

RESEARCH BRIEF

Communities of practice for social systems strengthening to improve child wellbeing



UNIVERSITY
OF
JOHANNESBURG

CENTRE FOR
SOCIAL DEVELOPMENT
IN AFRICA



Using a digital Child Well-being Tracking Tool to enhance service delivery: lessons for scale-up

From surviving to thriving

PATEL, L., TELUKDARIE, A., GRAHAM, L, SELLO, A. & ARCHER, J.

NOVEMBER 2024

South Africa's constitution clearly articulates the rights of children to live healthy, safe and fulfilled lives (section 28). South Africa is also a signatory to the [Convention on the Rights of the Child](#)¹ and the [Sustainable Development Goals \(SDGs\)](#). All of these initiatives aim to promote child wellbeing and are based on the premise that for children to thrive they need nurturing care in a set of six interconnected domains: health; nutrition; economic and material wellbeing; protection and care; education and psychosocial wellbeing.

When South Africa adopted the Sustainable Development Goals in 2015, the government committed to 'leave no child behind' and work towards transforming the society, economy and the environment to make this a reality. Some [progress](#) has been made towards these targets - including reducing new HIV infections and neonatal death rates - but much still needs to be done to improve the lives of children and their families, particular with respect to SDG 1 (no poverty), SDG 2 (zero hunger), SDG 3 (good health and wellbeing), SDG 4 (quality education) and SDG 10 (reduced inequalities) which are particularly relevant to child wellbeing.

It is well established² that investing in children's early and foundation years pays dividends throughout a child's life and has the potential to transform societies. According to the [United Nations \(UN\)](#), children who escape stunting stay in school longer, earn higher incomes and are more likely to exit poverty. But, providing integrated support to children and their families is challenging, especially in developing country contexts with high rates of poverty, family and community violence, poor quality education, and poor health and psychosocial wellbeing outcomes. Improving access to and quality of services, overcoming under provision in services in historically underserved communities and overcoming fragmentation in service delivery across health, education and social development are urgent priorities.

The fourth industrial revolution presents a unique opportunity to enhance and enable more effective service delivery using cutting-edge digital tools. Digital tools have immense potential and can be used to improve child wellbeing services by streamlining data collection, monitoring and evaluation as well as to target on-the-ground services and support. Digital solutions are ideal for ensuring integration of services across departments.

The South African Government through the [National Development Plan 2030](#) and the [National e-Government Strategy and Roadmap](#) aims to make "extensive use of ICT to engage with and provide services to citizens." This will be achieved through "an enabling, coordinated and integrated e-Strategy that cuts across government departments and sectors." Through a bold digital transformation agenda government aims to deliver integrated and citizen-centred services that tackle inequality and poverty to improve people's quality of life so that all people can benefit from digital opportunities.

As such the stage has been set for the introduction of digital tools to enhance interaction between government and its citizens; and between government departments.

About the Communities of Practice for Child Wellbeing

The Communities of Practice for Child Wellbeing is an initiative focused on enhancing the wellbeing of early grade learners in the Foundation Phase in public schools by bolstering social support systems around them, to ensure better wellbeing outcomes and improved academic performance. The CoP study ran from 2020 – 2024 and was built on research which indicated that strong multi-sectoral and multi-disciplinary collaboration can ensure better outcomes for children³. The CoP researchers partnered with the health, education, mental health, and social services sectors to drive the initiative. The study was conducted and piloted in five urban primary schools in Johannesburg, Gauteng, and in 2024 a baseline study was concluded in Moutse, in rural Limpopo.

At each school a team with multi-sectoral representation was established to assess the children using the Child Wellbeing Tracking Tool and then provide targeted interventions to those who were at risk.

¹ [The Convention on the Rights of the Child](#) was adopted in 1989 and states that childhood is separate from adulthood, and is a special, protected time, in which children must be allowed to grow, learn, play, develop and flourish with dignity.

² Desmond, C., Richter, L. & Martin, P. 2016. Development of an Investment Case for Early Childhood Development in South Africa: Prioritizing Investments in Early Childhood Development. Pretoria: UNICEF

³ Patel, L., Knijn, T., Gorman-Smith, D., Hochfeld, T., Isserow, M., Garthe, R., Chiba, J., Moodley, J., & Kgaphola, I. (2017). Family Contexts, Child Support Grants and Child Wellbeing in South Africa.

What is the problem?

The South African government struggles to deliver high-quality education, health and social development services to children and their families. This is partly because government departments do not have an integrated view of a child's wellbeing. They are therefore unable to monitor and track child wellbeing in a way that can inform joined up planning and service delivery. This in turn results in fragmented implementation across different departments and social sectors. Government departments also lack the data to identify the needs of individual children and provide additional support to those at high-risk.

Some of the key challenges in improving child wellbeing are:

- **There is no holistic or integrated view of a child's wellbeing** – despite research that shows the multiple intersecting dimensions that impact a child's wellbeing.
- **A lack of data impedes planning and resource allocation** – research shows⁴ that investing in the early learning years pays lifelong dividends. Therefore government and its partners should be investing more resources in programmes for children during the early years of schooling. Without robust data, such investments are hard to justify.
- **Many interventions are not informed by evidence** – There is a lack of evidence of the feasibility of local innovation and their outcomes.
- **Many children in South Africa require customised interventions depending on their needs.** There is a need for validated child wellbeing assessment tools that are easy to use to identify children at risk in different domains such as health, nutrition, education and psychosocial to inform intervention plans and allocate spending and human resources where it is most needed.
- **Impact assessments are challenging** – with limited data it is difficult to monitor progress and assess the impact of interventions over time.

Our project aimed to first develop and test a digital tool that provided a holistic and integrated view of child wellbeing. Second, based on the assessments of children's needs, intervention plans were developed and implemented. This involved stitching together a suite of services across multiple departments to meet the needs of the children and their families. Finally we wanted to track progress and changes over time.

We identified two key requirements for a digital tool to achieve these aims.

Requirement	Rationale for this requirement
1. Integrated and holistic data on child wellbeing.	■ Enable monitoring of child wellbeing.
	■ Identify the gap between children's needs and the services available to them.
	■ Inform planning, policy review and implementation.
	■ Inform human resource planning and budgets.
	■ Evaluate interventions over time to assess longitudinal shifts.
2. Solutions that respond to children and their families' wellbeing concerns.	■ A dashboard and flagging system of children and families at risk.
	■ Ability to inform real-time interventions and assessments.

⁴ Heckman, J. (2008) Schools, Skills, and Synapses. *Economic Inquiry*, 46 (3): 289-324, <https://doi.org/10.1111/j.1465-7295.2008.00163>.

How can a digital tool help us?

Digital tools and systems are envisaged to provide a solution to enhance monitoring, interdepartmental collaboration, integration and service delivery. What we have learnt through our pilot is that digital tools can help key departments to gather data, identify children who need support and the type of interventions required. This could result in more targeted resource allocation.

Digital tools do four important things:

1. Allow for easy and real-time capturing and analysis of data – this data can be used to inform policy decisions, planning and reviews and resource allocation across multiple departments like the Department of Social Development, Department of Health and the Department of Basic Education. Although our pilot set out to use real-time data capturing, this was difficult to achieve and we recommend this feature is built into the tool in further iterations.
2. Be used as an aid for practitioners providing services for children and families in a school setting – a digital ‘dashboard’ can help practitioners identify the children who need services the most and the type of services that they need, to better allocate the resources available to deliver those services.
3. Monitor service provision to at risk children and families – a digital tool can aid the monitoring of child wellbeing and service provision.
4. Evaluation of effectiveness of interventions – digital tools, if used to capture the same data over time from the same children, can assess whether an intervention is working or not.
5. Enables evidence based advocacy for dedicated actions to improve child wellbeing outcomes.

What did we find using our digital Child Wellbeing Tracking Tool?

Our Child Wellbeing Tracking Tool (CWTT) allows us to capture data from several questionnaires that are loaded onto a digital application that was customised to assess vulnerable children and to inform interventions. It included demographic and identifying information on the children and their families. It also included data collection in six domains of child wellbeing. Detailed questions and scales were contained in each of the domains. The different sections were completed by interviewing the child, a child’s primary caregiver, class teacher and a healthcare practitioner.

This data was then collated into a complete case for each child. The tool had two main features:

1. **Data collection component** – to allow for easy data collection by local-level social service professionals.
2. **Data presentation component** – which presented data using a ‘dashboard’⁵ style interface to show which children were at risk and in which domain of wellbeing. This ‘dashboard’ was used by the multidisciplinary team of practitioners to plan interventions, deliver the services and track improvements over time.

We found that stakeholders like social workers, nurses, teachers and education psychologists saw the value in using a digital tool. Users found that the data collected and the risk profiles that were produced provided them with a clear indication of the domains in which children were ‘red flagged’ or identified as experiencing high or medium risk.

This system of flagging children at high or medium risk across the six domains helped the CoP team and their stakeholders (governmental and non-governmental partners) to prioritise those most at risk and informed their choice of tailored interventions.

⁵ A dashboard is an information management tool that receives data from a linked database to provide data visualizations

What did we learn from implementing the CWTT?

Research learnings	Implementation learnings
<ul style="list-style-type: none"> Intensive testing and piloting of a tool of this nature is needed. Back-up and data storage must be planned for at the start of the process. Data collection from different research participants requires an integrated approach to management of data to ensure data integrity. Merging and cleaning of data sets. Protocols for data cleaning and merging need to be planned and scoped in advance and rigorously tested before collecting large sets of data. Analysis can be time consuming and can undermine the real time use of the data. Scoping, planning and testing what data needs to be used for real time monitoring and how to automate the analysis is required. 	<ul style="list-style-type: none"> Digital literacy is a challenge - all users need extensive training and practice using the tool in the field. Data connectivity is a challenge, as is electrical power. Systems require offline capability and tools with long battery life in case of electricity outages. Tablets or other devices must have the correct specifications to enhance implementation efficiency. Application development should consider how to run on lower specification devices, particularly in resource-constrained environments. Communication between different project partners (developers and users) is key to enhancing the usability of the app. Data analysis if not automated can delay interventions. Tool development and testing costs were high. But in the long-run the tool has the potential to reduce costs by better targeting interventions to those in need. The use of a digital tool for assessment and intervention requires a culture shift among practitioners and in organisations. A change management approach is needed to ensure that the evidence produced is used in decision making and practice. Ongoing training, coaching, mentoring, supervision and performance management is needed to support implementation teams to use digital tools. Guidelines on access and ethical use of information and data are needed to enable data sharing across disciplines.

The CWTT as it stands has been rigorously tested and would be largely ready for scale up for monitoring purposes. In order to use the tool for intervention, more work is required to shorten the tool and to present the data in a way that all practitioners can easily use it.

What does this mean for policy and service delivery?

The National Integrated ICT Policy White Paper which was signed in 2016 states that “Convergence is at the heart of this White Paper. [It] has therefore adopted a holistic approach ... and recognises that the policies need to take into account the needs of sectors such as education, justice, health and welfare so that digital technologies can support their development goals.”

Embracing digital technology and the fourth industrial revolution is a necessity if South Africa is to achieve the United Nations Sustainable Development Goals and its country targets by 2030. The current e-Government Strategy and Roadmap pave the way for the rollout of a tool of this nature that integrates data from education, health and social development. To implement a project of this nature does require that some key governance and operational issues are addressed.

The strategy specifically outlines key projects that require digital solutions including the Department of Health (DoH’s) e-Health project in key provinces. It also resonates with the Department of Social Development’s (DSD’s) Implementation of the National Integrated Social Protection System (NISPS). This could aid improving the wellbeing of children and youth. It could also identify the need for other interventions beyond social grants such as parenting skills programmes, counselling services, referral to mental health services and provide intervention programmes to promote the wellbeing of children. These governmental initiatives all align with the CoP and the demand for more seamless integration of service delivery, all of which could benefit from a digital tool like the CWTT.

The digital divide in South Africa poses a significant barrier to educational and social equity, as access to digital tools is not universal. While 74.7% of the population uses the [internet](#), many marginalised communities still face challenges like limited connectivity, high data costs, and lack of digital literacy. These disparities must be carefully considered when using digital tools for social development to ensure that no one is excluded from opportunities for growth and participation

What needs to be done to make these initiatives a reality?

Policy and planning requirements:

- Policy reform to integrate data sharing across the three provincial departments.
- Motivate for increased human resource and budget allocations for a project of this nature – the initial investment is high but the benefits in terms of improving child wellbeing and reducing costs through more appropriate targeting could be immense.
- Change management across the three departments to build and develop a culture of evidence-led interventions that could be adapted through a ‘learning by doing’ approach.

Practical considerations:

- Co-create an integrated digital platform informed by the requirements of each department.
- Develop a robust governance framework to ensure compliance with all the relevant legislation.
- Develop an integrated intervention or programme to support children and families across these three departments.
- Develop an action implementation framework that sets out collaboration agreements, roles and responsibilities of the parties, ethical approval procedures for data sharing and interventions, interdepartmental coordination mechanisms, sharing of knowledge and resources, training, supervision and performance monitoring, reporting procedures and evaluation of outcomes.

Technical requirements:

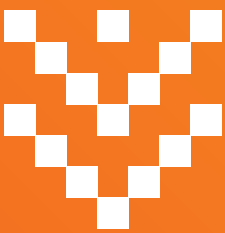
- Ensure local housing and storage of data for real-time access.
- Secure the necessary hardware and software for rollout.

Human resource requirements:

- Training – extensive training and ongoing support to practitioners working in the field is needed.
- Capacity-building and build digital literacy across all social sector departments.

Conclusion

Supporting child wellbeing is a collective responsibility of all parties at all levels of government as well as non-governmental partners, individuals, families, schools, community level organisations and services. By using digital tools in novel ways we can streamline the process of needs assessment and prioritisation of services thereby enabling timely and targeted support to improve child wellbeing outcomes. Digital tools are most effective when integrated into a comprehensive system of care and require a balanced approach that leverages digital tools, human expertise and caregiver and child insights to effectively measure and improve child wellbeing outcomes.



Communities of Practice web link:
<https://communitiesforchildwellbeing.org/>