



Inquiry into data availability and use

Submission on the Productivity Commission's Issues Paper

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Introduction

The Smith Family welcomes the Productivity Commission's Inquiry into data availability and use, given the importance of data in enabling evidence based policy, and program evaluation and development. In the context of education, a significant proportion of young Australians are not achieving key educational milestones, including in the early years, school and post-school transitions (Lamb et al. 2015).

In Australia, young people from disadvantaged backgrounds have poorer educational outcomes, relative to their more advantaged peers (ACARA 2015; Lamb et al. 2015). Even taking into consideration academic capability students from disadvantaged backgrounds do not make the same academic progress as their advantaged peers, as they move through school. By the time students who have high Year 3 NAPLAN (National Assessment Program – Literacy and Numeracy) scores reach Year 9, those from disadvantaged backgrounds will be one and three quarter years behind their advantaged peers (Goss et al. 2016).

Educational outcomes have implications for the future prospects of individuals in employment, health and welfare outcomes (Victorian Auditor-General 2012). At a national level educational outcomes affect economic growth and social development (OECD 2015).

Developing a detailed understanding of the factors contributing to the differences in educational outcomes and those contributing to stronger educational achievement for disadvantaged children, requires access to good quality, detailed longitudinal data.

The comments in this submission relate particularly to The Smith Family's experience regarding longitudinal data collection, and linking to available public sector data, with respect to education and related outcomes.

The Smith Family

The Smith Family is a national non-government organisation with a mission to support the long-term educational participation of disadvantaged young Australians.

Learning for Life scholarship program

The Smith Family's largest program is its *Learning for Life* scholarship program, which is an early intervention long-term program providing support to disadvantaged young people to participate in education. There are currently around 34,000 students on this program. Students can participate in the *Learning for Life* program from the first year of formal school through to the completion of tertiary studies.

The scholarship has three integrated components:

- A modest biannual payment made to families to help them cover core education related expenses such as books, uniforms and excursions.
- A Program Coordinator (The Smith Family staff member) who works with the family and their school to support the young person's long-term participation in education.
- A range of short programs that help ensure the young person is engaged in education. Students develop the skills, knowledge, attitudes and behaviours needed for long-term educational participation and success.

The Smith Family's data development agenda

The Smith Family is committed to assessing the effectiveness of its programs and to continuous improvement. It has invested in developing the capability to systematically track and evaluate the educational outcomes being achieved by all *Learning for Life* students, through:

- the development of a large-scale longitudinal administrative database
- linking information from the administrative database to internally collected data
- linking The Smith Family datasets to public sector education data.

This investment enables the ongoing assessment and continuous improvement of the effectiveness of the *Learning for Life* program and contributes to national educational policy development.

The Smith Family has a continuous data development agenda that supports an approach to evaluation, which is significantly strengthened by internal data linkage capabilities. These capabilities are underpinned by systems, processes and practices that ensure data is captured and used in accordance with the *Privacy Act 1988* and with principles detailed in the *National Statement on Ethical Conduct in Human Research*.

Privacy

The Smith Family is committed to protecting the privacy and confidentiality of everyone who participates in the organisation's programs and activities. We support and are bound by the Australian Privacy Principles under the *Privacy Act 1988*. When families are recruited to our programs, consent is obtained to collect and use personal information to assess the effectiveness of programs.

Tracking student progress through a unique identifier

The Smith Family has developed a national longitudinal administrative database of all students who participate in the *Learning for Life* program. Each student has a unique identifier which enables their individual progress to be tracked over time. Given the mobility of students the unique identifier is particularly important. Currently, with the exception of Western Australia, state Departments of Education do not have a similar identifier for young people.

Information on demographic characteristics, program participation, and short-term and long-term outcomes are collected on all students and entered into a purpose built database. The database is specifically designed to support operational processes as well as research and evaluation projects.

The Smith Family's longitudinal database is unique. It contains over 80,000 individual students and its design allows for the annual systematic analysis of the progress and outcomes achieved by individual students and different groups of students, such as those from Aboriginal and Torres Strait Islander backgrounds or those whose parents are not in employment. The database enables analysis to be conducted at student, family, school, community, state and national levels. The analysis is driven by the need to demonstrate program effectiveness at supporting the best educational outcomes for students. This evidence based approach is particularly valued by The Smith Family's private, philanthropic, corporate and government funders.

Over the last four years, a particular focus at The Smith Family has been on the extent to which participation in the *Learning for Life* program has contributed to strengthening some of the key educational outcomes identified by the Council of Australian Governments' (COAG) in the *National Education Agreement 2009*:

- school attendance
- school completion
- post-school engagement in employment, education and further training.

These metrics are also relevant for tracking, among *Learning for Life* students, the *Closing the Gap* targets, aimed at reducing the gaps in educational outcomes between Aboriginal and Torres Strait Islander and other Australian students.

The Smith Family's database allows for the ongoing monitoring of the effectiveness of the *Learning for Life* program through the annual tracking and reporting of school attendance and completion rates (see Appendix Tables 1 and 2 for a summary of these outcomes).

As will be described in the data linkage sections below, the database is linked to internal primary data collection that monitors the post-school engagement of former scholarship students on a biennial basis. Publicly available data is also linked to the longitudinal database to significantly augment the organisation's capacity to evaluate the educational outcomes of *Learning for Life* students against relevant external benchmarks.

Data linkage and its benefits to The Smith Family

The Smith Family has developed a range of data linkage processes in which the unique student identifier is used to augment the longitudinal administrative information.

Information from school reports

At the end of each calendar year, families who participate in the *Learning for Life* program provide each scholarship student's end-of-year school report. From this report, information on school attendance and academic achievement is captured and linked with information in the administrative database.

Information relating to participation in short programs

Each year The Smith Family offers a range of short, evidence based programs to *Learning for Life* students and their peers. These programs are aimed at developing the skills, knowledge, attitudes and behaviours needed for long-term educational participation and success. Program participation at the individual level, is currently captured for nine of these short programs. For *Learning for Life* students, their short program participation is linked to their administrative information. This enables analysis of the extent to which multiple interventions contribute to stronger long-term educational outcomes.

Primary data collection through specific research projects

The Smith Family's Research and Advocacy team works collaboratively with a range of university academic partners to increase its understanding of the factors contributing to the educational outcomes of disadvantaged students. Data obtained from students and their carers through surveys, interviews and focus groups are periodically collected and linked to administrative information, to address specific policy or research questions.

Key amongst these primary data collection projects is the biennial survey of former *Learning for Life* students, which provides information on the post-school engagement of young people who have been on the scholarship program (see Appendix Table 3 for a summary of these outcomes).

External publicly available data

The Australian Curriculum, Assessment and Reporting Authority (ACARA) is the national independent statutory authority responsible for national data collection and reporting that supports:

- analysis, evaluation, research and resource allocation
- accountability and reporting on schools and broader national educational achievement.¹

A particularly useful initiative of ACARA has been the development and implementation of nationally defined and agreed definitions and protocols for data collections. This ensures the centralised repository for information on schools is verified, accurate and comparable across jurisdictions.

Through ACARA's data request process, The Smith Family has secured a range of high-value school-level data on those schools in which *Learning for Life* students are enrolled. This information includes the characteristics of the school's student population as well as the school's average attendance rate.

The Smith Family adopts ACARA's unique school identifier to link school-level information to individual administrative information for each *Learning for Life* student. Analysis of this dataset enables comparisons to be made between *Learning for Life* students and their peers in the same schools, and informs policy and practice in two important ways. The comparisons allow for the monitoring of:

1. The extent of disadvantage being experienced by *Learning for Life* participants relative to their peers, based on individual characteristics and circumstances. In monitoring relative disadvantage, The Smith Family develops a stronger understanding of the extent to which *Learning for Life* is reaching the children and young people most in need of the program (see Appendix Table 4 for an example of these comparisons).
2. The individual and average attendance rates of *Learning for Life* students, relative to the school-level average attendance rate. These comparisons allow us to monitor the effectiveness of the *Learning for Life* program in improving attendance rates, relative to other students from the same schools.

Data linkage benefits

The linkage of internal primary data, school report information and external publicly available data with The Smith Family's longitudinal administrative database has a number of benefits additional to those related to the evaluations described above. In augmenting the administrative database through various data linkages, respondents do not need to provide valuable analytic demographic information already contained in the administrative database. This:

¹ ACARA is also responsible for the national curriculum and for the national assessment program, including NAPLAN (National Assessment Program – Literacy and Numeracy).

- minimises the response burden on students and families
- reduces the administrative costs usually associated with collecting extensive demographic and/or retrospective historical information.

It also increases the accuracy of information contained in the final datasets. Respondents are not asked to recall program participation or educational outcome information that is obtained from more objective data linkage sources, such as school reports, program enrolments, and national standardised data collections.

Policy and practice implications

The Smith Family's ongoing data development agenda and its use of publicly available information have been invaluable to internal policy and practice development. The analysis of the longitudinal administrative database, that has been augmented with additional internal and external information, has led to:

- The development of more tailored support for particular groups of students and at particular times in their educational journey. This includes those who are struggling with school attendance, students transitioning to high school or senior secondary school, and students of Aboriginal and Torres Strait Islander backgrounds.
- Changes in the frequency and nature of engagement with *Learning for Life* families, particularly taking account of those students who need additional support.
- Re-defining the roles of *Learning for Life* staff working directly with families, increased role specialisation and reorganising the structure of the workforce in order to provide more targeted and effective support.
- The development of approaches which better support students' career pathways.
- Training for all *Learning for Life* staff and refined induction programs for new staff, on how to work more effectively with highly disadvantaged families.
- Continuous improvements in key educational outcomes achieved by scholarship students over the last four years (as shown in Appendix Tables 1 to 3).

Collectively, a range of these developments and improvements have led to increased effectiveness and efficiencies in the delivery and implementation of the *Learning for Life* program.

The analysis of this data also provides a broader evidence base through which The Smith Family can contribute to national policy and practice debates, by identifying particular population groups at risk of poor educational outcomes, and interventions which are effective in supporting them.

Other public sector data initiatives

Going forward, The Smith Family's evaluation of internal programs will be increasingly reliant on public sector data.

High-value datasets

As mentioned in the previous section, The Smith Family currently collects the school attendance and achievement information from each *Learning for Life* student's end-of-year school report.² With 34,000 students on the program, this process is resource intensive, requiring significant organisational efforts with regard to the administration of the collection process, data entry and quality control checks.

Access to high-value datasets, held by the state education departments, would substantially reduce the resources required to process this information. In collaboration with a number of state education departments, The Smith Family has commenced work that aims to have the provision of annual attendance and achievement information, for each *Learning for Life* student, provided directly by the state. These collaborations will significantly contribute to increased efficiencies in service provision, as data collection and entry resources are diverted to essential program delivery.

Public sector data processing requirements

To capture student-level information directly from states, The Smith Family is ensuring that parental/guardian consent, obtained from *Learning for Life* families, meets the requirements of state Auditor-Generals. Working directly with the state education departments and Auditor-Generals will minimise the departmental processing required, as student data will not have to be de-identified before being provided to The Smith Family.

Effective government initiatives into improving data access and use

In addition to the ACARA and state-based initiatives already discussed, a number of other potential collaborative data sharing initiatives are established and/or underway. These initiatives have the potential to significantly contribute to The Smith Family's capacity for ongoing evaluation of the long-term outcomes achieved by students from disadvantaged backgrounds. Therefore, data sharing initiatives will also contribute to increasing the effectiveness of The Smith Family's programs. These include:

- Western Australia's Department of Education's use of unique student identifiers. This enables the Department to track, over time, the educational pathways and achievements of all public school students. In the future, The Smith Family will be working towards gaining parental/guardian consent that will enable data to be obtained from the Department that relates to the child's education prior to scholarship commencement. For example, currently if a child commences scholarship in Year 4, The Smith Family has no information for this child's first four years in formal schooling. Access to this information will ensure The Smith Family has a full enumeration of each Western Australian scholarship student's educational progression and outcomes.
- The South Australian Early Childhood Health and Development Project has linked 12 government administrative datasets, including health and education data, using Master Linkage Keys provided by South Australia Northern Territory Datalink.³

² The student level data that ACARA receives is de-identified and, therefore, it is not possible to identify *Learning for Life* students within the ACARA datasets.

³ <https://health.adelaide.edu.au/betterstart/research/data-linkage-project-description.pdf>

Initial discussions have commenced regarding the sharing of de-identified data from the Project, for South Australian *Learning for Life* students. The linking of de-identified longitudinal educational pathway information from The Smith Family's database, with early childhood and health information held by the Project will contribute to unique insights. In particular, it will allow for a more robust examination of the long-term relationships between education and health outcomes among disadvantaged students.

- The health sector is at the forefront of data linkage in Australia, predominantly at a state level,⁴ but with some national data collections also available for linkage, including Medicare data and data held by the Australian Institute of Health and Welfare.⁵ The Smith Family anticipates that, in the future, through statistical linkage keys it will be possible to link de-identified *Learning for Life* records to national health datasets, providing a more complete understanding of the relationships between health and educational outcomes.

Conclusions

A solid data development agenda, that incorporates high-value public sector education data, underpins The Smith Family's organisational strategic objective to ensure programs are evidenced based. This has enabled The Smith Family to:

- more effectively support the achievement of stronger educational outcomes among over 34,000 disadvantaged Australian students
- accurately inform internal policy and practice development
- improve efficiencies in the delivery of organisational programs
- demonstrate, to private, philanthropic, corporate and government funders, the effectiveness of the programs they support
- contribute to national educational research and policy development.

Learning from existing government initiatives and building on the progress being made with education and health public sector data, has the potential to significantly enhance the evidence bases of public/non-government community service provision. The Smith Family has been afforded significant benefits through the streamlining of government processes that make public sector data more available and through the internal capacity to link this information with internal data.

Work remains to be done, particularly with regard to encouraging the take-up and use of currently underutilised data collections, and increasing the technological capacity within service provision agencies to collect, link, analyse and interpret data. While relatively small-scale, The Smith Family's experiences are nevertheless, indicative of the potential for significant and rapid advancements in the development of evidence based service provision and program evaluation, nationally.

⁴ <http://www.phm.org.au/>

⁵ <http://www.aihw.gov.au/data-linking/>

References

ACARA (Australian Curriculum Assessment and Reporting) (2015) *National Assessment Program: Report 2015*, ACARA: Sydney.

Goss P, Sonnemann J, Chisholm C & Nelson L (2016) *Widening gaps: What NAPLAN tells us about student progress*, Grattan Institute.

Lamb S, Jackson J, Walstab A, & Huo S (2015) *Educational opportunity in Australia 2015: Who succeeds and who misses out*, Centre for International Research on Education Systems, Victoria University, for the Mitchell Institute: Melbourne.

OECD (Organisation for Economic Cooperation and Development) (2015) *Universal basic skills: What countries stand to gain*, OECD publishing.

Victorian Auditor-General (2012) *Student Completion Rates*, Victorian Auditor-General: Melbourne.

Educational outcomes and characteristics of *Learning for Life* students

Tables 1 to 3 highlight three key outcomes measures for the *Learning for Life* program. Year-on-year improvements in all three outcomes are the result of using data analysis to inform program development and implementation.

Table 1: Improvements in average school attendance rates for *Learning for Life* students, 2012 to 2014

Students	2012 (%)	2013 (%)	2014 (%)
Primary school	90.4	91.2	91.3
Secondary school	84.6	86.0	86.9
Aboriginal and Torres Strait Islander students	85.2	86.9	87.3

Note: In line with national data collection practices, these data are for students in Years 1 to 10.

Table 2: Year 12 completion rates of Year 10 *Learning for Life* students, 2010-2012 to 2013-15

Period	Proportion of Year 10 students completing Year 12 or equivalent (%)	Number of students
2010-2012	59.6	1,455
2011-2013	62.5	1,662
2012-2014	63.2	1,645
2013-2015	68.2	1,778

Table 3: Engagement in employment, education and training of former *Learning for Life* students, 2013 and 2015

<i>Learning for Life</i> students	Overall Engagement Rate (%)	Fully engaged* in employment, education or training (%)	Partly engaged* in employment, education or training (%)
2013			
All students	79.6	61.7	17.9
Aboriginal and Torres Strait Islander students	70.0	56.0	14.0
2015			
All students	84.2	65.8	18.4
Aboriginal and Torres Strait Islander students	74.2	54.6	19.6

*Fully engaged means participation in employment, education or training for 35 hours a week or more. Partly engaged means participation in these activities for less than 35 hours a week.

Table 4 highlights the relative disadvantage of *Learning for Life* students to their school peers, even in disadvantaged schools. Results are similar for all state jurisdictions.

Table 4: The characteristics of *Learning for Life* students in NSW compared with their peers in disadvantaged schools, 2014

Characteristic	Total school population* (%)	<i>Learning for Life</i> students in the same schools* (%)
Aboriginal and Torres Strait Islander background	14	25
Parent/carer Year 12 completion or post-school education**	80	39
Parent/carer university education***	13	3
Parent/carer employed	79	18

Notes: *Sample of 50 low socio-economic schools with 30 or more *Learning for Life* students. **Post-school education includes: Certificates I-IV; Diploma, Advanced Diploma, Associate Degree; Bachelor Degree; Graduate Diploma, Graduate Certificate; Postgraduate Degree. ***Bachelor's Degree or higher. The NSW Department of Education and Communities provided data to enable this analysis. Similar differences to those above, between *Learning for Life* students and their peers, were obtained across all jurisdictions. These comparisons between *Learning for Life* students and their peers confirmed for The Smith Family that recruitment to the *Learning for Life* program is effective in targeting those students who are in the greatest need of support.