

PART 6: NATIONAL INDICATORS TO TRACK CHILD WELLBEING

Indicators of child wellbeing are needed to act as a warning system for child wellbeing and to help monitor the effects of policy changes and new programs resulting from the National Agenda for Early Childhood (NAEC). Such indicators provide population-level data that will improve our understanding of the wellbeing of the whole population and also identify those who are most vulnerable and allow interventions to be targeted more sensitively. This section presents considerations in developing a set of indicators for monitoring child wellbeing and particular considerations for performance indicators. A set of potential national indicators, based upon previous work conducted in NSW, QLD and Victoria and potential sources of information are presented. The section concludes with a discussion of data-development issues for further consideration.

Considerations for monitoring child wellbeing

Substantial work has already been done in Australia to develop indicators for monitoring child wellbeing. As background, Turrell's discussion of conceptual and methodological issues in research on child health and development is outlined here (Turrell, 2002).

- Research should be guided by a conceptual framework of child wellbeing that incorporates the full range of influences, including:

Distal 'upstream' determinants: influenced by cultural processes, government policies, economic, welfare, health, housing, transport, taxation and social, physical, economic and environmental determinants of health.

Midstream (intermediate) factors: which differ with groups, such as low income, life course stages and settings, psychosocial factors such as stress and social support and health behaviours such as physical activity).

Proximate 'downstream' determinants: physiological systems (endocrine, immune), health inequalities such as mortality and morbidity and biological reactions such as hypertension and Body Mass Index.

- Multilevel and spatial analyses need to be sufficiently complex to incorporate the full range of influences and the relationships between them.
- The best design for measuring change and process is a longitudinal cohort study. Funding has been provided for the Longitudinal Study of Australian Children (Sanson et al., 2002).
- Socioeconomic position (SEP) is a widely used concept in child health and development research, but tends to be poorly measured. Turrell recommended multiple socioeconomic indicators at the individual, family and community levels and at different life course stages.
- Evidence suggests that people from low SEP tend to be under-represented in survey research. This under-representation needs to be

considered in sampling and recruitment strategies, as well as in interpreting the results of studies.

- Data linkage between existing data collections can improve the cost-effectiveness of research. However, there are problems with anonymity and privacy. (Since Turrell's paper was written, the Australian Research Alliance for Children and Youth has begun a project to establish a national data network.)
- Given the complexity of the multiple influences on child wellbeing, triangulation of quantitative and qualitative data is recommended.

Criteria for indicators of child wellbeing

A number of jurisdictions have already conducted substantial work in identifying indicators of child wellbeing. For example, the Best Start project in Victoria developed a set of indicators to identify child outcomes that are liable to change, relevant to the wellbeing of children and that consider different issues across the lifespan (Waters, Goldfeld & Hopkins, 2001). The indicators used a social model of wellbeing encompassing psychosocial, socio-environmental and socio-economic factors and considered the child in the context of family, community, and environment. The Commission for Children and Young People (CCYP) (Qld) and the NSW Commission for Children and Young People (NSW CCYP) have also developed indicators for monitoring the wellbeing of children (CCYP (Qld), 2002; NSW CCYP, 2003).

Criteria for national indicators of child wellbeing, based on the criteria developed by Victoria, Queensland and NSW are presented below:

1. Indicators enable comprehensive coverage for wellbeing across an array of outcomes, behaviours and processes.
2. Indicators represent issues for the wellbeing of children from pregnancy through to transition to school around eight years of age.
3. Indicators are easily understood and concise.
4. Indicators assess positive and negative factors of wellbeing.
5. Indicators take into account the degree (or depth), the duration and the accumulation of risk factors children face. This will assist in identifying sub-groups of children at risk of poor developmental outcomes.
6. Indicators consider the issues relevant to the diversity of Australia's population.
7. Indicators are developed anticipating future trends. For example, as time pressures on parents continue to increase and with the recognition that this can lead to poor developmental outcomes, the amount of time parents spend with their children becomes an important health determinant and indicator of child wellbeing.
8. Indicators reflect national social goals such as improving literacy and numeracy and increasing the rates of breast-feeding.
9. Indicators have the same meaning across time.
10. Indicators are available at a national level.
11. Indicators are accessible and able to be published.

12. Indicators are capable of disaggregation by age, gender, location and Indigenous status.
13. Indicators allow for annual comparisons (bi- and tri-annual collections might also need to be included).
14. Indicators are valid and reliable measures.
15. Indicators are (when possible) consistent with international guidelines on the monitoring of the wellbeing of children.

Criteria for monitoring performance

Considerations for developing performance indicators for monitoring the impact of an intervention are provided below. An 'intervention' can be a government policy, a program or national framework.

Effective monitoring systems

Ideally, an effective monitoring system provides: information on how well a given policy or strategy is being implemented; how effective it is in the short, medium and long-term; and indications of the reasons why it is or is not working. Jutkowitz proposed that an effective monitoring system has the following characteristics:

- Decision-oriented – it is designed to help managers and policy makers set clear and attainable objectives.
- Process-oriented – it provides data on the implementation of programs.
- Based on the criterion of utility – it provides the sort of information a manager can use to make decisions.
- Focused on questions that reflect the short or medium-term impacts and solutions.
- Oriented to resource limitations and trade-offs – directing responses to problems toward solutions in keeping with budgetary and other resource constraints (Jutkowitz, 1995).

An effective monitoring system can also improve communication within government departments and between government and non-government organisations. By increasing accountability, it can also improve intersectoral collaboration and performance.

- **Likelihood of change:**

Indicators that are likely to show some change during the observation period are more useful than indicators that are unlikely to change within the period. Factors to be considered include historical variations and population projections.

- **Ability to detect change:**

Limited statistical power is a major constraint on the ability to detect changes in time series data. Statistical power depends critically on the size of the expected population level impact. For example, it will be difficult to detect an

incremental reduction in the prevalence of the outcomes of new, small-scale initiatives, particularly when other programs are already in place. It will be easier to detect the impact of a sharp, substantial and sustained increase in the availability of an intervention where none previously existed.

- **Reliability:**

Another problem is the reliability of the data: apparent improvements may prove to be artefacts of changes in the way outcomes are measured. Measures of outcomes are sensitive to the effects of increased scrutiny, or to changes in definitions. For example, some outcomes are poorly defined and changes in the way they are defined or coded can affect their rates.

- **Causal attribution:**

Assuming that it is possible to detect changes at the population level, the more difficult task is to attribute these changes plausibly to a specific intervention. It is rarely feasible to conduct randomised controlled trials or quasi-experiments to evaluate national initiatives. Two issues of causality are particularly. First, there is no simple relationship among goal – objective – strategy – performance indicator. Goals can have many objectives, objectives can have many strategies and strategies can have many performance indicators. This ‘fanning out’ also occurs in the other direction – performance indicators can reflect the efforts of many different strategies, each of which can contribute to multiple objectives.

Secondly, changes in outcomes of interest can be affected by international trends (eg in the content of child care programs), and by the activities of a range of national strategies (eg National Mental Health Strategy, Youth Suicide Prevention Strategy, National Crime Prevention, National Drug Strategy) as well as State, Territory and local initiatives.

In sum, while it is often not possible to separate the sources of influence on any outcome, it is preferable to pick performance indicators that are most likely to be influenced by the intervention, rather than indicators that are subject to many other influences.

- **Negative consequences:**

It is suggested that, ideally, a range of performance indicators should be collected that identify the range of impacts of interventions. Consideration should be given to monitoring possible negative consequences of the intervention.

Framework for performance indicators

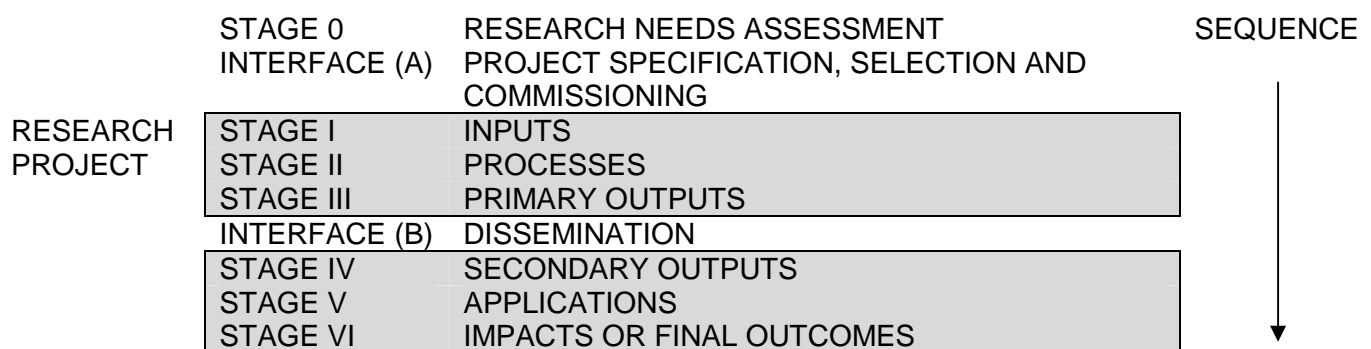
Frameworks provide a model to guide the development of performance indicators. One such framework is the Outcome Model for Health Promotion developed at the National Centre for Health Promotion, University of Sydney

(Nutbeam, 1998). This model highlights the importance of identifying the full range of possible outcomes of an initiative, while recognising that these outcomes will occur at different stages. Specifically, performance indicators are identified for each of the following stages:

- Social and health outcomes (goals).
- Intermediate outcomes.
- Intervention modifiers.
- Intervention impacts.
- Interventions (process).
- Infrastructure support.

The Health Economics Research Group at Brunel University described a framework that traces the return on investment in research and development (Buxton & Hanney, 1996). The model divides the research process into seven stages, with two interfaces (Figure 9) and outlines five main categories of benefit: knowledge, research benefits, political and administrative benefits, health sector benefits and broader economic benefits. While the model was designed to assess the payoff from research, it is also useful on a broader level for evaluating interventions.

Figure 9: Outline input-output model for assessing payoff from applied research



Note: From How can payback from health services research be assessed? in *Journal of Health Services, Research and Policy* 1(1), by M. Buxton & S. Hanney, 1996, pp. 36-43.

Many other relevant frameworks exist. For example, Rossi’s framework emphasises the need to collect information on problems related to multiple outcomes (Rossi, 1999). The RE-AIM framework is a model for comprehensively evaluating public health interventions that includes five dimensions: reach, efficacy, adoption, implementation and maintenance (Glasgow, Vogt & Boles, 1999). It is beyond the scope of this document to analyse these and other relevant frameworks.

From the above overview, however, some suggestions for performance indicators can be made. Time-scales for outcomes from investments can be considerable and there is therefore a need for realism about the change that can occur that on performance indicators in a given timeframe. Further, some outcomes at later stages result from intermediary outcomes rather than

directly from initial inputs. It is therefore appropriate to focus on different outputs and outcomes at different times. Ideally, a staged review of performance will be conducted. Finally, indicators of multiple outcomes are required, with concern for positive as well as negative outcomes.

- **Criteria for performance indicators:**

Performance indicators should ideally meet as many of the criteria outlined below as possible. These are not mutually exclusive. Performance indicators should:

- Provide useful information for evaluation and further planning.
- Reflect the efforts of the intervention, rather than multiple other possible factors (i.e. be specific).
- Detect the size and range of intervention achievements (i.e. be sensitive).
- Be clearly related to the goals, objectives and strategies of the intervention.
- Reflect the priorities of stakeholders.
- Be specific, for example, to a specific behaviour among a particular group within a defined geographic space and time.
- Be measurable in that it is feasible to measure them and the data are reliable and valid.
- Be attainable: some change should be expected from the planned strategies within the timeframe of the intervention.
- Be affordable or available: eg already being collected and likely to continue to be collected or able to be collected with minimal modifications of existing data collections.

Domains

Table 16 presents a set of possible domains for indicators of child wellbeing, based on work conducted in Victoria (Best Start), Queensland and NSW (Kids' Stats) (Waters et al., 2001; CCYP (Qld), 2002; NSW CCYP, 2003). These are restricted to short-term indicators for monitoring children aged 0-8 years and do not include longer-term outcomes such as high-school retention, youth employment, criminality and drug use.

Table 16: Suggested domains for indicators of child wellbeing

HEALTH

Parental health

- Maternal age / adolescent births
- Reported wellbeing
- Received antenatal care

Child mortality

- Death rates
- Youth suicide

Exposure to smoke

- Smoking through pregnancy
- Parental smoking in home

Child welfare – abuse & neglect

- Notification rates

Child nutrition

- Breastfeeding
- Child's diet
- Parents' diet
- Child's Body Mass Index
- Food security

Child morbidity

- Birth weight
- Top causes of morbidity
- Parental rating of child health
- Hospitalisation due to injury

Child emotional wellbeing

Child disabilities

FAMILY

Family functioning

Parental education

- Parental literacy
- Parental education

Parental style

Parental employment

- Parental employment
- Family income

EDUCATION

Child Education – preschool (3-5)

- Attendance

Child literacy

- Parental time reading to child
- Benchmark for reading
- Literacy

Child Education – school

- Enrolment
- Absenteeism
- Class sizes

Child numeracy

CHILD ENVIRONMENT

Safety

- Domestic violence reports
- Parents feeling safe in

Housing status

- Home tenure
- Persons per room in public

community

- Victims of crime
- Child protection notifications
- Perceptions of safety

housing

- Young clients of SAAP

Social environment – social connections

- Formal supports for parents
- Social relationships & supports
- School relationships

Transport accessibility

- Air quality

SERVICE DELIVERY

Childcare

- Attendance by type
- Quality
- Affordability

Early detection and intervention

- Immunisation
- Referral to services for speech, language, developmental, behavioural problems
- Dental treatment

Play & physical activity

- Participation
 - Parks and programs
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Data sources

Data sources identified by the three jurisdictions include national (eg ABS), state (eg hospital) and local (eg local council) data collections. Two studies that could augment existing data collections are described below. These are the LSAC and a proposal to use the Early Development Instrument.

The LSAC is being conducted by a consortium led by the Australian Institute of Family Studies (Sanson et al., 2002). It is notable that this study uses similar measures to those currently used in NSW, Victoria and Queensland for monitoring child wellbeing. Grounded in an ecological model of development, the LSAC incorporates the concept of developmental pathways. The study addresses seven broad research questions. These are:

1. How well are Australian children doing on a number of key developmental outcomes?
2. What are the pathway markers, early indicators, or constellations of behaviours that are related to different child outcomes?
3. How are child outcomes interlinked with their wider circumstances and environment?
4. In what ways do features of children's environment (such as families, communities, and institutions) impact on child outcomes?
5. What helps maintain an effective pathway, or change one that is not promising?
6. How is a child's potential maximised to achieve positive outcomes for children, their families and society?
7. What role can the government play in achieving these outcomes?

Child outcomes to be measured by LSAC include behavioural and emotional adjustment, language and cognitive development, readiness to learn, overall health, motor/physical development, and social competence. Data will also be collected on key factors influencing developmental outcomes, relating to the child (for example, health, temperament, literacy experiences), the parents (for example, socio-economic status, parenting style, health), and the broader family, child care, school and community environments.

"In addition, information on key life events which can lift or depress a developmental trajectory (for example, illness or injury, entry to child care or school, separation or divorce of parents) will be collected" (Sanson et al., 2002, p. xi).

The study incorporates a multiple cohort, cross-sequential design to study two cohorts:

- a minimum of 5000 children aged less than 12 months, selected in 2003, and followed at least every two years until they reach 6-7 years of age in 2009; and
- a minimum of 5000 children aged 4-5 years when selected in 2003, and also followed at least every two years until they reach the age of 11-12 years of age in 2009.

A possible source of data will be the Early Development Instrument (EDI). There has been widespread use in Canada in the past few years of an instrument designed to obtain a snapshot of children's progress across all the major developmental domains at the point where they start formal schooling. The Early Development Instrument is designed to assess how well populations of children are faring (eg children attending a particular school, or living in a particular neighbourhood), and enables the proportion of vulnerable children in a neighbourhood to be compared with its traditional demographic characteristics (eg socio-economic status), as well as the availability of community resources that support families with young children, such as playgroups and libraries (Janus & Offord, 2000).

A successful pilot study of the instrument's applicability in Australia has recently been conducted in the northern suburbs of Perth, and a larger trial is being planned (Hart, Brinkman & Blackmore, 2003). Wider use of a similar instrument in Australia is currently being considered (Goldfeld, 2003).

Issues to be addressed

In developing indicators for monitoring child wellbeing, the following issues will need to be addressed. This is not an exhaustive list, but represents some of the more obvious issues that have arisen in the course of preparing this document.

- Are the indicators simply to monitor child wellbeing, or to monitor the performance of government initiatives in this area?
- Are the indicators to be restricted to short-term indicators, or to include longer-term outcomes such as school retention, youth employment, juvenile offending and drug use?
- Much data is collected at the local and state/territory level. Organisations such as the AIHW have produced reports that aggregate this data. However, many data collections were not designed as national data collections, so jurisdictional differences and gaps can compromise the national aggregation of data. Achieving national data from state/local collections will require substantial resources and effort.
- Routine data collections can be problematic as indicators of trends or performance. For example, van den Eynde, Veno and Hart (2003) described how a number of data collections had limited utility, accuracy and completeness. Consideration needs to be given to the quality of existing data collections for monitoring needs and performance.

- Consideration needs to be given to priority variables for disaggregation. For example, data is not always available by important indicators such as gender, age, family type, rural/urban area, SES and Indigenous status.
- The States have already independently conducted substantial work in the area of indicators of child wellbeing. It appears to be a matter of urgency to coordinate these efforts, to reduce wasteful duplication and enhance synchronicity (that is, to enable national monitoring and state/territory comparisons).
- Indicators need to be based upon an explicit theoretical framework, including distal 'upstream' determinants as well as more proximate 'downstream' influences on child wellbeing (Turrell, 2002).
- The use of multiple data sources to enable triangulation of information and the use of qualitative data to increase understanding of the complex and dynamic processes that influence behaviour has been recommended (Turrell, 2002).

Conclusion

We should not prematurely close the debate on indicator choice at national and jurisdictional level. There needs to be considerable investment in the development of an agreed set of reliable and valid indicators. As LSAC uses similar measures to those currently used in NSW, Victoria and Queensland, it is likely to produce the evidence-base that will be necessary to decide on the age-specific indicators that predict outcomes at later stages. These are the indicators that are most useful to monitor. Work relating to the EDI could also be useful. The final choice will require considerable work and should be a piece of separately commissioned work.

This work should be guided by a decision about whether to have indicators for all areas so that they can benchmark on the potentially vast number of indicators of wellbeing – a massive task – or whether to be more strategic. It is suggested that the key is to have indicators that show sub-group contrasts and illustrate which children are and are not doing well and areas where we are doing better and worse.

Finally, while there is general agreement about the value of having a national approach to child wellbeing, the indicators will need to accommodate the likelihood that the States and Territories, local government and the non-government sector will want to maintain differences of emphasis.