Trends in health service utilization during the Covid-19 pandemic in 2020 with special reference to reproductive maternal, newborn and child health (RMNCH) in Tanzania

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EXECUTIVE SUMMARY

What we did. We looked at the impact of the COVID-19 pandemic on essential health services in sub-Saharan Africa, including Tanzania. Through the Countdown to 2030 for Women's, Children's and Adolescents' Health country collaborations, analysts from 11 countries, global public health institutions and ministries of health assessed the general service utilization trends in selected services for maternal, newborn and child health.

When and how it was done. This was done in Tanzania. We looked at the monthly routine health facility data by district for the period 2017–2020. We compiled and adjusted after extensive quality assessments and mixed effects linear regressions were used to estimate the size of any change in service utilization for each month from March to December 2020 and for the whole COVID-19 period in 2020.

What we found. The results showed completeness of reporting of health facilities. The reporting was higher in 2020 than in the preceding years and extreme outliers were few. The country median reduction in utilization of nine health services for the whole period March–December 2020 was 3.9%. The greatest reductions were observed for inpatient admissions and outpatient admissions, while antenatal, delivery care and immunization services generally had smaller reductions.

In comparison, eastern African countries had greater reductions than those in west Africa, and rural districts were slightly more affected than urban districts. The greatest drop-in services were observed from March– June 2020 for general services, when the response was strong as measured by a stringency index.

Policy implication. The district health facility reports provide a solid basis for trend assessment after extensive data quality assessment and adjustment.

Regular analyses of the DHIS2 data using this approach developed in the Countdown study is recommended beyond 2021.

INTRODUCTION

The COVID-19 pandemic may affect the utilization of health services through disruptions in the provision of routine health services as well as changes in the demand for services (Figure 1). Multiple modeling studies in a range of health fields have raised major concerns about the impact of the pandemic and the associated service disruptions on health outcomes, particularly for women and children [1,2,3].

The underlying data on service impact for these models are still limited, especially for sub-Saharan Africa. Several studies based on health

facility data have begun to register adverse consequences on the use of specific services in multiple countries, but with considerable variability between services, countries and time periods of 2020.

In Tanzania, little information is available on the spread of COVID as case and death reporting to the WHO was discontinued from May 2020. This does not mean that there was no response. From March 2020, the Government implemented various WHO-recommended measures, but did not enforce a lockdown[4.]

According to an international government stringency index which includes school closures, travel bans, social distancing measures etc. the overall strength of the response was low, 11 out of 100 (among the lowest in sub-Saharan Africa and globally).

This study aimed to expand the knowledge on the disruptions and rebounds in health services utilization during 2020 for a selected set of health care services, focusing on the RMNCH. The period of interest is March – December 2020, when most countries began to report COVID cases and the initial measures to control the spread of COVID-19 were taken. The study compares the observed monthly service utilization patterns, obtained from the routine district health information system (DHIS2) for all districts with an expected level of service use based on data from the previous years, starting January 2017.

HOW IT WAS DONE

The study was conducted as part of the existing Countdown country collaborations, which are multi-year partnerships, between the Countdown to 2030 global and regional public health institutions with country public health institutions and ministries of health. The focus is on strengthening health data analysis to inform country review of progress and performance. Among the 13 countries in sub-Saharan Africa that currently have Countdown collaborations, 11 expressed an interest in this study. Each country team included analysts from public health institutions and the ministry of health. Nine web-based workshops were organized during May-Aug 2021 to jointly go through a stepwise analytical process of data compilation, data quality assessment and adjustment, analysis, and interpretation of results (Figure 1).

All workshops were supported by analytical code in Stata 15.0.

Figure 1: Stepwise analysis process with country teams
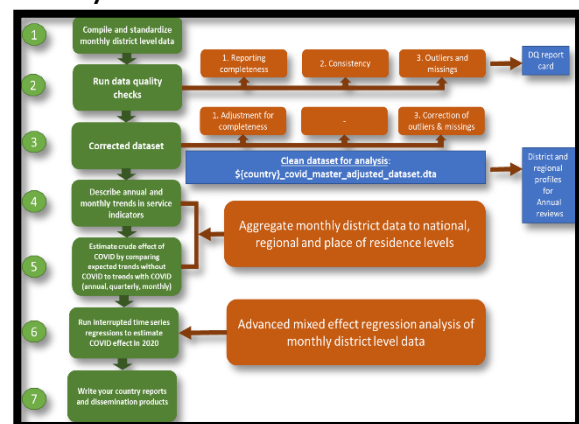
The analytical approach started with reported monthly data from each district. The assessment and adjustments were made using common rules, as there are often are too many districts to make individual decisions. The districts with problematic reporting rates and inconsistencies were flagged.

The national summary was created bottom-up from all district data (there are 184 districts or councils). Similarly, we created data by region and data by urban-rural-mixed type of district. A summary of data quality captures both the national values for each year during 2017 –

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2020 and the percent of districts with good data for each of the three dimensions of data quality.

WHAT WE FOUND

The quality of data in the Tanzania DHIS2 is good to very good for all four years with a summary score ranging from 93-96%. High facility reporting completeness, few extreme outliers, and good internal consistency (although dropping somewhat in 2019-2020) are the key characteristics.

To assess whether there were changes in service utilization during March – December 2020 we used an Ordinary Least Squared (OLS) regression model at national, regional and district levels, comparing the observed monthly values with expected levels of service use, based on the data for Jan 2017 – February 2020.

Figure 2: Percent change in utilization of selected services during March – December 2020, compared to expected utilization based on the preceding three years.
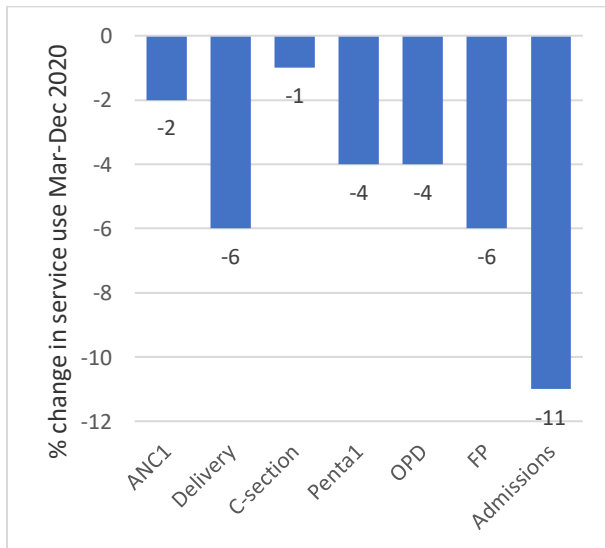

Figure 2 above presents the changes in service utilization for the whole period March to

December 2020 for six services - ANC first visit (ANC1), institutional delivery, C-section, pentavalent vaccination first dose (penta1), outpatient department (OPD) utilization, family planning visits (new and re-visits) and inpatient department (IPD) admissions – for mainland Tanzania. All seven services had lower utilization than expected based on previous year's levels and trends. The small decreases were observed for ANC1 and C-section, the largest for admissions (11%). The median was -4%.

The monthly pattern shows that IPD admissions experienced the greatest drop during April – August 2020 with drops between 10-25%, but lower levels later in the year, although still about 5% lower than expected levels.

Institutional deliveries showed a very different pattern with virtually no decrease until August 2020, and then a drop of about 12% during the last quarter of 2020, greater than any other service.

CONCLUSION

- The Tanzania DHIS2 data are a valuable source to detect time trends in key indicators of essential health services at national, regional and district levels.
- The systematic assessment showed that data quality is good with high reporting completeness by health facilities, few extreme outliers and missing values and good internal consistency in the majority of districts.
- In comparison to expected levels of service utilization, there was a 4% reduction in service utilization during March – December 2020, which ranged from 1% for

C-section and 2% for first antenatal visit to 4% for OPD visits and first pentavalent vaccination, 6% for institutional deliveries and family planning visits and 11% for inpatient admissions.

- The timing of the drop-in service utilization varied between interventions but was greatest in May and during the months of October-December. There was no clear rebound.
- The impact on the continuation of health services varies between regions (and by interventions), but the patterns are somewhat similar. The smallest impact was observed in Dar es Salaam region.
- The differences between urban and rural districts were generally small.
- Based on this analysis, it can be concluded that there is a modest but important adverse effect of the COVID pandemic on service utilization, especially admissions, which may have implications for Tanzania's effort to reach its health targets.
- Regular analyses of the DHIS2 data (e.g. quarterly) using the approach developed in the Countdown study is recommended for 2021 and beyond.

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