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Future of statistics for Africa: Statistics that leave no one behind, the example of making birth registration in Nigeria more inclusive

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Abstract. The RapidSMS is an online database system which was introduced in Nigeria in 2011 as an open source software tool for monitoring birth registration process. The innovation allows real-time tracking of the local government and regional birth registration activities with the core machinery being registration at the local levels. Birth registrars are reporting aggregated numbers and registration disaggregated in four age groups < 1, 1–4, 5–9, 10–17 by sex, geographical location and by registration centre. The center-by-center data collection mechanism reflects the children's population data indicating where birth registration coverage varies substantially between states and in some cases between local government/community setting. The dashboard is helping to identify where non-registered children likely account for some of the most excluded and vulnerable children in Nigerian communities and where rates are often lowest for such children.
These statistics are mostly found in rural areas, from poor families and with parents who have minimal or no formal education. The innovation (with its functionality improved on consistent basis) is helping to identify disparities in service delivery and facilitating prompt, evidence-based responses to areas where birth registration levels are low. It is assisting with tracking the trend of registration that will help the country reach the Sustainable Development Goals (SDGs) – birth registration-goal 16.9 by 2030. Specific focus is on how the dashboard is helping to improve data acquisition and analysis including registration coverage and not just registration events. The write up further explores how the RapidSMS is providing a platform for real-time analysis of decentralized birth registration data as an essential information for understanding efficient service delivery, improved local level registration and developing specific solutions where state level analysis and solutions are often too broad.

Keywords: Birth registration, innovation, RapidSMS platform, dashboard, quick analysis, outreaches, child population, real time monitoring, data collection and collation, monitoring and advocacy tool

1. Introduction

"Birth registration confers an important set of benefits and protections for children; non-registration means that children miss out. Without proof of age, children may be engaged in hazardous labor or be treated as adults in the justice system. Without citizenship, children are at higher risk for trafficking. In the event of family separation due to natural disaster or armed conflict, non-registered children are more difficult to reunite with their families. Birth registration is also critical for national planning and governance objectives" [1]

Nigeria is a Federation operating three tiers of government-Federal, State and Local Government.

It is composed of 36 States, the Federal Capital Territory (FCT) and 774 Local Government Areas (LGAs).

A centralized Civil Registration and Vital Statistics System [2] (CRVS) is operated under a single organization – the National Population Commission (NPopC) mandated as the main institution to establish and maintain a continuous and compulsory registration of births and deaths nationwide. Information regarding birth registration in Nigeria was derived from multiple sources, each with specific methods, variables and limitations.

There has been a poor public response to reporting the occurrence of births, deaths, and stillbirths. This general apathy towards registering these events is indicative of the very poor data collected in respect of

such events for many years. This has been due to the failure to process the field data on an annual basis due to inadequate human and material resources. Thus, in 2008 the comprehensive report of livebirths, deaths and stillbirths was published by NPopC for the first time [3].

The report covered cumulative statistical data for the year 1994 to 2007, indicating that births of large number of children under five are unregistered and unreported in Nigeria. The report [4] indicated the number of under-five children consistently unregistered especially between year 2000 to 2007. As of 2001 at least 79 per cent were unregistered, in 2004 and 2005 about 86 per cent were unregistered but the figure slightly changed to 65 per cent as the coverage rates for unregistered children in Nigeria as of 2007.

After the 2008 publication there have been efforts to expand birth registration coverage, but there has been no systematic assessment of what factors are most responsible for effective or ineffective birth registration programming. There are no best-practice models or evidence-based interventions recorded for the local context and the equity focus on birth registration was not addressed.

Further, by 2011 several key contextual issues hampered efforts to strengthen the birth registration system impacting negatively on increased percentage coverage. The political dispensation was fragile and quite unfavorable for programming with a marked decline in urban and rural level services. There were (and still are) insecurity issues resulting in economic destabilization affecting families and their ability to access services including birth registration, was not an immediate priority for these affected populations, especially in the North East of Nigeria.

1.1. National level statistics

The national-level statistics based on periodic household surveys especially the 2011 – Multiple Indicator Cluster Surveys, (MICS) the 2008 and 2013 Nigeria Demographic and Household Surveys [5] (DHS) also highlighted low birth registration coverage – at just under 30 per cent. Progress on increasing coverage of under-5 birth registration within the 5 year – period (2008, 2011 and 2013) was impacted by the enormous population growth in Nigeria, which stood at over 170 million in 2013.

The MICS and DHS are nationally representative household surveys designed to collect data on children and women, specifically for health, nutrition, and education, but also on birth registration, family environment, child work and knowledge of HIV/AIDS.

Both surveys provide data for a wide range of demographic, socioeconomic, and health indicators that are linked to the birth registration status for each child. The most recent MICS of 2017 [6] set under-5 birth registration coverage at 46.8 per cent and DHS 2018 [7] results indicated the coverage at 43 per cent showing a slight percentage increase from the 2013 results.

Analysis of these household survey data is the primary source for current dialogue concerning birth registration in Nigeria and this can be linked to important global issues like the SDGs.

The importance of the wide range of demographic and socio-economic indicators has become very important in the face of the global indicators linked with the Sustainable Development Goals and its numerous indicators. The 17 Sustainable Development Goals are defined in a list of 169 SDG Targets. Progress towards these Targets are being tracked by 232 unique Indicators Almost all the SDG's indicators refer to the issue of the proportion of child population, requesting for accurate population and household data that is disaggregated by sex, age and geographic location. Some of the goals like *"no poverty, zero hunger, good health and wellbeing, quality education, gender equality, economic growth, reduced inequalities, having sustainable cities, ending violence against all women and girls and providing legal identity for all, including birth registration"* all required proportion of the target population, proportion of population living below the national poverty line, by sex and age, proportion and number of children aged 5–17 years, by sex and age and proportion of adolescent birth rate (aged 10–14 years; aged 15–24 years), etc. To this extent, the SDGs outcomes and results can be successfully calculated using data from a functional birth registration system and the vital statistics gained from a civil/birth registration system can provide up-to-date and accurate population data that is disaggregated by sex, age and geographic location.

Thus, for Nigeria's MICS and DHS the household surveys have become an important tool to track the country's readiness to achieve the SDGs. However, data collection methods and variables differ slightly between these surveys and each is associated with slightly different results. Both surveys asked all mothers and caretakers of children under five to respond to questions regarding previous registration and possession of a birth certificate. MICS is the only existing data source that addresses reasons for non-registration and (adult) knowledge of how to register a child's birth. It is important to note that these national level statistics were based on random samples or based primarily on a sample study

with a lot of variableness not considered. Particularly, the precise number of children registered in a qualitative and quantitative manner and the country's enormous population growth at the time of the data gathering process were seemingly not considered It is plausible to state that data collected from different sources or household surveys might vary in quality and format. Some people might not provide accurate information and low sample figure can compromise confidentiality and may be susceptible to some fluctuations when calculating proportions. A good example are the household surveys like MICS and DHS which occurs every 4 and 5 years respectively. This is unlike the real time data that provides a more consistent and accurate mechanism and layout of registration efforts on regular basis and in a more decentralized manner.

Therefore, there is a need to compliment household surveys with more accurate real time data, since it is an information that is delivered immediately after collection and margins of error occasioned by big time sample surveys are usually reduced or eliminated.

Such data is usually processed using computers, mobile phones and other Information and Communication Technology (ICT) equipment and stored for later or off-line data analysis.

It is important to state that several African countries [8] (like Zambia, Mozambique, Uganda, Malawi etc.) including Nigeria are using technological innovation to bridge gaps in registration efforts and to implement decentralized monitoring systems using ICT or mobile phone-based platforms that collects real time data on birth registration process [9].

2. Methodology

2.1. Nigeria's innovation experience

In Nigeria, in order to address the delay in reporting birth registration coverage and to make up for the household surveys, an innovative tool called RapidSMS an open source platform and a Short Message Service (SMS) based application was developed in 2011 by the United Nations Children Fund (UNICEF). Its deployment was for dynamic data collection, logistics coordination and communication, leveraging on basic SMS mobile phone technology. It is an SMS text-based framework that manages data collection efforts and complex workflows. It helps with high-speed data collection and analysis assisting users burst through paper-based bureaucracies to monitor the implementation of interventions more effectively.

The initiative at inception was accepted by the Federal Ministry of Health in Nigeria and was deployed during the 2010/2011 Long-Lasting Insecticide Nets (LLIN) distribution campaigns in Kano, Borno, Sokoto kebbi and Anambra State in Nigeria The deployment enabled tracking and reporting of household mobilization which took place during door-to-door visits, in advance of the distribution of the nets. To encourage active participation in the campaigns, registered households were issued net cards and were asked to provide information about collecting and using the LLINs by field enumerators Information provided were sent through the enumerator's phone to the RapidSMS dashboard. The sent information were collated to track the number of LLINs distributed, received and being used at the household levels.

Data generated from the dashboard was then used to position nets at distribution points, saving huge transportation costs and other time-consuming complex logistics concerns associated with the distribution. RapidSMS was deployed to bring about value addition by increasing efficiency and effectiveness of the implementation of the LLIN campaign distribution.

Having learned valuable lessons and recorded milestone successes in these LLIN pilot deployments, which were enough for showcasing the potentials of RapidSMS in providing real time information and data management, the innovation was then deployed to birth registration efforts. For the successful deployment to take place, initial background workflows were defined, with state by state mapping of registrars and birth registration centres in all the 774 Local Government Areas. Functional and non-functional birth registration centres were defined and identified. Based on the mapping, a data base and spreadsheet were concluded featuring only functional centres as centres where birth registration services are provided. Data base includes details (state, LGA, registration centre, name, telephone number and academic qualification, status of registrar-whether a permanent staff or an ad – hoc staff) of over 3000 registrars in specific and functional birth registration points and at the primary health care delivery centers.

Unique codes were assigned to each registrar in the data base for the dashboard to accept and sort data reported using the designated codes. The over 3000 birth registrars were capacitated to send a simple text message (to a short code 24453, which spells "child") using the unique code to post birth registration data. Training workshops were held in 23 locations across the country for all the 3148 birth registrars from January

2011 to October 2012. Registrars posting data to the dashboard has grown to 3,780 in 2020 [10].

The technology allows birth registrars across Nigeria to use SMS messages through their phones to input twice-monthly registration statistics including the number of cases registered according to sex and in four age groups (boys and girls under age 1 year, 1–4 years, 5–9 years and 10–17 years). Each registrar sends an SMS message to the automated database. Results are coded for each participating registration center, LGA, state, and geographic zone. The SMS message uses a standard format with a unique identifier (assigned to each registrar/registration center) followed by registration statistics for each age group for boys and girls. These statistics are compiled automatically and electronically and are reported as monthly Figures using the open website which is also accessible to the public. On average, the RapidSMS dashboard receives and processes at least 7,560 SMS messages/reports monthly from the functional birth registration points and at the primary health care delivery centers.

The registration centres were located in health institutions-maternity homes, primary healthcare centres, hospitals, LGA Secretariat and LGA offices of National Population Commission situated mostly in those rural, very rural, and urban slums. Timely supervision of these local and rural community level registrars was lacking. Commitment and accountability were weak, and some error reporting were noticed.

With the RapidSMS dashboard, these gaps were dealt with diligently. The organizational challenge of non-reporting, poor reporting or error reporting were handled headlong through the innovation technology.

3. Results and discussion

3.1. Gains from the Innovation

Prior to the inception and roll out of the RapidSMS dashboard, data on birth registration was not easy to access, compile, record or report. It took a long time to retrieve data from registrars and from the various states. Many registrars were not performing optimally. Many would register children but may not send the records or reports to the State or Federal level collation centre. There was no way to track or supervise local level registration efforts, especially for registrars working in rural, very rural, and semi-urban communities across the country.

The dashboard was deployed to feature at a glance, registration points and registrars that did not post or report their respective birth registration data. It depicts not only raw data of number of children registered, but the percentage number registered by each registrar. For example, where the expected number to register was 100,000 children and the registrars registered only 10,000 or 20,000, the dashboard will feature the number and indicate that the registrars had registered only 10 or 20 per cent calling for improved performance. The purpose of the features is to support different managers (at the LGA level being the Deputy Chief Registrar (DCR), at the State level being the – Heads of Department (HOD) and the Federal officials at the NPopC headquarters) to understand what birth registration activities are happening in their jurisdictions. It is to identify areas for improvement, especially when the number or the percentage registered are low consistently. Erring registrars are detected easily, called up and challenged to improve his or her performance. This process is ensuring that many registrars are consistently reporting their data from 2011 till date.

The dashboard is further enabling the managers to better understand and track the number of registration materials issued to recipients and what birth registration activities took place in each of the registration centres located in the 774 LGAs. For example, where 1,000 birth certificates were distributed in January to a registration centre in an LGA and the dashboard data showed by the end of the month of January that only 100 births were posted, this will be in red color, to show a clear indication that the registrar had not utilized at least 900 registration certificates and could not complain about insufficient (stock-out) number of certificates. Where a registrar has utilized 900 out of the 1,000 birth certificates issued, the dashboard will show it as green, as a good performer and additional registration materials are thus provided to take care of the child population to be registered.

The data and information from the LGAs, is making it possible and much easier to see instant results and the number of certificates issued to children that are registered. Based on the color codes, the findings and LGA level data is helping the NPopC to design location-specific interventions that informs procurement and distribution of birth registration materials. The system is assisting LGA registration centres and National NPopC to track the stock levels of birth certificates and to avoid stock outs.

In addition, registrars occasionally fail to submit RapidSMS reports or submit reports that are inaccurate (usually due to errors when typing the SMS message). Whenever reports are absent or inaccurate, the pro-

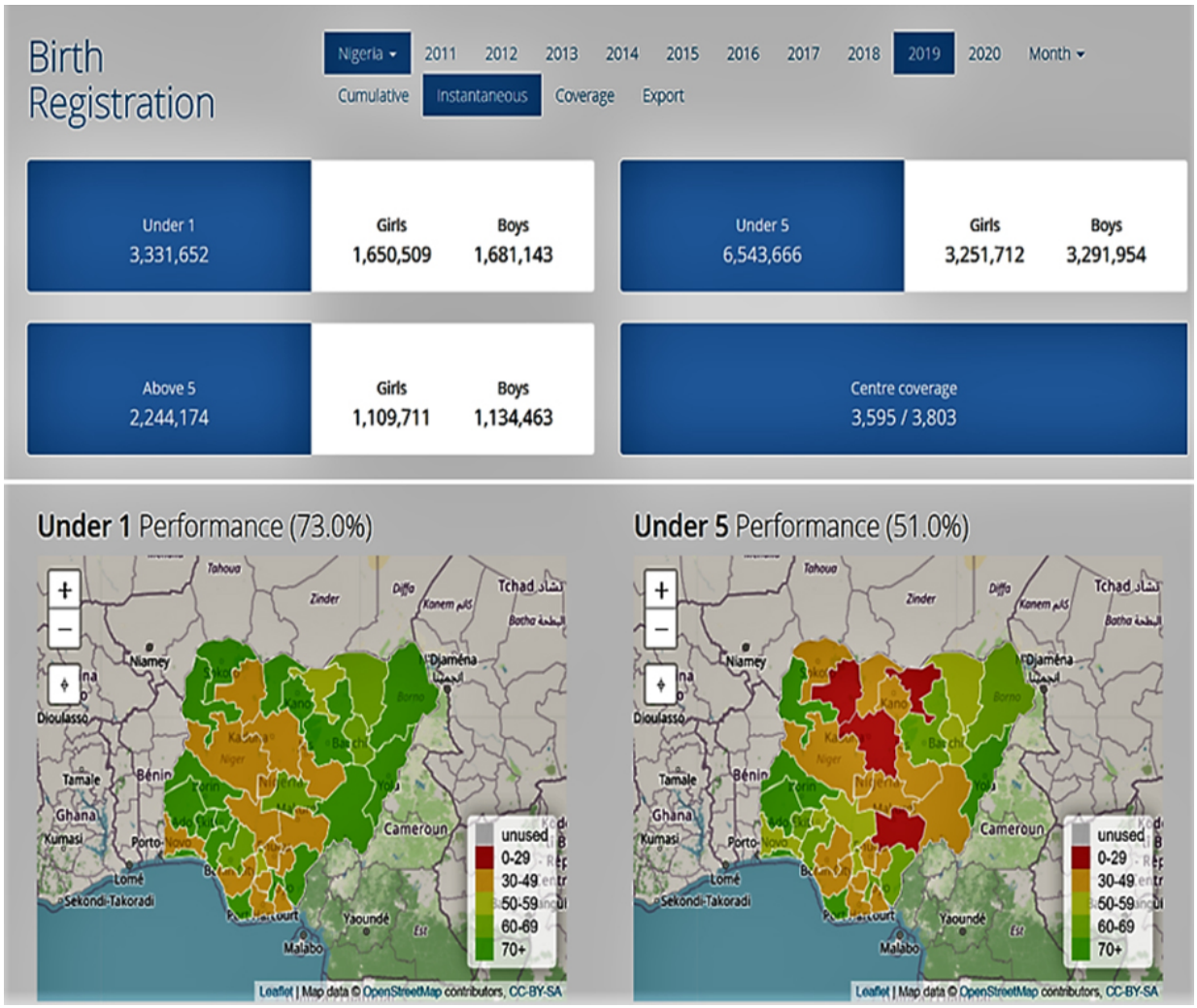

Fig. 1. Features of the RapidSMS dashboard.

cess is streamlined to reduce reporting errors, with the dashboard interface simplified to automatically identify and highlight registrars/registration centers that have reported such error message. Managers can review the dashboard's database in order to find and deal with the erring registrar(s) involved and gross mistakes or non-reporting points are automatically flagged by the dashboard. Registrars can correct the error-report or send the missing reports.

Basic automated data analysis is also available to help managers at all levels to keep track of the progress. Export functions were improved so that raw data could be saved in spreadsheets or database format for more advanced analysis. Monitoring teams were appointed to ensure that RapidSMS reports are submitted appropriately on-time, complete, and accurate. Other functionalities of the dashboard are – the filter component, that sorts the years, months, specific period and specific administrative level of the data at the state and national levels.

There are summary data on the number of children registered per specific period – for Under-1, Under-5, and Above-5 children component. These have color-coded values and maps for birth registration coverage while state-appropriate "levels of information" for birth registration can be filtered and automated data analysis are shown at a glance. Red shows the LGA does not meet minimum coverage target, Orange indicates minimum coverage target was met and Green shows the LGA has met the optimal coverage (see Fig. 1).

The system allows consistent and persistent real-time tracking of local and regional birth registration activi-

Table 1
Yearly data reported between 2011 and 2019

Year	Children under-5			Children above-5		
	All	Female	Male	All	Female	Male
2011	2,667,827	1,277,224	1,390,603	1,319,704	617,821	701,883
2012	3,051,145	1,458,725	1,592,420	1,487,828	740,191	747,637
2013	3,160,575	1,525,777	1,634,798	1,618,817	778,178	840,639
2014	3,251,887	1,575,425	1,676,462	1,495,910	725,517	770,393
2015	4,824,129	2,336,144	2,487,985	1,993,105	960,633	1,032,472
2016	4,980,295	2,435,892	2,544,493	2,766,592	1,353,455	1,413,137
2017	4,929,843	2,419,770	2,510,073	2,668,070	1,302,029	1,366,041
2018	6,144,180	3,020,305	3,123,875	2,260,731	1,091,980	1,168,751
2019	6,543,649	3,251,715	3,291,934	2,244,173	1,109,711	1,134,462
Total	**39,553,530**	**19,300,977**	**20,252,643**	**17,854,930**	**8,679,515**	**9,175,415**

Grand total: 39,553,530 + 17,854,930 = 57408460.

ties, considering it was rolled out since 2011 and still on-going. It was designed to help identify disparities in service delivery and facilitate prompt, evidence-based responses to target areas. The dashboard is helping to improve data acquisition and analysis including registration coverage and not just registration events.

3.2. Birth registration national data

With these features in place, there are no hiding places for erring registrars. Birth registrars were made to be more efficient and accountable and they were able to register children and post the reports to the dashboard in a consistent manner since 2011. Every year birth registrars report birth registration data disaggregated by boys/girls and in the 4 age groups (under-1, under-5, age 5–9 years, and age 10–17 years). Yearly data reported between 2011 and 2019 cumulatively totaled 57,408,550 (see Table 1).

The innovation technology indicated the steady increase in the number of under-5 children registered since 2011 when the dashboard was rolled out. The children above – 5 (ages 5–9 and 10–17) also got a boost in the registration efforts by moving steadily from 1,319,704 in 2011 to 7,915,364 and almost triple the number at 17,854,930 by end of 2019. Data on children from 5–17 though seen as late – registrations of children under-18 or missed children were captured as well.

Thus, the dashboard enables counting of late registrations and measuring the trends in the number of all children registered in different age bands on an annual basis. The data reported on yearly basis were calculated in a cumulative manner. Thus, the number of children under-5 registered in 2011 moved from 2,667,827 to 16,955,563 in 2015 and more than doubled by 2019 indicating at least 39,553,530 have been registered in Nigeria within the 10 years period in focus.

Table 2
Percentage increase in some states between 2011 and 2014

State	2011	2012	2013	2014
	Coverage (%)	Coverage (%)	Coverage (%)	Coverage (%)
Kwara	38	59	81	94
Kano	24	32	41	52
Sokoto	28	24	30	40

There was a slight decline on the number of under-5 children registered in 2017 (4,929,843) compared with total registered and reported in 2016 (4,989,2950) with a difference of at least 50,452 children. This could have been as a result of the conflict situation in some parts of Nigeria, which further brought out the essence of registration by RapidSMS. Data reported through the dashboard indicates differences in registration efforts which was what happened in 2017.

In another instance, the dashboard reflected the improvements made in some Northern states of Nigeria (Kwara, Sokoto and Kano) where birth registration coverage was initially low. Resultant effect of specific actions undertaken was reflected in the dashboard. To improve coverage in the 3 states, motor bikes were procured for registrars. This facilitated easy access of the registrars to reach out and register children in identified, hard to reach and marginalized communities in those states. Registered births among children under-1 in Kwara state increased significantly from 38 and 59 per cent in 2011 and 2012, to 81 and 94 per cent in 2013 and 2014. In Kano State, it increased from 24 and 32 per cent in 2011 and 2012, to 41 and 52 per cent in 2013 and 2014 respectively (Table 2). The population reached in the 3 states were in urban areas and mostly in rural areas, from poor families and with parents who have minimal or no formal education.

Thus, data reported as a result of specific events or interventions and posted to the dashboard are easily

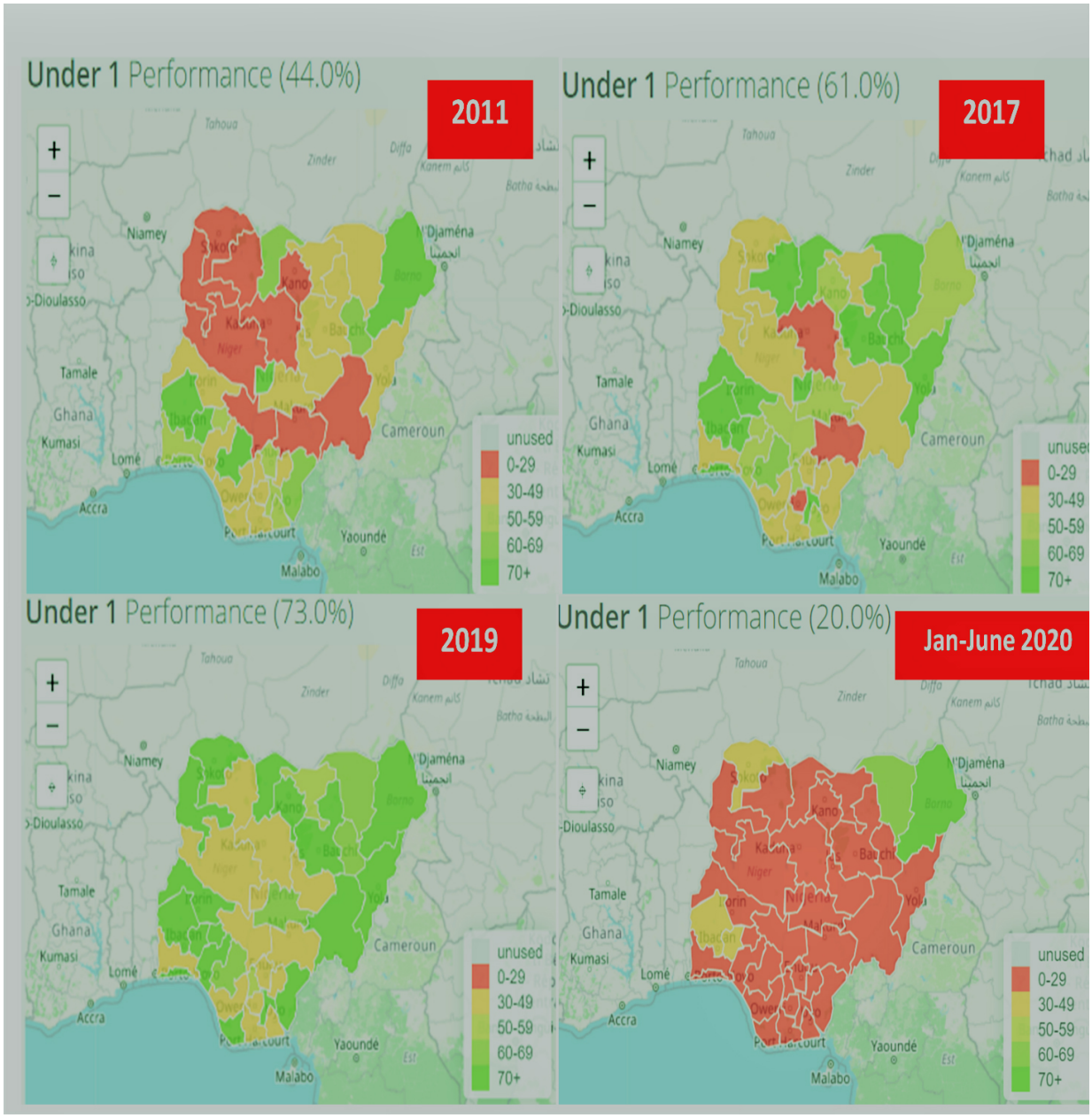

Fig. 2. States' performance between 2011 and 2020. Source: https://rapidsmsnigeria.org/br/.

quantitatively assessed to determine the improvement in performance or coverage prior to or after the interventions.

Furthermore, the technology enables tracking the trend of registration that will help the country reach the SDG – birth registration-goal 16.9 by 2030. All registered births in each of the 3780 health centres, the 774 LGAs and the 36 states plus the Federal Capital Territory from 2011–2020 are available. The data and report of especially children under-1, were captured and depicted in a map, no matter how rural or hard to reach their locations are. Low performing states (in red color) at the beginning of the roll out in 2011 have all climbed out of the red to become green in 2019 (see Fig. 2). While the 2020 Figure indicated the low-level registrations due to the COVID-19 pandemic

Interventions made to improve coverage especially in 2019, for example, included engagement with the

media to promote birth registration messages, increased interoperability at the health care delivery points and consistent efforts of the registrars to register children and post to the dashboard. The innovation was used as an advocacy tool to raise funding and personnel that enabled expansion and resources to register children in very rural, hard to reach and marginalized LGAs with the highest catchment areas or populations in the country.

The 2019 data and results further indicated the concerted efforts made to expand birth registration coverage from poor performing LGA to high performing LGA. The available data is open, seen broadly by all states and users and is employed to maintain healthy rivalry amongst states and to promote consistent registration efforts. The analysis presented in (Fig. 2) includes all available RapidSMS data collected from 2011 to 2020 which originated from 3,780 birth registration centers in the 774 LGAs representing the 36 states and the Federal Capital Territory in Nigeria. Most importantly, the birth registration report and data are not reporting on absolute numbers alone, but these numbers are rather measured against projected birth registration rates. Steady increase in registration of under 1-children in Nigeria rose from 44% in 2011, to 61% in 2017 and to 73% in 2019. Only 20% births were registered between January and June 2020 due to COVID-19 related restriction in movements and other safety protocols. However, limited disruption of registration services accounts for the high birth registration rate in conflict affected Borno and Yobe as compared with other states across the country.

Geographic size and population are factors that affect service needs at the LGA level. There are local poverty, poor transportation, difficult terrain, and armed conflict were consistently identified as some of the reasons that access to registration centers might be limited. But in places where these limitations are situated, birth registration data were captured and sent to the dashboard on consistent basis. The RapidSMS dashboard allows birth registration data and information from the LGAs, from remote rural and very rural areas to be documented, making it possible and so much easier to see instant results and the number of children registered in real time across the geographical areas in the country.

According the data reflected (Fig. 2) for year 2020, it clearly showed the negative impact of COVID_19 pandemic on registration efforts given the low-level registration especially of children under-1 being only 19 per cent. The dashboard remains the tool by which specific interventions, events happenings at the National, State, LGAs or birth registration centres that leads to increase or decrease in the number of births registered are measured. For example, because of COVID-19, the low-level registration effort is reflected in the dashboard enabling the understanding that the pandemic has a negative impact on birth registration rates. Birth registration report reflected a huge decline especially on under-1 birth rate because most parents and families are not showing up for birth registration services at the registration points because of the nationwide lockdowns. It is expected that post-COVID interventions and expected positive results will also be reflected possibly by the end of the year.

3.3. Data usage and its advantages

The yearly data and report from the RapidSMS dashboard have become a major source of information for decisions about birth registration programming in Nigeria. The comprehensive and disaggregated birth registration statistics is assisting the Country in understanding child population dynamics and those being left behind especially in the rural and marginalized communities. The report and statistics in the dashboard helped the country to successfully conduct an impact evaluation report on birth registration [11]. The report indicated what needs to be done to improve birth registration programming in Nigeria.

The web-based data dissemination technology continues to provide “Live updates” for monitoring and reporting of birth registration data and information across the country – be it in communities, local government areas, urban, semi urban, rural, semi-rural, very rural, riverine and mountainous areas.

Performance of over 3000 registrars are viewed on monthly basis at a glance and instantly analyzed, while supplementing the paper process. The number registered by each registrar is measured according to targets set on monthly basis – compared with expected or projected births especially of newborn, under-1 and under-5 children. The data collection process being real time is fast, easy, inexpensive and ensures active feedback from the Federal level, to the state and then to the local government levels. With the reporting available in all of 774 LGAs nationwide, all levels of the NPopC administration can utilize the data to promote improved registration activities and to provide an evidence base for birth registration programming and advocacy efforts. State and National officers continue to use the data to monitor results, to advocate for increased resources and expanded services, and to optimize registration activities.

The use of the technology continues to strengthen partnership building initiatives between NPopC, the Basic Education and the Health Care delivery actors in Nigeria. The platform is providing real-time data to help track the number of children born per time the number of growing babies needing immunization and pre-school age children needed by education sector to plan, implement and monitor childhood development programmes.

The consistent process has become a significant key in measuring how the country is meeting global and regional targets set and eventually the SDG target of registering all births. The strategic focus is to keep monitoring the coverage rates, creating intervention to boost the numbers until the SDG set targets are reached.

3.4. Implication for other African countries

With the present global challenge being the achievement of measurable results, evidence based planning and mechanism for monitoring and evaluation, the RapidsMS technology is recommended as a monitoring tool that can be replicated in many African countries, while still in pursuit of an end to end automation or digitalized technology that is currently too expensive for many African countries to embark on.

A quick analysis of most African countries [12] indicated 3 main countries with the largest population size. These are Nigeria-200,963,599, Ethiopia-112,078,730 and Egypt-100,173,395. The countries with the lowest population rates are Mayotte-272,815, Sao Tome & Principe-219,159, and Seychelles-98,347.

It is assumed that countries with very low population and covertly child population should be able to register the births of their children with ease, like in Seychelles, but the reverse is unfortunately the case for so many African countries.

It is on record [13] that there are still many countries in Africa where the under-5 children are not registered. The catalogue shows the percentages of the under-5 population that are not registered like in Nigeria-11%; Rest of West and Central Africa-8%; Democratic Republic of Congo-7%; Ethiopia 10% and Rest of Eastern and South Africa-21% [14]. Incidentally, Nigeria was mentioned, but at least the country is making plausible efforts to measure and monitor the number of births registered in the country and has established mechanisms and innovation technology to meet her own contribution to the global expectations.

African countries to meet the SDGs goals 16.9 on birth registration would need to take drastic measures to include commitment and action at all levels of government (national, state, local) backed up by legislation to strengthen the civil registration and vital statistics systems. There is a need to reduce the distance to registration sites for communities (particularly those in rural and remote areas) simplifying birth registration processes and hosting mass community outreach campaigns to raise awareness about the benefits of birth registration for families, especially through the media. Birth registration needs to be linked with essential social services (e.g. access to health and education), and investment in technological and innovative solutions.

4. Conclusion

Based on Nigeria's experience, replicating an efficient RapidSMS innovation will strengthen civil/birth registration and vital statistics systems to monitor real-time maternal and child mortality which is key to National Development and achieving the SDGs in Africa.

The innovation as deployed in Nigeria can be used as an advocacy tool for the expansion of birth registration resources (funding, personnel) to be allocated to very rural, hard to reach and marginalized LGAs with the highest catchment areas or populations in African countries.

The use of the RapidSMS technology, can support the development of innovative strategies to increase effective birth/civil registration workforce and systems that is all inclusive, where the child population in all wealth quintiles – whether rich or poor are reached. Countries in Africa will be able to deploy technologies that enables the registration of all children in urban, urban slums, rural, very rural and hard to reach areas or communities. The data generated can be deployed to monitor change ensure stronger and more efficient routine registration system is in place and support monitoring the SDG target 16.9 – population dynamics. It can be used to instigate aid and development agencies to support and invest in increased registration coverage across the continent especially in countries with very low coverage. Replicating the RapidSMS technology can become a major source of information for decisions about birth registration programming and it is presented here for replication by other African countries as a good practice.

References

[1] UNICEF Child Protection home page on definition on Birth

Registration, available at: https://www.unicef.org/protection/57929_58010.html#.
[2] Civil registration is defined by the UN as – the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events (BIRTHS, DEATHS, MARRIAGES, DIVORCE, FOUNDLINGS, ETC.) pertaining to the population as provided by law or regulation in accordance with the legal requirements of a country.
[3] Report of Livebirths, Deaths & Stillbirths in Nigeria (1994–2007), National Population Commission, Abuja. November 2008, available at: http://www.ibenaija.org/uploads/1/0/1/2/10128027/report_on_birth-death-stillbirth-registration.pdf.
[4] Report of Livebirths, Deaths & Stillbirths in Nigeria (1994–2007), National Population Commission, Abuja. November 2008, available at: http://www.ibenaija.org/uploads/1/0/1/2/10128027/report_on_birth-death-stillbirth-registration.pdf, see page 12.
[5] National Population Commission (NPC) [Nigeria] and ICF International. 2014. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.
[6] National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). 2017. Multiple Indicator Cluster Survey 2016–17, Survey Findings Report. Abuja, Nigeria: National Bureau of Statistics and United Nations Children's Fund.
[7] National Population Commission (NPC) [Nigeria] and ICF. 2019. Nigeria Demographic and Health Survey 2018 Key Indicators Report. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.
[8] EVERY CHILD'S BIRTH RIGHT Inequities and trends in birth registration: available at: https://www.unicef.org/publications.
[9] The Transformational Use of Information and Communications Technologies in Africa (World Bank, 2012); 2012 Information and Communications for Development: Maximizing Mobile (IRBD/World Bank, 2012).
[10] The dashboard indicated the current number of registrars reporting data to the dashboard on regular base, available at: https://rapidsmsnigeria.org/br/2020.
[11] 2018 Nigeria: Impact Evaluation of the UNICEF Supported Birth Registration Programme in Nigeria 2012–2016.
[12] Elaboration of data by United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2019 Revision. (Medium-fertility variant). Accessed at https://www.worldometers.info/population/countries-in-africa-by-population/.
[13] United Nations Children's Fund, Birth Registration for Every Child by 2030: Are we on track? UNICEF, New York, 2019.
[14] United Nations Children's Fund, Birth Registration for Every Child by 2030: Are we on track? UNICEF, New York, 2019, page 16.