Assessing the effect of the COVID-19 Pandemic on EmONC services uptake in Somaliland

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Why do the analysis

Globally, healthcare providers have reported huge challenges of increased demand for health care and treatment of people with COVID-19. This has been compounded by fear, misinformation and limitations on movement, all of which have led to serious disruption of the delivery of essential health services including maternal, new-born, sexual and reproductive health services[1,2,3].

In addition, preliminary analysis of District Health Information Software 2 (DHIS2) data carried out in Somalia on ANC1, ANC4 and assisted deliveries seem to indicate a moderate percentage drop in ANC1 in April and May of 2020 versus 2019 whereas a slight percentage increase was observed in ANC4 and assisted deliveries in the same months in 2020 versus 2019[4].

Confirmed cases of the coronavirus infection were reported in Somaliland in late March 2020. Data on key emergency obstetric and neonatal care (EmONC) uptake indicators are collected on monthly basis from UNFPA supported health facilities. We used data on 3 key EmONC uptake indicators (namely antenatal care [ANC], normal facility-based deliveries and deliveries through C-section operations) to assess if there is a significant reduction in uptake levels that is attributable to the COVID-19 outbreak in Somaliland.

What we wanted to know

The assessment was carried to determine whether the spread of the Coronavirus infection impacted adversely on the uptake of EmONC services provided at the mother and child health (MCH) centres and referral hospitals supported by UNFPA in Somaliland.

What we wanted to know

How the analysis was done

We used monthly data covering January to May in 2020 and in 2019 on the three main indicators listed below:

- ANC uptake grouped into 1st and 2nd visits combined and 3rd and 4th visit combined.
- Normal deliveries, and
- Deliveries through caesarean section

We performed two steps of analysis, namely trend analysis and comparative analysis. The trend analysis was applied to the January-May 2020 dataset and was aimed to identify any significant trend (i.e, month-to-month change in uptake) in the data. The comparative analysis compares the uptake levels during January to May 2020 with those during the corresponding months in 2019.

For the trend analysis, a simple linear regression model was fitted (with the data on the logscale) to estimate the gradient (i.e, average change in a given indicator variable per month) and to test the statistical significance of the estimated gradient. For the comparative analysis, on the other hand, the Chi-square statistic was calculated to determine any significant difference in uptake between the data in January-May 2020 and that in the same months in 2019.

The SPSS Statistical Package v.25 was used for the analysis of the data.

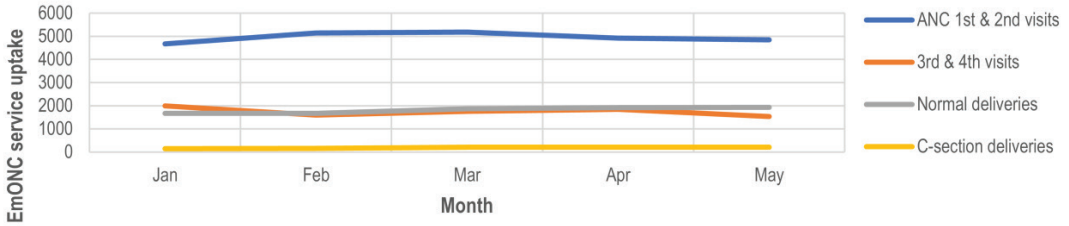
What the analysis shows

The trend analysis (Jan-May 2020 dataset)

Figure 1 presents the uptake data on ANC (ANC 1st & 2nd visits and ANC 3rd & 4th visits), deliveries and C-sections in the form of line-graphs with the dataset displayed as a table.

Only the data on facility-based normal deliveries showed a statistically significant slight increase from January to May (P-values = 0.025; see fig 1). Other observed variation in the other 3 variables (ANC 1st & 2nd visits, ANC 3rd & 4th visits and C-sections) are considered as arising from random fluctuation in the data.

Fig 1: Antenatal care, normal deliveries and C-sections uptake at BEmON & CEmON health facilities* in Somaliland during January to May 2020



Month	ANC 1st & 2nd visits	3rd & 4th visits	Normal deliveries	C-section deliveries
Jan	4671	1989	1675	151
Feb	5144	1596	1677	160
Mar	5188	1756	1872	213
Apr	4927	1847	1918	202
May	4852	1534	1933	205
	P-values = 0.846	P-values = 0.325	P-values = 0.025	P-values = 0.076

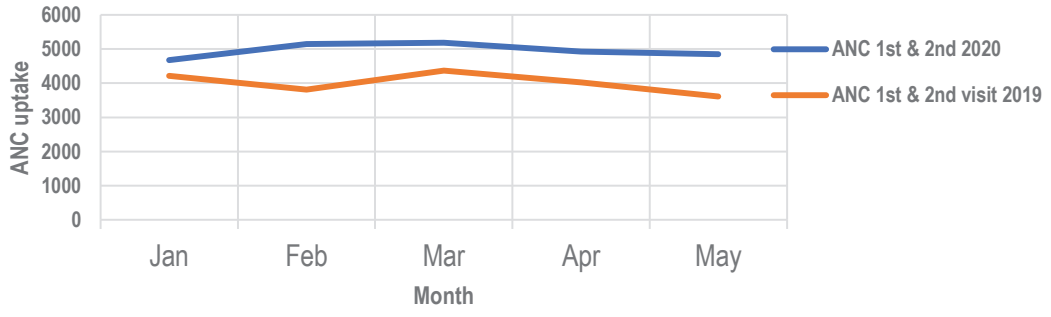
*** Data from only UNFPA supported health facilities**

Comparative analysis: January-May 2020 data versus January-May 2019 data

Figures 2, 3, 4 and 5 present the uptake data on the same variables (i.e, indicators) in line-graph and tabular forms comparing the uptake levels in January-May 2020 with that in the same months of 2019.

overall, uptake levels in all 4 EmONC indicators were higher in the 2020 months than those in the same months in 2019 (see figures 2,3,4 and 5). However, these differences were statistically significant only for the 2 ANC categories, i.e, ANC 1st & 2nd visits and ANC 3rd & 4th visits (see figures 2 and 3). The higher levels of normal deliveries and C-section operations observed in the 2020 months did not prove to be significantly different statistically from those observed in the corresponding months of 2019 (see figs 4 and 5).

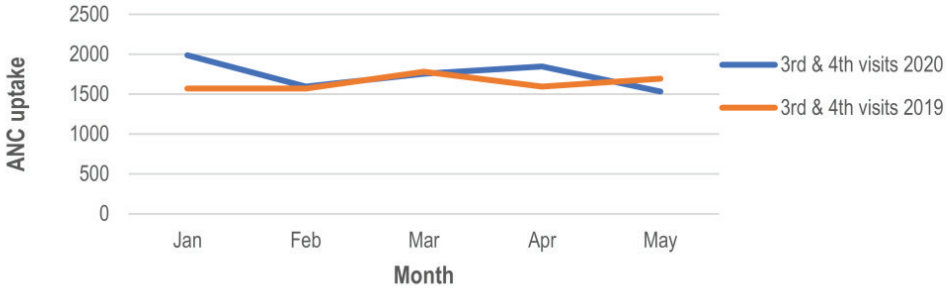
Fig 2: Uptake of antenatal care (ANC) 1st & 2nd visits in Somaliland during 2020 Versus 2019



Month	ANC 1st & 2nd 2020	ANC 1st & 2nd visit 2019	Difference
Jan	4671	4213	458
Feb	5144	3812	1332
Mar	5188	4365	823
Apr	4927	4021	906
May	4852	3607	1245
Total	24782	20018	4764

Chi-square(df=4) = 61.6892; P-value <0.0001

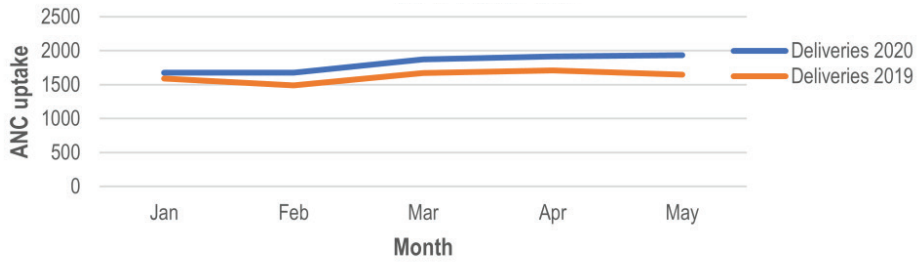
Fig 3: Uptake of antenatal care (ANC) 3rd & 4th visits in Somaliland during 2020 Versus 2019



Month	3rd & 4th visits 2020	3rd & 4th visits 2019	Difference
Jan	1989	1570	419
Feb	1596	1570	26
Mar	1756	1779	-23
Apr	1847	1593	254
May	1534	1694	-160
Total	8722	8206	516

Chi-square(df=4) = *60.70; P-value <0.0001*

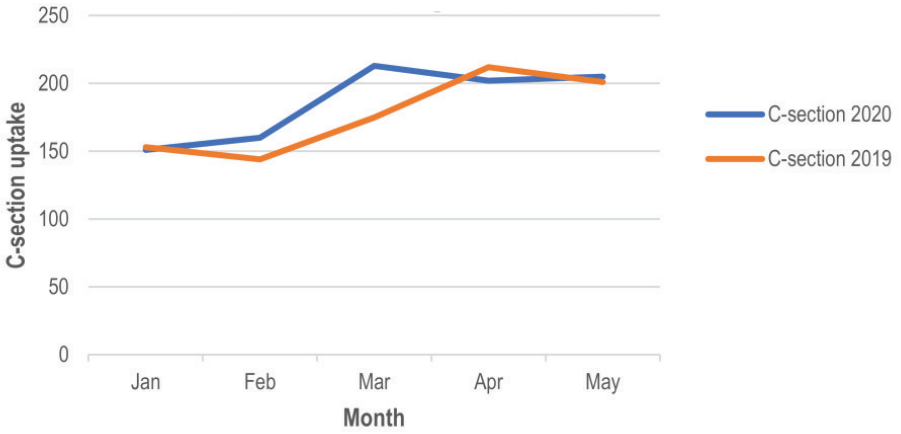
Fig 4: Normal deliveries at EmONC health facilities in Somaliland during 2020 Verus 2019



Month	Deliveries 2020	Deliveries 2019	Difference
Jan	1675	1589	86
Feb	1677	1488	189
Mar	1872	1670	202
Apr	1918	1710	208
May	1933	1649	284
Total	9075	8106	969

Chi-square(df=4) = 4.8787; P-value >> 0.10

Fig 5: C-section deliveries at EmONC health facilities in Somaliland during 2020 Versus 2019



Month	C-section 2020	C-section 2019	Difference
Jan	151	153	-2
Feb	160	144	16
Mar	213	175	38
Apr	202	212	-10
May	205	201	4
Total	931	885	46

Chi-square(df=4) = 3.695; P-value >> 0.10

What the results mean

On the whole, the results from this analysis have not shown any decline in the use of the EMONC services that could be linked to the Coronavirus epidemic in Somaliland. In fact, the trend analysis has shown a significant increase in the number of women who had normal deliveries at health facilities during the first 5 months of 2020, whereas the comparative analysis has found a significantly higher number of women coming to MCH centres or referral facilities for ANC consultations during the first 5 months of 2020 compared with those coming to the same health facilities for ANC consultations during the corresponding 5 months in 2019.

The evidence indicating the absence of a proven impact of the COVID-19 outbreak in Somaliland is in agreement with information obtained through interviews with frontline staff that were conducted before the start of the current analysis. Majority of the interviewees said they did not notice any reduction in the number of clients coming for EmONC services.

“It appears that people around here are either not bothered about the Coronavirus infection or are not aware of it”, said one MCH team leader.

“So far we have not experienced any pressure of dealing COVID-19 patients. We provide the usual services as usual”, said another.

The higher levels of the EmONC uptake in the 2020 data (as compared with that in 2019) is likely to be due to improved collection and reporting of data subsequent to joined-up decision made together with the Ministry of Health Development to scale up the collection and reporting of complete and accurate data on monthly basis.

Strengths and limitations

Strengths of the analysis

The finding from this analysis is based on large-sized monthly episode data on the uptake of key EmONC services. This helped to increase chances of detecting any impact that the Coronavirus may have had on the uptake these services. A two-step approach was used in the analysis of the data, namely trend and comparison analyses. The former was aimed at teasing out changes in uptake from month to month whereas the latter was used to compare variations in uptakes in 2020 vs 2019. Appropriate statistical method (and pertinent significance test) were used in both approaches. Finally, results from interviews (held prior to the analysis of the data) with lead BEmONC and CEmMONC staff are in agreement with the results of the data.

Limitations of the analysis

There are always weaknesses in any study or analysis. In this case information bias may represent a significant weakness. The data used in this analysis are routinely collected service utilisation data. This means that the data were collected retrospectively (i.e, prior to the time when the analysis was undertaken). This type of data are inherently fraught with both inaccuracy and incompleteness of the data.

The takeaway message

1. The analysis found no evidence indicating that the Coronavirus outbreak caused any significant adverse impact on the uptake of EmONC services provided at health facilities supported by UNFPA in Somaliland. Reasons put forward included:
    - Much of the human and other resources in those health facilities were not redirected to the COVID-19 efforts. The rate of spread of the outbreak was not as high as in elsewhere in the world.
    - The outbreak did not cause much fear or concern among the public enough to stop people from visiting their MCH centres or maternity hospitals.
2. The higher levels of the EmONC uptake observed in the 2020 data (as compared with that in 2019) is likely to be the result of a scale-up plan aimed at improving data collection and reporting, the implementation of which has started in early January 2020.

Reference

1. Riley T, Sully E, Ahmed Z, et al. Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low- and middle-income countries. Int Perspect Sex Reprod Health. 2020; 46:73–76.
2. World Health Orgnisation. Maintaining essential health services: operational guidance for the COVID-19 context. https://www.who.int/publications/i/item/10665-332240 (accessed 18/7/2020).
3. Kathryn Church, Jennifer Gassner & Megan Elliott (2020) Reproductive health under COVID-19 – challenges of responding in a global crisis, Sexual and Reproductive Health Matters, 28:1, 1773163, DOI: 10.1080/26410397.2020.1773163
4. PowerPoint Slide presentation shared with the UNFPA Somalia SRH Health Team (reportedly by partner colleagues from UNICEF and WHO Somalia who had conducted the analysis).