



Data for Children

From Insight to Action: Using data to drive results

November 2017

DATA FOR CHILDREN

FROM INSIGHT TO ACTION: USING DATA TO DRIVE RESULTS

Over the past decade, there has been no shortage of discussion about the sheer volume of new data being created every minute. Similarly, there is no dearth of promises about the potential of those data to transform lives. Too often, however, the discussion and the promises remain just that – speculative and exciting, but unproven. The potential has delivered too little in the way of real results.

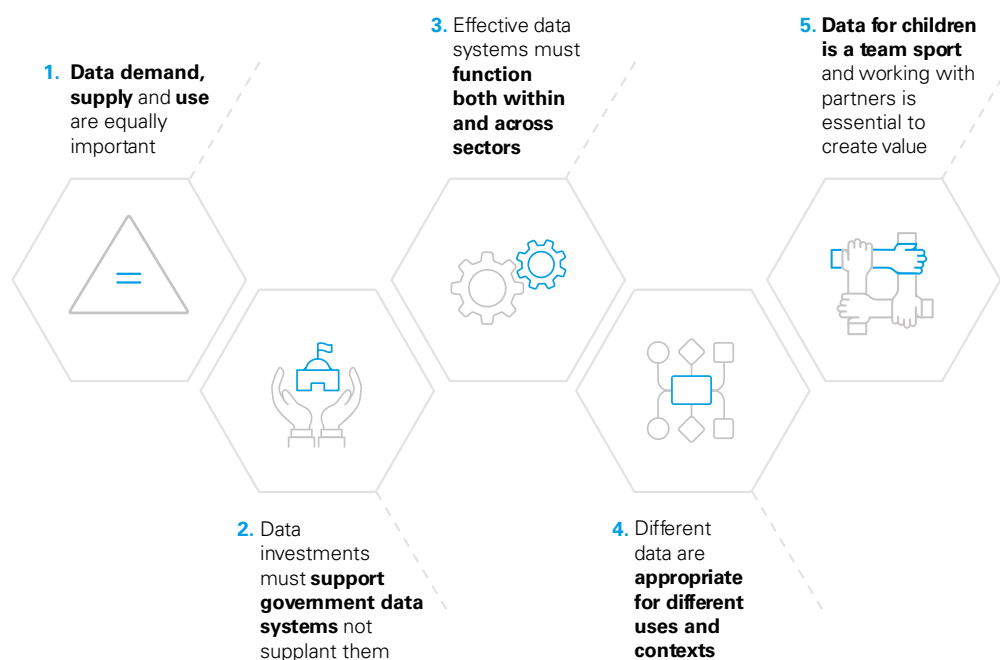
UNICEF is committed to changing that reality. Around the world, UNICEF and its partners are working to make the best, most practical use of data to drive results for the world’s most vulnerable children.

In April 2017, UNICEF released a blueprint – the [Data for Children Strategic Framework](#) – for making that shift across the organisation. Since then, UNICEF has rapidly expanded its commitments in

three areas that are essential for good data work: coordination, strategic planning, and knowledge sharing. Through the newly-established Task Force on Data, UNICEF colleagues are now working better, together. In a diverse range of pilot offices, UNICEF teams are engaging in a new strategic planning process, aimed at identifying the most impactful data-related investments. A new internal website and community space now offer UNICEF data enthusiasts and practitioners a place to learn from each other.

This brief is part of those efforts to make the case for strategic, action-oriented data work. It includes five examples of how UNICEF and its partners are using data to tackle problems ranging from effective messaging in a public health emergency to getting children back to school after they have been displaced by violence.

Basic principles of UNICEF data work



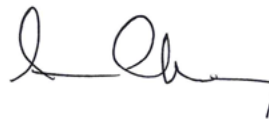
The examples are arranged around five basic principles of data for children work. The principles, outlined in the Strategic Framework, reflect both core UNICEF values as well as practical experience about what works when it comes to data for children: teamwork, practicality and attention to context. Each example highlights a specific principle, though most embody good practices in more than one area.

These are five examples among many; there is a huge volume of exciting and impactful data work already underway across the organisation. These examples provide clear evidence of potential translated into results. Identifying and expanding work like this is especially critical as the Sustainable Development Goals (SDGs) generate greater demand for reliable information as well as an increased urgency for acting on those data.

As a leader in many sectors as well as an experienced partner in both development and

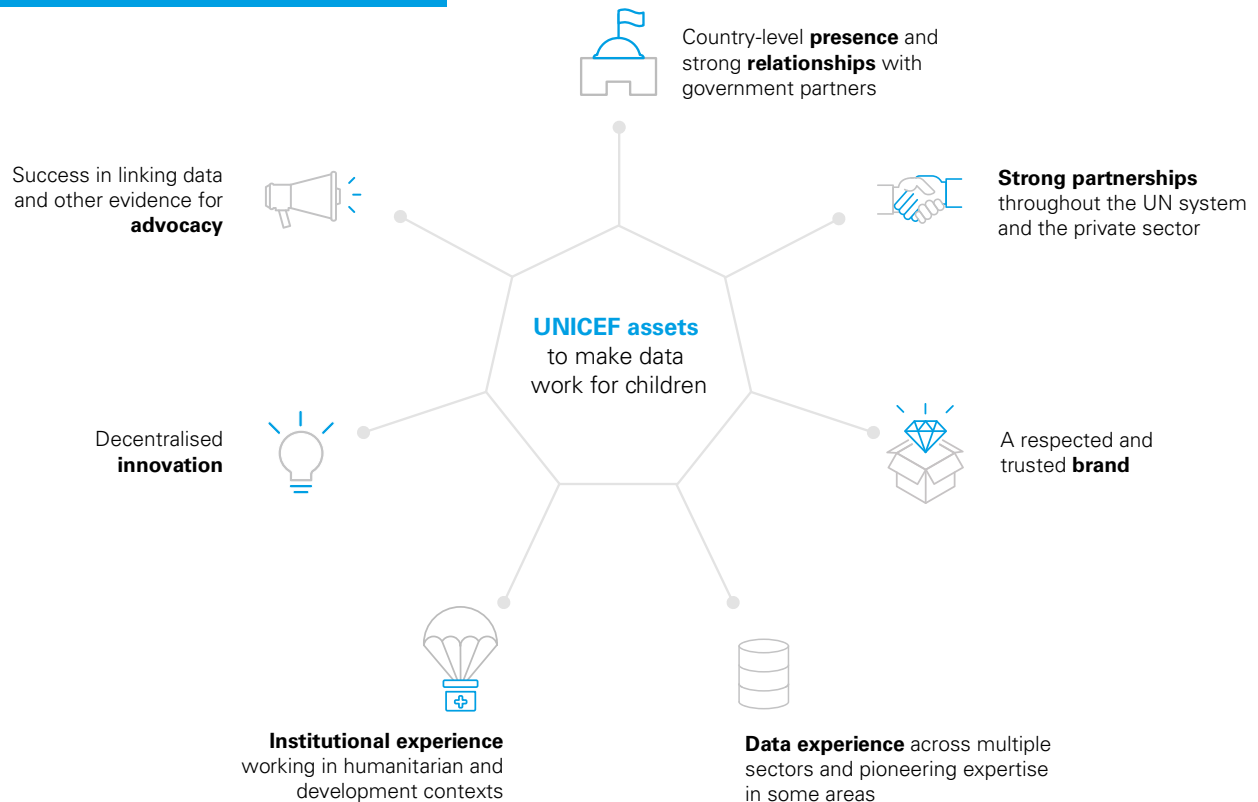
humanitarian spheres, UNICEF is well-positioned to both demonstrate and champion the value of informed data demand, supply and use. Decades of experience and a widespread ground presence offer promise for developing and scaling solutions.

Ultimately, however, unleashing the power of data for children is a team sport that requires a diverse and energetic coalition of advocates. UNICEF is hard at work expanding that coalition and welcomes new voices from all corners. This brief concludes with some opportunities for all supporters to get more involved – an ending that is just the beginning of much more work to come!



Laurence Chandy,
Director, Division of Data, Research and Policy

Key assets for UNICEF data work



1. Data demand, supply and use are equally important



Using near real-time data and community feedback to support maternal, newborn and child health in East Africa

UNICEF work in Kenya, Swaziland, and Uganda on near real-time monitoring (NRTM) systems and community feedback is building government expertise, demand and use for data - and delivering better health and nutrition interventions for women and children.

The challenge

Kenya, Swaziland, and Uganda each face specific concerns in maternal and child health. At the same time, all three countries face some similar challenges, including decentralised health services that are dispersed across large rural areas, health facilities struggling to understand the quality, reach and impact of their own performance, and limited data that make it difficult for district and national health officials to be aware of and provide much-needed support to facilities.

The opportunity

Working with government counterparts in each country, UNICEF saw an opportunity to tackle some of these challenges by making better use of near real time data and community feedback. With faster insights about what was happening at the facility level and a better understanding of users' experiences, health facilities would get a more timely, actionable understanding of the different changes that were necessary to improve health outcomes for women and children.

Data in Action

Since 2016, UNICEF offices in Kenya, Swaziland, Uganda and Zimbabwe have been supporting their local-level government counterparts as they turn near real-time health and nutrition data into actionable insights at the subnational level.

Mobile data collection and easily understandable, color-coded dashboards and scorecards are helping health facilities better understand and manage the quality, reach and impact of their delivery of care. Real-time community feedback, collected through SMS and other channels for dialogue adds an additional layer of

information, giving decision-makers better insight into the experiences – and, importantly, recommended solutions – of impacted community members.

The three UNICEF country offices have each developed applications for NRTM and citizen feedback for their context. All applications have institutionalised the use of data in government systems, including in quarterly performance reviews of health management teams.

Kenya created a reproductive, maternal, newborn, child and adolescent health (RMNCAH) scorecard to drive accountability and management at the county, sub-county and ward levels where services are delivered. Community health workers collect data using mobile phones for rapid data reporting. Support is given to health staff at all levels to make decisions based on this data. Dashboards tracks actions taken at all levels and are used in performance reviews. Community feedback is entered into the data system and shared with health management teams.

To address user grievances and low levels of satisfaction with healthcare outcomes, Swaziland developed the country's first health management information system (HMIS) dashboards for use at the subnational level. Reliable and quality data on community feedback, gathered through an SMS-based platform, is used by healthcare staff to make timely and responsive improvements in the quality of health services provided. The initiative also builds staff capacity to use data through a new national Client Management Information System.

Uganda launched and has now fully institutionalised an RMNCAH scorecard within their HMIS. The intuitively designed scorecard allows health facility staff to see the impact of their work and the easy-to-access data allow them to see trends that are timely and relevant to their decision-making. Adjustments in health action plans are based on these data and on a bottleneck analysis, which provides insight about how to address unsatisfactory performance on select indicators.

In each of these countries, focused investments in training and the generation of geographically disaggregated and directly relevant, facility-level data are changing the way that services reach children. They have allowed local government staff to access information, see trends relevant to their decisions, interpret their own data and - most crucially - act on those insights.

The lessons identified across all of this work have also been captured through a concerted knowledge exchange effort, which has been facilitated at a regional level and shared globally. One key area where continued knowledge exchange is likely to prove particularly valuable is in identifying sustainable models for community engagement and feedback, an area of work where each country has identified ongoing challenges.

As the learning continues, the work to date is demonstrating results. Focusing on the full cycle of data demand, supply and use is contributing to an increase in health budgets in Kenya, attention to data quality issues at the national level in Swaziland, and the relocation and improved take-up of RMNCAH services outreach in Uganda.





2. Data investments must **support government data systems** not supplant them

Giving child refugees a second chance at education in Lebanon

By creating a modular data system that could adapt to and support future government data systems, UNICEF is giving Syrian children in Lebanon a second chance at education while building up demand, supply, and use of data across government.

The challenge

As the conflict in Syria deepened, the Government of Lebanon recognised the need to respond to the overwhelming educational needs of children who had fled across the border. In 2013, the Ministry of Education and Higher Education (MEHE) and UNICEF teamed up to offer free education up to grade nine. However, Lebanon struggled to make sense of the information that was being sent in by schools across the country. Data was intermittent and of poor quality; the absence of a national Education Management Information System (EMIS) meant that there was no system in place to help the government collect, verify, analyse and use good data to form a clear picture of needs and the impact of the services that were being provided.

The opportunity

With so many children at risk of losing their chance at an education, UNICEF and MEHE focused on getting and keeping as many children in school as possible. The success of that strategy relied on rapidly generating high-frequency data. To accomplish this, UNICEF worked with the government to build a data collection and monitoring system called the Compiler, which tracks the enrolment and attendance of refugee children in educational services.

Data in Action

The Compiler was initially envisioned as a temporary solution in the absence of an EMIS in Lebanon. The government was eager to avoid past experiences; attempts to work with donors to build an EMIS had proven costly, prolonged and ineffective. Mindful of this, UNICEF and MEHE worked quickly over the space of three months in 2016 to design and build a

modular system that was both immediately useful and could adapt over time to a future, official EMIS.

The Compiler is now operational in all 355 schools providing refugee education. Each school has a tablet with internet connectivity. Every day, teachers take attendance on paper forms, which are then given to a single administrative staff who verifies and uploads that day's data on the tablet. Data are instantly uploaded to the Compiler database, which is hosted on the cloud.

The Compiler gives relevant staff the ability to track every child's educational history, including where and when they move between non-formal and formal education systems, dropout and retention rates in school - disaggregated by gender, location, school and other indicators. The quality of the data has given MEHE the confidence to adjust its programmes based on a real-time analysis of what is happening in facilities. In 2017, MEHE announced that school budgets would be disbursed based on the number of children registered in the Compiler.

Robust analysis help Lebanon better plan and shape its programmes. For example, outreach campaigns encouraging refugee parents and caregivers to send their children to school were unsuccessful in certain parts of the country, with as few as 20% of children coming to the first day of school to take the pre-test. Further analysis showed that informal settlements in these areas were located far from schools offering refugee education, making it difficult for children to attend. Understanding the real reason for low turnout rates has enabled MEHE and UNICEF to bring education services closer to children.

UNICEF's approach in working closely with MEHE to invest in data that supports government data systems - even ones that do not yet exist - won the widespread adoption and use of the Compiler by the government. The Compiler is now linked to the Back to School campaign and measures, for the first time, its efficiency and impact on children. The Compiler also serves as the platform for a cash transfer project by flagging children at risk of dropping out of school and for household visit and referral services to help them return to school.

Government enthusiasm for data and evidence is high and the UNICEF country office is a trusted partner in bringing evidence into policy decisions. At the request of the Ministry of Social Affairs, UNICEF is now working to adapt the Compiler to manage the ministry's human resources data.

3. Effective data systems must function both within and across sectors



Building data demand and expertise in and across government in Zimbabwe

By building trust with local politicians and closely collaborating with Zimbabwe's national statistical office on a targeted project, UNICEF demonstrated the power of disaggregated data and evidence for policy, while building up data systems and demand across government.

The challenge

From 2004 to 2008, Zimbabwe experienced the largest decline in the World Bank's Statistical Capacity Indicator of any country in the world. While knowing that there were grave threats to children and families across the country, Zimbabwe struggled to collect, verify, analyse, and use good data in ways that would improve outcomes. The national economy's output had halved since 2000 and ZIMSTAT, the national statistical office, faced significant budget and skill constraints.

The opportunity

In 2014, UNICEF Zimbabwe and ZIMSTAT wanted to start revitalising data capacity and use by creating a reliable and impactful product that could be used to identify key challenges facing the country's children.

In 2015, the two offices published the Child and Youth Equity Atlas, a collection of 25 district-level and 22 ward-level maps that visualized the issues faced by vulnerable populations, broken down to the lowest administrative level. Maps included topics such as the proportion of married female teenagers and the proportion of out-of-school children.

Data in Action

The atlas proved to be a powerful tool across sectors of government. It galvanised a national movement on key indicators, and the visualizations produced in the atlas were used in everything from parliamentary advocacy to local government and council meetings.

The atlas, based on the high quality and widely

respected 2012 Population Census, included secondary analysis that brought clear and compelling evidence to topics that had previously been poorly understood.

The severity of the maternal mortality problem for teenage girls, for example, came into stark relief when the atlas showed that nearly 30 per cent of maternal deaths occurred among girls between the ages of 15-19. At the same time, the data showed that half of the nation's female population had been married by the age of 19. The atlas also offered important insight into a policy solution to these problems: showing a strong relationship between girls who have received education and their decreased likelihood of early marriage. Together, these data and analyses provided clear evidence in support of a national movement for ending child marriage. This movement has since led to an effort by parliament to amend the marriage act, which is currently in court.

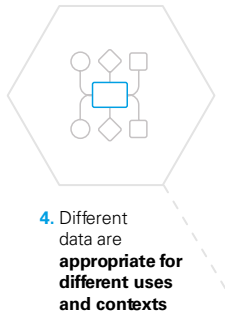
Outside the capital, local councillors were able to see – for the first time – exactly how their area was faring on key metrics, especially in direct comparison to other regions. The clear visual design of the maps made the information digestible to everyone, replacing complex statistical calculations and equations that were inaccessible and of limited value for most decision-makers.

Over four years, UNICEF partnered closely with ZIMSTAT, the Ministry of Planning and the Ministry of Finance on subsequent data projects. UNICEF staff began sitting in ZIMSTAT's offices to teach and participate in data and analysis trainings.

As the Equity Atlas gained traction, ZIMSTAT began receiving recognition for the quality of its work. Requests for data and analysis began coming in from other government ministries and parliament, and good practices around data privacy and security developed organically over time. As trust grew between the UNICEF office and ZIMSTAT, UNICEF was granted access to raw and sometimes sensitive data, and the office, in turn, honoured this trust by hiring experts to anonymize and aggregate any data shared with other UN agencies. Government appetite and expectations for high-quality data and analysis is now high and UNICEF is a valued partner that is regularly asked to attend meetings on policy decisions, give trainings and conduct data analyses for different ministries.



Combining several data sources, UNICEF and its partners were able to identify and better reach the Haitian communities most in need of vital health services in the aftermath of Hurricane Matthew.



Improving accessibility to health facilities in Haiti after Hurricane Matthew

With new insights gleaned by analysing multiple data sources together, UNICEF optimized its programmatic response after Hurricane Matthew.

The challenge

Nearly 900,000 children were affected by Hurricane Matthew in 2016, two-thirds of them requiring humanitarian assistance. By the end of that year, there were more than 39,000 suspected cholera cases in Haiti, compounding an already complex set of health challenges in the country. The hurricane caused extensive damage to Haiti's health system and, given poor road infrastructure and challenging terrain, many remote communities were left unable to access functional health facilities. The urgency of maintaining coverage of basic health services quickly escalated.

The opportunity

With better data about the health obstacles that Haitian communities faced in accessing health services, UNICEF and its partners would be able to both better target emergency support as well as advocate for appropriate facility placement during longer-term reconstruction efforts.

To meet those challenges, UNICEF colleagues in New York and on the ground in Haiti worked together to gather the right data and, more crucially, turn it into actionable insights.

Data in Action

The work started with the creation of detailed maps of the affected areas to inform decision-making about where mobile health clinics should be deployed to deliver the greatest impacts. This step was followed by a deeper analysis of the accessibility of all health facilities, allowing UNICEF to advocate from a strong evidence base about the best places to scale-up community health resources and rebuild a more resilient health system.

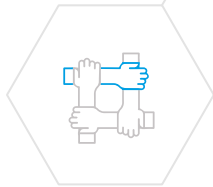
The work relied on bringing together multiple data sources to address the specific questions that had been posed. To map the geographic accessibility of health facilities, UNICEF made use of AccessMod – free, open-source software from the World Health Organisation. The software allows realistic estimation of the travel time between communities and health facilities by accounting for elevation, terrain, road networks, land use conditions, hydrographic barriers, local modes of transport and road conditions. It also helps planners estimate the number of people unable to access care because of capacity limits in existing facilities and can help identify where new health facilities should be placed to improve accessibility.

Using the travel time estimates generated by this analysis, national maps were produced identifying geographic areas located within one hour of the closest functional health facility. A High Resolution Settlements Layer (HRSL) from two outside partners was then overlaid with the travel time data to identify small communities and household clusters located outside the one hour travel time zones. The use of HRSL was an improvement over previous UNICEF mapping efforts because teams on the ground found that existing settlement datasets were not accurate enough to support this type of analysis.

Using these data insights, the Grande Anse inter-agency health coordination mechanism was able to identify and prioritise areas where the deployment of mobile clinics would be most valuable for meeting needs on the ground. The information also provided a baseline assessment on the accessibility of health facilities. This assessment was used by the Global Fund and other partners to inform the development of the national community health workers policy, the foundation of work to rebuild a more resilient health system.

With partners in and outside of government, UNICEF must do much more of this work to develop, use and share tools that bring multiple data sources and types together. These tools can both minimize the burdens of reporting and sharing data as well as enable new types of data analysis that provide new insights about the well-being of children.

5. Data for children is a team sport and working with partners is essential to create value



Harnessing the power of social media data to shape a Zika response in Brazil

In February 2016, Facebook and UNICEF teamed up to better understand the public conversation about Zika in Brazil. Using insights from anonymised Facebook data, UNICEF was able to create a data-informed Zika response campaign that engaged people across the country.

The challenge

Affecting at least 75 countries in Latin America, the Caribbean, Africa and Asia, the Zika virus threatens the well-being of women and children, causing devastating congenital and neurological conditions in newborns, including microcephaly. From 2015-2017, more than 220,000 cases were confirmed throughout the Americas, including nearly 3,700 cases of newborns with congenital abnormalities.

The opportunity

To contain the threat posed by Zika transmission, UNICEF has been working to simultaneously raise awareness of Zika prevention measures and build the capacities of families and communities to care for children affected by Zika.

Social media platforms and the data that can be gleaned from them offered a potent opportunity for both understanding the conversations that were taking place on Zika prevention as well as a pathway for shaping those same conversations. Getting the right information to the right audience at the right time could make a tangible difference in the prevention of Zika infections.

Data in Action

To tackle this challenge, UNICEF and Facebook teamed up, putting social media data to use in identifying the most effective messages and messengers in the fight against Zika.

Facebook pulled together anonymised insights from posts about the Zika conversation in Brazil, where more than 90 per cent of the population uses the platform every month. Together, Facebook and

UNICEF Brazil sought to better understand who was talking about Zika and their specific concerns.

The collaboration provided insights that shaped UNICEF's data-informed public communications campaign. Analysis from Facebook data scientists showed that 58 per cent of Facebook posts about Zika in Brazil came from men, opening the unexpected possibility that they could serve as advocates for raising awareness and promoting prevention. The work also showed that social media users were worried about the full range of mosquito-borne illnesses, not only about Zika. Using these insights, UNICEF tailored content on Facebook to align with Brazilians' concerns.

"I could not stress enough how much we have learned about the power of Facebook and how to maximize our results to engage users with the right information at the right time. This can, literally, save lives."

— Edith Asibey, Chief of Communication & Partnerships, UNICEF

One direct outgrowth of this research was the development new content for UNICEF Facebook posts, including one featuring a photo of Felipe Tavares kissing his infant daughter born with microcephaly. In the text, he explains how, since his daughter was born with the birth defect linked to Zika, he has worked to provide fathers across Brazil with the support they need to return to their families so that mothers aren't raising their babies alone. The ad campaign also went beyond Zika, with another post calling on people to protect themselves from other illnesses transmitted by the *Aedes aegypti* mosquito, with a follow-up survey showing that 82 per cent of those reached by the campaign planned to take action to protect themselves.



Moving from Evidence to Action

From Swaziland to Haiti, there is clear and convincing evidence that – when put to use – data can and have transformed results for children and their families.

The challenge that lies ahead is not about the potential of data. The most difficult – and potentially transformative – work to come is embedding a culture of data demand, supply and use throughout the work of UNICEF and its partners. The demands and opportunities of the SDGs compound the urgency of getting that balance right.

It is not good enough to have an ideal dataset that arrives on decision-makers' desks months after they have already taken a key vote. Likewise, the most beautiful visualisation that is built on biased data can hamper progress rather than advance it. Informed data demand, supply and use must be better matched to each other.

Across UNICEF, colleagues are working diligently to make sure that the right data get in the right hands at the right time. Experience has shown that using data and evidence to shape decision-making is crucial to driving results for children – and UNICEF is committed to making that happen.

In the coming months, this means deepening UNICEF work to:

1. Identify and share what good looks like when it comes to turning data insights into action and meaningful results;
2. Plan for the future by finding and prioritising the best investments in data, technology and talent; and
3. Develop the partnerships and resources needed to make this work happen.

To carry this work forward, UNICEF needs the active involvement of external partners as well as colleagues around the world.

Here are a few ways to help unleash the power of data for children:

- **If you are a UNICEF regional and country office:** share your data experiences and talk about what your office needs to make data work better. Data strategy colleagues can work with you to plan the most effective investments and way forward. Get started through the intranet site at <https://unicef.sharepoint.com/teams/DRP/DataforChildren/>
- **If you are a potential data or technology partner:** start a conversation with the UNICEF data team. The team can tell you about the most pressing data challenges standing in the way of progress for children; you can help identify links between your work and the solutions that children need. Please get in touch using the contact information on the back cover.

If you are a potential funding partner: UNICEF needs your support – and a much larger team of data advocates – to make this work scalable and sustainable. Together, let's begin a conversation about exciting opportunities to strengthen data work across the world. Reach out via the contacts listed on the back cover.

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To learn more about any of these specific examples or get involved, please send a message to data@unicef.org or reach out to a member of the team:



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