

# UTILISING LINKED GOVERNMENT DATA TO MONITOR AND SUPPORT PROGRESS TOWARDS THE UN SUSTAINABLE DEVELOPMENT GOALS

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## Abstract

In 2015 the United Nations General Assembly set an ambitious vision of 17 Sustainable Development Goals to tackle human rights, sustainable development and climate change. Data is essential for monitoring the progress of member states towards these goals. The utilisation of linked government data not only has the ability to monitor the SDGs but also to support their progress. This article outlines how linked government data has been utilised and can facilitate implementation of data informed strategies and interventions, and shared responsibility for implementation of solutions to enable more effective progress towards the SDGs.

## Sustainable development goals

In September 2015, a historic decision was reached by the 193 member states of the United Nations (UN) General Assembly that between 2015 and 2030, all nations would work towards an ambitious and transformational vision for our world via a set of commitments known as the UN Sustainable Development Goals (UN, 2015).

The 17 Sustainable Development Goals adopted under *Transforming our world: the 2030 Agenda for Sustainable Development* tackled human rights, sustainable development and climate change. They included targets designed to: end poverty and hunger; eliminate fear and violence; ensure good health and well-being for all; ensure equitable and universal access to quality education, health care and social protection; and achieve universal respect for human rights, dignity, equality and non-discrimination, as well as for race, ethnicity and cultural diversity.

Importantly, the vision singled out particular groups, envisaging a world that is just, equitable, tolerant, open and socially inclusive; in which the needs of the most vulnerable are met; where every child grows up free from violence and exploi-

tation; and where every woman and girl enjoys full gender equality without barriers to their empowerment (UN, 2015).

The then UN Under-Secretary General, Dr Babatunde Osotimehin, described in 2016 how the opportunities, support and barriers we provide to a girl at the age of 10 in 2015 will impact on her potential and the life she will lead at the age of 25 in 2030 (State of the World Population 2016, UNFPA, 2016). He declared: "A 10-year-old girl's life trajectory will be the true test of whether the 2030 agenda is a success – or failure."

Given that more than half of the world's 10-year-olds are in the Asia-Pacific region, as a region we have a great responsibility, as well as a great opportunity, to positively support and influence the life trajectories of our young people (UNFPA, 2016).

## Monitoring progress of sustainable development goals

Data is essential in determining whether we are making positive progress towards the Sustainable Development Goals (SDGs). Although there are only 17 defined SDGs, there are in fact 169 targets which require monitoring. This represents an enormous challenge to member

states to ensure the data we collect on these targets and indicators are valid and accurate. Many countries throughout the world, including the Asia-Pacific region, collect government administrative data on many of these indicators. This includes birth registrations, hospital morbidity, death registrations, mental health, education, child protection, justice and police data. The data collected is an important resource for monitoring many of the targets that have been set for the SDGs, for example: reducing the rates of maternal mortality, neonatal mortality, and under 5-mortality; increasing the completion rates of primary and secondary schooling; and reducing all forms of violence against children.

While government administrative data has the potential to provide information relevant to numerous SDG indicators, this resource can be used more effectively when we are able to link the data across government agencies. The Developmental Pathways Project in Western Australia is an example of how linked government administrative data can be utilised for more effective monitoring – particularly of vulnerable groups – but also to enable more effective approaches to progressing SDGs.

## Advantages of linking government data

Many of the SDGs are challenging issues that cannot be addressed by one solution alone. Examples of these are: poverty, educational difficulties, mental health issues, and violence against women and children. These issues are multi-causal, socially complex, and often cross the boundaries of individual government agencies (e.g. violence will often involve health, police, child protection, etc).

Progressing many of the SDGs will require multiple agencies working together to provide strategies at different points in the pathway of each goal. It was for a similar reason that the Developmental Pathways Project was established in 2005, enabling the linkage of data across agencies to monitor outcomes, and to encourage inter-agency strategies to address these issues (Stanley et al, 2011). The project has been able to link data from multiple agencies including those related to health, mental health, education, disability, child protection, justice, police, and housing (Figure 1).

Most importantly, the linked data includes no identifying information such as names, date of birth and address, thus preserving the privacy of individuals. The process of linkage is based on the separation principle, where the linkers only use identifying information (stripped of service information such as diagnoses, cause of death, police charge, etc) to link the data. Researchers and analysts receive only the service information, with a unique code representing the individual, and not the identifying information. This is integral to enabling the investigation of important issues and outcomes which can be incredibly sensitive (e.g. child abuse, mental health, drug use, etc), whilst ensuring the public's privacy is protected. There are strict ethics and governance procedures

in place to ensure the confidentiality of the data and that it is utilised for the benefit of the community.

The overarching aims of the linked data have been to: monitor issues which often cross agency boundaries; enable the identification of outcomes for specific groups, including those most vulnerable; identify risk and protective factors for outcomes and points of earlier intervention; encourage strategies that focus on prevention and earlier intervention; evaluate policy and practice changes; and identify groups for whom services do or don't work best. Although the Developmental Pathways Project has its own specific aims, it is also a resource for other researchers who wish to use the linked data for research purposes.

### Utilisation of linked data for monitoring and research on child maltreatment

The linked data has enabled important findings and recommendations which have been utilised by a range of government agencies. An example of the use of the linked data is in the area of the prevention of violence against children and improvement of child safety and well-being. By linking data regarding child maltreatment from the Department of

Child Protection to Department of Health and mental health data, we have been able to monitor outcomes as well as risk and protective factors, to identify points of earlier intervention and prevention.

In an international study published in *The Lancet* in 2012, we used our data to monitor trends in child maltreatment as well as policy initiatives across six developed countries, including Australia, England, Canada, the United States, Sweden and New Zealand (Gilbert et al, 2012). We found that despite concerted policy initiatives, there was no consistent evidence of a decrease across different indicators of child maltreatment. While there was a reduction in violent deaths in children in some countries, it was not associated with a consistent decline in maltreatment-related hospital admissions. The results also found that in several countries there had been a rise in the numbers of children placed into out-of-home care, particularly among infants.

Data has also been used to monitor emerging issues such as infants born with neonatal withdrawal syndrome due to maternal substance use during pregnancy (O'Donnell et al, 2009). Neonatal withdrawal syndrome usually presents within a few days of birth and includes symptoms such as respiratory distress,

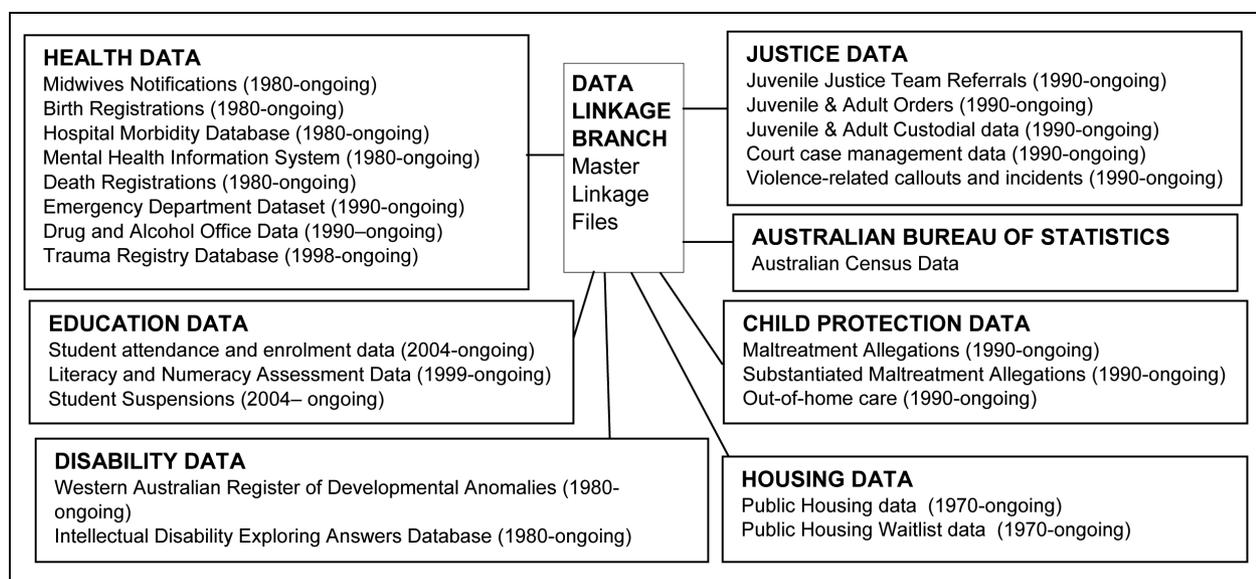


Figure 1: Linked government agency data

irritability, and feeding difficulties, resulting in a prolonged length of stay in hospital and intensive care. Maternal use of opiates and related substances during pregnancy is also associated with preterm births and poor fetal growth. Our research found a large rise in the rates of infants being born with neonatal withdrawal syndrome; however rates stabilised from 2002. Using linked data we also determined that infants born with neonatal withdrawal syndrome had a subsequent increased risk of child maltreatment (O'Donnell et al, 2009). This research led to an international study that looked at the rates of neonatal withdrawal syndrome across a number of countries (Davies et al, 2015). The study found that while rates increased and stabilised in Western Australia and England, they have risen in the United States and Ontario, Canada. This was thought to reflect better recognition and/or an increase in the use of prescribed opiate analgesics, such as methadone. These results highlight the need for prenatal and postnatal care of high risk mothers and their infants to promote improved outcomes.

Parents' mental health has been found to impact on their children in a number of areas including children's mental health, language development, behaviour and physical health. Research we have undertaken via the Developmental Pathways Project has found an increase in parental mental health issues over time, including an increase in the rate of mothers with a mental health diagnosis in the 12 months prior to birth (O'Donnell et al, 2013). The highest prevalence diagnostic groups were: substance-related disorders, depression and neurotic disorders; and adjustment and stress-related disorders.

Using the linked data, we were able to determine that mothers with a mental health contact had an increased risk of a child maltreatment allegation; and 48% of children involved in a child maltreatment allegation had a mother with a mental health contact (O'Donnell et al, 2015). In the cases of mothers who had had a mental health contact at any time prior to the maltreatment allegation, the allegations occurred, on average, when their children were aged four years; however in

cases where mothers had a mental health contact during pregnancy, the allegations tended to arise sooner – on average when children were three years of age. All mental health diagnostic groups were associated with an increased risk of child maltreatment; however the highest risk was associated with mothers with an intellectual disability, organic disorder, disorders of childhood and psychological development, and substance-related disorders.

These findings underscore the need for targeted supports and services to be provided to families with a mental health issue in the early years. Australian organisations such as the Children of Parents with a Mental Illness (COPMI), which offers online resources for families such as specific parenting information and safety planning, are an example of the kind of support that can help tackle both the issues raised above, and the SDGs.

A group of children highlighted by the United Nations as requiring increased focus are children with disabilities. Children with disabilities are at higher risk of maltreatment than other children in our communities, therefore it is imperative that countries monitor and support this vulnerable group. Our research, using linked disability and child protection data, found that 29% of children with substantiated maltreatment had a disability (O'Donnell et al, 2013). Child maltreatment risk was highest for children with intellectual disability, conduct disorder, and other mental and behavioural disorders, and only slightly higher for children with birth defects/cerebral palsy. However for children with autism and Down syndrome, the risk of child maltreatment was lower than children without a disability. This research highlights the need for countries to be aware of the need for additional support for families of children with disabilities, both to meet their unique health and developmental needs and support parents in what can be a complex parenting environment with a range of challenging behaviours.

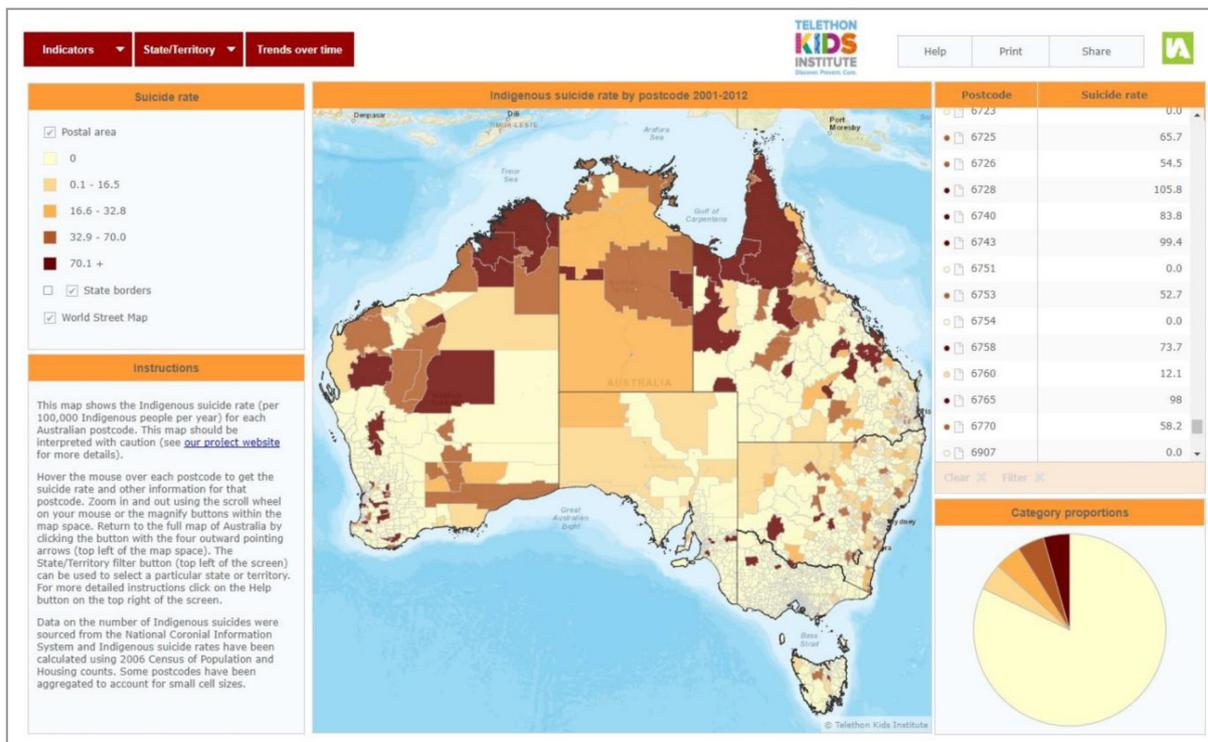
### **Geo-spatial mapping of administrative data**

Linked administrative data can also facilitate monitoring at a geographic level. Systems of monitoring targets set for the SDGs need

the capacity to evaluate outcomes on the basis of age, gender, socioeconomic group, ethnic origin, and place of residence, as key factors that predict vulnerability and disadvantage (Blas et al., 2008). Where people live can strongly influence their level of exposure to health-damaging factors, their vulnerability to poor outcomes, and the consequences of experiencing those poor outcomes (Marmot, Friel, Bell, Houweling, & Taylor, 2008). Place of residence can also significantly influence people's access to, experiences of, and benefits from, services aimed at addressing poor outcomes (Marmot et al., 2008). Geo-spatial mapping of data is therefore an important component of monitoring the health and wellbeing, educational achievement, and safety of children and young people.

Geographically-sensitive policy acknowledges the interconnections between the geographic distribution of services and the spatial patterns of risk and outcome (Dummer, 2008). Revealing these spatial patterns through data visualisation methods can inform our understanding of how area-level characteristics (e.g., school attendance rates, crime, health risks) may influence the arrangement of services in an area. The Developmental Pathways Project is currently developing an online interactive resource for Western Australia, which will map population-level administrative, census, registry, service, and survey data, aggregated at various levels of geography. Data included in the maps will be relevant to key indicators of development and wellbeing for children and young people, and services currently in place to support healthy development. This resource, termed the Child Development Atlas, will help identify areas of highest need and priority, facilitate monitoring of trends over time, and support a targeted focus for service delivery within specific jurisdictional areas. Resources such as the Child Development Atlas will increase our capacity for developing geographically-sensitive policy focused on achieving the targets set for the SDGs.

Mapping administrative data can also reveal spatial patterns in key indicators. For example, the Developmental Pathways Project recently contributed to the creation of maps for the Aboriginal and



**Figure 2: Example of administrative data mapping showing spatial profiles of suicides by Aboriginal and Torres Strait Islander peoples across Australia** (Reproduced with permission from Farrant et al., 2015 <https://www.telethonkids.org.au/our-research/early-environment/developmental-origins-of-child-health/aboriginal-maternal-health-and-child-development/atsispep/suicide-maps/suicides-by-regions/>).

Torres Strait Islander Suicide Prevention Evaluation Project (ATSISPEP) using data from the National Coronial Information System (NCIS; Farrant, Sims, Shepherd & Walker, 2015). Suicide is one of the most common causes of death among Aboriginal and Torres Strait Islander peoples (Australian Institute of Health and Welfare, 2014, 2015). On average, over 100 Indigenous Australians end their lives through suicide each year, with the rate of suicide twice as high as that recorded for other Australians. The maps help to provide a visual insight into how the number and rate of Indigenous suicides can vary across different regions of Australia (Figure 2).

Addressing vulnerability is a complex and multi-faceted issue that requires the collective efforts of a number of different actors, to ensure all children and young people have access to safe, healthy, nurturing, and responsive living environments (Marmot et al., 2008). Efficient cross-sector coordination – and not isolated interventions – drives social change

(Kania and Kramer, 2011). No single entity has the resources or authority to address the complex issues of vulnerability and disadvantage for children and young people.

Linked government data not only has the ability to monitor the SDGs but also to support their progress. A system of sharing data across agencies, in an easily comprehensible format (such as visual summaries), can facilitate inter-agency discussions about solutions, mobilisation of collective wisdom and expertise, and shared responsibility for implementation of solutions. Efficient collation of data across multiple agencies will facilitate the implementation of data informed strategies and interventions to enable more effective progress towards the SDGs.

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### United Nations SDG Action Campaign

The United Nations SDG Action Campaign is a special initiative of the UN Secretary-General administered by the UN Development Programme (UNDP) and mandated to support the UN system-wide and the Member States on advocacy and public engagement in the SDG implementation.

Building on innovative and impactful engagement techniques deployed since 2002, the UN SDG Action Campaign intends to create awareness about the 2030 Agenda, empower and inspire people across the world to achieve the Sustainable Development Goals (SDGs) while generating political will, and help make the Goals attainable by 2030.

The UN SDG Action Campaign's Global Campaign Center in Bonn, Germany is central to the UN's strategy of providing real-time cutting-edge advocacy support, big data expertise and analytics to Member States and partners across the globe, especially at the country-level.

The UN SDG Action Campaign commits to:

- Engage stakeholders and individuals to support member states and UN Country Teams in the SDGs implementation through direct people's engagement
- Encourage public ownership of the SDGs in every country through creative and innovative communications, campaigning and policy advocacy
- Sponsor people-driven processes to strengthen accountability mechanism and monitor SDG progress through generation/collection of data, evidence, and sentiment about the impact of the SDGs

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