From “What Happened?” to “What’s Happening?”
Equity in action through real time monitoring
A Resource for MoRES Application
From “What Happened?” to “What’s Happening?” Equity in action through real time monitoring
Jingqing Chai and Matthew Cummins


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Executive Summary

The use of real time monitoring (RTM) of key social services and socio-economic conditions is growing exponentially in rich and poor countries alike as a tool for better and faster decision-making. Service providers, development actors and civil society activists have recognised its potential for identifying emerging priorities, pinpointing bottlenecks in service delivery, increasing accountability and providing a voice for marginalised populations. UNICEF country offices are part of this trend, increasingly supporting initiatives that aim to harness the potential of RTM for children.

This report presents evidence and proposes ideas on how RTM can be utilised to advance social inclusion, equity and child rights. The information is the result of a UNICEF learning initiative which sought to better understand how RTM could make a difference for the most vulnerable. The learning initiative assessed selected UNICEF-supported RTM initiatives, conducted an extensive literature review related to RTM experiences and consulted with key practitioners both within UNICEF and beyond.

The learning initiative has documented evidence of how RTM is already making a difference in the design of policies and programmes for children: empowering vulnerable populations, improving local planning and service delivery, strengthening crisis or emergency preparedness, and enhancing equity-focused policies, plans and budgets.

Preliminary evidence also indicates that RTM is going beyond improvements to programme design and is contributing to concrete results for children: saving lives by improving supply chain management, and thus getting needed medical supplies to marginalised populations (e.g. in Uganda); preventing infant and maternal deaths, by strengthening demand for prenatal, maternal and neonatal health services in hard-to-reach areas (e.g. in Rwanda); and providing faster and better support to children who are most at risk of violence, by speedier entry and sharing of case management information and removing bottlenecks (e.g. in Senegal). Such RTM results occur when initiatives go beyond rapid data collection to speedy use and responsive action. Ensuring that RTM initiatives are guided by a systemic approach (e.g. paying attention to each of the distinct components that define effective RTM—data analysis, reporting and response capacity) is crucial to maximize the potential of future initiatives.

Over the last three years, UNICEF has developed, applied and refined an overall approach to improve the design and monitoring of equity-focused programmes, known as MoRES—the Monitoring Results for Equity System. A key feature of MoRES is identification and frequent tracking of bottlenecks and barriers that impede results for children, with links to feedback loops that allow for ongoing redesign of programmes and policies in response to these data. RTM is already being used as an integral part of the MoRES approach, and within this approach, it is now
clear that there is significant potential for RTM to have a widespread positive impact on overall policy and programme design and delivery.

Looking forward, as the digital divide narrows across developing countries, the momentum of RTM innovations will continue to accelerate. The question is how to best support UNICEF and its partners’ capacity and improve coordination in designing and implementing RTM activities, with a view to enhancing the equity orientation of such activities. Agile development of “know how” is an important aspect of this support, within which this report offers some initial insights.

A companion handbook, *Practical Considerations for Monitoring and Responding to Bottlenecks in Real Time: A Resource for MoRES Application*, offers more detailed discussion and illustrative examples to inform on the “how to” of implementing RTM.
SECTION I. Introduction

1.1 Background

Partly driven by the information and communications technologies (ICT) revolution, the field of real time monitoring (RTM) is rapidly expanding around the world. This report summarizes the main findings and takeaways from an overview of RTM methods and practices as well as an assessment of selected RTM initiatives by UNICEF and development partners. The findings offer initial evidence on the utility of RTM for achieving results for the most vulnerable children as well as lessons learned that can help guide RTM efforts to realize their full potential for advancing equity.

RTM has emerged as a solution to the limitations of the conventional role of programme monitoring, which is mainly concerned with adherence to planned implementation. It is increasingly recognized that the complexity of development issues calls for adaptive planning and timely course correction that is based on detecting real time changes and feedback (Hummelbrunner and Jones 2013). Given the time-sensitive and multi-dimensional nature of their vulnerabilities, RTM holds particular promise for improving children’s lives.

Beyond the important goal of improving services, RTM can help to promote social inclusion and contribute to greater equity. The most disadvantaged children face greater information challenges, as they are often “invisible,” hard to reach or difficult to track, even where mainstream information and monitoring systems are relatively developed. At the same time, compared to their better-off counterparts, they are highly vulnerable to adverse outcomes due to precarious livelihoods, limited coping capacity and greater instability in access to essential social services. The potential of RTM innovations in terms of improving the speed, cost and efficacy in both quantitative and qualitative data holds great promise to address the dual challenges of heightened vulnerabilities and lack of timely information associated with the most disadvantaged children.

In the wake of the global food, fuel and financial crises, RTM innovations have increasingly played a role in UNICEF’s efforts to gather faster and better information on child vulnerability. These innovations have included the use of ICTs, such as RapidSMS, to speed up and enhance information needed for delivering effective rapid nutrition interventions in the context of high food insecurity and for improved health services to address maternal and neonatal health. Innovations have also emerged in rapid assessments and monitoring of the crisis impacts to promote inclusive policy responses.

The Monitoring Results for Equity System (MoRES) developed by UNICEF in 2010 provides a framework to identify, track and address priority bottlenecks and barriers to positive and equitable outcomes for children. As its name implies, using this approach requires regular monitoring, and the experience of RTM initiatives shows promise for contributing to the success
of this approach, allowing government and partners to regularly monitor and assess progress (or lack thereof) in reducing bottlenecks and barriers in achieving results for disadvantaged children.\(^1\)

To help guide ongoing investments in RTM, UNICEF undertook a learning agenda under the name “Real Time Monitoring: Equity in Action” during 2011-12. The work consisted of a multi-country assessment of and consultation on select RTM initiatives that collect higher frequency data on (i) changes in livelihoods security among vulnerable populations and (ii) instability in access to services. While the initiatives were selected from diverse programme areas and themes, they shared a specific focus on strengthening information systems in order to enable timely policy and service delivery responses as well as to improve programme performance.

Although the timing of the study did not allow for direct linkages to the initial experience of MoRES application, the types of RTM activities covered and the needs they serve are highly relevant. By examining their experiences around core components and corresponding performance aspects, such as data quality and inclusivity, user relevance, potential for effective responses, sustainability and the use of technology, this report demonstrates how RTM can support the application of MoRES.

1.2 Audience

This report makes the “investment case” for RTM by highlighting its potential to achieve equitable results for the most vulnerable children and their families. The main audience is UNICEF decision makers and staff to demonstrate the opportunities presented by RTM to enhance equity-focused programmes and application of MoRES, as well as partners who are contemplating or already providing support to governments to build or strengthen RTM as part of national data collection and reporting systems.

There is also a companion handbook to this report, *Practical Considerations for Monitoring and Responding to Bottlenecks in Real Time – A Resource for MoRES Application*, which presents a set of guiding principles that should be considered to maximize the potential of RTM initiatives to generate actionable information and achieve equitable results, especially for children. The handbook contains a detailed assessment of the different RTM approaches and serves as a guide to help identify the most appropriate RTM method for a given purpose and in a given context. Practitioners interested in the “nuts and bolts” of RTM are encouraged to review the accompanying document, which is available at: [www.real-time-monitoring.org](http://www.real-time-monitoring.org).

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1.3 Methodology

The learning is drawn from a three-pronged effort, each of which produced distinct products:

- An extensive literature review was carried out on over 100 documented RTM initiatives (not limited to UNICEF) for which some form of evaluation is publicly available to allow for sufficient learning. A knowledge portal was created to facilitate the documentation of these and other ongoing and future RTM initiatives (www.real-time-monitoring.org).

- Seven new, in-depth case studies in UNICEF’s selected core programme areas were developed through field research, using qualitative methods including common questionnaires, focus group discussions and interactive stakeholder workshops (Table 1).

- Internal and external consultations, including a global expert workshop in June 2012, which shaped the framing, content and focus of this report and the companion handbook.

<table>
<thead>
<tr>
<th>Table 1. Case Studies: Programme Areas and Themes</th>
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<tbody>
<tr>
<td>Service Provision</td>
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<tr>
<td>Child protection</td>
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<tr>
<td>Education</td>
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<tr>
<td>Health</td>
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<td>Vulnerable minorities</td>
</tr>
<tr>
<td>Response to macro, livelihood shocks</td>
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</table>

1.4 Structure

The remainder of this report is organized as follows:

- Section II, What is RTM?, introduces key definitions, components and methods;

- Section III, Promoting Equity through RTM, explores the evidence on and potential of using RTM to achieve equity;

- Section IV, Conclusion, summarizes the key takeaways that could help guide UNICEF and its partners toward a more systematic engagement in RTM for equity.
SECTION II. What is RTM?

2.1 Definition

This review finds that many initiatives are called “RTM,” but that the term means different things in different contexts. In daily living, for example, “real time information” seems to have a clear interpretation: current information available for instant response, such as a car dashboard provides a driver. However, there is rarely a need to react immediately to changes in economic and social data and can thus be more flexible, but how much more?

In the context of this report, “RTM” is defined as “higher frequency data collection or reporting, to strengthen current programme performance or to inform policy and the practice (design, scale and scope) of future service delivery.”

RTM may be distinguished from more conventional forms of monitoring in its greater emphasis on the link between data generation and timely responses or corrective actions. A core attribute of RTM is an effective response mechanism, in which the monitoring is seen as a tool and resource for performance improvement; this must be the main driver of UNICEF’s commitment to RTM.

“Real time” is often defined in relation to existing, more conventional forms of information collection and reporting. For example, a quarterly sentinel site survey that monitors child nutrition can be considered “real time” when compared to traditional national nutrition surveys that are typically conducted every few years. However, as ICT and other forms of innovations are speeding up traditional forms of data collection and reporting, RTM should not be viewed as a distinct set of methods, but rather as encompassing improved aspects (e.g. design, use of technologies) that render higher frequency data collection and reporting viable.

While RTM is not conceptually defined in terms of the technology used, it is increasingly associated with new technologies. There are obvious exceptions: for instance, community-based monitoring of drugs at health clinics or teacher absenteeism at local primary schools is often “current and immediate” but may only involve written records. While the potential of ICTs for real time information exchange holds enormous promise for immediate welfare and equity gains, the digital divide remains, especially when the most disadvantaged are concerned. These considerations point to the importance of fitting technologies for purpose and of carefully considering inherent challenges posed by technological barriers.
2.2 Core components

A main finding of the assessment is the importance of taking a systemic approach to RTM, one that goes beyond data collection to give sufficient attention to data analysis, reporting (and information flow) and, most importantly, response capability, and treats them as integral components (Figure 1). Breaking RTM into four distinct components facilitates learning on innovations; it further helps unpack the bottlenecks that can jeopardize the performance of a RTM initiative in terms of data quality and inclusivity, user relevance and potential for effective responses.

2.3 Methods

Overall, the RTM initiatives assessed can be grouped under five methods:

- **Routine data systems** are part of information management systems and subsystems that continuously collect information at different time periods and across different levels. While they most commonly operate in education and health settings, such as Education Management Information Systems and Health Management Information Systems, they are increasingly utilized in other areas, such as child protection. RTM initiatives that build on routine data systems increasingly involve the adaptation of mobile technology for enhanced breadth, timeliness and analysis of information.

- **Sentinel site surveillance** is generally used to monitor selected service delivery units or communities. It is often used for nutrition monitoring, health and demographic trend assessment, facility-based disease management and early warning. Where sites are related to a specific intervention, monitoring may be wide ranging, tracking changes over time in input, process, output and outcome indicators to assess the extent to which an intervention is achieving its expected effects. In other cases (e.g. demographic monitoring), the range of indicators may be more limited. Although this method does not generally collect information that is representative of a population, it requires fewer resources than population-based surveillance and can also be used to assess trends.

- **Rapid surveys and assessments** aim to quickly obtain general estimates of incidence rates or assess programme performance. Although originally designed to estimate immunization coverage at district levels, rapid surveys are now used in a wide-range of areas. They have also become increasingly important for planners and researchers in understanding the impacts of economic and environmental shocks as well as in detecting vulnerability buildup and strengthening emergency preparedness in crisis situations. Whereas rapid surveys typically rely on a short questionnaire and a small sample size to provide fast feedback to
decision makers, rapid assessments are considered broader since they involve multiple data collection methods.

- **Community-based monitoring** is a method in which “people are facilitated to do things for themselves.” This method is well suited for higher frequency data collection on changes in vulnerabilities and access to services at the local level, with added potential of strengthening accountability through community participation. A key characteristic is the combination of a variety of strategies and processes to collect, analyze and disseminate information on a range of aspects at the local level, such as on service delivery, progress on development projects and budget implementation.

- **Citizen-based monitoring** aims to collect information mainly from individuals on service delivery or community issues, which can then be triangulated with other data sources to trigger alerts and/or inform responses. Fuelled by mobile phone technology, it has been increasingly used to enable individuals to perform monitoring functions outside of the more traditional RTM methods earlier described. Citizen-based monitoring often feeds into another monitoring approach, such as a routine data or community-based system, where groups of messages can be categorized, aggregated and checked with other data sources to facilitate some type of response.

In practice, RTM initiatives often combine elements from multiple methods, with the choice being highly contextualized and shaped by “preconditions.” Preconditions, such as the ethnic make-up of a community, the function and capacity of local administration, institutional politics and the capacity of existing data systems, are important to understand before selecting a method. The possible utility of different RTM methods for different determinants is summarized in Table 2 and elaborated in the companion handbook.

### Table 2. Possible Utility of RTM Methods

<table>
<thead>
<tr>
<th>Determinants and Purposes</th>
<th>Routine data systems</th>
<th>Sentinel site surveillance</th>
<th>Rapid surveys and assessments</th>
<th>Community-based monitoring</th>
<th>Citizen-based monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabling environment</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Availability/accessibility of services</td>
<td>+</td>
<td>▲</td>
<td>▲</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Effective demand/utilization of services</td>
<td>+</td>
<td>▲</td>
<td>▲</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Monitoring quality of services</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Empower vulnerable populations</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Improve local planning and service delivery</td>
<td>+</td>
<td>+</td>
<td>▲</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Strengthen crisis/emergency preparedness</td>
<td>▲</td>
<td>+</td>
<td>+</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Enhance equity in policies, plans, budgets</td>
<td>+</td>
<td>▲</td>
<td>▲</td>
<td>+</td>
<td>▲</td>
</tr>
</tbody>
</table>

Note: + denotes optimal suitability, ▲ possible suitability and blank “not suitable”
3.1 Overview

This study offers preliminary evidence on how RTM can help achieve equity. This is demonstrated by the potential of RTM to support: (i) better monitoring for equity, especially through its focus on frequent collection and reporting of data for tracking changes in bottlenecks and barriers, but also for assessing evolving vulnerabilities; (ii) equity-oriented intermediate outcomes, e.g. empowering vulnerable populations and improving service delivery in disadvantaged areas; and (iii) equity-oriented impacts, such as child and maternal health (Figure 2).

Figure 2. Role and Purposes of RTM

3.2 Supporting monitoring for equity

RTM contributes to equity by strengthening monitoring of changes in identified bottlenecks and barriers at subnational levels, i.e. level 3 monitoring (L3M) within the MoRES approach. MoRES represents a theory of change for achieving greater equity for children, by linking three key elements together: (i) an analytical framework to focus attention on the determinants of
improved results for the most disadvantaged children; (ii) country-based identification of measurable indicators of priority bottlenecks and barriers in relation to each determinant; and (iii) frequent collection and reporting of data to track the removal of bottlenecks and barriers at subnational levels, with feedback loops to inform programme and policy design and adjustments.

RTM initiatives can be adapted and built on to apply L3M by: (i) utilizing existing community stocktaking mechanisms to capture the most vulnerable children as well as mobilizing community support for an equity-focused programming approach; (ii) adopting or building on innovative, proven and effective sampling designs and response mechanisms; and (iii) expanding on existing or pilot routine or supply management systems that have already incorporated RTM features (illustrated in Box 1). It is important that RTM initiatives build on and strengthen existing national data collection systems to the extent possible.

**Box 1. Linking RTM Initiatives in Bangladesh, Senegal and Uganda with L3M**

In Bangladesh, the UNICEF country office identified a number of barriers and bottlenecks to achieving universal pre-primary education (PPE). Using the determinant framework, indicators were developed to monitor progress, but the actual tracking faces challenges of weak local-level capacities and data systems. BRAC’s PPE monitoring programme offers a variety of insights on how to overcome related challenges and support L3M. For example, at the community level, a stock taking of local communities is carried out during the design stage, which could inform on the coverage of vulnerable children as well as be used for campaigns to raise parental awareness of PPE programmes. Within schools, the monitoring of PPE classrooms may be built on to fill gaps in administrative data and shed light on quality issues, such as teacher capacity or the availability and appropriateness of didactic materials. The PPE monitoring programme’s innovative random sampling design also has potential for generating frequent, reliable data at a reasonable cost, while its multiple-level user set-up can enhance equity-focused policies and local service delivery.

In Senegal, UNICEF’s analysis of the child protection sector revealed that the major supply side bottlenecks to addressing violence against children included the high expense of delivering services, the low geographic coverage of services, insufficient staff, and limited knowledge and information on procedures and mechanisms to offer child protection services. The Database System for Case Management for Child Protection has the potential to allow for real time measuring and tracking of a variety of indicators. For instance, it could generate routine information on whether such services are being delivered as an integrated package (psychosocial community management, medical community management, school support, family mediation, etc.) and whether they are appropriately implemented by trained actors. If scaled nationally or nationally representative, case information (e.g. type of abuse, services rendered, location) could be used for aggregate mapping and monitoring, as well as to inform UNICEF programme design and government policy more broadly.

In Uganda, UNICEF identified drug stock outs in local health facilities as a high-priority bottleneck to be addressed by the country programme, with poor supply chain management noted as a major challenge. UNICEF helped the government to develop and roll out mTrac to facilitate rapid reporting of drug availability and consumption in local health facilities across the country. The system generates timely and actionable information that is easy to access and analyze, which allows for corrective responses to ensure drug delivery to all health facilities. By monitoring in real time (weekly) the supply chain management of drugs at the community level, mTrac serves as a suitable platform for monitoring progress on key health-related bottlenecks.

Sources: Bangladesh, Senegal and Uganda Case Studies

In addition, RTM contributes to equity by complementing Situation Analyses that are part of level 1 monitoring (L1M), and together with L3M, increasing the likelihood and reliability of timely programmatic responses (illustrated in Box 2). Especially in situations of heightened political,
social or economic volatilities, or pre-emergency settings, there is a need for higher frequency monitoring of evolving vulnerabilities. In such contexts, the combined effects of reduced real income and negative coping mechanisms (e.g. compromising dietary quality for quantity) make L3M data difficult to interpret. RTM initiatives that gauge short-term changes in household vulnerability can help capture heightened demand-related bottlenecks, thus providing critical, complementary information. In cases where RTM detects a sudden spike in severe deprivations, such information can be used as an early warning signal for internal and external advocacy purposes as well as for reprioritizing country programme strategies.

Box 2. Linking the RTM Initiatives in Romania and Yemen with L1M

Rapid assessments using combined quantitative and qualitative methods were carried out by UNICEF and World Bank to inform policy responses to the impact of the global economic crisis. A key finding was increased vulnerabilities among vulnerable groups, such as informal Roma workers. The quantitative component consisted of a nationally representative household survey that was repeated every six months and gathered information such as household coping strategies, monthly earnings, remittances, business activities, children’s expenditures; the qualitative component was based on sentinel-site monitoring and included interviews and focus group discussions with representatives of communities to gain insight on perceptions of poverty in the context of the crisis, including the main problems facing children. Such examples of RTM of evolving vulnerability have the potential for updating situation analysis, and when combined with L3M of local service delivery, inform programme adjustments such as scaled-up public assistance to Roma populations facing vulnerability build-up.

In Yemen, the Social Protection Monitoring Rapid Survey tracked the dietary intake and diversity, water consumption, as well as morbidity of randomly sampled social protection beneficiaries, to trigger in-depth assessments and inform pre-emergency preparedness. Analysis of the data indicated the rising vulnerabilities to malnutrition and inadequate water consumption. Such examples of RTM of evolving vulnerabilities, could potentially be used to inform nutrition micro-planning as well as to supplement L3M of service provision, by anticipating increased reports of malnutrition cases and referral to therapeutic treatment.

Sources: Vietnam and Yemen Case Studies

3.3 Supporting equity-oriented intermediate outcomes

RTM can help achieve equity by supporting a variety of equity-oriented intermediate outcomes, including empowering vulnerable populations, improving planning and service delivery, strengthening crisis preparedness, and enhancing equity-focused policies, plans and budgets.

- **Empowering vulnerable populations:** Enabling citizens to monitor changes concerning them the most, including particularly young persons, and users of public services in disadvantaged areas, can empower them to demand more from their elected representatives and even take their own actions to address local challenges. In Uganda, for example, U-report allows youth across the country to voice their opinions on issues that they care about and engage with Parliamentarians.

U-report offers young Ugandans a voice on issues that they care about and can also generate timely information for specific initiatives, such as reducing primary school dropout rates and improving services for children who have experienced abuse. It also helps raise awareness, and serves as a tool for local and national policy dialogue.
• **Improving planning and service delivery:** From strengthening pre-primary education services in Bangladesh and improving growth monitoring clinics in Malawi to ensuring water supply in India, RTM is transforming public sector planning and service delivery across all sectors. As these examples demonstrate, the value added of RTM in this regard lies in its ability to enable planning and delivery processes to be *adaptive*.

• **Strengthening crisis or emergency preparedness:** If appropriately designed, RTM can provide early warning signals and mitigate risk among vulnerable populations facing different types of shocks. The experiences of Lao PDR with Crisis Surveillance, Romania with Rapid Assessment and Yemen with the Social Protection Monitoring Rapid Survey underscore this potential, although they further demonstrate the importance of ensuring that this type of RTM is embedded in decision-making processes so that pre-emptive actions can be introduced in real time in order to avert crises.

• **Enhancing equity-focused policies, plans and budgets:** By capturing actionable information on hard-to-reach groups, RTM has shown great promise for ensuring that policies, plans and budgets focus on the most vulnerable. In the Philippines, for instance, the community-based monitoring system collects local level poverty data to promote evidence-based policymaking and programme implementation among local and national ministries; in Vietnam, findings from Rapid Impact Monitoring influenced national policy decisions adopted by the government, including on the role of formal and informal social protection to support groups most affected by the global economic crisis.

### 3.4 Supporting equity-oriented impacts

RTM can help achieve equity by supporting better impacts for the most vulnerable children and their families. This is perhaps most clear in terms of improving service delivery, as illustrated by the following examples.

• **By improving supply chain management, RTM saves children from preventable diseases like malaria.** In Uganda, mTrac was introduced in 2010 to overcome poor supply chain management of antimalarial medicines, which led to frequent stock outs in local health facilities across the country. By facilitating rapid reporting of the supply and consumption of antimalarials, stock out rates declined from 25.2% to 13.8% in facilities where mTrac was active by late 2012. Applying this improvement to the nation-wide rollout, which was
expected to be completed in 2013, suggests that an additional 1.3 million persons infected with malaria, including some 260,000 children under 5, could gain access to life-saving treatment each year, with hard-to-reach populations likely benefiting the most.\textsuperscript{2}

- **By strengthening the demand for maternal health services, RTM prevents infant and maternal fatalities.** In Rwanda, high rates of neo-natal and maternal deaths are mainly due to complications during pregnancy and childbirth. To help identify problems during pregnancy and promote deliveries in health facilities, a RapidSMS system was developed to enable community health workers to register and track pregnant women. If the same decline in newborn and maternal deaths achieved in the pilot district were applied to the nation-wide rollout that was expected by the end of 2012, RTM of pregnant women could save the lives of more than 10,000 newborn children and 600 mothers annually.\textsuperscript{3}

- **Real time information system for case management responds to time sensitivity and multidimensionality of children most vulnerable to violence.** In Senegal, one of the main challenges to effectively supporting children who have experienced violence was the lack of coordination and information sharing across different sectors and services. An interagency child protection data system was developed, which, through the use of mobile phones and palm-held digital assistants (PDA) handsets, enabled different organizations to enter, transmit and view data about specific children in need of protection and allow for common referral pathways with clearly defined policies and procedures. If the results of the initial pilot experience in three prefectures were to be applied nationally, an estimated 4,500 children at-risk could be expected to benefit from comprehensive protection services annually across the country.\textsuperscript{4}

\textsuperscript{2} National estimation based on: (i) 25.2% stock out rate of ACT in local health facilities before mTrac and a 13.8% stock out rate in facilities where mTrac was active as of November 2012 (as reported by UNICEF Uganda in March 2013); (ii) 11,824,484 presumed and confirmed malaria cases in 2010 (WHO World Malaria Report 2012); and (iii) 19.4% of the population under 5 in 2010 (UNDESA 2012).

\textsuperscript{3} National estimation based on: (i) a 54% reduction in newborn deaths and a 67% reduction in maternal deaths following the introduction of RapidSMS in the Musanze District (UNICEF 2011); (ii) a neonatal mortality rate of 21.1 per 1,000 live births, an infant mortality rate of 38.1 per 1,000 live births and a maternal mortality ratio of 480 per 100,000 live births (World Development Indicators 2011); and (iii) under 5 population of 1,785,726 (UNDESA 2010).

\textsuperscript{4} This estimate is based on the initial number of prefectures geographically covered by the database (3), the number of cases included in the database as of December 2011 (300) and the total number of prefectures in the country (45) (Senegal Case Study).
SECTION IV. Conclusion

RTM has great potential for better addressing the dual challenges of information gaps and heightened vulnerabilities faced by the most disadvantaged children and their families. The review and assessment of select RTM initiatives offers initial evidence on the utility of RTM for equity. In addition to allowing for more effective monitoring of equity, many have succeeded in or shown promise for achieving important child-related intermediate outcomes, including empowering vulnerable populations, improving local planning and service delivery, strengthening crisis or emergency preparedness, and enhancing equity-focused policies, plans and budgets. There also emerged preliminary evidence on the concrete impacts that RTM efforts have contributed toward achieving, including:

- Saving lives from preventable diseases like malaria, by improving supply chain management that benefits those most removed from the center;
- Preventing infant and maternal fatalities, by strengthening the demand for prenatal, maternal and neonatal health services in hard-to-reach areas; and
- Responding to the time sensitivity and multidimensionality of children at-risk of violence, by speedier entry and sharing of case management information and removing bottlenecks.

There have been missed opportunities as well, in terms of lack of success in generating timely policy, programme and service delivery responses. Among the lessons learned is the importance of framing a RTM initiative within a theory of change, such as that represented in MoRES, which links RTM data collected to identifying, tracking and addressing bottlenecks and barriers that are impeding results for the most disadvantaged children and their families.

The main takeaway is that, if implemented properly and if used to strengthen existing systems, RTM can be an effective tool for achieving greater social inclusion and equity for children. What drives the value added of RTM is the insistence on linking RTM data to speedy use and responsive action. As such, it is important to take a systemic approach to RTM, one that goes beyond data collection to give sufficient attention to each of the distinct components—data analysis, reporting and, most importantly, response capability—and treats them in an integrated manner.

Looking forward, it is important to recognize that as the digital divide narrows across developing countries, the momentum of RTM innovations will continue to accelerate. The question for UNICEF is how to best support UNICEF and its partners’ capacity and improve coordination in implementing RTM activities, with a view to enhancing their equity orientation.

Agile development of “know how” is an important aspect of this support. Already, since the global study was conducted, several of the case studies have enhanced their methodology, improved their coordination mechanisms, and supported partner response capacity. To this end, this report should be seen as forming an early part of the ongoing learning to support the capacity development of UNICEF and its partners in applying MoRES, as well as in building equity-sensitive, sustainable RTM national systems.
References


