAM intervention for students in the seven NT schools included in this study.

Two important caveats bear mention. First, because this study took place only in Term 3 and Term 4 of the school year, when remote school attendance in the NT is typically low (and falling), these results may not be generalizable to Terms 1 or 2. This study does not establish that the SEAM intervention is not effective in Terms 1 or 2, although lack of effectiveness in Terms 3 and 4 certainly provides some evidence that the SEAM intervention was not effective in Terms 1 or 2 either. Second, the fact that only 23 students had their payments suspended means that this sample was not large enough to detect a potential effect of payment suspension. In other words, there might have been an attendance effect of payment suspension, but this study did not include enough payment suspensions to be able to definitively tell.

7 Methodology

This study had two distinct phases: randomization and data analysis. In the randomization phase, we received a (de-identified) list of SEAM-eligible students from NT DoE every week during the study period, which included information on the school, school year, and gender (M/F) of each student. We used a nonbipartite matching algorithm to create pairs of students who were similar on age, gender, and the school they attended. Each pair had one treatment and one control student. We then sent this list back to NT DoE, who carried out the SEAM intervention with the treatment students as SATO capacity allowed (meaning that the SATOs did not have capacity to intervene with all 448 referred students).

In the data analysis phase, we received data from NT DoE on the dates of particular SEAM interventions as well as attendance for all of the students (treatment and control). We calculated average attendance for all the treatment students both before and after each of the SEAM interventions which they received (if any). We calculated these same

attendance rates for each of the matched control students, using the intervention dates for each control student's matched treatment student. We then compared the difference in these attendance rates before and after each SEAM intervention.

8 References

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