
RESEARCH REPORT

# FUTURES AT RISK:

## THE IMPACT OF COVID-19 ON MATERNAL, NEWBORN, AND CHILD HEALTH IN FRAGILE AND CONFLICT-AFFECTED SETTINGS

unicef
UNITED KINGDOM
FOR EVERY CHILD

## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ANC | antenatal care |
| CAR | Central African Republic |
| COVID-19 | coronavirus disease 2019 |
| DRC | Democratic Republic of Congo |
| EMRO | World Health Organization Regional Office for the Eastern Mediterranean |
| FCAS | fragile and conflict-affected settings |
| GBV | Gender-based violence |
| IPC | infection prevention and control |
| IRC | The International Rescue Committee |
| LMIC | low- and middle-income country |
| LLIN | Long-lasting insecticidal net |
| MENA | Middle East and North Africa |
| MNCH | maternal, newborn, and child health |
| MSF | Médecins Sans Frontières |
| MUAC | mid upper arm circumference |
| NGO | Non-governmental organisation |
| PMTCT | prevention of mother to child transmission |
| PNC | postnatal care |
| PPE | personal protective equipment |
| SMART | Standardised Monitoring and Assessment of Relief and Transitions |
| SRH | sexual and reproductive health |
| STI | sexually transmitted infection |
| TBA | Traditional birth attendant |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| WASH | water, sanitation and hygiene |
| WHO | World Health Organization |

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The research was conducted between October 2020 and January 2021.

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# EXECUTIVE SUMMARY

The impacts of COVID-19 are unprecedented globally. The pandemic is reversing decades of progress in maternal, newborn and child health (MNCH), including fragile and conflict-affected settings (FCAS) whose populations were already facing challenges in accessing basic health and nutrition services.

At the time of finalising this report, new variants and emerging waves of COVID-19 are causing a surge in infections and deaths in FCAS. Our research shows that even before the new and more infectious variants reached FCAS, COVID-19-related disruptions to funding and lifesaving MNCH and nutrition services were already leading to the preventable deaths of women, newborns and children. And with the vaccine out of reach for the most at risk of infection, the worst might be yet to come.

The research that underpins this report provides a stark warning that preventable maternal, newborn and child deaths are increasing as a direct result of COVID-19 disruptions to funding and lifesaving services. Three main factors are impacting the delivery of essential MNCH and nutrition services:

1. Funding for MNCH and nutrition has been diverted, reduced, or suspended

   Early on in the pandemic a clear political priority was placed on the financing of the pandemic response. This led to the repurposing of MNCH and nutrition funding towards COVID-19 activities. In many settings, services for women and children were shut down at the request of governments. When new funding was raised, it was usually directed at COVID-19 specific measures, not to maintain essential services. Funding disruptions for MNCH and nutrition during COVID-19 have further exacerbated existing serious limitations caused by the long-standing de-prioritisation of MNCH in emergency preparedness and response plans.[1] They have also increased the cost of maintaining existing activities for MNCH.

2. Supply and use of MNCH and nutrition services has been disrupted

   There have been substantial changes in access to, and uptake of MNCH and nutrition

services, due to a combination of factors. From the demand side, the most common reasons identified by the research for not using MNCH and nutrition services include fear of infection, interruption of service provision, movement restrictions, distance from health facilities, difficulties with transportation, increased financial burden and fear of being quarantined following a positive test result, as well as stigma associated with visiting health facilities. From the supply side, a reduction in MNCH and nutrition service provision was reported across settings due to MNCH staff being diverted to pandemic response activities, health workers infected with COVID-19, staff absence due to fear of contracting the virus, the diversion of infrastructure and supplies, and shortage of drugs due to supply chain disruption.

3. Adaptation strategies on MNCH and nutrition services have been limited

   Adaption measures have been adopted to improve access to health interventions as part of the pandemic response, but in most countries, they have been used to reduce the risk of COVID-19 transmission. The provision of essential services, including outpatient care, has been scaled down in many countries, often to half the normal activity. The full implementation of adaptation strategies has also been challenging due to lack of flexible funding, global supply chain disruptions, and weak capacity to rapidly implement new ways of working.

The full effects of these disruptions on child and maternal mortality will not be known for some time. However, we can be certain that without urgent action to fund humanitarian responses and resume lifesaving interventions, the impacts of COVID-19 on child and maternal mortality could be greater than mortality associated with the virus.

# INTRODUCTION

COVID-19 has had unprecedented health, social and economic impacts globally. It has exacerbated pre-existing inequalities in maternal, newborn, and child health (MNCH) outcomes, especially in fragile and conflict-affected settings (FCAS) which already reported considerably worse health outcomes compared to other settings even before the pandemic.[2] This is due in large part due to the fragility of the health systems that exist in FCAS which operate with limited human resources for health, resilience and responsiveness.

The impacts of COVID-19 in FCAS are many and far-reaching and are disproportionately affecting women and children due to existing factors of vulnerability.[3] Yet, whilst women's and children's health and nutrition needs are increasing, lifesaving services are now even more difficult to access and utilise, and existing humanitarian crises have become "secondary" due to the pandemic.

Evaluations of humanitarian responses to previous crises including the Ebola epidemic in the Democratic Republic of Congo (DRC) and West Africa, and the cholera outbreak in Yemen have provided numerous lessons and insights into the impact of outbreaks on health outcomes for vulnerable populations in FCAS.[4,5,6] Many of the impacts of COVID-19 explored in this report were witnessed in these crises, including reduced access to immunisation services due to roll-outs being halted, reduced or stopped, reduced participation in preventative health services and increases in home-births and non-attended deliveries.

Evidence from previous outbreaks clearly shows that maintaining essential health care services is critical to reduce additional deaths and that the indirect effects of outbreaks and epidemics exceed the mortality and morbidity caused by it.[7,8]

We are now well in to the second year of the pandemic, and with the burden of COVID-19 shifting to low- and lower middle-income countries, the findings from this study are especially important.

To our knowledge, this is the first study to document the impact of COVID-19 on MNCH funding and programming in FCAS. It intends to provide reflections for donors, humanitarian actors and others working in this space to improve policy and programming for women and children during and beyond COVID-19.

# SECTION 1: METHODOLOGY

This study used two data sources: (1) a literature review and (2) qualitative key informant interviews with donor staff and humanitarian actors working in FCAS. The approach was both exploratory and explanatory. Each data source was used to generate new evidence and both sources were triangulated to validate findings. For example, the results of the literature review were concurrently shared with the qualitative research team to refine probes for the interview topic guide and ask key informants for clarifications relating to emerging literature review findings. Conclusions from the desk review were also iteratively used to complement the qualitative findings.

## 1.1. Literature review

Search Strategy

Our review included published peer-reviewed and grey literature both publicly available and shared by the key informants during or after the interviews took place. The search strategy was based on a published search protocol for a study on a similar topic in low- and middle-income countries (LMICs).[9] The search terms used referred to categories of population (maternal, newborn, child and adolescent), health services (health care, health systems and provision/use) and settings (FCAS and relevant LMICs).

We searched for publications in Embase, Medline and Global Health databases using the Ovid® search interface. This search was complemented by screening the Repository composed by John Hopkins; Centre for Humanitarian Health for relevant results until 2 February 2021. We also screened reference lists of relevant articles including a global scoping review on maternal and perinatal health[10] to identify additional publications.

Grey literature was searched in publicly available records from Interagency Working Group for Reproductive Health in Crises, Save the Children, Médecins Sans Frontières (MSF), the International Rescue Committee (IRC), CARE International,

International Committee of the Red Cross, READY Initiative, United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA), United Nations High Commissioner for Refugees, Healthy Newborn Network, Women's Refugee Commission, Marie Stopes International and the Global Financing Facility. We searched for publications related to current UK Government work on the UK Parliament website. We included articles published in academic journals (such as editorials, commentaries, and perspective pieces), reports, relevant news articles, pre-prints of studies and information shared by the interviewees. In addition, we included the available data on the UNICEF's 'Tracking the situation of children during COVID-19' dashboard ('UNICEF dashboar' hereafter),[11] using the existing filter for countries with 'other ongoing humanitarian response'.

The search included publications from 1 March 2020 to 31 January 2021 to account for the known start of the pandemic in FCAS. Any publications in English, Portuguese, Spanish and French were included if they met the inclusion criteria.

Study selection and data extraction

Full inclusion and exclusion criteria for the literature review is presented in Table 1.

**Table 1:** Inclusion and exclusion criteria for the literature review

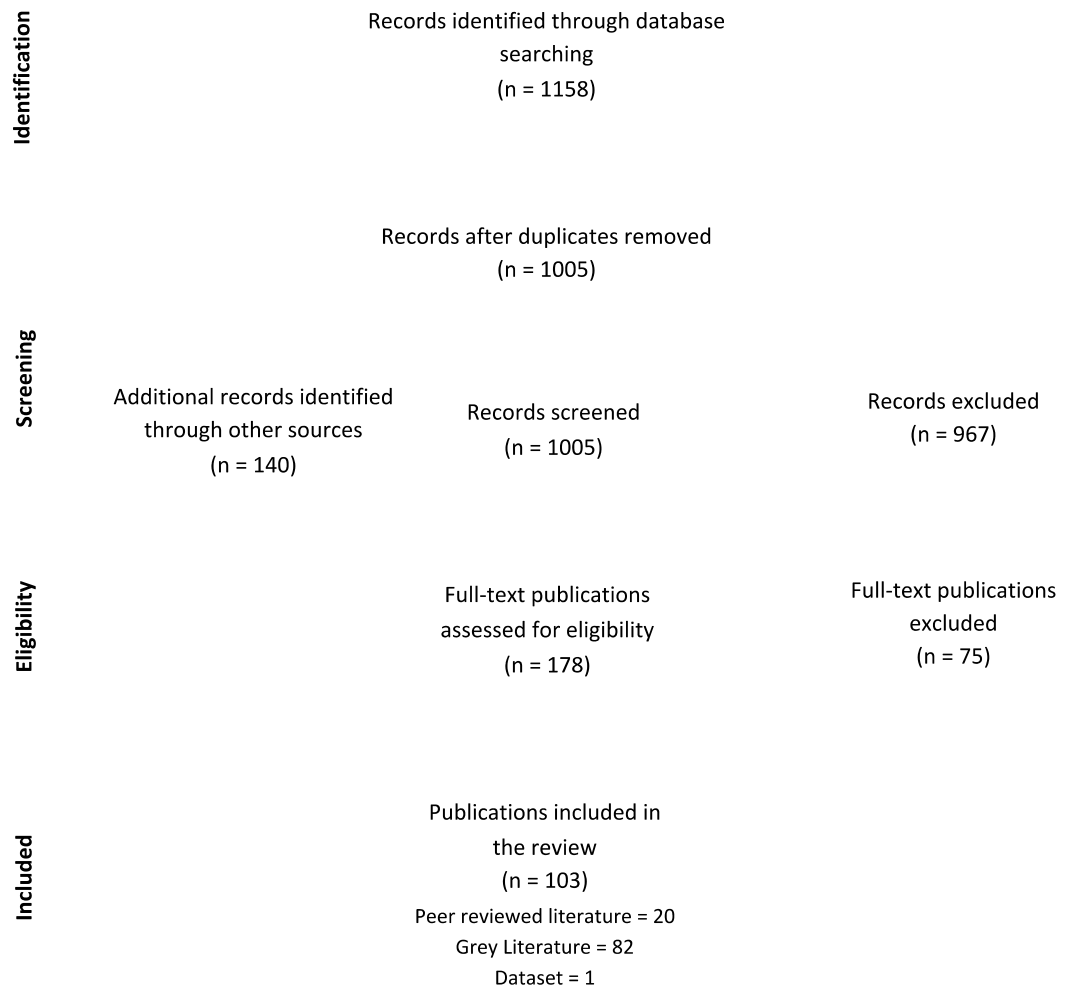
| Category | Included | Excluded |
|---|---|---|
| **Population of interest** | Women, adolescents, newborns, and children living in FCAS, as defined by the World Bank,[12] and other relevant LMIC settings | Women, adolescents, newborns, and children living in other settings not included in the list from World Bank or LMIC settings relevant to FCAS |
| **Intervention** | Any interventions relating to MNCH | Publications focusing on other health areas, on clinical aspects of COVID-19 in MNCH, and sexual and reproductive health services. |
| **Outcome** | Indicators that report on the indirect impact of COVID-19 in MNCH services | Indicators that do not report on the indirect impact in MNCH or are only focused on the direct outcomes of COVID-19. |

| | | |
|---|---|---|
| **Situation** | Publications referring to the effect of the pandemic in the FCAS. | Publications from prior the pandemic in the FCAS |
| **Type of publication** | Any type of publication; peer-reviewed studies and other types of publications in a journal (e.g., editorials, comments); grey literature (including pre-prints, relevant news articles and data shared by the interviewees) | |
| **Publication date** | 1st March 2020 – 31st January 2021 | Any publication published before 1st March 2020 and after 31st January 2021 |
| **Language** | English, Portuguese, Spanish, French | Other languages |

The population of interest for the literature review included women, adolescent, newborns and children in fragile and conflict affected states as defined by the World Bank.[12] Publications from LMICs that were deemed relevant to FCAS were also included. This search focused on MNCH including antenatal care (ANC), postnatal care (PNC), deliveries, essential newborn health interventions, child health interventions, vaccinations, and nutrition activities.

We downloaded all returned citations from the searched databases into an Endnote library and applied a standard data-screening process (Figure 1). Data from the final selected studies were then extracted into a Microsoft Excel database, with data extraction fields including author and year, country, population, publication type, general topic, data on MNCH outcomes, and conclusions. We used a narrative synthesis approach due to the heterogeneity of publication outcomes, interventions, and methods.

**Figure 1:** PRISMA flow diagram for publications included in the literature review




## 1.2. Qualitative interviews

We conducted 39 remote semi-structured key informant interviews from October 2020 - February 2021. Eligibility criteria included: humanitarian actors in FCAS (programme staff, policymakers, practitioners from local and international non-governmental organisations (NGOs) and UN agencies) engaged in MNCH programming in FCAS during COVID-19 and donor staff funding MNCH programming in FCAS. Participants were purposively recruited, and snowball sampling was used to identify additional relevant respondents. We aimed to include a broad range of humanitarian actors to attempt to collect diverse information from a range of FCAS.

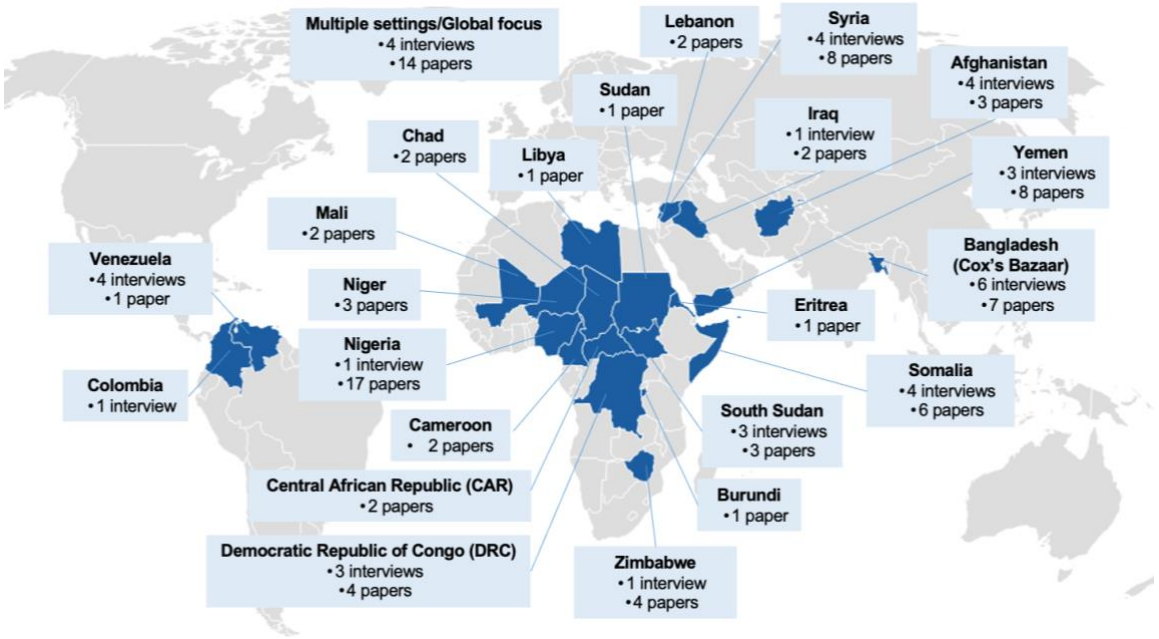
The interviews with humanitarian actors were carried out using an adapted version of the interview guide used by the COVID-19 Humanitarian Platform[13] to collect data on programmatic adaptations and innovations in humanitarian settings during the pandemic. Our guide was adapted for donor staff to include a focus on levels and trends in funding for MNCH programmes in FCAS before and during COVID-19.

Thematic analysis was undertaken on interview transcripts and supporting documents provided by key informants using Braun and Clarke's six phases of thematic analysis.[14] Analysis was undertaken independently by two researchers using NVivo software.

### 1.3. Characteristics of key informants and included publications

Key informants in the study (n=39) represented donor staff (n=3), academics (n=2) and humanitarian agencies (n=34). Key informants reported findings from the following 12 fragile and conflict affected states: Afghanistan, Colombia, DRC, Iraq, Nigeria, Somalia, South Sudan, Syria, Venezuela, Yemen, Zimbabwe, and Bangladesh (Cox's Bazaar) (Figure 2).

**Figure 2:** Number of interviews and included publications by country



A total of 1158 citations were returned from peer-reviewed databases, with 140 additional studies identified in reference lists (Figure 1). Following full-text screening, 103 publications met the inclusion criteria (Table 2), comprising of 20 peer-reviewed publications, 82 grey literature publications, and one dataset. The peer-reviewed papers included 15 empirical studies and five reviews; and the grey literature included 31 non-peer reviewed articles published in an academic journal (e.g., editorials, comment, letters to editor), three pre-print studies, two magazine articles, one non-peer reviewed review, 28 reports/briefs from humanitarian actors, 13 news articles and four presentations shared by key informants. The included dataset was retrieved from the UNICEF dashboard[15] which reported data from 26 countries, of which 23 are part of the World Bank fragile and conflict affected states list.

**Table 2:** Overview of included publications by setting and type of publication

| | Peer-reviewed literature | Grey literature | Dataset | Total |
|---|---|---|---|---|
| Fragile and conflict-affected setting (FCAS) | 10 | 56 | 1 | 67 |
| Low- and middle-income country (LMIC) | 10 | 26 | 0 | 35 |
| Total | 20 | 82 | 1 | 103 |

# SECTION 2: RESEARCH FINDINGS

The research findings are organised in two main sections: (1) the study's main finding that focuses on the effects of COVID-19 disruptions on MNCH outcomes and (2) the key findings that specifically consider the main disruption factors impacting maternal and child mortality.

It should be noted that all data collection for this study was conducted before recent decisions by the UK government on where aid cuts would be made following the announcement of the proposed plan to cut UK Aid from 0.7% to 0.5% of Gross National Income in November 2020.

## 2.1. Main finding: COVID-19 disruptions are causing preventable maternal, newborn and child deaths

The study found that COVID-19 related disruptions to funding and existing lifesaving MNCH and nutrition services are leading to preventable deaths of women, newborns and children. Mortality estimates calculated to date estimate that years of advocacy and improvement of MNCH are being threatened.[16,17,18] The full extent of increased morbidity and mortality caused by the pandemic is unknown due to reduced data surveys and flows which would usually monitor these data points. However, findings from interviews and published literature point to increased morbidity and mortality associated with MNCH across several settings.

### Maternal health

Interviews and published literature highlighted increased rates of adolescent pregnancy, late presentations with more severe disease and increased rates of maternal mortality.

Several publications that carried out or referred to modelling calculations found excess maternal mortality due to the disruptions in maternal health services. Although none was specific to FCAS, they can serve as a proxy indication.

In a modelling study looking at the indirect mortality from COVID-19 in LMICs, the authors estimate that there will be substantial excess mortality due to disruptions in essential maternal and child services and access to food (Table 3).[19] The authors found that over six months of disruptions (least to most severe scenario) this would result in between 12,200 and 56,700 additional maternal deaths. This means an increase of 8.3%-38.6% in maternal deaths per month across 118 countries.[20] They further noted that 60% of additional maternal deaths would be caused by the reduced coverage of four childbirth interventions.[21] These estimations did not include the excess still births that are predicted to occur due to the disruption of essential maternal health services. Authors also caution that these numbers are an underestimation, especially in rural, low resource and FCAS where the most vulnerable pregnant women are.[22]

Data also show that the four most populous LMICs (including Nigeria) could see a 31% increase in maternal and newborn deaths and still births as a result of reduced family planning (FP), antenatal care (ANC) and facility based deliveries in the next 12 months.[23,24] Another publication estimated the impact of the reduction of sexual and reproductive health (SRH) services in lower-middle income countries over a year. A 10% decline in coverage of maternal and newborn health services would mean an additional 1.7 million women who give birth and almost 2.6 million newborns that would experience major complications without receiving the needed obstetric and newborn care. This would result in additional 28,000 maternal deaths and 168,000 newborn deaths.[25]

Several interview respondents also highlighted an increase in maternal mortality across a range of humanitarian settings, citing inability to access care, reduced care-seeking behaviour, reduced ANC and potential COVID-19 infection itself as attributing factors.

*" ...during my first three months of being in Yemen, I had no maternal deaths... then when COVID hit, we had so many more maternal deaths. Sometimes, it's hard for us to say exactly whether it was because of COVID-19 because we didn't actually test everybody. I've worked in many settings as an OBGYN. For the most part, I can say*

*this is the reason why maternal deaths occurred, that there were a few cases that occurred that it was just such an unusual aetiology of why this person died. In particular, I think so there's a few reasons for this. Why did we have maternal deaths? ... It could have been due to COVID. It could have been that people were a lot more afraid of coming to the hospitals, because obviously that was like, I think, a common narrative around the world." - International NGO, Yemen*

Reports from other LMICs, including Zimbabwe, Nigeria, and Bangladesh note delays in health care seeking. Women are reported as arriving late at heath facilities and presenting with serious complications (such as eclampsia) as ANC services are neglected.[26,27] Interview respondents also highlighted increased late presentations with more severe maternal morbidity and complications linked to reduced pregnancy care and other COVID-19 related impacts, such as iron deficiency anaemia, secondary to increased levels of malnutrition.

*"I think one thing that we did see was an increase in late presentations and there was a subtle increase in maternal mortality cases in our clinic over the summer. That speaks to a presentation of patients not coming in for routine, preventative care in their pregnancy, and then having problems later on..." - International NGO, Bangladesh*

**Table 3:** Modelled estimates of the impact of a large service disruption in 2020-2021 on maternal health outcomes in select fragile and conflict affected states[28]

| Country | Increase in maternal mortality | Number of fewer women without access to facility-based deliveries |
|---|---|---|
| Yemen[29] | 5% | 67,200 |
| South Sudan[30] | 1% | 10,700 |
| Somalia[31] | Not reported | 15,600 |
| Nigeria[32] | 9% | 725,900 |
| Niger[33] | 6% | 78,800 |
| DRC[34] | 8% | 699,800 |
| CAR[35] | 11% | 21,400 |

Child health

Poor child health outcomes were highlighted throughout the literature and interviews. A Save the Children report warns that 60 million children will need humanitarian assistance in 2021 to survive. This accounts for half of all children in need globally and includes those living in eight countries (Yemen, Ethiopia, DRC, Afghanistan, Sudan, Syria, Pakistan and Nigeria).[36] A modelling study that considers the excess mortality due to disruptions in essential maternal and child services and access to food reported estimates of 253,500 to 1,157,000 additional child deaths in a year in the least and most severe scenarios respectively (Table 4).[37] This translates to a 9.8% – 44.7% increase in deaths in under-fives per month across 118 countries.[38]

Interview respondents also highlighted increased child morbidity and mortality with children frequently arriving at health facilities late and with severe disease. Key attributing factors included reduction in child health provision facilities, reduced outreach activities, reduced health seeking behaviour and worsening malnutrition.

*"...In Yemen, there were a lot of children arriving in a very bad state. In White Nile the team asked because the number in the hospital was very low. And that was because the activities - the screening activities at community level stopped with the pandemic." - International NGO, Yemen and Sudan*

**Table 4:** Modelled estimates of the impact of a large service disruption in 2020-2021 on child health in select fragile and conflict affected dates[39]

| Country | Increase in under-fives mortality | Number of fewer children left without oral antibiotics for pneumonia | Number of fewer children left without diphtheria, pertussis and tetanus (DTP) vaccination |
|---|---|---|---|
| Yemen[40] | 13% | 347,200 | 697,800 |
| South Sudan[41] | 13% | 198,000 | 214,300 |
| Somalia[42] | 13% | 92,300 | 313,500 |
| Nigeria[43] | 18% | 6,202,200 | 4,988,600 |
| Niger[44] | 16% | 624,400 | 974,800 |
| DRC[45] | 16% | 1,616,000 | 3,307,900 |
| CAR[46] | 12% | 53,500 | 88,600 |

Malaria

Concerns have been raised over the effect that neglecting malaria control programmes will have in the African continent.[47] Children are the most vulnerable group affected by malaria[48] and under-fives account for 70% of global malaria deaths.[49,50] A modelling study performed for Sub-Saharan Africa estimates that severe disruptions in malaria interventions could double the number of malaria deaths (compared to 2019 levels), with 382,000 excess deaths predicted. In Nigeria alone, reducing case management for six months and delaying long-lasting insecticidal net (LLIN) campaigns could result in 81,000 (44,000–119,000) additional deaths.

Vaccination coverage

Vaccine coverage has reduced substantially across several settings and has had important implications for public health. Childhood vaccination against diphtheria, hepatitis B, tetanus and whooping cough in Somalia declined from 77% to 56% in June 2020.[51] A study done between April and June 2020, over 15 African countries (seven of which are fragile and conflict affected states) and which compared vaccination coverage in the first three months of 2020 to April-June 2020 found that the countries with lower coverage pre-COVID-19 experience higher declines in the number of children vaccinated after the pandemic was declared. This demonstrates the disproportionate impact on the most fragile of contexts.[52]

Past experience indicates that this type of situation could result in new epidemics of childhood vaccine preventable diseases.[53] Despite the declaration of wild polio eradication in Africa in 2020, vaccine-derived polio transmission has increased due to polio campaigns being suspended. It is now reported in a number of countries such as Niger.[54] In Afghanistan, polio vaccination was stopped and there was a rise in polio cases, particularly in polio free areas.[55,56,57]

*"We are already seeing increases in vaccine-preventable diseases, for example Diphtheria, tetanus pertussis, and measles outbreaks. Polio campaigns were also*

*suspended and Vaccine derived Polio cases are also occurring due to low vaccination coverage." – NGO, setting anonymised on request*

There is a strong argument to continue routine vaccinations, using Personal Protective Equipment (PPE) and respecting hygiene and physical distancing measures.[58] A modelling study focusing on countries in Africa compared the health benefits of continuing routine vaccinations against the risk of being infected with COVID-19. Authors estimate that routine childhood immunisations should be continued as the deaths prevented by this activity outweigh the risk of COVID-19 deaths related with the visits to vaccination clinics.[59]

Catch-up programmes are now ongoing in some FCAS to address the impact of halted immunisation programmes in early 2020. In November 2020, 89% of planned catch up vaccination sessions held in Cox's Bazaar had been completed.[60] In Zimbabwe, levels of measles and rubella 1 and DTP3 immunisations dropped in March and April 2020 but since then have been rising and as of October 2020 these levels are within previous years.[61]

Malnutrition

Several publications and interviews reported increased malnutrition, with women and children being most at risk, in settings that were already experiencing high levels of food insecurity and malnutrition before COVID-19.

*"The big problem in Syria is chronic malnutrition... So, on one end, you have the economic situation that is deteriorating, day by day is the increased price of fuel. On top of that, the COVID epidemic. So, we will see the consequences of this probably... next year... [There are] even more children... that are not growing because of chronic malnutrition." - Multilateral organisation, Syria*

Data from the Social Science Analytics Cell/UNICEF report in the DRC reported increases in moderate and severe acute malnutrition cases in Ituri province since the start of the pandemic. The increase was particularly marked in two-to-five year old

children.[62] Several other settings reported rises in severe acute malnutrition admissions, ranging from increases of 10% up to 70%.[63,64,65,66,67]

In a modelling study looking at the indirect mortality from COVID-19 in LMICs, the authors estimate that 18-23% of additional deaths in children under-five will be caused by the increased prevalence of wasting.[68] Modelling done for the Middle East and North Africa/WHO Regional Office for the Eastern Mediterranean (MENA/EMRO) region estimates that between 2000 and 12000 children under-five die in the second half of 2020 because of wasting caused by the disruption of the pandemic to food access and health care. Of the 10 MENA/EMRO countries included, four are considered fragile and conflict affected states.[69]

In the DRC, data shows that maternal nutrition is also affected as women are the first ones to adopt negative coping strategies such as reducing food intake.[70] In Southern Yemen at least a quarter of a million pregnant and lactating women are in need of malnutrition treatment.[71,72]

Reduced quality of care

Interviews and literature also highlighted a reduction in the quality of maternal and child health and nutrition care due to supply issues and stock outs, inadequate staffing levels and diversions of resources to COVID-19. For example, an online survey across 60 LMICs reports that due to understaffing, the rapid change of guidelines or unclear communication and challenges with the supply chain, the quality of maternal and newborn health services is deteriorating.[73] Some interview respondents reported a reduction in length of stay in maternity wards as a measure implemented in the pandemic.

Lack of basic healthcare equipment (e.g., PPE and COVID-19 testing) and support in health facilities is also an issue, for example in obstetric services in Nigeria.[74] A small survey also identified the need to support health care workers with adequate training, PPE and action plans in Libya.[75]

*"That affects maternal and child health because we have to re-do protocols for how we treat something because we're running out of certain medications and so on. So, the quality of care was definitely affected by COVID-19 because the supply chain was disrupted." - International NGO, DRC*

*"...a very practical example was lidocaine... if you start running low... then if you have a combination of secondary and primary health care, you will probably use it more in the secondary health care. But that means that for maternal health, for example, you can't put in the implants anymore. Or you'll give the injection for penicillin, for STIs without lidocaine, which is rather painful. It's doable, but it's very painful because you're going to use lidocaine for a secondary health care level intervention. Or you're doing a suture without lidocaine... in after delivery, which is also very unpleasant" - International NGO, DRC*

Limited visibility of the true impact

**Routine health service data**

Several respondents reported disruption or suspension in routine data collection, monitoring and evaluation and measurement activities in MNCH. This is due to a number of factors including deprioritisation of MNCH measurement activities, inadequate staffing, and difficulty in carrying out activities based in the community due to lack of PPE, movement restrictions and other COVID-19 prevention measures. This leads to reduced quantity and quality of data.

*"Because we'd normally collect that data through clinic attendance. I guess you could assume that we missed some pregnancies. So we were underreporting. And we had limited outreach activities." - International NGO, South Sudan*

*"I think everyone, even governments, are facing data collection gaps. Data collection and data quality was in a bad state before COVID-19 in many countries. And now with COVID-19, it's just worsening...we don't know how many people are affected. We don't know how many people die, probably not. Because people don't come to the hospitals anymore, don't come to the healthcare facilities, they might just have COVID-19 or die*

*from the virus at home, and we don't even capture them. Because, in several countries... there's no recording systems, [or] recording systems are not working as well as they should be. You know, in some countries, community health workers are very strong data collectors. But with COVID-19, they might not even go to the villages where they would normally go." - Multilateral organisation, global*

**Population and community level data**

There has been a significant reduction in the visibility of community level deaths of women and children during the pandemic; this means that the true impact - although feared to be catastrophic - cannot be adequately understood or communicated. Multiple community measurement activities have been suspended, including mortality surveys, (e.g., Standardised Monitoring and Assessment of Relief and Transitions (SMART) surveys) and nutrition surveys, as well as community surveillance have also been impacted. This has prevented organisations and academics from being able to officially state the true extent of excess deaths and starvation. It has also limited understanding of whether crises have reached famine proportions.

*"... there was a SMART survey supposed to happen in May. That was cancelled in May. And it's supposed to be only because I think the previous SMART survey was four years before. And because of the increased rate of stunting... they really plan to do this one. So it was supposed to be postponed in May, and then supposed to be done in December, but apparently, it has been postponed....SMART surveys have been postponed and postponed again. And that is absolutely a priority for Syria, particularly Northwest and Northeast, because you have stunting disease around 20% for children, but it's still increasing and acute malnutrition apparently is rising. And we have very limited data on this." – Funder, Syria*

*"Just at the time when we are concerned that there will be significantly more deaths from the collateral impact of the pandemic, our visibility has reduced and we have become blind to what is happening at population level and in the community. Planned mortality surveys have been suspended, and community mortality surveillance has been severely affected. Therefore, although we know the situation is extremely*

*concerning, we lack data to prove it. I suspect the true impact will only be known afterwards when it is too late." NGO, multi-country*

**Box 1: MNCH Outcomes – Key Reflections on what is required moving forward**

- We do not yet know the full extent of the outcomes because data collection and analysis has been disrupted. These activities must be restarted as soon as possible.
- Although limited and incomplete, available evidence shows that preventable deaths are occurring due to COVID-19 disruptions in MNCH services. Greater priority must be given to resume lifesaving MNCH and nutrition interventions
- Evidence from previous pandemics that indirect impacts can be greater than the disease is clear. Yet these lessons have not influenced the pandemic response to date, and more needs to be done to prevent the same thing from happening in FCAS.

### 2.2. Key findings: Funding, service disruptions and adaptation strategies are main factors impacting maternal and child mortality

The study found three main factors impacting maternal, newborn and child deaths due to COVID-19 related disruptions: financing challenges, service disruptions and insufficient or inadequate adaptation strategies.

Key finding 1 - Funding for MNCH and nutrition services has been diverted, reduced, or suspended

The pandemic response has and will continue to require significant financial investment to provide COVID-19 diagnostics, treatment and vaccines. In a context of severe economic contraction, money for COVID-19 has been taken from pre-existing sources and repurposed. This has made access to funding increasingly challenging.

Changes in funding patterns have generally not favoured MNCH or nutrition programming and service delivery which have been disproportionately affected according to several published reports, and interviewees. The impact of funding diversion and cuts has also been exacerbated by existing and significant limitations in the development of and funds for emergency preparedness and response plans. When these were available, MNCH was often missing,[76] and concerns have been

raised over the economic impact that the pandemic will have on humanitarian financing. This is especially concerning for people depending directly on humanitarian support for survival, such as children entirely dependent on food assistance.[77,78]

### Increase in cost of continuing the same activities

COVID-19 has led to significantly increased costs of maintaining existing activities for MNCH. A study from Nigeria that considered the changes in expenditure pre- and during the pandemic found that the cost of giving birth doubled or tripled depending on the route of delivery, with PPE accounting for a large proportion of the cost increase.[79] Another publication which looked at operative delivery at one hospital reported that the cost was significantly raised during the pandemic. COVID-19 Polymerase Chain Reaction (PCR) testing was another reason for increased costs, which in many cases, were passed on to women and families. A study documented women having to spend $78.30-$86.00 more for a caesarean section than pre-pandemic.[80]

These findings were echoed by interview respondents who also cited increased requirements for consumables such as PPE and service modifications for infection prevention control (IPC). More money was also required for human resources to maintain existing services. This is because a significant number of existing staff with underlying medical risk factors had to be moved away from frontline roles and contexts with difficult medical evacuation, and staff having to self-isolate or quarantine.

It therefore became significantly more expensive to continue maintaining the same levels of activity of MNCH services as before the pandemic even before considering COVID-19 related activities. In many cases additional funding for human resources to cover gaps was not available and humanitarian teams became significantly smaller. More than 50% reductions in international staff have become common in many settings.

### Diversion of funding from MNCH activities to COVID-19 related activities

Because women of reproductive age (15-49 years) and children are at lower risk of severe COVID-19 disease (based on available and limited data in FCAS), they are not the main beneficiaries of COVID-19 specific interventions. However, recent research has documented how the diversion of focus towards the pandemic has led to redirection of funds away from other services, including MNCH services.[81,82] One article notes that MNCH funds were easy to reallocate as this sector was mainly funded through block grants. Fundraising by humanitarian actors in FCAS was therefore required to address the funding gaps.[83]

Responses from interviewees echo these findings. Reallocations occurred early in the pandemic, with respondents describing a lack of available funds for the initial COVID-19 response from emergency preparedness. This resulted in use of available funds from MNCH. The primary use for the diverted funds reported was for IPC activities such as procurement of PPE, strengthening of water, sanitation and hygiene (WASH) services and to build additional inpatient capacity for isolation facilities. It was noted that even once additional funding did become available, it was frequently for COVID-19 specific measures only, not for maintaining essential services, including MNCH services. In many cases additional human resources and supply were also only available for COVID-19 related activities.

*"In the beginning, we didn't have resources for COVID-19. I mean, a lot of resources for COVID-19 came around April. But before April, we had to optimise resources in which we had in the country to kickstart our response." – Multilateral organisation, Afghanistan*

*"It took a while for the COVID funds to really come. So we had to use the existing funds to support the program during the adaptation and the later phases as well." – Multilateral organisation, Bangladesh*

*"When the funding started coming, nutrition did not get a lot of funding because of COVID-19, because [it was] classified as a secondary impact, there is the primary impact and the secondary impact." – Multilateral organisation, Somalia*

### Political pressure to deprioritise MNCH activities in favour of COVID-19 activities

There was a clear political priority placed on COVID-19 activities in many countries from early on in the pandemic. Decisions about funding diversions away from MNCH and towards COVID-19 activities were driven by governments, donors and stakeholders.[84] Respondents highlighted that in many cases governments explicitly requested MNCH activities to be deprioritised or prevented them from occurring in favour of COVID-19 activities.

*"We run the only free maternal and child health hospital in the region, treating thousands of children and assisting thousands of deliveries per year. We were asked to close this facility and replace it with a COVID-19 treatment centre. Thankfully in this case we were able to argue for the need to continue MNCH services. However, there are other examples where COVID-19 treatment centres took priority above MNCH activities." – International NGO, setting anonymised on request*

### Planned funding and MNCH activities which did not materialise

Interviewees highlighted how the focus on COVID-19 meant that other MNCH activities that were planned for 2020/2021 did not take place. These included trainings, quality improvement initiatives and entire MNCH programs in some cases. Overall, there was limited "hardware" (funding, staff, supplies) and "software" (training, political will, prioritisation) after the pandemic started for actors to focus on MNCH activities. Activities to prepare for or respond to COVID-19 were prioritised, which prevented many new MNCH activities from being planned, impacting MNCH over the coming years. Examples cited included vaccination activities, HIV and TB, prevention of mother to child transmission (PMTCT), ANC and FP.

*"In many cases funds which had been expected before the pandemic for certain activities did not materialise and planned programs didn't open. In Yemen we scaled back antenatal and delivery care in an area in the knowledge that another actor had received funding and would start delivering these services; however in the end this actor was not able to open the expected services, citing funding issues... Women were then not receiving these services and we were unable to meet the demand, frequently*

*turning women away in labour. Home deliveries likely increased, and we saw increasing number of neonatal tetanus, probably as a result" - NGO, Yemen*
*"We were supposed to start activities for prevention of mother to child transmission of HIV, but due to the pandemic this was put on hold due to lack of capacity. There are children who have been born HIV positive since then, and this could have been prevented" – NGO, Bangladesh*

Examples of positive trends

There were some accounts of positive trends in relation to funding. Janvrin and McKay note that the pandemic has diversified the funding sources which could be a solution to strengthen reproductive, maternal and child health programmes.[85]

Several interview respondents reported additional funding being made available from both international internal organisation funding and from donors. Strengthening WASH including IPC was a major reported use for the funding to increase availability and quality of WASH in health facilities and improve communication and education on WASH. Reported benefits of increased funding and prioritisation of WASH were avoidance in spread of COVID-19 in health facilities and in other infections, including diarrhoeal diseases. Various actors and funders highlighted that funding was not earmarked for the pandemic and could be used for other activities such as MNCH services. Many hope that the increased IPC focus generated during COVID-19 could be sustained and translate into decreased healthcare associated infections in MNCH services.

*"Many hospitals all over the world turned out to be the source of infection. So we were very careful that we (…) immediately developed the guidelines on infection prevention and control, we distributed these, we trained the workers, and we were monitoring, you know, the adherence to strict adherence to these protocols. And we also developed guidelines on disinfection of the floors, the walls of the frequently touched surfaces, and equipment and everything." - Multilateral organisation, Bangladesh*

*"If the improvements in IPC can be maintained after COVID-19 then this could perhaps be a positive side effect of the pandemic." - NGO, settings anonymised on request*

*"One of the other things that they've come through is reductions in level of diarrhoea... which, I think... has been referred to as one of the positive aspects of COVID-19. And it's actually increased considerably the levels of hygiene." - Funder, Bangladesh*

*"On the one hand... IPC improved, hygiene improved, hand washing improved, I mean, it was much more focus put on that, where you could actually even see a reduction in certain diseases, like, diarrhoeal diseases, and whatever." - International NGO, DRC*

*"For donors, that pandemic has been a huge priority; you know, we have received incredible support in particular for personal protective equipment, for supplies, which was the major issue, testing and capacity in particular through WHO and also additional money for activities like communication, case management, etc, etc." - Multilateral organisation, Syria*

*"In general, this funding is flexible, it's not earmarked for a specific activity...we have regular dialogue with all our partners, in terms of their response and how things are progressing, whether they need to adjust, in order to be able to respond to their needs." - Funder, Bangladesh*

**Priority areas for funding**

Funding to maintain essential health services and action plans are needed to mitigate the indirect impacts of COVID-19 for maternal and newborn health in LMICs.[86] Interview respondents suggested several key strategies needed to address the funding gaps in MNCH. Priority areas for funding highlighted by respondents were maintaining essential health services, mitigating the secondary effects of the pandemic on MNCH, and health systems strengthening, including improved resources, capacity building including human resources for health, and better data collection and management. Respondents also highlighted the need to focus on the most vulnerable populations and settings. To mitigate these funding gaps, respondents highlighted the need for improved emergency preparedness and response, with essential services

maintained and strong leadership and coordination. The need for revised funding mechanisms was highlighted, with recommendations for earlier availability of funding in emergencies and longer financing arrangements for routine funding with more flexibility for recipients in the use of funds.

*"It is important that whoever is funding or whoever is supporting - they should not neglect the other routine services, because they will be a bigger killer than COVID-19." - Multilateral organisation, Somalia*

*"I think the number one priority is continuation of services. And that could be from several aspects - strengthening health care workers, strengthening midwives, strengthening community health workers who might be the only ones who have been able to have contact with mothers, newborns and children, especially in humanitarian settings." - Multilateral organisation, international*

*"I'm worried more about its impact on the uptake of other health services. And it's an area in which we need additional resources. And here I'm really talking about programs of maternal, newborn, child health, including nutrition. At the moment people are not prioritising them, because a lot of the major donors are only interested to support COVID-19." - Multilateral organisation, Afghanistan*

*"I would have certainly preferred to have had some of the leading donors globally [responding] immediately. But then, you know, understanding that it is a pandemic, and almost every part of the world was affected. So, I do understand and appreciate the delays in receiving funds for COVID-19 response, but... had we got the funds a bit early, that would have helped." - Multilateral organisation, Bangladesh*

*"The response to the pandemic made me wonder what happened to "women and children first." Honestly it felt like women and children last sometimes. Women and children make up a far greater proportion of the population in many humanitarian settings than high income countries most affected by COVID-19." – International NGO, setting anonymised on request*

*"There was a very disease-focused rather than person-focused response. It was about global health security rather than people. Some countries made the mistake of managing COVID-19 as if it were flu, whereas humanitarian organisations some made the mistake of managing it like Ebola." – International NGO, setting anonymised on request*

**Box 2: Funding MNCH services in FCAS during COVID-19 – Key reflections on what is required moving forward**

- Increased funding for MNCH must return to pre-pandemic levels, even before considering increasing additional needs due to the secondary impacts of the pandemic.
- Funding for MNCH and for maintaining these and other essential services in crises including diversified services which can be maintained during COVID-19 should be re-prioritised.
- Longer term funding agreements and flexibility in funding from donors should be put in place
- A greater focus should be placed funding for health system strengthening activities.
- The increased focus on IPC should now be leveraged for institutionalisation of IPC and WASH across all activities.
- The focus on COVID-19 vaccination should not detract attention from MNCH activities and should occur alongside strengthening of childhood vaccination and outbreak responses which have been neglected despite having a far greater impact on children.
- As we continue to fight COVID-19, and in future pandemics more funding for MNCH will be needed, with early dispersal of funds.
- Emergency preparedness plans must include capacity and funding to maintain MNCH activities.

Key finding 2: COVID-19 has led to changes in supply of and demand for essential MNCH and nutrition services

COVID-19 has severely impacted access to and uptake of MNCH and nutrition interventions. For example, in Somalia, 43% of surveyed women and children reported facing barriers in accessing health care and medication,[87] and in Bangladesh, a report on forcibly displaced Rohingya communities found that only 57% of surveyed women have been able to access health facilities safely and easily since the start of the pandemic.[88] Both the demand (service uptake) and supply (service provision) sides of essential services have been overwhelmingly affected by the pandemic.

**Demand-side changes**

The literature review and interviews identified reductions in MNCH service utilisation across several settings. The most common reasons for overall decline in use of healthcare services included the fear of infection, interruption of service provision, movement restrictions, distance from health facility, difficulties with transportation, increased financial burden and fear of being quarantined following a positive test result [89,90,91,92,93,94,95] Interview respondents also mentioned additional factors such as stigma associated with visiting health facilities. According to interviewees, unclear communication and lack of adaptation of COVID-19 messaging for pregnant women also led to confusion about going to health facilities to deliver or not as COVID-19 messaging was advising people to avoid attending them.

*"The biggest problem in Venezuela... that got exacerbated is lack of fuel and electricity. So that was already an issue with the health care facilities. But then... COVID-19... made it even more challenging. This is coming from users that we interviewed... being able to get to the clinics, to get their contraceptive needs or to be able to get the harm reduction counselling to facilitate abortion care, became more challenging during COVID-19." - NGO, Venezuela*

*"There were a lot of concerns among the population... who was hesitant, even to come to the hospitals to access care. There was a lot of stigma associated with... health workers, because some... people had expectations that all... health workers are treating COVID-19 patients, so the appropriate issue is to stay away from health workers." - Multilateral organisation, Afghanistan*

*"We did see a drop in service utilisation. And I think that was probably for a number of reasons. One was, as I mentioned before, the lack of clarity in terms of messaging, so should people stay at home or should people still come to the clinic, etc." - International NGO, South Sudan*

**Maternal health**

Service utilisation decreased in several aspects of maternity care, including ANC and PNC.

Key informant interviews and several reports highlight a decline in ANC attendance in some settings.[96,97,98,99] In Cox's Bazar, ANC consultations for adolescents fell by 65% between January and May 2020, in line with the first lockdown.[100] Across settings, the main reasons for decline in ANC reflected those previously mentioned in the general reduction in MNCH service usage.

*"All other services including antenatal care were disrupted...in theory, the services were not stopped. But people stopped coming to the consultations. People stopped themselves obtaining services. And it was mainly because of the fear...They had the fear that maybe they go to COVID-19 from the hospital, from the healthcare providers..." - Multilateral organisation, Afghanistan*

Interviewees and the literature search highlighted decreased facility delivery in several settings, with more home deliveries with traditional birth attendants (TBAs) reported in several countries including Nigeria and Bangladesh.[101] In Kenya, the relocation of human resources, conversion of maternal health facilities into isolation centres and movement restrictions led to the reduction of services offered. This created a confusion of where women could go to receive these services them and forced to seek the services of TBAs.[102] In Afghanistan, facility-based deliveries decreased by half.[103]

*"The bigger concern was we had a huge reduction in the number of patients. So we went from... 2000 deliveries on average to, in July, we had... 900 deliveries... I still don't know where all these people started to go." - International NGO, Afghanistan*

Little data was found on PNC but what is available shows a decrease in PNC uptake. Data from Zimbabwe showed that PNC uptake was considerably lower than in previous years. Levels dropped in March 2020, and since April, when was the lowest, it was reported to be slowly rising.[104]

### Child health

Interviews and literature findings also noted a decline in utilisation of child health services.[105,106,107] This drop in attendance was attributed to parents' fear of visiting health facilities for the risk of being infected[42] but in many places was also due to messaging to communities which generally discouraged healthcare access for "non-severe" conditions. In some locations, particularly malaria regions, there was concern that COVID-19 messaging about keeping children with entirely treatable conditions away from health services would discourage parents and carers from accessing services for febrile illness. Another concern was fear of separation from caregivers but this was not practiced by most health actors.

The impact of reduced healthcare seeking was seen in both outpatient and inpatient settings. In some cases, a rise in inpatient mortality was witnessed due to increased delays in healthcare seeking. Other more specialist services for children were also affected. For example, a cross sectional study from Nigeria on the impact of COVID-19 on paediatric surgery reported a drop in the use of health facilities (from 60.4% facilities seeing more than 30 patients per week to 9.9% of facilities with this caseload).

### Nutrition services

Interview respondents noted a reduction in uptake of nutrition services during the pandemic despite needs increasing in some contexts, especially for child nutrition interventions.

*"There was definitely a reduction in the number of children that were enrolled in supplementary feeding and therapeutic feeding programs. And this was... for a number of reasons. One of them being that you know, people were reluctant to come to the clinics." - Multilateral organisation, Global*

### Supply-side changes

Interviews and the literature search found a reduction in MNCH service provision across settings. Reduced staffing was a key contributor due to MNCH staff being

diverted to COVID-19, staff infected with or scared of contracting the virus at work leading to absences.[108,109,110]

In Northeast Syria, within Al-Hol camp that is mainly populated by women and children, movement restrictions and high COVID-19 infection rates amongst health care staff resulted in the closure of some Primary Healthcare Centres (nine out of 24) in July. By late August only five clinics were operational.[111]

MNCH services were deprioritised, in addition to funding being from MNCH to COVID-19. Interviewees also reported diversion of other resources including human resources, infrastructure, and supplies.

Stock outs and supply issues, including PPE and in some settings routine medications, reduced health facilities' ability to provide MNCH services.[112] In many cases, supply chain disruption led to a shortage of basic items for inpatient care. This reduced the quality and safety of care for both staff and patients. Several interview respondents also noted the deprioritisation of MNCH services by other actors in the region they worked in, often to divert resources to COVID-19 activities.

*"In general, both focusing on health care specifically but also wider in terms of the facilities for mothers and children - they have suffered a lot from the way that people shifted their attention when COVID-19 came." - International NGO, South Sudan*

*"I don't feel within our own organisation that it [nutrition] had as much attention that it should have gotten. I think there's a lot more awareness now about nutrition, because of the impending food security and... the potential new nutritional consequences of that. But what level of priority? I would say it was given low priority." - Multilateral organisation, global*

*"When the COVID-19 started... I would say nutrition really suffered, because what have they are they reassign all the health staff to do, all the nutrition staff to work on COVID-19 related activities. So, we noted that... all the upstream work that we do to*

*do with policy guidelines... things were not moving, everything had to come to a standstill for like five months." - Multilateral organisation, Somalia*

### Maternal health

The literature review and interviews highlighted reduced provision of maternity services due to COVID-19. Interviewees reported that ANC service provision had gone down in several settings, and entirely suspended in two countries. In Syria, reproductive health services were disrupted. Prenatal care visits were limited, increasing health risks for pregnant women and newborns.[113] In Sub-Saharan Africa, the overburdening of the health systems, shifts in funding, the adaptation measures and closure of SRH clinics, all had a negative impact on the delivery of ANC.[114]

PNC was also reduced across several settings, with a few key informants reporting complete suspension of newborn care.

### Child health service disruptions

According to interviews and literature review, child health services, including routine outpatient care, were reduced or suspended across several settings. Save the Children examined the impact of COVID-19 on child health in 37 countries where they have projects. They found that 89% of the respondents (caregivers and children) have seen their access to healthcare, medications and medical supplies impacted by the pandemic. More than one third of respondents reported facing barriers to accessing healthcare including the closure of health facilities, long queues, and shortage of medications.[115] Indirect effects of the pandemic for children include downscaling and closure of consultations as well as reduced preventive care, vaccination and nutrition programmes. These may increase morbidity and mortality from other diseases.[116,117,118,119]

Data from UNICEF on countries with humanitarian responses demonstrates a drop in childhood out-patient department (OPD) consultations of 10-24% in 9/26 countries, and a drop of more than 25% in 10 other countries.[120] A cross sectional study from

Nigeria focussing on the impact on paediatric surgery saw 92% of centres suspend surgeries and 80% not offering telemedicine follow up.[121]

There were some examples from interviewees where service utilisation did not change significantly, largely in countries with lower numbers of COVID-19 cases or in remote regions which are yet to witness widespread community transmission. However even in these cases the quality of care was often impacted, due to shortages of supplies and human resources.

**Disruption of immunisation**

Routine immunisation was disrupted across many settings due to early recommendations from scientific advisory groups for emergencies to suspend all preventative mass vaccination campaigns. 24 countries cancelled measles vaccination campaigns in mid-April 2020, increasing the risk of measles outbreaks.[122,123] In 26 settings with humanitarian response, UNICEF dashboard data shows that health campaigns for vaccination, LLIN or mass drug distribution were disrupted in 14 settings, with four reporting a 75-100% drop. Only four settings did not experience a change or decrease in routine vaccinations.[124] In Syria, vaccination programmes decreased by around 40%.[125] The suspension of mass vaccination campaigns for measles, polio and other infectious diseases place children, especially those suffering from malnutrition, at increased risk.[126] Despite ongoing outbreaks of infectious diseases affecting children, such as measles, mass campaigns were still prevented from occurring in several settings.

Given pre-existing increasing trends in vaccine preventable diseases, many interviewees were extremely concerned by decreases in vaccination coverage because catching up on gaps in vaccination will be extremely challenging in many humanitarian settings.

*"Across almost all of our projects there were significant reductions in vaccination activity. These populations already had low vaccination coverage and are now*

*extremely vulnerable to other vaccine preventable diseases, which disproportionately affect children."* NGO, multi-country

Reasons for vaccine disruption include delivery systems affected by the pandemic, healthcare services being stretched and caregivers becoming fearful of visiting health centres.[127] A cross sectional study from Lebanon describes that routine immunisation has been interrupted because of the social distancing rules and that pre-planned second phase of the measles vaccination did not go ahead.[128] MSF reports that vaccination activities in Somalia and Somaliland were reduced to account for overstretched health systems with the implementation of IPC measures and management of COVID-19 patients. In several countries there was at least one vaccination campaign suspended.[129,130] Several interview respondents attributed the reduction or suspension in vaccination coverage to factors including supply chain issues, suspension of outreach activities to prevent COVID-19 spread and consequences of stopping other services (e.g., ANC) which normally would be used as an opportunity for comprehensive care provision, including vaccination.

*"It never stopped 100%. But just the availability of the vaccine, the directive, essentially - the instructions from the system was like, we need to focus on the COVID stuff. And then this activity [immunizations] really ground to a halt." - International NGO, Bangladesh*

**Reduction of nutrition activities**

Nutrition services, including nutrition centres and food distributions, were suspended in several FCAS. UNICEF dashboard data reports that from early onset of the pandemic, there was a 30% reduction in the coverage of essential nutrition services in LMICs, which further reduced by 75%-100% while strict lockdown measures were in place.[131] Data from September 2020 shows that treatment for child wasting decreased between 10-24% in six of 26 countries with a humanitarian response. Five countries had decreases in treatment of 25% or more.[132]

Reasons for reduced nutrition activities cited in interviews and literature search included a link to reduction or suspension of community outreach activities and measures to prevent gatherings and prevent transmission of COVID-19.[133,134]

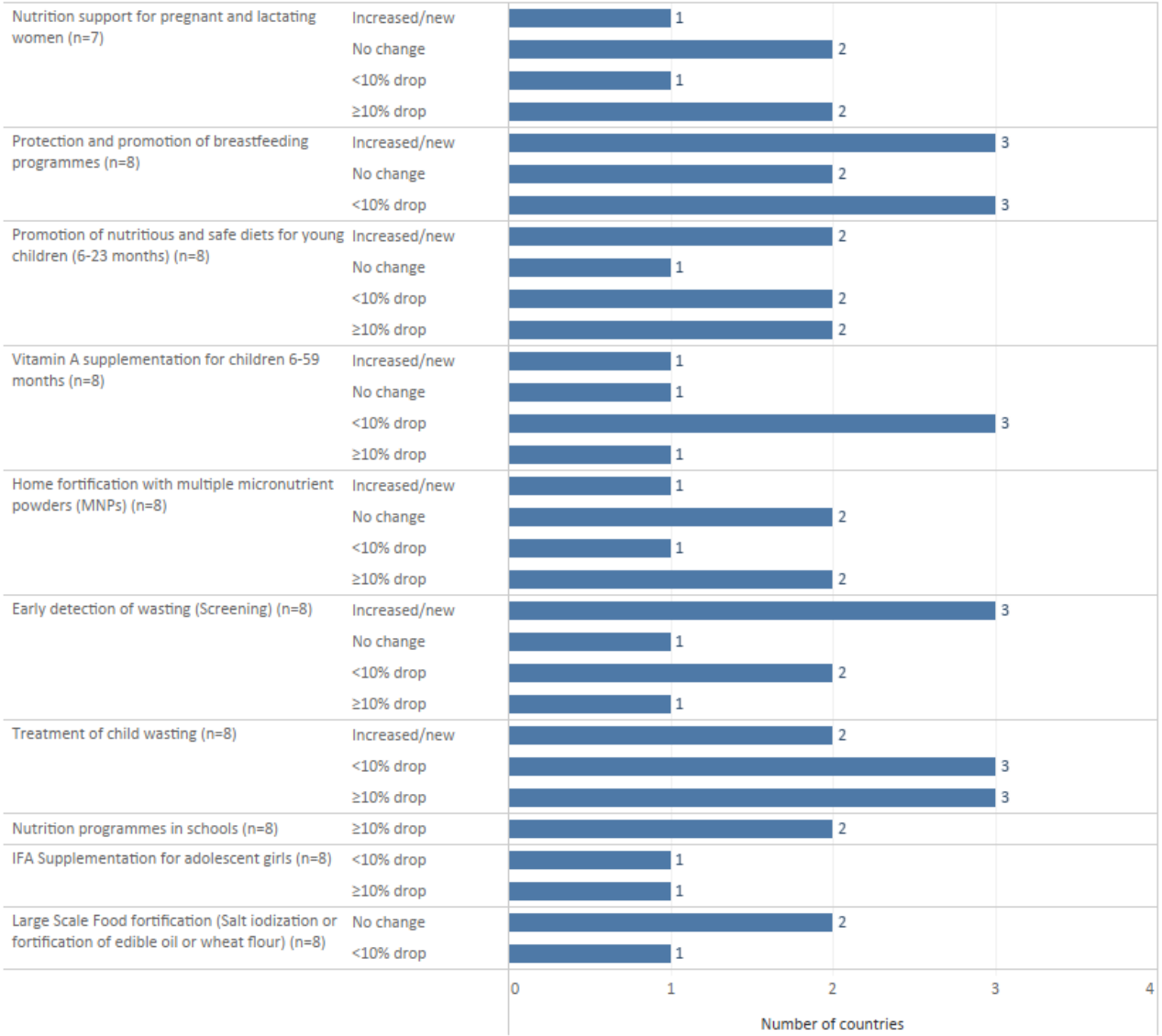
Nutrition activities linked to schools and learning centres were particularly affected, as many of these were closed. In Cox's Bazar, nutrition programming staff could not enter the camps and community and group activities were stopped. Curative nutrition activities were classified as critical and allowed to continue but other activities such as nutrition education and growth monitoring activities were suspended. Restrictions in the camp continued until the last week of July 2020.[135] Funding for nutrition actors was also compromised in many settings. Due to lack of funds, the World Food Programme in Yemen had to cut rations affecting nine million people, putting more people at risk of worsening famine.[136,137]

*"We were told that you cannot go into the community because you can potentially take COVID in and out to the community... So we had to stop that...And because some of the programs, the nutritional programs such as dinners for kids were shut down... that is a problem because a lot of kids didn't have anything to eat except for what was given in those diners." - NGO, Venezuela*

Reports from several countries refer to the difficulties that populations have been facing in accessing and ensuring food supplies. A review of maternal and child nutrition in LMICs maps its drivers upon the pandemic. Reduced income, limited resources for quality diets, food insecurity, limitation of health care services and interruption of humanitarian responses are leading to undernutrition.[138,139,140] A multi-country Save the Children survey found that 62% of surveyed households reported struggling to find food items (meat, diary, grains, fruits and vegetables) during the pandemic, with 52% of the respondents attributing this to high food prices[141]. In Syria and Yemen, food insecurity is increasing due to worsening economic conditions, lower food quality and higher prices in food.[142,143,144] In Bangladesh, access to food assistance has been insufficient for Rohingya communities, especially for vulnerable people including single mothers, pregnant and lactating women and children.[145] In several areas of Venezuela, World Vision reports that 73% of children in the surveyed households were

going hungry; one in three children reported going to bed hungry; and 35% answered that they have experienced food shortages.[146] A Save the Children report in Somalia (July 2020) highlights that 77% of women report that there was no infant formula/breast milk substitute available for malnourished children less than six months old during COVID-19.[147] Figure 3 below shows COVID-19 related changes in the coverage of nutrition services in quarter one 2021 as compared to quarter one 2020.[148]

**Figure 3:** COVID-19 related changes in the coverage of nutrition services in quarter one 2021 compared to quarter one 2020.



**Deprioritisation of other infectious diseases**

Other outbreaks of childhood infectious diseases have been deprioritised during COVID-19. Measles, diphtheria, pertussis, and other outbreaks have occurred in several humanitarian settings but received insufficient focus or been entirely neglected in many cases.

"*We wanted to respond to the ongoing measles epidemic with a mass vaccination but could not get permission (from the government) to do this during the pandemic. COVID-19 was prioritised above childhood diseases." – NGO, setting anonymised on request*

*"We have had recent measles outbreaks and other vaccine preventable diseases are also on the rise. However mass vaccinations were suspended. The impact of this can now be seen with newly developing measles outbreaks. But it seems COVID-19 is still a bigger priority." NGO, South Sudan*

*"There was a pertussis outbreak and this was communicated to multilateral partners, however this communication was not prioritised and there was no response and was followed up by communications on COVID-19 instead, even though there were no COVID-19 cases in the area. Pertussis is many times more infectious, and more deadly than COVID-19 in children." NGO, South Sudan*

*"There was a particularly bad seasonal outbreak of respiratory disease in children, probably due to respiratory syncytial virus. However, whereas extra inpatient capacity had been planned for adult COVID-19 patients, no extra capacity was made available for children with other respiratory disease outbreaks. Therefore we had to put several children in the same bed, or turn them away." NGO, Afghanistan*

In several settings, malaria prevention activities such as seasonal malaria chemoprevention and bed net distributions were suspended. This is likely to have increased child deaths. Provision of malaria preventive interventions during routine services was also reduced due to those services being compromised themselves, for

example ANC, with reduced malaria intermittent preventable treatment in pregnancy as well as bed net distribution.

*"In anticipation of the seasonal malaria peak we were expecting other organisations to step up malaria prevention activities in the camp including vector control, however their capacity was reduced and insufficient preparation was made. In the end the malaria peak was higher than we have ever seen in 7 years since the camp was established." NGO South Sudan*

*"COVID-19 and malaria were expected to arrive around the same time. All the conversations and meetings were about COVID-19." NGO, setting anonymised on request*

In areas where malaria prevention activities took place, the burden on facilities was reduced, which was particularly important during the pandemic. This is because although malaria prevention was often suspended to reduce COVID-19 transmission, scaling up malaria prevention could have the effect of reducing COVID-19 transmission in hospital settings by reducing the need to seek healthcare.

**Suspensions in outreach activities**

Whilst some respondents highlighted decentralisation of services as a key adaptation strategy, suspensions of outreach activities were common and had wide ranging impacts. A qualitative study from three slums in Nigeria that compared the availability of services before and during lockdown found that due to movement restrictions, house-to-house services including immunisation and other MNCH services delivered by community health workers were stopped.[149]

Interviewees described reduction in services that would normally have relied on outreach/mobile strategies as entry-points, including for reproductive health, gender-based violence (GBV) interventions, deworming and screening programmes. Several interviewees described a suspension in bed net distributions because of suspension in outreach and lack of PPE. A review focusing on LMICs mentioned that anti-malarial campaigns have suffered from price increases, shortages and logistical difficulties with

PPE, insecticides, and mosquito nets (e.g., In June 20, 73% of the 106 surveyed countries reported service disruptions).[150]

*"... In the camp, you have a really big component that's outreach activities. And this was seriously impacted by COVID-19, really impacted by COVID-19. The outreach activities, it was almost zero for SRH, it almost disappeared completely... I didn't realize at first that it was the most important activity for SRH and SGBV." - International NGO, Bangladesh*

**Suspension of other preventive and promotional activities**

Other preventive activities have been suspended and are receiving very little attention, despite being cost-effective and life-saving interventions. Mass treatment distributions for soil-transmitted helminths and for neglected tropical diseases such as trachoma, schistosomiasis, onchocerciasis and filariasis, have also been suspended, with negative consequences for children.

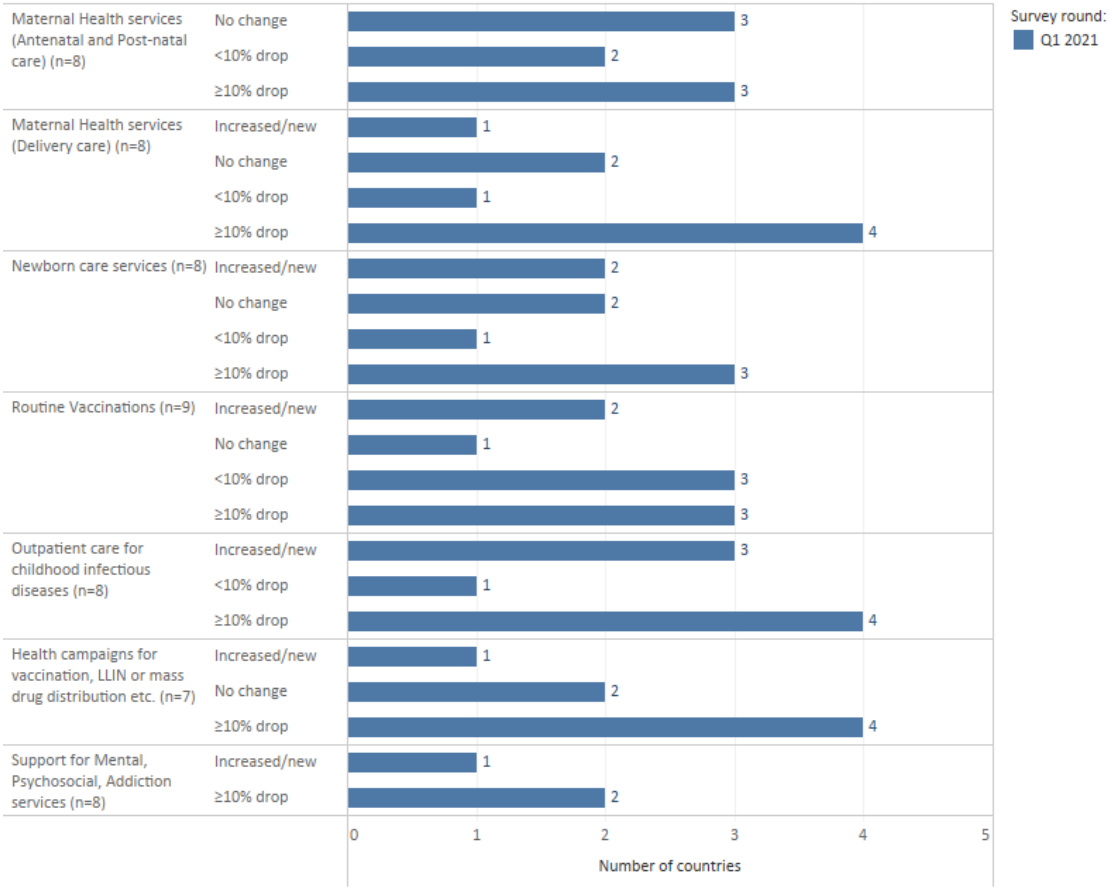
Suspension in health education, campaigns and advocacy was also reported. Respondents emphasised the suspension of advocacy activities in awareness raising of tuberculosis, hepatitis A, polio and family planning. The health promotion activities which continued were largely focused on COVID-19. UNICEF data from humanitarian settings refers to a 10-24% drop of protection and promotion of breastfeeding programmes when compared with 2019.[151]

*"They didn't do any big health education campaigns or anything where they had previously. They would have gathered people around for talks on safer things." - International NGO, South Sudan*

**Measurement activities**

MNCH measurement activities such as monitoring and evaluation of routine epidemiological data, were frequently suspended across settings due to factors including diversion of staff to COVID-19 and lack of PPE.

**Figure 4.** COVID-19 related changes in coverage of health services in quarter one 2021 compared to quarter one 2020. [152]




Q1 2021 for each Value - Service disruptions broken down by Parent Sub Question v2. Color shows details about Q1 2021. The data is filtered on Parent Id, Parent Sub Question, Trends Flag, Survey Round and Sub Category. The Parent Id filter keeps 461. The Parent Sub Question filter keeps 7 of 142 members. The Trends Flag filter keeps 0 and 1. The Survey Round filter keeps Q1 2021. The Sub Category filter keeps 12 of 153 members. The view is filtered on Value - Service disruptions, which keeps <10% drop, ≥10% drop, Increased/new and No change.

**Box 3: Supply- and demand-side challenges to MNCH services in FCAS during COVID-19 – Key Reflections on what is required moving forward**

- A public health approach must be applied to COVID-19 responses.
- MNCH must be re-prioritised, with emphasis on maintaining essential services.
- Awareness raising of the impact on children of other diseases and outbreaks which have

been neglected during COVID-19 and the reprioritisation of these interventions should take place.

- Community engagement, rumour management and clear communication are all important to understand and alleviate concerns.
- Surge and emergency preparedness planning is crucial to prevent stock outs and supply issues.
- Protection of healthcare and other front-facing staff is a priority to continue services.
- Scale up of vaccination for childhood diseases is needed.
- Prevention of mother to child transmission (HIV, Syphilis, Tetanus) activities should be re-established and scaled up.
- Malaria prevention activities should resume to ensure no disruptions in bed net distribution and seasonal malaria chemoprevention.
- Opportunities to combine community preventive activities together should be explored to increase efficiency and expedite catch-up activities such as nutritional interventions, mass vaccination campaigns, Vitamin A, bed nets, SMC, and other mass distribution activities.
- Nutrition services should be re-started, especially given the impacts COVID-19 is anticipated to have on wasting and low weight infants.

Key finding 3: Adaptation strategies for MNCH and nutrition services have been limited

The literature search and key informant interviews reported that adaptation strategies for MNCH were implemented, most of them with the primary objective of reducing transmission of COVID-19. Challenges in adaptations, in particular their unintended negative consequences for MNCH were evident across FCAS.

There were concerns from some key informants about whether the priority placed on reducing transmission of COVID-19 compared to other essential services was proportionate to the threat given the seriousness of other factors affecting MNCH in FCAS. Factors enabling successful adaptations of MNCH services included preparedness, coordination and collaboration between actors, good communication, provision of adequate amount of supplies and support from the local population.[153,154] Barriers to adaptations include lack of flexible funding, challenges with global supply chains, and capacity to rapidly implement new ways of working.[155]

### IPC and adaptations to prevent COVID-19 spread

Publications across LMICs, including some FCAS, mentioned several standard service adaptations, such as reorganisation of patient flow, social distancing measures (e.g., reduction of hospital visitors, reduction in access to smaller groups of patients at a time, reduced frequency of facility visits), reduced opening hours and reduction or suspension of OPD consultations. Where possible, limited examples existed of offering telephone follow up consultations/telemedicine to replace some lost consultations.[156,157,158,159,160,161]

In the key informant interviews, specific IPC adaptations of facilities/services to prevent COVID-19 spread was also reported by several actors. Increased WASH activities were implemented in many contexts, with handwashing and environmental IPC prioritised. Emphasis was placed on training staff in IPC and use of PPE in several settings. Most programs with patient-facing roles required additional PPE to continue to run. Due to lack of sufficient PPE in many contexts, adaptations were made to protocols to find ways for them to continue without PPE to prevent their complete closure. Integrated Community Case Management was an example of where "no-touch" protocols were developed for treatment of malaria without rapid diagnostic testing, pneumonia and diarrhoea management, using history and examination from a distance. However, these adaptations were challenging to implement. They also reduced efficiency and quality of care and provided less protection for healthcare workers.

In many cases 'adaptation' to prevent spread of COVID-19 meant the reduction in services in practice. In some cases, lack of staff to run these services made adaptations necessary. A key informant in a headquarters-level position in an NGO reported that outpatient services were significantly reduced in many countries, often to half the normal activity. In many cases these were supply side changes due to reduced capacity, but it was also partly because of impact on demand from fear of healthcare seeking and community messaging which often discouraged healthcare seeking for 'non-urgent' conditions. This messaging did not always address the specific needs of women and children. ANC services were reduced in many settings

to reduce crowding and COVID-19 transmission. In many cases, women were permitted only one ANC visit. This negatively impacted malaria prevention in pregnancy, PMTCT, tetanus vaccination, prevention of anaemia, and treatment of sexually transmitted infections (STIs). The identification of higher risk pregnancies was also more difficult, which is likely to increase maternal and perinatal deaths and future generational effects on health and development.

*"These are services that are usually very crowded. So they tried to adjust the services too. They had longer hours. They gave women specific times to come to reduce some crowding, where they did have to decrease services, they prioritise women that were in the third trimester of pregnancy." - Multilateral organisation, global*

**Use of technology**

The use of technology played a vital role in adaptation strategies. Telemedicine was provided in different settings including Zimbabwe, Syria and Nigeria.[162,163,164,165] One provider from Zimbabwe used telemedicine to manage gynaecological and obstetrical conditions during lockdown. They reported it to be effective, suitable for use for triage and accepted by the target population. It also managed to resolve the situation in 52.2% of the cases. Nevertheless, it is likely that the impact of limited use of telemedicine services has not been equitable across settings and socioeconomic groups.

In some settings health actors were able to use technology to improve communication with the community to some extent. In one small survey across several LMICs, community messaging, use of social media and WhatsApp for reliable information encouraging women to use maternity services were suggested as possible solutions to maintain the use of health services.[166] Interview respondents also highlighted that MNCH service provision was shifted to online modalities by several actors, for example use of telemedicine, mobile phone/WhatsApp calls and messaging. In addition to its use for providing services and information to users, interview respondents noted the use of online technology for staff training, including on COVID-19 measures (e.g., IPC, screening for COVID-19 in health facilities) and for

maintaining essential health services. Online tools were also used to adapt data collection in several settings to try and continue the delivery of routine monitoring and evaluation on MNCH data.

*"They can do the consultation remotely, using the tablet, community health workers, you know, bring it to the pregnant woman and then they consult with the midwives. And then for the other thing also that we also try to improve in is using the mobile phone platform as a mobile platform - the community can text a message to the health provider or to the community health workers about their problems." - Governmental agency, Bangladesh*

*"We developed this adaptation training, and we trained the partners, just virtually, everybody on management of acute malnutrition in the context of COVID-19, how to do the promotion of infant and young child feeding in the context of COVID-19 and the community awareness also in the context of [the pandemic]. Immediately, once we completed, we had two weeks of virtual training like six sessions, to cover the whole country, and then the NGOs had to replicate that in their respective operational areas." - Multilateral organisation, Somalia*

But a review of obstetric practices in Nigeria noted that although telephone consultations are the recommended practice during COVID-19, this is not a realistic solution for the country, as most of the target population does not have access to a phone.[167] Such concerns were echoed by interview respondents who noted that access and proficiency in technology was a challenge for adaptation strategies involving online tools for staff and target populations. In many humanitarian settings, access to technology is highly uneven and coverage is low, especially among women. This means that the use of these methods is not possible or further exacerbates inequalities amongst populations.

#### Decentralisation of services

Decentralisation of MNCH services was another important adaptation. One article noted that due to the decrease in demand for facility-based health care, it was crucial to provide MNCH services at the community level.[168] Several interview respondents

intended to shift MNCH services to mobile or outreach services to better reach populations in the community. In limited cases, they highlighted how they managed to operationalise this shift, for example by using important community gathering places such as the local mosque to provide health promotion and related services. Another form of decentralisation of services was using self-care interventions. Several respondents mentioned the shift in global nutrition guidance to using mother/caregiver led mid upper arm circumference (MUAC) measurements to screen for malnutrition at home, with guidance on when to seek health care given to caregivers. This adaptation was also highlighted in the literature.[169,170] This is in line with data from UNICEF dashboard data regarding the implementation of this adaptation strategy for management of acute malnutrition, including the reduction of frequency of follow up visits and the use of MUAC by caregivers.[171]

Yet, despite the intention to increase community-based services, the extent to which this has actual been possible has been limited in many settings. This is because of funding constraints, the repurposing of community health workers to COVID-19 related activities, and limitations to community gatherings. In some countries outreach activities have even been suspended during the pandemic. Given rapid changes to community-based services and challenges in training, additional investment is also required to ensure this adaptation is accompanied by adequate training, monitoring and evaluation.

*"Another thing that we did is we stopped community workers from going to do MUAC measurement, as I said, we introduced the use of mother-led MUAC. So, giving every household MUAC tapes so that they can monitor the nutritional status of their children, the mothers are told if it is red, that is bring the child or yellow bring the child, because they can see the colour. So, when they see the colour, they can see, okay, [I] need to bring the child and then from there, you can verify the measurement." - Multilateral organisation, Somalia*

*"We decided to use a mobile clinic to do outpatient treatment... We just needed to be closer to the population to do this screening and treatment at the community level. We*

*left the hospital and moved to the community to try to treat the malnourished children earlier." - International NGO, Yemen*

Interview respondents also described how treatment protocols in some settings were altered to continue essential healthcare whilst reducing contact frequency at facilities. Measures included giving longer durations of medication and food rations and encouraging use of long-acting reversible contraceptives (e.g., intrauterine devices, implants).

**Community engagement**

Community engagement initiatives have been reported in some settings. In the UNICEF platform, the 26 countries with humanitarian responses report using community engagement, awareness and behaviour change to continue health service provision, although this is not specific for MNCH.[11] A consultation of different humanitarian actors reveals that efforts to improve community networks and feedback improved in some settings since the onset of the pandemic.[15] In other settings, community engagement has been affected by the pandemic. This is due to misinformation and mistrust surrounding COVID-19 and the collateral impact on services being visible to the population, for example reduced health workers and supply shortages that impact on quality of care.

Communication and advocacy adaptation strategies targeted education on COVID-19 such as rumour management, COVID-19 prevention measures and signs and symptoms of infection were highlighted by several interview respondents. Actors also described new communication and advocacy activities on maintaining essential services to reassure and continue promotion of usage of MNCH services, such as institutional deliveries.

*"Community messaging has been a key part of what we've done. To reassure people that the services are still open and safe to attend. And also information about COVID, how to stay safe, hand washing, guidance, all those kinds of things that we've seen in many other contexts globally. We've had to work with the Ministry of Health in country*

*we've had to work with religious groups, community leaders – made sure that the messaging was appropriate and understandable in the context." – International NGO, Yemen*

Acceptability of adaptations by the local population was a further challenge faced by several actors. For example, lack of acceptance of one adaptation preventing hospital visitors led to reduced service uptake.

*"...The first thing we did was to stop with all the caretakers to enter the hospital, you need to think that in that area, I mean the patient, they are always coming with the mother-in-law... And this was a big, huge thing. And challenge, because also, we need to have a lot of meetings with the elderly, with the community to also make them understand, we need to reduce the flow of the people coming inside and going outside." – International NGO, Afghanistan*

*"People started losing trust in our facilities because they came and they didn't get treated, because there wasn't anything, which is very unusual... I think that had a very, very huge impact on the perception of the community of what we do." – International NGO, DRC*

**Box 4: Adaptation strategies for MNCH services in FCAS during COVID-19 – Key Reflections on what is required moving forward**

- Community-focused and participatory approaches should be prioritised when designing adaptations, including representation of women and children.
- Facilitation of open communication between community workers conducting health visits, health facilities and local police enforcing movement restrictions to coordinate severe or deteriorating case referral.
- A video or photo component should be integrated into to tele-health visits to enable a visual assessment where relevant, e.g., for anthropometry.
- Early planning of adaptations should be prioritised, focusing on maintaining essential services and prioritising MNCH and avoiding diversion of funding or resources.
- Existing supply chains should be supported to ensure supply prepositioning to meet increased MNCH supply/product needs to cover extended duration between visits.

- Donors should make available additional funding to enable adaptations to be fully implemented.
- Capacity building and continued training of staff is critical to implementing adaptations.
- Integration of monitoring and evaluation into adaptations with regular reviews.

## CONCLUSION AND KEY REFLECTIONS

The pandemic is exacerbating negative MNCH outcomes in FCAS that were already significantly worse than in other settings before COVID-19 due to lack of funding and the deprioritisation of essential services for women and children.

Many lessons can be learned from previous outbreaks and should be integrated into humanitarian responses in FCAS. MNCH must be prioritised in FCAS both routinely and during pandemics such as COVID-19. This is essential to avert millions of preventable maternal, newborn and child deaths.

Political will and mobilising of sufficient resources, with sustained commitment from donors, governments, NGOs and multilateral organisations working in FCAS are urgently needed to prevent a devastating health crisis for mothers and children. Steps must be taken to strengthen health systems and existing MNCH services, ensuring that the most vulnerable populations are reached. Continued advocacy efforts are also vital to the prioritisation of MNCH services, with particular attention needed to mitigate the predicted negative secondary effects of COVID-19 on MNCH outcomes in FCAS over the coming years.

Drawing on our study findings, we outline the following key reflections to guide and inform stakeholders and in the longer-term to improve MNCH outcomes for populations in FCAS during and beyond COVID-19.

### Key reflections for the short term

1. Increased funding is urgently required to re-establish MNCH activities which have been deprioritised or halted during the COVID-19 pandemic.

a. Funding arrangements must be responsive to the needs highlighted by recipients of funding. Longer-term predictable funding agreements, with flexibility for recipients in how and where to use funds, should be undertaken as one aspect of enabling this.
b. Additional funds for emergencies, available with ease of access particularly in the early stages of a crisis, are important for ensuring timely and appropriate response to an acute crisis whilst protecting MNCH services and avoiding diversion of funds away from MNCH.

2. Attention must be refocused onto ongoing childhood infectious disease epidemics which have been neglected during the pandemic.
3. Catch up mass vaccination campaigns must be planned and implemented.
4. Adaptations which may have negatively impacted MNCH need to reassessed and re-considered.
5. Additional funding for increasing humanitarian needs should be mobilised.
6. Innovative community-based strategies should be explored and funded and where possible preventive health and nutrition activities should be packaged together.
7. Feasible adaptations to services should be scaled up and their impact evaluated.
8. Community mortality surveillance should be re-established, and nutrition and mortality surveys planned as soon as possible.
9. Healthcare workers, including community health care workers, should deliver MNCH services such as immunisation as part of COVID-19 vaccine efforts.

**Key reflections for the long term**

1. Health systems strengthening in FCAS must be a key priority for donors.
    a. Routine data collection and reporting mechanisms must be improved to enable better assessment and effective response to ongoing and acute situations affecting MNCH.
    b. Increased resources, including human resources for health, supplies and infrastructure, are vital for health systems to have resilience in the face of an additional crisis, particularly considering the challenges already faced by those in FCAS.
    c. WASH, including IPC, must be strengthened and institutionalised in health services and the wider community.

d. The most vulnerable populations including women, children and adolescents must be prioritised, especially in complex settings experiencing several ongoing emergencies.

2. Emergency preparedness and response for future epidemics must be improved.
   a. The focus should centre on maintaining essential services, which must include MNCH services.
   b. Improvement in emergency planning must be institutionalised. As well as availability of emergency financial resources, provision including surge staff and adequate supplies of essential healthcare resources (e.g., essential medications, adequate hospital infrastructure, personal protective equipment) must be readily available.
   c. Routine planning for emergency preparedness and response should ensure this to prevent negative outcomes for MNCH, nutrition and wider health outcomes in the event of an additional crisis.
   d. Adaptation and contingency measures to maintain MNCH services should be planned early with sufficient resources made available by funders. Participatory approaches and focus on the community/service users throughout adaptations is important to ensure acceptability and positive outcomes.
   e. Strong leadership and coordination are required in the event of an additional emergency occurring to enable a timely and appropriate response to target the crisis and mitigate any negative effects on MNCH.

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# UNICEF WORKS TO BUILD A BETTER WORLD FOR EVERY CHILD, EVERYWHERE, EVERY DAY.

Front cover

A team of doctors go door to door in Hajr, Yemen, helping to protect families against cholera. The vaccination campaign was supported by UNICEF.



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